



TOWARDS AN UNDERSTANDING OF A CHANGING FOOD SYSTEM IN MAURITIUS: A CASE STUDY OF RURAL AND URBAN MAURITIUS

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ABSTRACT

Nutrition transition is a phenomenon occurring throughout most of the developing world whereby traditional diets are increasingly being replaced by Western diets. In the literature, globalization is described as the main factor promoting such a transition. In adopting Western lifestyles, people abandon their traditional foods and adopt a Western diet which largely consists of energy-dense, nutritionally poor and highly processed foods. The nutrition transition, the underlying causes and its subsequent impacts on public health are well documented in the literature. However, there is a gap in the literature explaining the different ways in which the nutrition transition unfolds in the lives of people. Therefore this research project tries to document the lived experience of a changing food system in the Mauritian context.

Mauritius has been selected as the study site because it is a microcosm of the casual factors driving the nutrition transition and also because the food system is rapidly changing. In 2008, the status of the country changed from being a net food exporter to a net food importer. A rural and urban site namely, Bambous Virieux and Tranquebar, Port-Louis have been selected to understand the different food geographies and to investigate the ways people in different locations experience a changing food system.

By means of in-depth interviews, narratives and observation, the difference aspects of a changing food system is investigated. This study approaches the phenomenon of nutrition transition from the research participants' lens.

ABBREVIATIONS

CHNS	China Health and Nutrition Survey
CSO	Central Statistics Office
DR-NCD	Diet Related Non Communicable Disease
FAO	Food and Agriculture Organisation
FDI	Foreign Direct Investment
FIB	Food Import Bill
GDP	Gross Domestic Product
GNP	Gross National Product
RDI	Relative Development Index
SIDS	Small Island Developing State
TFC	Transnational Food Corporations
WHO	World Health Organisation

GLOSSARY OF TERMS

La boutik Sinoi. The term ‘La boutik Sinoi’ (translation is ‘Chinese shop’) is used as a synonym for retail stores in the Mauritian Kreol language. The word ‘Sinoi’ is Kreol for Chinese. Retail stores are named after the Chinese as they historically used to run retail stores. They were very common and used to be found at every street corner. They are very much embedded in the Mauritian culture. Traditionally, the Chinese shopkeepers used the very famous ‘abacus’ as calculating instrument. Moreover, food commodities were handed over in triangle-shaped packets made from newspapers. Customers used to stock up on food commodities prior to the Spring Festival (Chinese New Year) because all the stores closed down for the festivities (Mauritian Times, 2010 & MauritiusMag, 2011). Eventually, even retail stores owned by members of other ethnic groups were still referred to as ‘la boutik Sinoi’.

Meat preparations are meat-based products such as canned meat, meat extracts, meat juices and meat pies.

Relative Development Index is a composite index that measures the relative achievement of sub-regions of the country in various dimensions of development. The index ranges between 0 and 1, where index values near 0 indicate the least developed areas and index values near 1 indicate the most developed areas.

Roche cari is the local term for a crafted spice grinder. It consists of a stone roll known as the ‘baba’ and a rectangular cut stone with a rugged surface. They are both made of the same stone. Hence the name ‘baba’ for the stone roll as it is an extension of the big rectangular stone. It is most likely to be found outside the house because it is mounted in cement and thus becomes a fixed feature. Traditionally, every household used to have one.

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1. INTRODUCTION

The food system has evolved significantly throughout history, from foraging to the pastoral system and subsequently to modern agriculture. These changes in food systems have been paralleled by shifts of global significance such as civilisation, wars, industrialisation, changes in economic practices and the advent of modern technology amongst others. In recent years, academia and popular press have taken vast interest in dietary changes noted across the globe. It is believed that the prevailing dietary pattern in the developed world is spreading across the developing world. This phenomenon has been termed the ‘Nutrition Transition’. This has been occurring in Mauritius at an accelerated pace over the last two decades and this dissertation explores the lived experience of a changing food system in the Mauritian context.

The nutrition transition is defined by Popkin (2006b:29) as “large shifts in diet and activity patterns, especially their structure and overall composition.” The predominant contemporary shift noted across the developing world is the distancing from traditional diets to energy dense, highly processed, high-fat and high-sugar diets (Drewnowski & Popkin, 1997; Popkin 2003; 2006b; Nielsen & Popkin, 2003; Popkin *et al.*, 2001). Traditional diets usually consisting of staples rich in fibers and carbohydrates, are increasingly being replaced by Western-based diets in the developing world (Nielsen and Popkin, 2003; Popkin *et al.*, 2001). Scholars agree that the developing world is going through the nutrition transition at an unprecedented pace. The developed world transitioned over several decades to achieve the present level of nutrition transition, and yet the same level of transition is occurring within a 10 to 20 year period in some parts of the developing world (Popkin, 2004).

It is widely being reported that the developing regions are abandoning local traditional foods consisting mainly of cereals, fibre-rich foods and complex carbohydrates to adopt Western-based diets which has increased the consumption of fats, caloric sweeteners and processed foods in these regions. Hence, the amount of calories in the diet can be used to capture the essence of the changing food system. For instance, the increase in the amount of calories per

capita per day has increased by 14.6% in the developed world whilst a 41.4% increase has been recorded in the developing world from the 1960s to 2005. (Grigg, 1999; Shapouri & Rosen, 2007). This mirrors one aspect of the rapidly changing food system in the global South.

The driving forces behind the nutrition transition have been extensively covered in the literature and globalisation has been identified as the primary driver of dietary changes across the developed and developing worlds (Drewnowski & Popkin, 1997; Popkin, 2001; 2004; 2006b; Hawkes, 2006; Hawkes, Chopra & Friel, 2009; James, 2000; Lang, 1999). Globalisation has led to the advancement of Western lifestyles within the developing world which have resulted in rising incomes (Drewnowski & Popkin, 1997; Hawkes, Chopra & Friel, 2009), rapid urbanisation (Satterthwaite, 2007) and the spread of mass media and technology (Popkin 2003, Popkin, 2004; Hawkes, 2006). In addition to the above-mentioned changes, Popkin (2004) argues that globalisation has caused shifts in the global trade due to the restructuring of economies and changes in the economic regime, reference being made to trade liberalisation, tariff reduction and increased Foreign Direct Investment (FDI) amongst others (Lang, 1999).

Trade liberalisation has significantly influenced food availability on a global scale as well as on a national scale (FAO, 2003). Food market integration coupled with FDI, have significantly influenced the availability, price and the type of food on the global food market (Hawkes, Chopra & Friel, 2009; Rayner *et al.*, 2007). These types of economic practices have been of utmost importance in the reshaping of the food market in developing regions as an increase of approximately 200% and 1400% was recorded in FDI in Asia and Latin America, respectively, over one decade period from 1988 to 1997 (FAO, 2003).

The above-mentioned factors have also changed the food landscape in the developing world with supermarkets becoming the prominent feature in the food economy (Reardon & Berdegue, 2002). As the share of supermarkets as a total of food sales have increased in the retail sector, they increasingly influence the types of foods consumed. Hawkes (2008) state that supermarkets are established in such a way so as to increase the volume of food bought per transaction, constantly introduce new products and increase the availability of highly

processed foods as they offer large profit margins (Hawkes, 2008). As such, supermarkets are recognised to be furthering the dietary transition.

The literature on nutrition transition has focused primarily on the health consequences due to changes in dietary habits. For instance, the literature has dealt extensively with the health consequences of adopting high-fat, high-calorie and nutrient-poor diets, which has provided crucial knowledge to address increasing obesity and other non-communicable diseases across the globe. This body of literature has been essential to understand the impact of the transition and subsequently implement policies to curb the spread of non-communicable diseases.

The majority of the research studies carried out within the realm of nutrition transition have focused on quantitative data and tend to be carried out at a national level thereby treating the population as a whole entity thus negating the intra-country differences. Despite an extensive body of literature on the phenomenon of nutrition transition including the causal factors and the associated consequences, there is little to no material on the localised experience of such dietary transitions. Decisions about trade policies are made by governments and trade regulating bodies at a national, regional or even international level; however the impacts of such changes are felt by consumers at the local level, far removed from the decision-making process. Therefore this research project intends to bridge this gap and seeks to document the lived experience of a changing food system.

The material available to date on the topic of nutrition transition is used as the basis but this dissertation explores it from another perspective. The experience of nutrition transition induced by a change in the food system is sought from a local perspective thus recognising that it spreads at different rates within sub-populations and therefore acknowledging the importance of cultural factors and different responses to dietary changes (Lang & Rayner, 2007). There are nuances in the experience of a changing food system that are further explored in this research study. As such, this dissertation contributes to an emerging body of literature capturing more than just factual information on nutrition transition. It recognises that the experience of a changing food system is context specific and does not necessarily occur as a homogenous process across a nation.

The decisive factors driving the spread of the nutrition transition have been well researched, however currently there is a gap in the understanding of some of the social processes furthering the transition. For instance, consumption including food consumption is believed to be a social process which is used to differentiate positions in society (James, 2000; Worsley, 1999). In addition, the link between increased income and the rise in consumption of Western-based foods is not clearly defined and discussed in the literature even though there is a linear correlation between the two variables (Popkin, 1993).

Therefore, in an attempt address the paucity of data identified in the literature, this research project approaches the phenomenon of nutrition transition from a different perspective. The aim of the research is to understand the lived experience of a changing food system from the consumers' lens. Acknowledging that different localised cultural and social factors are in place, this research study examines the lived experiences in two study sites.

It involves the analysis of the lived experience of a changing food system in two different sites in Mauritius. The one being the capital city, Port Louis and a rural village, Bambous Virieux, situated on the eastern shore of the island. Through looking analytically at the changing food system, I interrogate the experience of situated changes on the ground.

Several methods were used to collect primary and secondary data. Henning, van Rensburg and Smit (2004) argue that to a large extent, the aim of the research study shapes the research process theoretically and its execution on ground. Therefore to understand and analyse the lived experience of a changing food system, primary data was collected through observation, semi-structured interviews and a collection of food narratives. Secondary data was obtained from certain government institutions to contextualise the change and analyse some of the factual information with regards to the changes in the food trade regime, the economy and social improvements experienced in Mauritius over the last few decades.

Using narratives as a means of collecting data offered the opportunity for research participants to share their food stories thus providing a collection of personal narratives and reflection on the ongoing dietary transition. Food stories capture reflections and emotions about how these changes are experienced and lived daily. Semi-structured interviews contributed towards generating information about the types and volumes of food consumed,

food habits, food sources and the frequency of grocery shopping. Observation and the mapping of food sources provided a better understanding of the local food system in place in both study sites.

Through this research project undertaken, it became very clear that the Mauritian food system has changed significantly over the last couple of decades. It should be noted that given Mauritius's non-indigenous, multi-ethnic society, the diet has always been in some form of transition. The pace of this transition in the past 40 to 50 years, however, has significantly increased.

Across the developing world, including Mauritius, there is the shift towards Western-based diets as people abandon their traditional diets based on low-fat, low-calorie, high in complex carbohydrates local and seasonal foods. Diets adopted are characterised by high-fat, high-calorie, high-sugar with an increasing share of processed foods. As Mauritius relaxed its trade barriers to enter the competitive global market, the local food market has been significantly impacted with food imports exceeding food exports in 2008, thus changing its historical status from net food exporter to net food importer (Rajkoomar, 2008).

The aim of the study is to understand the lived experience of a changing food system using a case study of rural and urban Mauritius. The objectives identified to address the aim mentioned above are the investigation of the food purchasing and consumption pattern and the understanding of the situated food geographies. Additionally, an analysis of the dietary choices as well as food sources provides a better understanding of the changing food system. Documenting the food research participants' food narratives provided a glimpse into the lived experience of the traditional food system and the experience of the various changes over time. This research project interrogates how individuals respond to a changing food system which is a reflection of a wider economic transition. This dissertation attempts to provide a better understanding of the dynamics of nutrition transition and thus contribute to the literature.

To reiterate, the aim of this dissertation is to understand the lived experience of a changing food system and the objectives are as follows:

- Investigate the food purchasing and consumption pattern
- Compare the urban and rural food consumption pattern and food geography
- Analysis of dietary choices and food sources
- .Documenting food narratives capturing the changes in the food system over time

Due to differing degrees of urbanisation and socio-economic factors, two sites were selected to investigate lived experiences in different settings. It can be concluded that social, economic and cultural practices impact on the spread of the transition. The next section portrays Mauritius as a whole as well as the social and economic differences between the selected study sites.

1.1. CONTEXTUALISING MAURITIUS

Mauritius is a Small Island Developing State (SIDS) located in the Indian Ocean with an area of 2040 km² and a population of 1.284,924 (Ministry of Finance and Economic Development, 2011). It is a multi-racial state with Indo-Mauritians¹, Creoles², Sino-Mauritians³ and Franco-Mauritians⁴ (United Nations, 2002). Based on economic factors, the UN (2002) classified Mauritius as the second most successful economy within the African regional block, following closely after Botswana.

Masters and Carillet (2007) state that the strategic geographic location of the island between Africa and Asia has facilitated its rise to the current economic powerhouse position it occupies in the Indian Ocean region. Dommen and Dommen (1999) state that the period from 1959-1969 was crucial in inducing economic development in the country. During that period a welfare state was under construction whereby education was considered a high priority and desired decrease in birth and death rates were achieved. Before the 1970s, the economy was based on sugarcane production and processing. Sugar was by far the largest export produce, absorbed the biggest share of the labour force and occupied most of the fertile land on the island (Masters & Carillet, 2007).

1 Mauritians of Indian descent brought in as indentured labourer to work sugarcane plantations.

2 Mauritians of African and Malagasy descent brought in as slaves.

3 Mauritians of Chinese descent brought in to work in the trade industry, mostly in retail stores.

4 Mauritians of French descent, mainly descendants of colonizers

The history of Mauritius explains its contemporary multi- ethnic society as slaves were brought in from various places in Africa and indentured labourers from India (Masters & Carillet, 2007). In the aftermath of the abolition of slavery, the existing labour force pool was complemented by immigrants from China and India.

Mauritius has a long history of colonisation and experienced different waves of occupation ranging from the Dutch, French to the British. The Dutch occupied the island for a short period of time, from 1638 to 1710. The occupation of the island was followed by the French, from 1710 to 1810 and thereafter the island was captured by the British Empire. Mauritius remained under the British rule until independence was pronounced on March 12, 1968.

Following independence, rapid economic diversification was brought about by the new democratic government, thereby moving from an economy solely built on sugar to one that is anchored in textile, financial services and tourism (Masters & Carillet, 2007). Following economic restructuring, the Mauritian economy grew by an average of 5% per year from 1980 to 1990. Towards the end of the following decade, the unemployment rate dropped from 42% to 6%, the epitome of the implementation of a successful economic model (Masters & Carillet, 2007).

Based on its history and its socio-economic climate, Mauritius offers such an interesting study site because it is a microcosm of rapid economic and social change (Masters & Carillet, 2007; Uusitalo *et al.*, 2005). Owing to its colonial history, Mauritius has both French and British influences, still prominent in various aspects of life, and a dominant Indian population cohabiting with descendants of African slaves and Chinese traders. Driven by globalisation and the opening up of the market economy, this pluralistic society is undergoing major changes, noted by more people moving away from traditional ways of life to adopt new lifestyles based on Western norms.

As mentioned by Uusitalo *et al.* (2005), although Mauritius is a small country, the rates of diffusion of the nutrition transition and lifestyle change occur at different paces due to the presence of different socio-economic forces. Thus more than one study site was deemed necessary to assess and understand the Westernization of diets and to investigate if they unfold in the same ways in different areas. Consequently two sites, one rural and one urban,

were selected because they offer varying degrees of the social and economic forces at work in the Mauritian economy. This contributes towards bridging the gap identified in the literature whereby research projects have largely focused on national trends which do not recognise localised differences. Along the same vein, as urban and rural areas have different settings and infrastructure, one of the objectives is to compare the rural and urban food geographies, which guided the choice of a rural and an urban site, Bambous Virieux and Port Louis, respectively.

The sites selected are Tranquebar, a suburb of Port Louis and Bambous Virieux, a village situated on the eastern shore of the island (Refer to Section 3.3 for more detail). The study sites will be further discussed and justified in the methodology chapter.

1.2. STRUCTURE OF THIS DISSERTATION

In order to address the aim of understanding the lived experience of a changing food system in urban and rural Mauritius, this dissertation is structured as follows. The following chapter provides a review of the literature available on the theme of nutrition transition. The key elements are explored with particular reference to the constructs of the nutrition transition, its history in the developed world and the eventual diffusion into the developing world over the last two decades. Different experiences of the dietary transition in the developed as well as the developing countries are presented to provide the key elements of the phenomenon and its outworkings. The causal factors driving the transition are further explored and discussed along with the consequences associated with such changes. The literature review highlights the different dialogues on the topic of nutrition transition across the developing world. Also, the paucity of research with respect to some aspects of the transition is presented, thus justifying the need for this research project.

Chapter 3 presents the methodological approach adopted to undertake this research project and provides a description of the research experience. The purpose of this chapter is to explain the theory behind the research process as a whole and particularly to the data collecting methods employed. The context of the study sites is provided so that the existing social and cultural processes are better understood. A combination of observation, semi-

structured in-depth interviews, narratives and food mapping was used to collect data in order to analyse the lived experience of a changing food system in Mauritius.

Chapter 4 focuses on the waves of economic development experienced in Mauritius. This chapter uses secondary information to establish the economic context, highlighting the changes that occurred in the post-independence era from 1968 onwards. The current economic practices as a result of the macrolevel economic changes and the colonial legacy of the agricultural practices, are discussed.

Chapter 5 provides a descriptive account of the experience of the changing food system as articulated by the research participants. The different components of the traditional as well as the prevailing food system are presented from the research participants' lens. The tangible factors including, *inter alia*, structural changes in the diet and the introduction of new foods products are explored as well as the emotional connection with food is further investigated.

Chapter 6 presents the change in the food landscape recorded in Mauritius. As the dietary patterns transitioned from traditional to being Western-centric, the geography of food retail has transformed accordingly. As such, traditional food stores are increasingly being replaced by supermarkets bringing different kinds of foods and food practices.

The concluding chapter, Chapter 7 draws on all of the themes explored in this research study. This chapter uses the research findings, presented in Chapters 5 and 6 to reflect back on the aim and objectives, and the literature engaged with in this thesis. The lived experience of a changing food system is discussed in relation to the information available on the nutrition transition.

2. LITERATURE REVIEW

2.1. INTRODUCTION

This chapter is a review of the literature of the theoretical aspects of the nutrition transition, the causal factors, different experiences across the globe and the ramifications of adopting such dietary changes. This chapter begins with an overview of the concept of nutrition transition, the dietary shifts reported and the Westernisation of the global diet. In order to further the understanding of nutrition transition, the nutrition history of both the developed and developing world is presented. Several examples are presented to show the rapid transition occurring in the developing world. Nutrition transition is a multi-faceted phenomenon and the theoretical underpinnings of the dietary transition are explored in detail. The literature explains that the nutrition transition is a homogenisation of the Western food basket across the globe and as such the components of that particular food basket are presented.

The second part of the chapter explores the factors driving nutrition transition across the developing world such as globalisation, urbanisation and socio-economic changes. There has been much research work done within the field of nutrition transition because of the health consequences as briefly described in the third section of this chapter. The various aspects of the nutrition transition are explored ranging from the factors to the consequences. All of the above furthers the understanding of a changing food system and many of those aspects will be further discussed in the following chapters.

2.1.1. The History of Changing Diets

The global nutrition history has revealed that consumption patterns and the geography of food consumption worldwide has changed drastically (Grigg, 1999). Grigg (1999) argues that economic and technological changes transformed the Western diet, with a twofold increase in

calorie intake in some industrialised countries during the 1800s and the 1950s. Grigg (1999) explains that simple diets based on cereals and potatoes were substituted for diets based on meat, animal sourced foods, oils, vegetables and sugar. In terms of food consumption patterns, there was a significant difference between the developed and developing world (Grigg, 1999). Based on the food balance sheets⁵ produced by the Food and Agriculture Organisation (FAO), Grigg (1999) states that the daily calorie intake per capita in developed nations was 50% more than that reported in developing countries in the 1960s as depicted in Table 1 underneath.

Table 2.1: Daily per capita calorie intake in developed and developing regions, 1961-2005
(adapted from Grigg, 1999 and Shapouri & Rosen, 2007)

Region	Total calorie intake per capita/day		
	1961	1970	2005
Developed world	2982	3135	3418
Developing world	1925	2143	2722

In terms of food consumption, there were stark differences between industrialised nations and developing nations. In addition, the proportion of animal sourced foods in the diet was significantly higher in developed countries. However, economic development characterised by the increase in real income altered the food system in developing countries (Grigg, 1999) as economic development caused major lifestyle changes mirrored accordingly in food consumption patterns. Traditional diets based on idiosyncratic food cultures perfected over centuries are increasingly being replaced by a Western-based diet. As such, this is increasingly leading to a homogenisation of food baskets across the globe. Popkin (2004) states that the change in food consumption pattern, termed as nutrition transition, is occurring much faster in developing countries than it did in the richer North. Popkin (2006b: 293)

⁵ Grigg (1999:3) states that food balance sheets “are not consumption data, but estimates of the available supplies, calculated from national statistics of production, quantities taken from store, and imports, from which are deducted exports, foods put into store and used for seed, feed and industrial purposes. A deduction of ten percent is made for wastage between farm and retail outlets. The final figures are food supplies available at the retail level in calories per capita, and grammes of protein and fat per capita.”

argues that “globally, our diet is becoming increasingly energy-dense and sweeter. At the same time, higher-fibre foods are being replaced by processed versions. There is enormous variability in eating patterns globally, but the broad themes seem to be retained in most countries.”

The literature identifies rapid globalisation as one of the main causal factors driving nutrition transition across the developing world (Drewnowski & Popkin, 1997; Popkin, 2001; 2004; 2006b; Hawkes, 2006; Hawkes, Chopra & Friel, 2009; James, 2000; Lang, 1999). Major consequences of globalisation in the developing world has been rising incomes (Drewnowski & Popkin, 1997), rapid urbanisation which occurred much faster in the developing regions than in the West, a shift in lifestyle, the spread of mass media and technology (Popkin, 2004). In addition to the above-mentioned changes, Popkin (2004) argues that globalisation has caused shifts in global trade due to the restructuring of economies. Kennedy, Nantel and Shetty (2004) argue that many trade barriers have been removed to facilitate the free flow of goods, technology and information, which is the central tenet of globalisation. The following figure captures some of the aspects of nutrition transition which will be further discussed in the rest of this chapter.

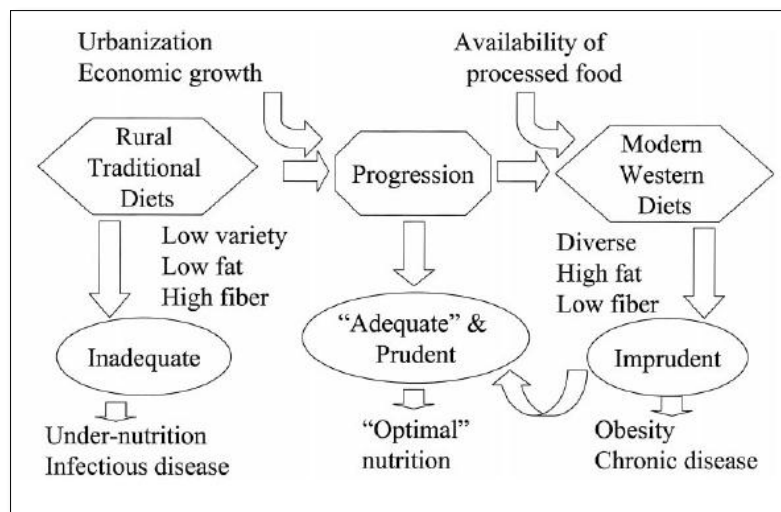


Figure 2.1: The different elements of nutrition transition
 (Source: Tucker & Buranapin, 2001: 2418)

2.2. THE NUTRITION TRANSITION

The human diet has changed significantly throughout history, from the hunter-gatherer's diet to the modern 21st century citizen's diet. Drewnowski and Popkin (1997), Popkin (2003; 2006b), Nielsen and Popkin (2003) and Popkin *et al.* (2001) narrate a change from traditional staples rich in fibres, high in carbohydrates and low in fats to one which is energy dense, highly processed, full of fats (animal and vegetable derived) and sugars. Popkin (1993) argues that there is a global convergence to a Western diet characterized by high levels of saturated fats, sugar, refined foods and a decrease in fibre intake. Nutrition transition is defined by Popkin (2006b:289) as "large shifts in diet and activity patterns, especially their structure and overall composition." In other words, the nutrition transition occurs as part of a lifestyle change to a modern, Westernized one which is partially reflected in altered eating habits (Drewnowski & Popkin, 1997; Popkin *et al.*, 2001).

Throughout human history, societies have undergone many nutritional changes. Worsley (1998) states that the hunter-gatherer societies consumed mostly carbohydrates and so did agricultural societies. The latter were very dependent on a limited number of staples which made them very vulnerable to famines in events of crop failures or natural disasters. A diverse food supply and a diet high in animal products and fats are characteristic traits of industrial societies.

It has been widely reported the developing world is going through the nutrition transition at an unprecedented pace as opposed to the developed world which transitioned over a long time period. Based on the figures provided in Table 2.1, from 1961 to 2005, the calorie intake in the developed and developing worlds has increased by 14.6% and 41.4% respectively. During the same timeframe, the gap in the calorie intake between the two regions was halved. The global adoption of the Western lifestyle and by extension, the Western diet, has led to the following as discussed by Uusitalo *et al.* (2005: 608):

the 'Western world' has become more than a geographical or historical concept as Japan and other nations have widely adopted aspects of Western culture. The diffusion and adoption of Western culture in other places is often termed 'Westernisation', whereby societies and individuals adopt particular ideas and practices from more economically developed and commercialised countries rather than their indigenous ones. A world-wide standardisation of

lifestyles is occurring as a result of the global diffusion of the Western model of daily living, particularly American consumer culture.

In order to understand the pace of rapid diffusion of nutrition transition within the developing regions, the following section describes the transition experienced in the developed world.

2.2.2. Nutrition Transition in the Developed World

The transformation of the Western diet occurred between the 1800 to 1950 period (Grigg, 1999). In the early 1800s, diets in Western countries mainly consisted largely of cereals and potatoes which made up the greatest proportion of the total energy supply, animal sourced foods, and small amounts of sugar, vegetables and fruits (Grigg, 1999). In his work, Grigg (1999) identifies that from 1800 to 1950, the daily caloric intake per capita was low in most Western countries ranging between 1800 and 2300 calories.

According to Grigg (1999), following the industrialisation era, dietary patterns in many Western countries changed considerably with marked increases in regional food consumption accompanied by a structural change in the diet. The radical change in lifestyle was brought about by economic and technological changes (Grigg, 1999). These changes mentioned by Grigg (1999) are shifts in the global agricultural system thus causing the lowering of food prices, improved means of transport, refrigeration and increased purchasing power due to increased real income post industrialisation.

It is estimated that the per capita consumption of refined carbohydrates and fat has significantly increased in England by a factor of five to ten over the last two hundred years (FAO, 2007). This change has been accompanied by a decrease in the consumption of fibre-rich grains (Uusitalo, Pietinen & Puska, 2002 cited in FAO, 2007). Following the above-mentioned changes, Grigg (1999) states that the new diet consisted of a larger proportion of sugar, oils, fats, fruits, vegetables and animal sourced foods. The consumption of meat and meat-derived products doubled between the start of the nineteenth century and the 1960s. Additionally, in the early 1800s, the source of protein was predominantly cereals and pulses, however, as dietary patterns changed; more of the protein was being derived from animal sourced foods (Grigg, 1999) thus making animal and vegetable fats more prominent in the diet.

According to nutrition history, Western diets have already been radically transformed (Grigg, 1999), however, as food systems evolve, industrialised countries still experience some changes in dietary patterns. In recent times in developed countries, the major change noted is in the form of increased food portion sizes (Nielsen & Popkin, 2003). The phenomenon of nutrition transition currently experienced in the developed world is less about the types of foods consumed and more focused on the quantities of food consumed. This change is strongly linked to marketing strategies of large food companies.

Nielsen and Popkin (2003) argue that in the United States, food portion sizes⁶ increased during the period 1977 to 1996. It is estimated that the portion size of a cheeseburger, salty snack and soft drink has increased by approximately 25%, 60% and 63% respectively. Nielsen and Popkin (2003) concluded that fast food portion sizes have increased more significantly than home-made or restaurant meals. They further note that this increase occurred as fast food companies practice 'value adding' where it turns out to be best value for money to buy large meals. The outcome of the study also revealed that Americans consume more food, in terms of each meal size portion than they did in the late 1970s (Nielsen & Popkin, 2003). In addition, Popkin and Gordon-Larsen (2004) further argue that the daily amount of calories consumed by the American population has been on the rise due to the growing consumption of energy-dense, nutrient-poor foods and snacks.

In some parts of the developed world, significant changes in diets have resulted from the implementation of policies and regulations by the government. For instance, in the 1980s there was a strong urge in the Netherlands, Norway and Finland to reduce the consumption of high-fat foods. Therefore the availability and supply of fat-free foods on the market increased (Popkin, 1993). According to the latter, due the implementation of food and nutrition policies, Norway successfully decreased the proportion of energy derived from animal fats by 20%. Popkin (1993) argues that, similarly, the consumption of animal fats per capita has decreased in Great Britain and Canada. Some Western societies are promoting simple diets consisting of grains, vegetables and fruits through means of education and nutrition policies (Drewnowski & Popkin, 1997). Nevertheless, the Western diet remains predominantly low in fibre, high in sugars, fats, refined and processed foods.

⁶ The types of foods used as markers for the experiment conducted by Nielsen and Popkin (2003) are salty snacks, desserts, soft drinks, fruit drinks, French fries, hamburgers, cheeseburgers, pizza and Mexican food.

Drewnowski and Popkin (1997) state that the developing regions are abandoning local traditional foods consisting mainly of cereals, fibre-rich foods and complex carbohydrates to adopt Western-based diets which has increased the consumption of fats, caloric sweeteners and processed foods. The next section expounds on the above statement.

2.2.3. Nutrition Transition in the Developing World

As the developing part of the globe is increasingly adopting the type of lifestyle being led in the developed world (Uusitalo *et al.*, 2005), a homogenisation of dietary habits has occurred. The bulk of the research work conducted within the field of nutrition transition focuses on developing nations as their dietary habits and lifestyles are shifting at an unprecedented pace from traditional to the idealised Western model (Uusitalo *et al.*, 2005). Popkin (2004) argues that the Western world achieved the present level of nutrition transition over several decades while some developing countries only took a 10 to 20 year period to achieve the same level of dietary transition. Through collective work done across the developing world, Popkin (2003) argues that as the dynamics of food system changes, the proportion of fat, caloric sweeteners and animal sourced food products in the diet increases.

In addition, Drewnowski and Popkin (1997) and Uusitalo *et al.* (2005) note that traditional diets consisting of complex carbohydrates and fibre are being replaced by refined wheat (starchy staple food), meat, processed foods and dairy products which are all distinctive traits of a Western diet⁷. However, Uusitalo *et al.* (2005) and Satia (2010) argue that the ‘Western diet’ itself varies depending on geography, food culture, historical period and dietary acculturation. According to Uusitalo *et al.* (2005), foods such as breads, meats, fat spreads, refined grains such as wheat and rice, snack chips, skimmed milk, pasta and processed foods are classified as Western foods.

Evans *et al.*, (2002) report that the consumption of mutton flaps⁸ and chicken parts have increased significantly in the Kingdom of Tonga. From the period 1976 to 1996, an

7 However, Uusitalo *et al.* (2005) argues that the ‘Western diet’ itself varies depending on the geography, food culture, historical period and dietary acculturation (Satia, 2010). According to Uusitalo *et al.* (2005), the literature classifies foods such as breads, meats, fat spreads, refined grains such as wheat and rice, snack chips, skimmed milk, pasta and processed foods as Western foods.

8 Evans *et al.*, (2002) describe mutton flaps as the cut from a lamb’s belly. This particular part of the animal has very little amount of meat and a great amount of fat.

approximate 100% increase was reported in the import of mutton flaps in the food economy in the Kingdom of Tonga (Evans *et al.*, 2002). To accentuate the pace at which nutrition transition is occurring in some developed countries, Evans *et al.*, (2002) state that the consumption of high-fat imported meats has increased by 60% in one decade (1989 to 1999). The latter concluded that the reported consumption of imported foods such as bread, beef chicken parts, mutton flaps, flour noodles, rice was greater than that of traditional complex carbohydrates such as plantain, giant taro and Tahitian chestnut (Evans *et al.*, 2002).

In developing nations, the most common types of food consumed are edible oils, caloric sweeteners and animal sourced foods (Popkin, 2003). He further argues that the first major shift in the food system denoting the nutrition transition is the increase in import or local production of oilseeds and vegetable oils. Popkin (2003) states that the production of vegetable oil with particular reference to soybean, sunflower, palm and groundnut has increased threefold during a 30 year period from 1960 to 1990. Drewnowski and Popkin (1997) state that the availability of vegetable oils termed as ‘cheap fats’ on the global market has revolutionized the human diet as it has rendered baking and frying cheaper than they would have been if animal fats were used.

Furthermore, an increase in the consumption of other types of foods such as caloric sweeteners⁹ and animal sourced foods has been reported in many parts of the developing world (Drewnowski & Popkin, 1997; Popkin, 2003). Accordingly, Popkin (2003) argues that since the 1960s, a threefold increase has been reported in the consumption of caloric sweeteners in the developing world. Delgado (2003) coined the phrase ‘livestock revolution’ referring to the increasing demand for animal sourced foods¹⁰ in developing nations. He predicts that by the year 2020, the developing world will consume about 63% of the total meat available on the global market thus denoting an increase of about 20% from current available figures (Delgado, 2003). According to the latter, due to an accelerated pace of the spread of nutrition transition, within a timeframe of two decades (1970 to 1990), the increase in meat consumption in the developing world tripled that reported in the wealthy industrialised countries (Delgado, 2003). Popkin (2004) states that across the vastness of food

9 In this context, the term caloric sweetener encompasses sugar and non-sugar products such as high fructose corn syrup.

10 Delgado (2003) refers to mainly meats and dairy products.

cultures present around the globe, diets are increasingly becoming more Westernised as discussed in the following section.

2.2.4. Different Experiences of the Westernisation of the Global Diet

Nutrition transition refers to the declining consumption of local traditional foods and the increased consumption of Western-based foods. However, it is important to recognise the impact of the food economy and the local food geography on the manner in which the dietary transition occurs. There are varying degrees of transition which are exemplified by the different examples provided in this section. As previously stated, the nutrition transition is a multi-faceted phenomenon with the homogenisation of the food basket occurring differently in different contexts. Even though the central tenet is the same which comprises the increased consumption of energy-dense foods, high in fats, sugar and highly processed foods, the dietary transition translates differently in different countries due to varying socio-economic and cultural contexts. These different experiences reflect some of the attributes of a particular society and the prevailing economic environment.

It is to be pointed out that there are different food consumption patterns in different sub-populations within a specific country. Most studies have undertaken country to country or the developed with the developing world comparisons while there is little understanding of the varying levels of diffusion of the dietary transition. This dissertation intends to fill this gap and provide more information on the experience of the dietary transition in Mauritius.

The major shift involves a distancing from the traditional diet to a Western-based one termed as the “Westernisation of the global diet” by Drewnowski and Popkin (1997:34). The nutrition transition is a global phenomenon, occurring concurrently across various parts of the world such as South-East Asia, India, the Mediterranean Islands, Arctic communities and amongst others, Mauritius. Various parts of the world have been researched to track the pace and advancement of the dietary transition and as such referring to the Asian diet, Pingali (2006: 282) writes:

The new dietary habits reflect Western patterns, and could be quite unlike the habits that had developed locally over many generations. Consumers exhibit strong preferences for meat or fish, dairy products, temperate zone foods such

as apples and highly processed convenience foods and drinks all of which are readily available in the emerging supermarkets and fast-food outlets. The evolving diets are distinctly higher in fat and protein content relative to traditional Asian diets that emphasize carbohydrates.

2.2.4.1. *The new dietary dimensions in China*

China is undergoing nutrition transition at an accelerated pace (Drewnowski & Popkin, 1997; Popkin *et al.*, 2001) compared to the rest of the developing world. China, being one of the most powerful economies on the global scene, has experienced a significant increase in GDP per capita since 1978 with one of the most rapidly developing economies in the world (Du *et al.*, 2002). Du *et al.* (2002) state that it has had one of the highest economic growth rates experienced in modern times. Consequently, the living standards have rapidly increased which have been paralleled by many social changes (Du *et al.*, 2002). These changes have also been reflected in the types of foods consumed by the Chinese population. Drewnowski and Popkin (1997) note the stark change in diet that occurred in the late 1980s as people abandoned their traditional diets consisting mainly of staples such as rice, millet, sorghum and some vegetables for a diet consisting of rice, wheat and meat products. It was noted that people with higher incomes were more likely to replace vegetables with animal sourced foods (Drewnowski & Popkin, 1997; Du *et al.*, 2002 and Popkin *et al.*, 2001).

Popkin (2003) argues that the Chinese nutrition transition follows a classic Westernisation pattern. The major structural change in the diet has been the decrease in the daily consumption of coarse grains which dropped from a 135g/capita/day in 1989 to 46g/capita/day in 1997, a decrease of approximately 60% realised within one decade. As nutrition transition involves the distancing away from traditional diets, a marked decline is noted in the daily intake of fresh fruit and vegetables (Popkin, 2003). Conforming to the Westernisation pattern, there has been a significant increase in the consumption of meat and meat products, poultry and game, egg and egg products, seafood, dairy products and vegetable oil. The daily intake per capita of poultry and game, egg and egg products and vegetable oil doubled over the period 1989 to 1997.

2.2.4.2. *Nutrition transition in India*

Similar to China's experience, India has been experiencing nutrition transition. India embraced an economic liberalisation reform in 1991 which was followed by significant economic improvements (Misra *et al.*, 2011). Thereafter, the GDP rate increased significantly and was accompanied by increased literacy, life expectancy, rapid urbanisation and decreased poverty rates (Misra *et al.*, 2011; Pingali & Khwaja, 2004).

According to Pingali and Khwaja (2004) and Misra *et al.*, 2011, ingredients in the traditional Indian food basket are increasingly being substituted by Western foods. There were two noticeable waves of transition whereby the first one occurred in the 1980. During the first phase, the Indian diet became more diversified, however, the essence of the diet was still predominantly traditional (Pingali & Khwaja, 2004). The typical diversified diet consisted of millet, wheat, pulses, cereals and some animal products. Pingali and Khwaja (2004) argue that during the first wave of change, the consumption of animal products, especially milk, increased significantly. In addition, there was an increase in the consumption of traditional vegetables products such as pulses, wheat, rice and cereals.

Pingali and Khwaja (2004) state that the second wave of transition occurred in the 1990s and that particular decade marked the structural change from traditional to a Western-based diet. The latter argue that “the 1990s were associated with the consumption of significantly larger amounts of energy-dense foods in the form of fats, oils and starchy roots (Pingali & Khwaja, 2004:7).” The proportion of animal sourced foods in the diet rose significantly, along with a marked increase in the intake of vegetable oils, starchy roots, wheat, sugar and sweeteners (Pingali & Khwaja, 2004; Rajitha, 2012). They further argue that typical to the unfolding of the nutrition transition, there was a significant decline in the demand for traditional food commodities such as pulses and cereals. This wave of transition was more pronounced than the first one and more noticeable as traditional foods were increasingly being replaced by “processed, ready-to-eat, deep-fried and with added preservatives” foods (Misra *et al.*, 2011: 280).

The *modus operandi* of the nutrition transition is that there is a decline in the consumption of local traditional foods along with an increase in the consumption of Western foods. Based on Pingali and Khwaja's study (2004), it was noted that the use of wheat in the Indian diet was

changing. Wheat is a long established staple food in the northern parts of India, commonly used to make 'chapatis'. Following the second wave of dietary transition, wheat was increasingly being used to make bread-like products of commercial nature. Bread is characterised as a typical element of the Western diet. In this instance, the structural change in the diet caused by the nutrition transition, involved re-purposing wheat from its traditional use to the production of a Western-based food item.

The consumption of meat and meat products increased and data presented by Pingali and Khwaja (2004) reveal that the daily caloric intake per capita of animal fat and milk more than doubled over the two waves of dietary transition (1980 to 2000). During that period, Pingali and Khwaja (2004) state that the consumption of meat increased by 37% which is lower than that experienced in other countries and that is because of religious convictions. This emphasises the cultural context of nutrition transition. Popkin (2003) argues that the increase in consumption of vegetable oils is one of the markers of nutrition transition and Pingali and Khwaja (2004) state that the daily caloric per capita consumption of vegetable oils in India increased by a staggering 88%.

2.2.4.3. The experience of the nutrition transition in the Fiji Islands

As mentioned previously, nutrition transition is considered to be a global phenomenon and even isolated places such as the Fiji Islands are experiencing a change in dietary patterns. Fiji along the same line as Mauritius offers an interesting case study due to its small size and geographic isolation. The case of the Fiji islands in many ways is similar to Mauritius as they are both small economies, integrated into the world market thus increasing vulnerability to external market shocks.

Nutrition transition is occurring in the Fiji Islands marked by the traditional food commodities being substituted with imported processed and refined foods (Schultz, 2003). Prior to the 1950s, Schultz (2003:11) writes:

Traditional diets consisted of food from land and sea usually consumed twice a day: morning and evening. Meals were simple, balanced and nutritious, consisting of: starchy root crops as the main energy source, fish, crabs and shellfish as protein and local green leafy vegetables as an accompaniment:

coconut used in cooking, was the main source of fat. Meat was eaten only occasionally (pork, chicken, turtle meat), usually at special feasts.

During that time, traditional foods such as taro were being increasingly replaced by cassava, bread, rice and wheat flour biscuits and there was a noted increase in the consumption of animal protein (Schultz, 2003). The latter indicates that some of the types of foods introduced in the Fijian diet were cereals, meats, milk, vegetable oils and fats and animal fats. Schultz (2003) further argues that the shift in dietary pattern was championed by shifts in the local food system thereby increasing their reliance on imported foods. The proportion of energy derived from imported foods increased by approximately 10% from 1985 to 1996, with over half of the dietary energy derived from imported foods (Schultz, 2003). The latter argues that the distancing from indigenous diets to the adoption of Western-based diet has rendered imported commercially processed and refined foods to become established as key food items in the contemporary Fijian diet.

Based on the different experiences of the nutrition transition, traditional staples such as sorghum, millet, taro and cassava amongst others are being eroded from the diet to adopt Western food which is heavily reliant on wheat. Diets perfected over decades are being substituted by energy-dense, high in fat, nutritionally poor and processed foods. All the different experiences of nutrition transition presented above are driven by a range of economic and social factors. Having defined the nutrition transition and presented its diffusion in the developing world, it is important to understand the causal factors. These factors are discussed in the next section.

2.3. DRIVING FORCES BEHIND THE NUTRITION TRANSITION

As stated in the previous sections, nutrition transition is a global phenomenon that has already caused major structural shifts in diets in industrialised countries and is causing fast-tracked dietary changes in many developing countries (Popkin, 2004). According to the literature, the underlying factors of such shifts in dietary patterns are similar in nature. Therefore, the following section addresses the socio-economic factors driving the change. A range of factors is presented with globalisation argued as the main contributing factor which in turn brings about various changes in society thus furthering the nutrition transition.

2.3.1. Globalisation

This issue (the globalisation of our food system) is immensely complicated and made all the more potentially confusing by our participation in the process. Every time we travel, we can both note the diffusion of dietary habits and at the same time contribute to that process. By travelling, we take out likes, dislikes and food expectations to cultures which previously perhaps did not share them. No one is immune from the impact of the immense changes in how food is grown, processed, distributed, marketed and sold around the world (Lang, 1999: 335).

Hawkes, Chopra and Friel (2009) argue that the basis of nutrition transition is rooted in the process of globalisation. Globalisation is defined quintessentially the cross-border movement of people, capital, goods, technology and ideologies causing profound effects on the types of lifestyle being led across the globe (Popkin, 2006). Kennedy, Nantel and Shetty (2004) state that one of the characteristics of globalisation is the conjunction of economic practices, legal systems, society at large and culture across countries. This convergence of practices across countries has led to the loss of the richness of diversity in many aspects of life. As such, Hughes and Lawrence (2005:301) referring to the globalisation of Western lifestyles, state that “globalisation, the new monoculture, reduces cultural diversity to the lowest common denominator of ‘least effort’ lifestyles characterised by physical inactivity and convenience.” As globalisation creates the framework for the spread of Western ideologies and subsequently Western lifestyles, it carries dietary implications (Hawkes, 2000; Popkin, 2006) and it has led to the Westernisation of the global diet (Drewnowski & Popkin, 1997).

Hawkes, Chopra and Friel (2009) put forward the argument that along with globalisation comes changes in the social system, especially in the form of increased income, urbanisation and the absorption of women in the labour force. These changes are driven by the process of globalisation, thus serving as precursor for changes in dietary patterns (Hawkes, Chopra & Friel, 2009). In addition, the latter argue that there are globalisation-related changes that occur in the food system¹¹ causing different foods to become more available on the market

¹¹There are two kinds of changes namely dietary convergence and dietary adaptation. Dietary convergence is defined by Kennedy, Nantel and Shetty (2004) as the increasing dependence on the same kinds of foods across the globe. This dependence on a narrow base of foods causes the loss of food culture. On the other hand, dietary adaptation is described as the increased consumption of highly processed foods, convenience foods and meals away from home (Kennedy, Nantel & Shetty, 2004). They further argue that dietary adaptation is a consequence of the availability of new food commodities on the market, working mothers and exposure to aggressive marketing campaigns by food companies.

(Hawkes, Chopra & Friel, 2009; Hawkes, 2006). Kennedy, Nantel and Shetty (2004: 1) state that:

globalisation is having a major impact on food systems around the world...[which] affect availability and access to food through changes to food production , procurement and distribution... in turn bringing about a gradual shift in food culture, with consequent changes in dietary consumption patterns and nutritional status that vary with socio-economic strata.

2.3.1.1. *The link between income and diet structure*

Drewnowski and Popkin (1997) argue that diets with a great proportion of fats derived mostly from animal sourced foods, is typical of high income societies. Based on the food balance sheet of 85 countries compiled by the FAO, it is clear that there is a linear relationship between income and the corresponding proportion of fats and sugars in diets (Drewnowski & Popkin, 1997, Popkin, 1993; 2003; 2006b). Hawkes, Chopra and Friel (2009) argue that there is an undeniable relationship between rising income and diet. In many developing countries, it has been noted that as incomes of members of lower economic status rise, diets tend to be more obesogenic. In other words, as incomes rise, more energy is derived from sugars, animal and vegetable fats, typical of energy-dense and nutritionally-poor diets of the West. Additionally, the food balance sheet data reveals that an increase in income is linked to a significant decrease in the consumption of complex carbohydrates which is one of the salient characteristics of traditional diets.

Popkin (1993) states that in the 1980s, the real per capita income in China increased significantly averaging a twofold and threefold increase in urban and rural areas, respectively. The latter argues that the rising income was accompanied by changes in the composition of the diet. As a result of the increasing income, the consumption of fats increased significantly. From 1978 to 1987, there was a distinguished increase in the intake of sugar, edible oils, eggs and almost a doubling in the consumption of meat in the Chinese diet (Popkin, 1993). The increase in GNP led to an increase in national dietary adequacy (Drewnowski & Popkin, 1997), however there was still a marked difference between the diets of the poor and their richer brethren. Thus, Drewnowski and Popkin (1997:37) write:

Analyses of the Chinese diet, assessed by the 1989 CHNS¹² survey, show that diets of the poor were largely based on rice, millet, sorghum, cabbage, salted vegetables, soybean sauce, and salt, with some meat (pork). Higher-income respondents replaced coarse grains and starchy tubers with more rice and wheat. As incomes rose, vegetables and pickled vegetables were replaced with more meat, poultry, eggs, dairy products, and fresh fruit.

James (2000) argues that globalisation leads to an increased consumption model in low-income societies in developing countries. The reason being that consumption is a social process, a status-intensive one (James, 2000). This rise in consumption of certain types of foods is not about the income *per se*, but is attributed to the connection between income and the social processes. As stated above, food consumption is a social process which carries much value and is used as a marker of wealth. Along the same line, Worsley (1998) states that the food we consume carries symbolic significance because it delineates members of society. According to James (2000) and Worsley (1998), within the act of consumption, there is ‘positional competition’, *i.e.*, consumption leading to a higher position within the hierarchy of society, thus benefitting the consumer. This ‘positional competition’ leads to ‘positional consumption’ because it partly determines one’s position in society (James, 2000). Due to the fact that consumption of certain products has direct implications on one’s position in society, it is viewed as more than an end to itself but rather as a promoting agent. Therefore, as Worsley (1998) argues, food is used to achieve social prestige as it is used by consumers to achieve social ends. Based on a study in the Kingdom of Tonga, Evans *et al.* (2002) argue that one of the plausible explanations behind aspects of the nutrition transition is that there is a form of prestige attached to the consumption of imported foods, irrespective of the nutritional quality.

Furthermore, James (2000) suggests that low-income members of society derive more satisfaction from the consumption of such positional goods because they in turn benefit from a progression on the socio-economic ladder. Also, the aforementioned author argues that for those at the bottom of the echelon, a small increase in positional consumption yields a greater advancement on the social ladder (James, 2000).

¹² CHNS stands for China Health and Nutrition Survey

A decline in the real price of food coupled by an increase in income has made certain foods¹³ more accessible to people of lower income status (Kennedy, Nantel & Shetty, 2004). Drewnowski and Popkin (1997) argue that once a certain level of income is reached by people in developing countries, they might not revert back to traditional diets. In many instances, these traditional diets are referred as ‘diets of poverty’ (Drewnowski & Popkin, 1997), thus indicating the perception of poverty attached to traditional foods. Western-based diets offer more variety in terms of food products than the so-called diets of poverty and Drewnowski and Popkin (1997) argue that dietary diversity is fundamental for eating pleasure. As such, as incomes rise, dietary diversity is reported to increase.

2.3.1.2. *Globalisation of mass media*

There is a relationship between globalisation of mass media and the extent to which the Western lifestyle has penetrated developing countries (Popkin, 2003). He suggests that globalisation has led to the centralisation of mass media and the promotion of certain types of lifestyles and dietary patterns. Hawkes (2006) argues that from the 1980s, there has been a significant growth of transnational advertising agencies in the low income and transitional countries. To a certain degree, food advertising shapes the speed and flow of food commodities on the global integrated market (Hawkes, Chopra & Friel, 2009). They further argue that the mechanism through which advertising operates is by attracting consumers’ attention to new commodities on the market and enhancing the value, appeal and necessity of products on the market. Nurkse (1957: 112, cited in James, 2000) writes that “when people come into contact with superior goods or superior patterns of consumption, with new articles or new ways of meeting old wants, they are apt to feel after a while a certain restlessness and dissatisfaction. Their knowledge is extended, their imagination stimulated; new desires are aroused.” Along the same line, Hawkes, Chopra and Friel (2009) argue that food advertising and promotion shape preferences of certain types of food over others. Therefore, this creates the basis for making certain types of food more appealing to people (Hawkes, Chopra & Friel, 2009).

13 The three main staples globally are rice, wheat and maize. The production of such staples is highly subsidized in the producing countries. Due to an increase in demand for rice across Africa and some parts of Asia, the FAO stated that in 2002, the global trade amounted to 28 million tones which set a record (Kennedy, Nantel & Shetty, 2004).

Popkin (2006b) and James (2000) state that the advertising industry and especially the food advertising industry has soared in the last couple of decades, experiencing significant growth in many regions of the developing world (James, 2000). The latter states that the fastest growth has been noted in Asia and Latin America. The advertising industry grew by over 1000% in China, 600% in Indonesia, 300% in both Malaysia and Thailand and about 200% in India (James, 2000). There is sustained increase in media expenditure in developing countries, inasmuch as in the 1990s the media expenditure by Coca-Cola and McDonald's decreased in the United States while a significant rise was observed outside of the United States (Hawkes, Chopra & Friel, 2009). They state that Coca-Cola no longer features amongst the top 10 media spenders in the United States and Europe, however it is one of the largest spenders in low and middle income countries.

FAO (2007) state that research undertaken in the developed world revealed that the food advertising industry targets children and youth with energy-dense, nutrient-poor foods. Similar patterns are being observed in the developing world thus furthering the nutrition transition towards promoting and adopting high-fat, nutrient-poor foods. Based on a research study undertaken in Brazil, the FAO concluded that in 2002, approximately 60% of all food advertising was targeted at high-fat, high-calorie foods and sweeteners.

A significant increase in television ownership in the developing world has facilitated Western ideologies to penetrate that part of the globe (James, 2000; Popkin, 2006a). The increase in television ownership is a two-pronged issue. Firstly an increase in television ownership coupled with increasing amounts of money spent by TFCs on food advertising, has led to the promotion of nutrition transition across the developing nations. Food consumption behaviour in children have been heavily influenced by food advertising which focuses on high-fat, nutrient-poor and energy-dense foods (FAO, 2007). Secondly, Popkin (2006a) states that television viewing is one of the major drivers of obesity due to a lowering of energy expenditure coupled with food advertising.

2.3.1.3. Economic restructuring

There is a growing literature on the contribution of economic restructuring and the spread of Western consumption models. Lang (1999) defines economic restructuring that is typical of

globalisation as trade liberalisation, tariff reduction, FDI and market deregulation or self-regulation. One of the underlying principles of globalisation is that it potentially impacts on the availability of financial resources which in turn redefines the food market (FAO, 2007; Lang, 1999; Hawkes, 2006; Hawkes, Chopra & Friel, 2009).

Globalisation has redefined food markets and therefore dietary patterns by inducing a shift on the demand side as well as on the supply side (FAO, 2007). It is widely acclaimed in the literature that on the demand side, changes such as urbanisation, income growth and social status have been crucial to the spread of nutrition transition across the developing world. On the supply side of the food market, the growth as TFCs which occurred itself as a response to globalisation, has significantly altered food consumption patterns globally (FAO, 2007; Hawkes, 2006).

2.3.1.3.1. Transnational Food Corporations

Rayner *et al.* (2007) put forward the idea that economic restructuring has reshaped the food systems across the globe. The food supply chain has traditionally been short, based on local seasonal produce. However, with changing food systems, the food supply chain becomes increasingly more complex due to capital intensive processed foods. Through the establishment of TFCs, traditional food patterns have been eroded as transnational supermarkets significantly increased the availability of processed, high fat, high calorie and fast foods on the market (FAO, 2007; Hawkes, Chopra & Friel, 2009). As food markets in developing countries experience an increase in the availability of highly processed foods through the rise of supermarkets and US-style fast food chain outlets, traditional diets are increasingly displaced (Hawkes, Chopra & Friel, 2009; Lang, 1999). The rapid growth of fast food chains in the developing world has been termed as ‘Burgerisation’ ‘Coca-Colonisation’ thus capturing the rapid spread of fast foods in the developing world as shown below.

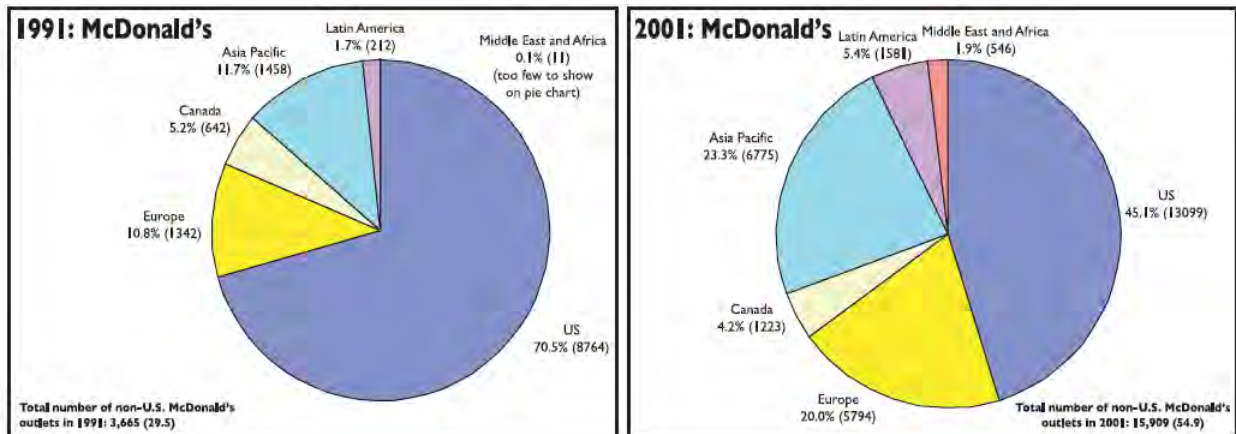


Figure 2.2. McDonald's outlet by region, 1991 to 2001
 (Hawkes, 2002 cited in FAO, 2007)

The number of fast food outlets, in this case instance McDonald's is used as a marker which indicates the prevailing food culture. By inference, a dominating 'Burger Culture' has a large number of fast food outlets. The overall number of McDonald's outlet increased during the given decade with the largest increase being recorded outside of the US. The Asia Pacific block experienced an increase of approximately 350% while the Latin American region experienced a growth of 645% in the number of McDonald's fast food outlet over a period of 10 years. This significant change indicates that these regions have a growing affinity for processed foods and are moving along the nutrition transition spectrum.

2.3.1.3.2. Trade liberalisation

Trade liberalisation is a cornerstone of the modern economy and it has warranted its own managing body, the World Trade Organisation (WTO). The WTO's aim is to promote trade liberalisation amongst member states (Rayner *et al.*, 2007). The supranational organisation conducts different negotiations rounds on a regular basis to address pertaining trade issues such as FDI, tariff barriers and subsidies. The concept of trade liberalisation emerges from the economic theory suggesting that an increase in the volume of trade benefits consumers by lowering prices as well as improving incomes derived from the agricultural sector (Rayner *et al.*, 2007). It is believed to be a pro-poor policy, *i.e.*, the more nations adopt trade liberalisation, the more it increases their ability to reduce poverty.

Rayner *et al.*, 2007 argues that there is a school of thought emerging amongst the adepts of trade liberalisation contesting its benefit to the poor populations of the developing countries. The neo-classical trade theory literature strongly advocates the concept of trade liberalisation (FAO, 2003) thereby promoting free market conditions which represent idealised trade. It is widely perceived that implementing free market conditions lead to an increase in trade which in turn generates economic welfare (FAO, 2003). In order to benefit from free trade, there are certain prerequisites such as competitive markets, terms of trade benefitting a certain party, the lack of regulatory mechanisms to ensure that the losing party is compensated (FAO, 2003). The literature suggests that economic welfare is a factor of market integrations, in other words poverty is due to the lack of trade liberalisation (FAO, 2003; FAO, 2007).

Trade policies drafted in response to trade liberalisation have significantly influenced food availability on a global scale as well as on a national scale (FAO, 2003). Changes in trade regimes as noted across the developing world, has led to the volume of imports exceeding exports (FAO, 2003). Along the same line, the liberalisation of food trade, food market integration and FDI have greatly influenced the availability and price of food whilst investing corporations have dictated the types of foods available on the market (Hawkes, Chopra & Friel, 2009; Rayner *et al.*, 2007). Lang (1999) argues that trade liberalisation facilitates the transfer of agricultural commodities from the South to the West, however there has been a significant increase in the trade of branded processed foods from the overproducing West to the global South. In addition, Rayner *et al.*, 2007 state that there has been a significant decrease in the volume of food exported from developing countries as a proportion of the total food exports from 50% in the 1960s to less than 7% by 2000.

Hawkes (2006) argues that as certain trade barriers were removed to fit the trade liberalisation model, more goods and capital flowed across nations. Policies implemented in the last 20 to 30 years have severely impacted the global agricultural marketplace. For instance, towards the end of the 1990s, the volume of food imported was twice as high as that exported in many of the least developed countries (Rayner *et al.*, 2007). Consequently, from the mid 1970s to 2004, the Food Import Bill (FIB) in developing countries doubled and the share of trade of processed foods overtook that of primary agricultural products (Hawkes, 2006). For instance, Brazil made major economic adjustments to allow the trade liberalisation

of soybean oil through a plethora of economic measures put in place to promote the production, consumption and export of soybean oil (Hawkes, 2006).

As anticipated, Hawkes (2006) and Hawkes, Chopra and Friel (2009) state that the production and export of low-cost soybean oil rapidly increased in Brazil which has amounted to a 67% increase from 1990 to 2001. This figure represents more than a 100% increase in the volume of soybean oil exported and a historically low price on the global market (Hawkes, Chopra & Friel, 2009). The availability of soybean oil coupled with its low price on the global market contributed to the spread of nutrition transition across the globe (Hawkes, 2006) and as stated before, the increase in production of vegetable oil is regarded as a marker for nutrition transition (Drewnowski & Popkin, 1997).

Moreover, many countries have restructured their economies in order to attract FDI¹⁴ (Hawkes, 2006; Hawkes, Chopra & Friel, 2009; Popkin, 2006b) and this has allowed for TFCs to establish themselves in the developing world. Between 1990 and the year 2000, the cash injection by means of FDI in the developing world has soared sixfold (Hawkes, 2006; Hawkes, Chopra & Friel, 2009). The table shows the increase in FDI in two regional blocks in the global South noted in one decade.

Table 2.2. Increase in FDI in two regional blocks, 1988 - 1997

Regional Block	FDI in 1988	FDI in 1997	Increase
Asia	\$ 743 million	\$ 2.1 billion	196%
Latin America	\$ 222 million	\$ 3.3 billion	1386%

As shown in the table below above, FDI now stands as the largest source of financing from external agencies for the global South. Investments of such magnitude in the food economy have resulted in a shift in the economy from the production of raw agricultural commodities to processed foods for export (Hawkes, 2006). As such, Hawkes, Chopra and Friel (2009) argue that FDI has critically contributed to the global spread of the nutrition transition. According to Hawkes, Chopra and Friel (2009), the food processing sector receives the

¹⁴ FDI is defined by Hawkes (2006: 6) as “long-term investment by an enterprise in one country into an enterprise in another, in which the foreign enterprise becomes a foreign affiliate to the parent (transnational) company.”

largest share of FDI. For instance, FDI by US agencies into foreign food processing companies has increased by 300% within two decades, realising a sale increase from \$ 39.2 billion to \$ 150 billion. Along the same line, within a decade (from 1990 to 1999), FDI from US supermarket chains rose from US \$ 4 billion to US \$ 13 billion.

Hawkes (2006) argues that the market integration between the United States and Mexico is responsible for the nutrition transition being experienced by the Mexicans. The Mexican government lowered trade barriers in the early 1980s to attract investment from the United States and Hawkes (2006) argues that three quarters of it was injected in the production of processed foods. By 1997, FDI from the United States into the food processing sector totalled US \$ 5.3 billion representing a historic change from the initial US \$ 210 million injected into the Mexican economy in 1983 (Hawkes, Chopra & Friel, 2009). Hawkes (2006) states that the sale of processed foods in Mexico experienced an increase of 5-10% per annum from 1995 to 2003. The dietary consequences of the above-mentioned economic changes are such that during a six month period in the year 2004, consumption of snacks alone increased by 12% (Hawkes, 2006). The latter further argues that during 2000 to 2003, the consumption of baked goods and dairy products increased by 55.4% and 48.1 % respectively. The daily per capita calories derived from soft drinks increased by approximately 30% and Coca-Cola drinks increased from 275 to 487 servings per person per year (Hawkes, 2006).

2.3.2. Urbanisation

In 2006, the urban population globally totalled 3.2 billion exceeding the world's population in 1960. During the 1900s, the number of people living in urban centres increased tenfold (Satterthwaite, 2007). From the 1960s onwards, there has been a boom in urban population worldwide and it occurred at an unprecedented rate and scale (Satterthwaite, 2007). Urbanisation is defined by Satterthwaite (2007) as the increasing proportion of urban residents to the general population. As such, the latter argues that urbanisation is the result of greater proportion of rural to urban migration than *vice versa*. Satterthwaite (2007) states that urbanisation is associated with a soaring world economy and economic restructuring whereby economic activities shift increasingly from primary to the tertiary sector. Additionally, a higher level of urbanisation correlates to higher living standards such as increased life expectancy and literacy rates.

Satterthwaite (2007) argues that the low and middle income countries are experiencing higher rates of urbanisation with Asia alone accounting for approximately half of the total urban population worldwide. Throughout history, it is known that the wealthy Western nations had the largest share of the world's urban population, however, unprecedented change is low and middle income nations have tipped the scale (Satterthwaite, 2007).

So far, according to Satterthwaite (2007), the rapid urbanisation being experienced in low and middle and income countries, is largely driven by economic changes. The concentration of economic activities and investment opportunities in urban centres fuels urbanisation. One of the main economic changes is the shift from agricultural activities to the industry and services sector, most of which is situated in urban areas (Satterthwaite, 2007). The growth in GDP experienced in many of the developing countries from 1990 to 2003 occurred as a function of the expansion of the industry and services sector (Satterthwaite, 2007). Moreover, the latter argues that urban centres draw people because of the concentration of public service provision such as education, health care, telecommunication amongst others.

The literature on nutrition transition recognises urbanisation as one of the drivers behind the dietary shift. However, Mendez, Du and Popkin (2003) argue that there is very little understanding of the way in which urbanisation contributes to the adoption of an obesogenic diet. Evans *et al.* (2002) suggest that people living in urban centres rely increasingly on purchased foods than their rural counterparts. Drewnowski and Popkin (1997) state that the effects of urbanisation is such that urban dwellers consume more superior and polished grains such as rice or wheat as opposed to traditional staples that might have consisted of corn or millet. In addition, urban residents consume more fats, meat and meat products, sugar, highly processed foods and meals away from home (Drewnowski & Popkin, 1997).

Baxter (1980) explains that as people move from traditional rural lands where agriculture is practised to urban centres, they become increasingly more reliant on a cash-based system because they are unable to grow their food. Along the same line, as urban centres grow, increasingly more land is absorbed for housing and industrial purposes (Baxter, 1980), thus land becomes limited for cultivation. Furthermore, Baxter (1980) puts forward the argument

that as people move from rural areas where there is a strong sense of community to urban centres, they lose the traditional form of food support system.

Popkin (2004) argues that the energy density increases from a rural to an urban diet. In order to prove the effect of urbanisation on diet structure, Drewnowski and Popkin (1997) argue that a higher urbanisation rate is associated with an increase in the intake of sweeteners and fats. Urbanisation amongst lower income sub-populations can trigger a 100% increase in the consumption of sweeteners. Urbanisation causes residents to abandon traditional food patterns and adopt an energy-dense, nutritionally-poor and highly processed diet.

2.3.3. The Dietary Impact of the Absorption of Women into the Labour Force

Pingali (2006) argues that as urban centres are engines of economic growth, they employ more women in the labour force and most of them work outside of the home. As stated earlier, Satterthwaite (2007) and Pingali (2006) argue that most of the service and industry sector occurs in urban areas which is employing an increasing number of women. Carrigan, Szmigin and Leek (2006) suggest that family food consumption patterns have been adapted when increasing number of women became part of the labour force. With women employed in the labour force comes the 'heavy burden of production and reproduction' which involves work outside and inside of the home (Olayiwola, Soyibo & Atinmo, 2003).

According to Pingali (2006), this explains the increase in demand for convenience foods such as highly processed foods, fast foods, ready-made meals, or meals that do not require a long preparation time as opposed to traditional diets. Pingali (2006: 285) states that "studies have indicated that increased opportunity cost of women's time increases the demand for non-traditional 'fast food' in many countries." In other words, the consumption of convenience foods allows for time to be spent on some income-earning activities. Candel (2001 cited in Carrigan, Szmigin & Leek, 2006) explain that convenience foods are not only time saving in nature but also saves consumer energy and does not require culinary skills. Thus the bulk of the time and the activity of food preparation shift from the home kitchen to the food processing industry. The increasing spread of ready-made meals, fast foods, processed foods may lead to an erosion of food culture (Lang, 1999) which might have taken centuries to

evolve. The economic pressure to be engaged in income-earning activities drives labour participation thus creating time scarcity which necessitates convenience foods.

2.3.4. The Supermarket Revolution

The supermarket revolution in Western countries began in the 1950s -60s in the United States and a similar trend was noted in the 1980s in Europe. According to Ellickson (2011), supermarkets represent the epitome of the modern food market in such that a standardised store has largely displaced the butcher, fishmonger, baker and fresh produce vendors from the prevailing food economy in the developed world. Supermarkets were intended as self-service, all-in-one store thus diminishing transportation and distribution costs. In the aftermath of World War II, the concept of ‘supermarket’ started spreading (Ellickson, 2011).

As a result of supermarkets dominating the food retail landscape, a decline in the number of smaller stores in urban areas and poorer neighbourhoods was noted (Ellickson, 2008; Hawkes, 2008). Due to market saturation in Europe and the United States in the 1990s, there was a move for supermarket development outside of the West. The search for new markets coupled with factors such as trade liberalisation, increased FDI, urbanisation and an increasing middle class population in developing countries have culminated in a supermarket revolution in the global South (Hawkes, 2008). Supermarket development has occurred in different stages across the developing world.

Reardon and Berdegue (2002) state that the first wave of the supermarket revolution was experienced in South America and East Asia. From the mid 1990s to early 2000s, the supermarket share of the total food market share increased from 10-20% to 50-60% respectively (Reardon & Berdegue, 2002). In less than one decade, supermarkets became a prominent feature of the food economy in many developing countries. The second wave of the supermarket revolution was experienced in Mexico, South-East Asia, Central America and Southern Central Europe. Supermarket share increased from 5-10% to 30-50% in the above-mentioned regions from the 1990 to the early 2000s (Reardon & Berdegue, 2002). The third wave began to impact Eastern and Southern African countries, India and China in the early 2000s. In 2008, it was estimated that the supermarket share of the national food retail was 5-20%.

Coupled with the supermarket dominion over the food retail sector, another phenomenon noted in countries experiencing the nutrition transition is the closing down of traditional retail stores (Hawkes, 2008). Due to the expansion strategy and competitive pressures imposed by most supermarket chains, small grocery stores were forced out of business. In the year 2004, it was estimated that approximately 25 000 to 27 000 stores closed down in Thailand. In Argentina, the share of traditional stores in the food retail sector dropped from 56% to 19% over a 15 year period. In Brazil, supermarket share of the food retail market increased by 4.2% reaching 76.7% while the share of small traditional stores fell from 16.8% to 14.4% during the same time period (Hawkes, 2008).

There are various dietary implications associated with supermarket purchase. The literature states five core decisions made by supermarkets that significantly alter dietary patterns, namely location and format, foods sold, prices charged, promotional strategies and the nutrition-related activities implemented (Hawkes, 2008). The aforementioned decisions are taken at a national or international level, however they impact consumers at a local level at which decisions about food are made.

The nutrition transition has dietary implications which eventually bear health consequences (Drewnowski & Popkin, 1997; Hawkes, 2006; Popkin *et al.*, 2001; Popkin, 2003; Popkin, 2006b). The consequences are being felt in the developing world as an increasing number of people suffer from non-communicable diseases. Popkin *et al.* (2001) argue that the burden of non-communicable diseases has already shifted to the developing world. The latter argue that there is a shift from dietary deficit to dietary excess related diseases as the world moves away from undernutrition to overnutrition. The following section provides a brief discussion of the outworking of the nutrition transition.

2.4. HEALTH CONSEQUENCES OF THE NUTRITION TRANSITION

2.4.1. The Epidemiological and Demographic Shifts

It is widely acclaimed in the literature that the nutrition transition epidemic is paralleled by two historic shifts, termed as the epidemiological and demographic transitions (Popkin, 1993; 2003; 2004; 2006b; Drewnowski & Popkin, 1997; Satia, 2010). These noted changes in the

health status and composition of society occur as a result of socio-economic shifts in societies experiencing nutrition transition (Worsley, 1998; Popkin & Gordon-Larsen, 2004). Firstly, an epidemiological change is noted whereby there is a shift in the overall health status from infectious diseases to diet-related non-communicable diseases. Omran (1971:49) defines the epidemiological transition as “the shift from a pattern of high prevalence of infectious diseases associated with malnutrition, and with periodic famine and poor environmental sanitation, to a pattern of high prevalence of chronic and degenerative diseases associated with urban-industrial lifestyles.” The nutrition transition epidemic has been associated with high occurrence of coronary heart disease, obesity, diabetes (non-insulin dependent) and some types of cancer (Worsley, 1998; Popkin, 1997; 2003; Drewnowski & Popkin, 1997; Popkin & Gordon-Larsen, 2004).

Secondly, a demographic transition is observed as a result of the decreased fertility and mortality rates (Popkin, 2003). Popkin (2003) argues that low fertility rates and increased life expectancy, are markers of modern industrialised societies. The following figure¹⁵ represents the evolutionary process of the nutrition transition as documented in the previous paragraphs.

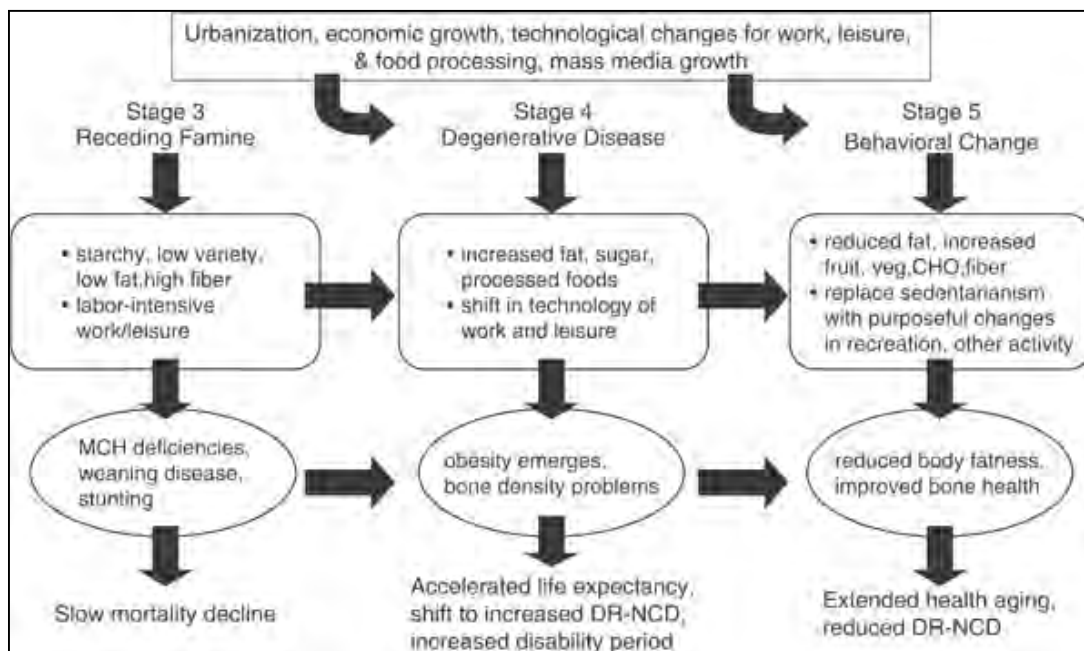


Figure 2.3: The last three stages in nutrition transition (Popkin, 2003: 582)

MCH: Maternal and Child Health
 CHO: Carbohydrates

¹⁵ Stages 1 and 2 are not shown in Figure 2.3 but they refer to ‘collecting food’ and ‘famine’ respectively.

2.4.2. The Developed World

The economic costs of the nutrition transition are significant and the developing world should be learning from the experiences of the developed world. Drewnowski and Specter (2004) argue that the obesity level has increased significantly in the last 20 years in the United States. By the year 2000, 64% and 30% of the adult population was classified as overweight and obese respectively (Drewnowski & Specter, 2004). The latter argue that the rapid increase in obesity level is linked to eating habits, more specifically to the consumption of energy-dense foods. These foods consist mainly of snacks, fast foods and caloric beverages and they are consumed in larger portions than they were four decades ago (Nielsen & Popkin, 2003). In addition, more meals - school lunches and food aid provided by food-assistance programs - are consumed away from home and they tend to be lower in nutrient value. O'Brien and Dixon (2002) argue that obesity is the worse pathogen infecting the developed world. They argue that obesity is damaging lives by reducing the quality of life and leading to premature death (Allison, Zannolli & Narayan, 1999; O'Brien & Dixon, 2002). Obesity leads to the development of other diseases such as type II diabetes, hypertension, cardio-vascular diseases, asthma, cancer, depression and many others.

2.4.3. The Developing World

According to Popkin (2003), one of the indicators of the nutrition transition is a receding famine thereby slowing the mortality rate; however, this is coupled with a rapid increase in the extent of non-communicable diseases. The epidemiological shift described by Popkin (2003) is the shift from infectious and parasitic diseases to diet-related non-communicable diseases. Thus nations undergoing the nutrition transition face a shift from undernutrition to overnutrition (Popkin, 2003). It is estimated that 80% of the total global deaths attributed to non-communicable diseases occurs in the low and middle income countries amounting to 29 million (WHO, 2010). According to Boutayeb & Boutayeb (2005), the share of deaths attributed to non-communicable diseases increased from 47% in 1990 to 56% by 2000 and it is projected to increase to 69% by 2020 in the developing world.

The rapid increase in the consumption of fast-food foods and Western-based foods which are high in fat, calorie, energy and yet nutritionally poor, is seen as a stepping stone for the spread of the obesity epidemic (Astrup *et al.*, 2007). It is widely acclaimed that such dietary

patterns are precursors to non-communicable diseases such as obesity, type II diabetes and cardiovascular diseases. The nutrition transition consists of a plethora of changes noted in the food landscape, however one of the major contributors to the rise in non-communicable diseases is the spread of fast foods. Fast food portion sizes are relatively larger than home-cooked meals portion sizes, they have a higher fat content with very little nutrition and are often served by large portions of high-sugar drinks (Astrup *et al.*, 2007).

Chen (2008) state the prevalence of overweight and obese people in 2002 amounted to 22.8% and 7.1% of the population, respectively, which represents an increase of 40% and almost 100% since 1992. This significant increase is not only attributed to the increase in consumption of high-fat high-calorie foods but has occurred as a result of the lifestyle adopted. Popkin (2006) states that countries such as Mexico, Thailand, China and Indonesia are experiencing a rate of growth nearing 1% per annum in the prevalence of overweight and obesity. This is a significant increase which is unprecedented in history.

2.5. CONCLUSION

Based on the above, it can be concluded that an increasing proportion of the developing world is adopting Western dietary patterns thus progressing along the nutrition transition scale. Traditional dietary patterns cultivated over decades are increasingly being replaced by burgers and sodas which exemplify the consumption of high-fat, high-calorie, high-sugar and nutrient-poor foods. The homogenisation of the Western diet is caused by various factors; some occurring at the macrolevel and other subtle factors impacting individual's consumption behaviour.

Globalisation has been a significant contributing factor to the spread of the Western dietary patterns across the rest of the globe. Globalisation, in itself, has been occurring since the beginning of time as it involves the movement of people, goods and ideologies. Globalisation has induced economic restructuring which in turn has redefined the global food market (Lang, 1999; Hawkes, 2006; Hawkes, Chopra & Friel, 2009). Economic restructuring in the form of trade liberalisation, the spread of TFCs and tariff reductions has resulted in major changes in the trade regime from the West to the South. Economic restructuring has been occurring across the developing world with significant increases being noted in the volume of

food products imported and in many instances with food imports exceeding food exports. It is to be pointed out that the bulk of the food imported from the West is largely processed.

Trade liberalisation, which emerged out of the neo-classical body of literature, has been a significant factor in reshaping the global food economy. Through trade liberalisation, FDI has been promoted which facilitated the establishment of TFCs in the developing world. It is increasingly acclaimed that TFCs have eroded traditional eating patterns and have caused them to be replaced by processed, high-calorie and high-fat foods (FAO, 2007; Hawkes, Chopra & Friel, 2009). This has been achieved by making cheap processed food products increasingly available on local food markets. Trade liberalisation shapes the food economy by dictating the food products available on the market, the volume as well as the price thereof (FAO 2003; FAO 2007). As an increasing number of TFCs invest in developing countries, they have more power to shape the food retail landscape and hence they have emerged as significant players in the spread of nutrition transition in the global South.

Rayner *et al.* (2007) argue that the WTO has been a significant game changer in the food economy and there are rounds of talk held regularly to discuss and renegotiate trades of term. However topics such as nutrition and diet are not considered significant enough to feature in those negotiations (Rayner *et al.*, 2007). They further argue that many of the policies affecting the food trade regime and subsequently food consumption impacting society at large and sub-populations at varying degrees, are made at a macrolevel. However, the complexity of the matter coupled with the lack of understanding of the geopolitical and socio-economic linkages have resulted in unpredictable and inadvertent consequences (Rayner *et al.*, 2007).

Urbanisation has been a critical factor in furthering the nutrition transition. People living urban centres are far more dependent on purchased foods (Evans *et al.*, 2002) and their diets consist of a larger share of fats, meat and animal sourced foods, sugar and highly processed foods than their rural counterparts (Drewnowski & Popkin, 1997). In addition, due to convenience foods being readily available in urban centres, residents are far more likely to consume meals away from home (Drewnowski & Popkin, 1997) and in most instances these meals are typical of Western foods. In addition, the literature states that as people leave rural areas to settle in urban centres, they become more reliant on a cash-based food system as they lose the traditional food support system (Baxter, 1980). Considering that highly processed

foods are made more accessible and available in urban areas, the poorer sub-population is likely to gravitate towards such foods due to competitive prices offered.

Piecing all of the above together, a gap has been identified in the literature regarding subtle factors influencing the spread of nutrition transition. For instance, currently there is a lack of understanding on the link between income and dietary patterns. From the current literature available on the topic, it is stated that an increase in income is correlated with an increase in the consumption of fats, sugar and sweeteners (Drewnowski & Popkin, 1997, Popkin, 1993; 2003; 2006b). This is paralleled by a decrease in the proportion of complex carbohydrates in the diet thus mirroring the distancing from traditional diets and the adoption of new dietary patterns. It is to be pointed out that the linkages between an increase in income and corresponding dietary change are not clearly articulated.

There is a school of thought putting forward the idea that food consumption is more than just a feeding mechanism but is rather a social process of far greater significance (James, 2000). This intangible factor is known as 'positional consumption' which is described by Worsley (1998) as positions in society being defined by the types of goods consumed. Extending this idea to the nutrition transition debate, it can be argued that the consumption of Western-based foods furthers one's position in society. This avenue should be further explored in relation to the progression of the nutrition transition in the developing world. As some of the intangible and more subtle linkages are better understood, a truer reflection of the process of nutrition transition will be provided. It is such a complex phenomenon which is a composite of social and economic factors. Therefore it should be explored from various angles in order to fully understand its causes and outworkings. This dissertation approaches the topic of nutrition transition from a different angle, which is from the experience of people living out these dietary changes.

The nutrition transition model widely used in the literature can be described as an oversimplification of the phenomenon. Based on the arguments put forward by Hawkes (2006), the nutrition transition information is largely focused on the dietary convergence, *i.e.*, an increasing number of people relying on a few staples. However, it should be pointed out that nutrition transition also brings diversification in the diet by introducing a large variety of new products (Hawkes, 2006). Madanat, Brown and Hawks (2007) state that the theoretical

framework used to support the concept of nutrition transition infers that prior to the rapid transition noted across the developing world, food intake was controlled in such that food was consumed in the right amounts and was based on the ability to satisfy hunger. However, this is a flawed preconception of the conditions that existed prior to the dietary transition as it must be acknowledged that there are groups of people who practiced gavage and other forms of overeating. Also, it cannot be assumed that every individual was accustomed to a healthy and balanced diet prior to the rapid nutrition transition occurring across the developing nations.

In addition, Lang and Rayner (2007) argue that the literature suggests that an increase in income inevitably leads to dietary changes being adopted, thus downplaying cultural factors and the way societies respond to changes. This argument can be further extended as the literature suggests that there is an inevitability embedded in the way development is occurring in developing nations. In other words, the presence of factors such as the lowering of trade barriers, an increase in FDI, the adoption of trade liberalization policies, increasing incomes, urbanisation and an increasing share of women in the labour force, will inevitably lead to the spread of nutrition transition. So far it has been perceived that the coexistence of some of the aforementioned within society will lead to a nutrition transition. However, there is the need to understand the nuances in the way the nutrition transition occurs as it is not a uniform process. As Drewnowski and Popkin (2007) argue, different individual or sub-population groups experience the transition in different ways and the transition is context specific.

As previously stated, traditional food systems have been perfected over numerous decades which imply that they have been transitioning over a long period of time. Therefore, food systems should be viewed as dynamic and evolving systems as opposed to static and linear progression along the nutrition transition spectrum. Based on the above, it can be argued that there is no such traditional food system as it is an evolving concept linked to time. However, in this dissertation, the term is used to refer largely to temporal indicators marking the end of a certain type of lifestyle and the progressive move towards a different way of life.

There is an extensive literature on the nutrition transition, the changing diets and the consequences of such changes. Most of those studies have been carried out at national levels

thus providing a snapshot of the common trends noticed as the nutrition transition unfolded. However, such studies are broad and fail to capture the nuances of such a change within a country. Additionally, studies done so far have focused on different aspects of the nutrition transition but there is little research material available on the different ways in which such a transition is experienced by people. Thus this study tries to capture the lived experience of a changing food system. It will build upon the literature available on the subject of nutrition transition but will focus on an aspect that has not been covered thus far. The literature engaging with cultural aspects of food does not address localised experiences thus this research project helps to address a gap identified in the literature. Such literature built on food and culture is slightly different to this research project but it is used to shape the methodological approach as described in the following chapter.

3. METHODOLOGY

3.1. INTRODUCTION

This chapter outlines the theoretical underpinnings of the methodological approach adopted in this research process. The first section discusses the importance of conducting a qualitative study in order to address the aim which is to undertake an analysis of the lived experience of a changing food system in Mauritius. The second part of the chapter describes the qualitative approach used for this dissertation. The third part of the chapter focuses on the contextualisation of the two study sites, namely Port Louis and Bambous Virieux as it is deemed important to provide a description of the social setting in which the research is conducted (Terre-Blanche, Durrheim & Painter, 2006). As such, this section provides some historical and socio-economic information on Port Louis and Bambous Virieux.

Once the context is established, in the third section I provide a review of the different data collecting methods employed during the field study in Mauritius. The same methods were applied in both sites and these include observation, in-depth interviewing and narrative collection in the form of food narratives. The next section of this chapter deals with my positionality as an external researcher and yet a cultural insider, documenting some of the challenges faced during the fieldwork and the limitations of the study.

The purpose of the research study is to undertake an analysis of the lived experience of a changing food system in Mauritius. The objectives set to meet the aim are to investigate the food purchasing and consumption patterns and analyzing the dietary choices as well as food sources. The intention behind choosing an urban and rural site is to compare the urban and rural food consumption pattern and food geographies. Additionally, in order to understand the changing food system and obtain a more holistic view of the nutrition transition, food narratives were collected from research participants as they portray the similarities and contrasts in food habits over the years.

3.2. USING A QUALITATIVE APPROACH TO ANALYSE THE LIVED EXPERIENCE OF A CHANGING FOOD SYSTEM

Most of the research studies carried out so far have focused on country or regional levels using large scale quantitative approaches. These have contributed towards furthering the understanding of the spread of the nutrition transition across the globe; however there are limitations to being solely dependent on a one-dimensional approach. Hence, to overcome these limitations and understand the lived experience of a changing food system, a more mixed approach is used in this research project. The approach is predominantly qualitative with some quantitative data such as population statistics, socio-economic data and trade figures collected to establish the context and support the qualitative argument.

The rationale for adopting a qualitative approach is “to describe and interpret people’s feelings and experiences in human terms rather than through quantification and measurement (Terre Blanche; Durrheim & Painter, 2006: 272).” Social scientists argue that qualitative research allows for investigating beyond the tangible and the visible social phenomenon in order to understand how one makes meaning and negotiates one’s own world (Henning, van Rensburg & Smit, 2004). The purpose of this study being to analyse people’s lived experience of a changing food system in Mauritius therefore calls for a qualitative approach as the way people negotiate the food system is investigated.

As I navigate respondents’ personal and social realities, I deal with their tacit theories behind everyday food practices, emotions, and stories. Schratz and Walker (1995) argue that there is a chasm between the real nature of theory and the understanding of theory and it is believed to be an abstract form of knowledge only engaged by the academic realm. However, the authors point out that behind everyday practicalities lies a certain thought pattern and rationale, conscious of it or not, we all hold a vast amount of theories guiding us through mundane activities. As such, these theories are termed as ‘tacit theories’ because they haven’t been formulated as formal statements and explained explicitly.

Henning, van Rensburg and Smit (2004) state that a qualitative approach is used to understand beyond the factual and tangible social phenomena. However to grasp an understanding of the reasoning and through process behind the nutrition transition occurring in Mauritius, the dietary changes are presented. The nutrition transition comprises significant

changes in the food consumption patterns whereby traditional diets based on widely available fresh produce are being increasingly replaced by Westernised dishes. Such diets are characterised by an increase in the consumption of meat, processed foods and convenience foods. The unseen refers to the different forces driving the changing food system paralleled by the nutrition transition and therefore participants were asked to explain why the system is changing, how they adapt to the new food system and how they live it out on a daily basis. The focus of the dissertation is on the way in which people live out, perceive and adapt to a rapidly changing food system rather than focusing on the system itself. Nevertheless, in order to provide context, the traditional and changing food systems are described in the following chapters.

A qualitative approach allows for an ‘open-ended, inductive exploration’ which is at the heart of such research (Terre- Blanche, Durrheim & Painter, 2006). This research study adopted a deductive approach using qualitative information, to apply the arguments of the nutrition transition theory to the lived experiences in Mauritius. Although a deductive approach is used, it still makes provision for an evolutionary process allowing for the discovery of new data explaining social phenomena. Ambert *et al.* (1995:881) advocate that qualitative research makes room for the “emergence of the unexpected” because of its very own nature and the nature of the data generated while quantitative methods would restrict the emergence of new data.

3.3. INTRODUCING THE STUDY SITES

This dissertation focuses on the lived experience of a changing food system in a rural and urban site in Mauritius. One of the assumptions is that nutrition transition spreads at different rates in different settings due to different socio-economic climates. Therefore two sites, a rural and an urban location, were chosen because they offer varying degrees of the existing economic and social factors. Choosing two sites situated in different socio-economic settings allows for the comparison of the lived experience of a changing food system in an urban and rural context in Mauritius. This contributes towards bridging the gap identified in the literature whereby research projects have largely focused on national trends thus negating intra-country differences in the spread of the transition. Therefore the sites selected are Tranquebar, a suburb of Port Louis and Bambous Virieux, a village situated on the eastern

shore of the island. Figure 3.1 below shows the location of the two study sites with respect to other economic centres on the island. The primary road network is shown in yellow.



Figure 3.1: Map of Mauritius showing study sites

3.3.1. Tranquebar, Port Louis

As capital city, Port Louis is the economic centre of the country and it is also a major tourist hub. As such, it has experienced the earliest formalisation of the food system coupled with rapid urbanisation in the last two decades. Port Louis has experienced a population increase from 132 460 to 148 160 representing a 12% growth from 1990 to 2012 (CSO, 2012). In addition, the local economy offers a diversity of economic operators ranging from the formal

sector to the informal one (UN Habitat, 2011). Also, Port Louis being a popular tourist destination experiences Western influences to a larger extent than any of the other urban centres in the country.

Port Louis is the administrative, commercial and legal centre, housing the departmental headquarters, parliament, harbour, bulk sugar terminal and court house amongst many others. Port Louis houses 'bazaar central'¹⁶ which is the one of the largest wet markets in the country operating on a daily basis. A wet market specialises in fresh produce retail comprising vegetables, fruits, meat and fish and it differs from a dry market which predominantly focuses on the sale of non-perishable goods. A section of the wet market is targeted at tourists; offering products such as memorabilia, locally made items such as tea, bags, traditional clothes and jewellery.

The informal sector is a significant part of the local economy with one of the highest number of street vendors in the country with many of them engaging in the food retail sector. In recent years, the contribution of the informal sector to the local economy has been acknowledged as this particular sector employs about 2000 people in the Port Louis district alone (Buglow, 2011). Also, Port Louis offers a diverse, dynamic and abundant food environment. The types of food available within the confines of Port Louis range from street food, fast food, to gourmet food. Additionally, there are numerous superettes¹⁷ and local supermarkets serving the people in the city. From a food geography lens, the city offers an interesting landscape with a mix of the old and the new food systems and the formal and informal food markets.

The resident population of Port Louis is 148 380 with a daily transit population of approximately 66 000 (Ministry of Finance and Economic Development, 2012). It is a densely populated area with a population density of 2 946 per km², totalling about 11% of the Mauritian population spread over 2% of the land distribution (Ministry of Finance and Economic Development, 2012). It is an old city, established as the centre of local economy by the French colonisers (Carillet & Presser, 2010). Most of the economic and commercial activities are concentrated in the city centre while the residential areas are on the outskirts of the city.

16 Wet market.

17 Mini supermarkets

Being the capital city, Port Louis is highly developed with a Relative Development Index(RDI)¹⁸ of 0.7756 which is above the national level estimated at 0.6701, thus reflecting a high standard of living (Ministry of Finance and Economic Development, 2012). Even though Port Louis has a typically high standard of living, there are pockets of poverty in the city (UN Habitat, 2011). Informal dwellings, *i.e.*, squatter camps can be found in certain areas in Port Louis, especially on mountain slopes whereby people live in precarious conditions lacking basic services (UN Habitat, 2011). During the period 2001- 2002, Port Louis was the urban centre with the highest poverty rate, ranging between 7% and 15% whilst the other urban centres experienced poverty rates ranging between 2% and 6% (Ministry of Finance and Economic Development, 2011).

In the process of choosing a site within Port Louis, several selective criteria were used as described in the following paragraphs. It was deemed essential to select a site within walking distance from the city centre in order to ensure that the dynamic food landscape within the central parts of the city is readily accessible to the sample group. Being in close proximity to a diverse food geography, it was assumed that the sample group engages in the food retail sector regularly thus contributing towards furthering the understanding in which people navigate the food system within the given context.

Therefore, Tranquebar, a suburb located on the foothills of Signal Mountain was selected (see Figure 3.2). It is within walking distance from the Central Business District (CBD) and its position in relation to the city centre is shown in Figure 3.3. Being a suburb of Port Louis, it is classified as wholly urban (Ministry of Finance and Economic Development, 2012) and thus serves as the baseline for conducting an urban rural comparison of prevailing food systems. Gibson and Brown (2009) and Marshall and Rossman (1995) argue that the choice of a site study is made to fit the interest of the researcher and adequately answers the research questions.

18 The Relative Development Index is a tool used by the Government to identify areas of priority within the country. The index is based on 12 variables encompassing housing and living conditions, literacy and education as well as employment. It ranges between 0 (lowest relative development) and 1 (highest relative development).

Furthermore, Tranquebar was chosen because I had an entry point into the study site through my research assistant, Ashley. He has an extensive knowledge of the area as he has been a local resident for a couple of years during his childhood. His familiarity served as an entry point with the kind of qualitative data collection methods used in this dissertation.



Figure 3.2: Study site in Port Louis



Figure 3.3: Study site in relation to city centre

3.3.2. *Bambous Virieux*

The literature suggests that urbanisation is a significant contributing factor to the spread of the nutrition transition, hence in formulating the research questions, it was assumed that nutrition transition spreads at different rates in rural and urban centres. Hence a site that is typical of the rural side of Mauritius was selected in order to conduct a rural urban comparison of the lived experiences of the changes in the Mauritian food system. The characteristics of the rural study site sought were firstly a community that has retained a traditional lifestyle reflecting to a certain degree some of the realities of the traditional Mauritian society. The second criterion was an isolated and yet accessible site. The assumption underlying this choice is that isolated areas are less likely to exhibit Western influences in lifestyle as well as dietary patterns. After considering some potential sites along the Eastern shore, Bambous Virieux was chosen as the study site for the above-mentioned characteristics.

Bambous Virieux is a small village on the south eastern part of the island with a population of approximately 1500 (see Figure 3.4). It has a population density of 194.5 per km² (Ministry of Finance and Economic Development, 2012). Based on the RDI¹⁹, Bambous Virieux is the fifth least developed area in Mauritius, scoring 0.5969 while the national average is 0.6701 (Ministry of Finance and Economic Development, 2012). This implies that Bambous Virieux has experienced development lower than that observed at a national level with fewer infrastructure and services put in place in this particular village than in the rest of the island.

From the period 2001 to 2007, data pertaining to poverty was collected in order to produce poverty maps and in both instances, Bambous Virieux was ranked as the poorest area within the 145 administrative regions in the country. During the period 2001/02, a poverty level of 21% was recorded in Bambous Virieux (Ministry Finance and Economic Development, 2011).

The lack of development in the region coupled with a relatively higher poverty rate, Bambous Virieux does offer insight into the type of society that existed before significant development occurred from the late 1960s onwards.

¹⁹ See Footnote on Page 49.

The main local economic activity is fishing, namely artisanal small scale fishing. Many of the fishermen practice it in order to feed their family for the day as well as supply their vendors. Occasionally they might even be able to sell some of their surplus to tourists or passers-by. Out of the 2307 registered fishermen on the island, Bambous Virieux has the third highest number of registered fishermen in the country with 9% of the total share (Ministry of Agro-Industry and Fisheries, 2006). The other economic activities consist of selling seashells, essential oil fabrication, onion cultivation²⁰ and boat building.

It is a place of historical importance as it marks the area where the Dutch landed in the late 1590s and was one of the very first places to witness deforestation. Ebony trees were removed to be replaced by sugarcane plantation (Carillet & Presser, 2010). Therefore, it is a long established area with a history of sugar plantations and fisheries which have shaped the local economy and local employment patterns. The area still has some large sugarcane plantations but a portion of it has been lost due to the drop in the price of sugar on the global market. The area shaded yellow in Figure 3.4 delineates the study site in Bambous Virieux.



Figure 3.4: Study site in Bambous Virieux

The map overlies Bambous Virieux with respect to the nearby economic and tourist hubs. All of the businesses in the area are concentrated on the main road running through Bambous Virieux. The businesses consist of clothing store, a couple of retail stores, snack

²⁰ Onion plantations are very prominent in Bambous Virieux because its sandy soils can sustain onion plants.

bars²¹ which operate as bars after hours. For any business outside of the village, most of the local residents travel by bus or by cab to the closest economic hubs. Some of them travel north to Flacq which is approximately 26 km away while most of the local residents travel to Mahebourg situated about 16 km away (see Figure 3.5 below). Both Flacq and Mahebourg are villages but they are much larger in size, population size and they both have a lot more economic activities occurring than in Bambous Virieux.



Figure 3.5: Location of Bambous Virieux in relation to nearby villages and tourist attraction hubs

3.4. DATA COLLECTION METHODS

The primary data collection was undertaken during two research periods, July to September 2011 and May 2012. The research methods employed were chosen because they are conducive to answering the research questions as shown in Table 3.1. The data collection methods will be further discussed in the following sections.

²¹ Snack bars are common in Mauritius. Usually, they are small family run businesses. They serve local snacks, usually prepared on the premises, with alcohol. They usually offer light meals. A snack bar can be an extension of someone's home which turns into a business during trading hours.

Table 3.1: Data collection strategy

Research Question	Research Methods
1. Investigate the food purchasing and consumption pattern	Interview with sample group, analysis of secondary data
2. Compare the urban and rural food consumption pattern and food geography	Interviews, comparative analysis between the two sample groups, document review, food mapping, observation
3. Analysis of dietary choices and food sources	Interview with sample group
4. Documenting food narratives capturing the changes in the food system over time	Food narratives

3.4.1. Observation

After choosing the two study sites, the process of observation was started in order to familiarize myself with the site and observe aspects of the food system in operation. Spending time in the study sites made me a recognizable presence and therefore opened possibilities to engage with participants. In Tranquebar, Port Louis, the observation was carried out with Ashley, a research assistant who facilitated the data collection process. Ashley was very enthusiastic about the research and willing to help in facilitating the research process. In addition, his knowledge of the area proved to be valuable in navigating the site and engaging with the local residents. For reasons of personal safety, a personal assistant was deemed necessary in Tranquebar. I had to rely on personal contacts to find a research assistant.

Walking through the streets of Port Louis and Bambous Virieux, engaging in conversations with local residents enabled me to develop an understanding of the local food system and the food retail structure. This understanding enabled me to engage more profoundly with the research participants.

Further along in the research process, the local residents became more accustomed to my presence, familiar faces would greet me and several of them would even inquire about the progress of the research process. According to Marshall and Rossman (1999), the physical and social settings influencing behavior are expressed in the form of cultural norms, traditions,

societal roles and values. Therefore, in order to understand such a complex setting, the researcher must carry out the research study in the environment where all those factors operate (Marshall & Rossman, 1999).

3.4.2. Sampling for a Representative Group across the Two Study Sites

3.4.2.1. The selection criteria

One of the selective criteria to be part of the sample group was that the respondents must be local residents of one of the two study sites. Therefore non-permanent residents and visitors did not qualify as potential participants for in-depth interviews. Long term residents have a better understanding of the shifts in the prevailing food system within a given area and are more capable of explaining the changing food retail landscape. The second selection criterion was food management within their household. A household food manager is the individual responsible for food management within the home. Food management involves food preparation, grocery shopping and keeping stocks of the volume of foods within the household but it does not necessarily translate to the household food manager undertaking all of the above-mentioned tasks. Some of the tasks are delegated to other members of the household; however the household food managers make critical decisions as to the types and volumes of foods to be purchased and thereafter consumed.

It was important for all the participants to be household food managers. This is because non-food managers might be disconnected from the food system and therefore might not have a clear understanding of the changes in the system. I worked under the assumption that more knowledge can be gained from food managers as opposed to those who do not partake in food management in the household. For instance, a non food manager might not be abreast with food price changes, the volumes of food consumed by the family and the frequency of grocery shopping trips.

As previously mentioned, it is not the household manager's sole responsibility to carry out all the tasks pertaining to food. For instance, some of the research participants are elderly people who do not travel to grocery stores or markets as it is physically challenging. Nevertheless all of the household food managers keep track of the amount food available in the household,

engage in the food preparation process and commission other members of the family to carry out grocery shopping.

At the beginning of the data collection, a sample group of 10 was considered to be adequate. However the initial methodological approach which consisted of accompanying research participants on their shopping trips, had to be adapted to suit the needs of the sample group. As such, more research participants were required to generate the desirable volume of data to adequately answer the research questions and allow for trends to develop. Marshall (1996) states that qualitative research is an iterative process, such that sampling stopped when enough information was generated from the research participants. The age group targeted was the late 40s to 50s and above and based on the assumption that people from this particular age group have profound knowledge of the traditional food system and have experienced the incremental changes in the food system over time. The sample group in the two study sites is further discussed below.

3.4.2.2. *The sample group*

The sample group consisted of a total of 21 people with nine of them were from Port Louis and the remaining 12 were from Bambous Virieux. Marshall (1996) puts forward the idea that in qualitative research, the ideal sample group is one which provides answers to all of the research questions in a satisfactory way and the size of the sample group becomes evident as the research unfolds on ground. An adequate sample size was reached when saturation of data was reached, *i.e.*, no more themes or explanations emerged. Hence, after interviewing nine and 12 research participants in Port Louis and Bambous Virieux respectively, adequate sample groups were formed as rich data was generated from the small group of participants.

Most of the interviewees were female and elderly people. As previously stated, one of the selection criteria was household food management and because food managers are generally women, they occupied the larger share of the sample group. Their food management expertise was crucial to generate the information used in this research project. In addition, age was an important factor in targeting the research participants as older people have a longer experience of the Mauritian food system and thus have a better understanding of the changes currently occurring in the system. Moreover, some elderly people were very

enthusiastic when they found out that my topic of research is around the theme of food and Nani, one of the participants even mentioned that she wants her story to be documented because times have changed and many of the traditional aspects are getting lost in the hype of technology and modern life.

All of the interviews in Port Louis were conducted in the participants' homes and in Bambous Virieux the location of the interviews varied. In Bambous Virieux the interviews occurred in a more comfortable environment, at times in someone's garden, at the pier or in the kitchen, the ultimate place in the house where food holds the position of prominence. It was quite common to start an interview on the streets and then be invited to finish it off in the participants' home over a cup of tea. In general, the interviews lasted between two to three hours.

The table overleaf shows some of the details of the research participants.

Name	Household Head (Y/N)	Number of people in Household	Employment status / Description of job	Age	Length of stay in study site
BambousVirieux					
Anand	Y	4	Field labourer	49	Born and raised in study site
Mrs Uma	y	1	Retired sugarcane plantation worker. Side business consist of selling street foods outside her house	58	25 years
Maya	N	4	Housekeeper	47	Born and raised in study site
Rumilla	N	4	Field labourer	51	32 years
Rose & René	Rose: N Rene: Y	2	Rose: Housewife René: Retired (Previously employed as construction worker)	Rose: 65 René: 69	Most of their lives
Layla & Vassen (interviewed as a couple)	Layla: N Vassen: Y	5	Layla: Dressmaker Vassen: Plantation owner	Layla: 53 Vassen: 59	Layla: 33 years Vassen: For most of his life
Kassila	N	3	Housewife	59	Born and raised in study site
Annelise	N	4	Housewife	37	18 years
Sam	Y	5	Labourer (works for his own account)	57	Born and raised in study site
Bindoo	N	5	School Cleaner/attendant	53	33 years
Uncle Gaby	y	2	Retired (previously worked as a	Early 60s	For most of his life

			handyman)		
Zac	Y	5	Office Clerk	47	Most of his life
Tranquebar, Port Louis					
Nani	Y	3	Retired (previously employed as a housekeeper)	81	Born and raised in study site
Mrs Veena	N	5	Housewife	47	28 years
Mila	Y	3	Primary School Teacher	52	14 years
Yvette	N	2	Retired (previously employed as a nurse)	61	21 years
Darren	Y	6	Construction worker	58	46 years
Laure	N	4	In pre-retirement phase (worked/working as an administrative officer)	48	21 years
Anjani& Jay (interviewed as a couple)	Anjani: N Jay: Y	2	Anjani: Primary School Teacher Jay: Primary School Teacher	Anjani: late 40s Jay: late 40s	Anjani: approx. 25 years Jay: approx. 25 years
Jenna	N	5	Kindergarten Teacher	48	Born and raised in study site
Danielle (Dani)	Y	5	Retired	56	32 years

3.4.2.3. *Snowballing and sampling technique*

In both study sites, a mix of snowballing²² and random sampling²³ technique was adopted. These two techniques complemented each other very well during fieldwork. The snowballing technique involved being referred to people by either participants or other people who could not participate in the study. For instance, Simon, one of the fishermen in Bambous Virieux, could not participate in the study as he is not involved in managing food in his household, referred me to potential participants. The use of snowballing sampling technique meant that I was referred to network of friends with similar backgrounds thus causing a bias and oversampling of a certain group of people.

Conversely, the use of random sampling opened up the opportunity to sample people with different backgrounds across the study sites thus counterbalancing the aforementioned form of bias. In addition, after spending time in both study sites, people became more accustomed to me and therefore to a certain extent, I did not have to rely entirely on snowballing. Random sampling meant knocking on peoples' doors or engaging in conversations with passers-by on the street to explain the purpose of the study and finding out if they would be interested in participating in the research. Random sampling proved to be difficult at times because of a lack of interest or because potential participants were unavailable due to other commitments. However, adopting the above-mentioned techniques eased the process of finding an adequate sample group.

Sampling was required because a researcher cannot undertake an intensive and integral study of all related people, events and phenomena and therefore one chooses a sample (Marshall & Rossman, 1995). The choice of the sample, be it site, people or phenomenon is fundamental to the subsequent research design and such choices are made according to the interest of the researcher (Gibson & Brown, 2009; Marshall & Rossman, 1995). In qualitative studies, the ultimate aim of a sample group is to provide an understanding of a certain group of people or psychosocial phenomena and the approach in qualitative research is iterative, flexible and pragmatic (Marshall, 1996).

22 O'leary (2005) defines snowball sampling as a sample group established through referrals. An initial respondent is identified and in turn, refer the researcher to someone else who does the same until there are enough respondents to make the sample group.

23 Scholars define it as the type of sampling whereby all the elements (potential participants) are identified and then randomly selected thus giving every element an equal chance of being selected.

3.4.3. Mapping of Food Sources

In addition, a very basic exercise of food retail mapping was conducted during fieldwork. It consisted of walking the sites and marking food outlets in relation to the participants' location. The mapping exercise serves as a basic analysis of the spatial element of the food geography in Tranquebar, Port Louis and Bambous Virieux. The mapping exercise helped to contextualise the information generated from the interviews and food narratives. Due to the fact that a large proportion of the grocery shopping was done outside the immediate boundary of the study sites, these food outlets could not be effectively mapped.

Nevertheless, the mapping exercise was important to analyse and compare the urban and food geography based on the study sites. The type of food purchase points present on the site is a reflection of the level of development and thus the extent to which the food system has changed. For example, the extensive presence of operational traditional retail store echoes a predominantly traditional sub-population as will be further discussed in Chapter 6. However, the strong presence of supermarkets which are known as “markers of the modern economy (Abrahams, 2009: 122)” reflects a Mauritian society that is more at an advanced stage in the dietary transition. One of the central premises of the research is that nutrition transition is more advanced in urban areas than in rural counterparts and as such, urban residents are more likely to be served by supermarkets as opposed to traditional retail stores.

3.4.4. Data Collection through Semi-Structured In-Depth Interviews

3.4.4.1. The initial approach

Initially, the methodology approach planned was an ethnographic approach, similar to that adopted by Daniel Miller (1998) in his study entitled ‘a theory of shopping.’ The latter walked the streets of North London and spent time outside of shopping outlets asking people about the nature and volumes of commodities purchased. Such was his entry point into the lives of people and then eventually after establishing relationships with research subjects, he spent time with them in their homes. This provided an understanding of the research subjects and their perceived realities of material culture and consumption.

Adapting this ethnographic approach to my research context, the initial plan for primary data collection was to accompany participants during their shopping trips. In doing so, I would have had a good understanding of the spatial analysis of the factors underlying people's choice of the location of food purchase. In addition, I would have been able to observe the tangible factors determining the location of food purchase, the dietary choices and determine the ways in which people navigate the food system. Combining the data collection with the mundane activity of grocery shopping was thought to be less time-consuming for participants; however it turned out to be intrusive. When tested on ground, participants vehemently turned down the approach.

Reflecting back on the initial approach, I realize that as much as I tried to adopt a strategy that is not time consuming for participants, it was very intrusive. That approach meant that I would have had to walk with the participants and in many cases accompany them on the bus to the store. To many of them, it meant that my presence would stand in the way of dropping in at a friend's place, carrying out other activities²⁴ in between shopping at different grocery stores. To many people, grocery shopping was coupled with other activities and accompanying them would mean that they would feel restricted. This mirrors the fact that grocery shopping is more than a mere mundane chore and echoes the way in which food intersects the participants' lives, from mere commodity to having a deeper meaning. This will be further elaborated in Chapter 5. Furthermore as previously mentioned in section 3.4.2.1, some of the food managers do not partake in grocery shopping and therefore on my behalf they would have had to coordinate grocery shopping with their spouse or children. Thus it turned out to be logistically challenging and for such reasons the approach was eventually rebuffed.

Research being an evolutionary process, the initial approach was modified and refined to a less intrusive one. This consisted of renouncing to accompanying participants on shopping trips and instead using in-depth interviews to generate data. Even though the approach changed, the same information was sought from the participants. The nature of the questions remained the same but the interviewing process was carried out in a different setting; instead

²⁴ One of the potential research participants in Bambous Virieux stated that she travels to Mahebourg for her grocery shopping and the trip is more than simply food shopping. Once in Mahebourg, she takes up on the opportunity to settle electricity and water bills at the Central Electricity Board and Central Water Authority offices, collect her pension, purchase medication and gift items when necessary.

of the conversation being conducted during a grocery shopping trip, it occurred in an environment considered safe and comfortable by the participants as further discussed in the following section.

3.4.4.2. *In-depth semi-structured interviews*

The first part of the interview consisted of a basic household demography survey in order to grasp an understanding of the participants and thus be able to create a socio-economic profile. They were asked about the number of people living in the household, their age and economic status. The second part of the interview consisted of questions relating to food, food consumption, food sources, food habits, frequency of grocery shopping, the dietary shift noticed over the years, the idealised food system, the relationship between food and health and their own health status. The questions were such that the conversation would revolve around the topic of food and geared towards understanding the ways in which people perceive and navigate the food system. For instance, all of the research participants were asked to describe a typical meal in their household in order to understand the type and volume of food consumed. They were asked about the number of shopping trips undertaken per week or month, the location of food purchase, and the types of food purchased. In addition to these questions, research participants were asked to reflect on the types of food purchased, the location and frequency of food purchases. As previously argues by Ambert *et al.* (1995) and Henning, van Rensburg & Smit (2004), one of the tenets of qualitative research is to understand the reason an individual or groups of people behave and act the way they do. Therefore, asking research participants to reflect on their consumption behaviour leads to unravelling the thought pattern behind their choices.

In accordance with the principles of informal interviewing, questions were not asked in a particular order as this was determined by the course of the conversation. Nevertheless, at the end of the interview, I would cross check my list of questions to ensure that all the questions have been answered during the conversation.

Marshall and Rossman (1995) argue that an interview is a useful tool for generating large volumes of data. An interview involves the personal interaction whereby the interviewee and the interviewer engage in a dialogue (Marshall & Rossman, 1995). The latter argue that

adopting such a qualitative approach allows for the research participants' view on the researched phenomenon to be disclosed as they view or experience it. Moreover, semi-structured in-depth interviews are free flowing interviews with predetermined questions about a key theme (O'Leary, 2005). This type of interview allows for the redirection of questions in order to follow up on interesting tangents, thus making room for the generation of the unexpected data (Ambert *et al.*, 1995). This particular type of interviewing allows for more avenues to be explored and thus generate very rich data.

3.4.5. Food Narratives

It was decided from the onset to use food stories as data collecting method because they are rich narratives which capture the similarities and contrasts in the food culture over the years. Interviews differ from food narratives because they capture factual data about change whilst food stories capture reflections and emotions about how these changes are experienced. Food stories are essentially narratives about memories of food. They are personal anecdotes or experiences built around the topic of food. A narrative is defined by Hinchman (1997: xvi) as a "discourse with a clear sequential order that connect events in a meaningful way for a definite audience and thus offers insights about the world and / or people's experiences of it." Using narratives as data collection technique allows the researcher to tap into data that would have been unavailable otherwise (Elliott, 2009). Narratives are windows into peoples' lives and provide a way to empower interviewees by giving them the opportunity to focus on particular aspects of their own lived experiences (Elliott, 2009).

For the purpose of this study, narratives were used to gain an understanding of the traditional Mauritian food system. They provide a means to integrate factual accounts with personal meanings and show the interconnectedness of food system changes and other changes, and the way these are experienced and understood by the research participants. Moreover, capturing food stories contributed to understanding nutrition transition at a micro level. Food stories are rich sources of data which deepen the understanding of the dietary change that occurred over the last decades.

To engage with food narratives, research participants were asked to share their favourite childhood food memories and asked about the typical Mauritian food at the time and the

ingredients of a typical meal consumed in their own household. Depending on the individual and the change in lifestyle experienced, research participants provided stories picturing the food system prevailing before the development era begun in Mauritius. They each provided their own food narratives and yet there was such commonality between those stories.

O'Leary (2005) presents the data analysis process as moving from collecting data to sorting it out to the analysis and eventually the interpretation of data. Software programs were not used for the analysis but instead thematic analysis was used. This involved working with words, deconstructing, coding and eventually looking for themes emerging from the data.

3.4.6. Data Capturing and Analysis

During the interviews, copious notes were taken down and turned into transcripts. Gibson and Brown (2009) argue that the process of transcribing consists of the researcher representing the data gathered during interaction with participants. It does not simply involve writing down word for word what participants said during interviews. It is more of an interpretive process because the researcher has to make sense of what was discussed during the interview and interpret the data in the light of the key theme (Gibson & Brown, 2009). The interviews were translated (from either French or Kreol to English) and transcribed upon arrival back to Cape Town. During the process of transcribing, it became clear that there were some key themes emerging from the transcripts, and therefore this provided the momentum for the analysis of the data collected.

3.4.7. Secondary Data

The use of secondary data was essential to understand the Mauritian population, the economic system and the current food system and the way in which it evolved over the years. Data such as population size and economic performance were obtained from the Central Statistics Office (CSO) publications. The findings of the latest national survey are available on the website portal. For historical data, I had to go in physically to make a request for having access to such data. Thus I managed to obtain information on the population growth from the 1800s onwards, trade figures over the years, quantity of food imported / exported from 1999 to 2009 and contribution of the agricultural sector to the economy. Also some

reports focusing on the national food security and diversification of agri-food sector were obtained from the Ministry of Agro-Industry & Food Security's web portal.

Moreover, a wide range of government officials were contacted for information requests and for interviewing purposes²⁵. I tried to make contact with various people at the Ministry of Agro-Industry & Food Security, Ministry of Foreign Affairs, Regional Integration & International Trade, Ministry of Industry, Commerce & Consumer Protection, and Ministry of Health & Quality of Life. Very few people replied to my information requests and I tried to follow up telephonically but was successful only in few cases. Information regarding trade statistics, income distribution, poverty map and food retail industry, were requested. Notwithstanding all of the different approaches used, hardly any feedback was received. In most instances, I was asked to consult the respective departmental website.

The information requested from the Ministry of Industry of Commerce & Consumer Protection was about the historical figures on the number of local traditional retail stores, supermarkets and the historical import / export data from the mid 1900s. That would have substantiated one of the most striking changes in the Mauritian food system, *i.e.*, the shift from retail store to supermarket food purchase. Moreover, the Ministry of Health & Quality of Life was approached for the latest figures on DR NCDs and the opinion of experts about the trend in those lifestyle diseases. Nutrition experts' opinion on the link between the present food system and the general health status of Mauritians would have been valuable. However, those pieces of information were not obtained from the respective ministries²⁶.

3.5. REFLECTING ON THE CONSTRUCTS OF MY IDENTITY

Due to the fact that each person is situated in a particular culture in a particular way, experiencing it in ways that is peculiar to the individual, the researcher must be aware of one's own positionality and the eventual consequences on the way the research process is approached (Allies, 1999; Bourke *et al.*, 2009; Ganga & Scott, 2006; Hopkins, 2007; Takacs,

²⁵ Relevant government officials were approached for interviews, however, most of the requests were rejected. Nevertheless, an interview was secured with an official from the Ministry of Agro-Industry and Food Security.

²⁶ Several requests were lodged with the Ministry of Commerce & Consumer Protection to access a database with the list of all registered food retail outlets in the country. After much reluctance, a telephonic conversation with a government official revealed that such information is not readily available for public viewing.

2003). The researcher's identity is a product of race, class, gender, age, sexuality, religious beliefs, world view, life experiences amongst many other subtle forces shaping one's identity (Bourke *et al.*, 2009; Ganga & Scott, 2006; Hopkins, 2007; Takacs, 2003). The element of bias or subjectivity brought in by interpretive qualitative research does not tamper with the truth or renders the study less valid (Durrheim & Painter, 2006) but in defense of this notion, Terre Blanche, Durrheim and Painter (2006) argue that investigating a group of people or social phenomenon through the researcher's lens is the process that allows us to understand social realities and personal biases. Therefore it was important to do some critical reflection on the constructs of my identity and the way it shaped the research process.

3.5.1. Being a Cultural Insider

I am Mauritian and I investigated the lived experience of a changing food system within two sites in my home country. This involved moving from Cape Town, where I am currently based, and spending three months in Mauritius. I was a so-called 'cultural insider', a term coined by Ganga and Scott (2006) referring to researchers sharing similar cultural, linguistic and national heritage as the research participants. Ganga and Scott (2006) argue that being a 'cultural insider' is complex and multi-faceted, however it provides social proximity between the researcher and the research participants. I experienced this social proximity in the fact that physically I looked like the participants, we spoke the same language and shared nationality. As mentioned by Ganga and Scott (2006), a cultural insider understands both the spoken and unspoken language which will be discussed in the following paragraphs.

Based on my experience, the 'social proximity' referred to in the literature was felt because we all spoke the same language. Sharing the same language helped to bridge some of the social fissures such as class, age and ethnicity. For example, most of the interviews were carried out in Kreol²⁷ and only two of them were in French. Familiarity with the language

27 Kreol is a French-based language that evolved as a result of the French occupation of the island in the 18th Century. Kreol is the most widely spoken language on the island. Eriksen (1998 cited in Rajah-Carrim, 2008) states that Kreol is considered to be a broken and non-standardized language which is not appropriate in the professional realms. Additionally, due to the history, most of the languages spoken on the island have a very close link to ethnicity. Kreol is the native language of Creoles (Mauritians of African descent) who are often considered to be part of the lowest echelon of society. Rajah-Carrim (2008:53) refers to Kreol as the 'language of national solidarity' and according to Eriksen (1990 cited in Rajah-Carrim, 2008), it is the unofficial national language.

facilitated the process, in such that if a research participant was more comfortable with Kreol, I would switch from French to Kreol or *vice-versa*. Using the language of preference allowed research participants to articulate their narratives more fluently.

Along the same line, being an insider was beneficial to gain access to the two sites that were very unfamiliar to me prior to the research process. Ganga and Scott (2006) argue that a cultural insider is more easily accepted within a group of people. In hindsight, I believe that people would have been very skeptical of me had I not been Mauritian. I was accepted due to the fact that we share common values and cultural heritage. This commonality gave me privileged access to the lives of the participants and privileged relations with them. Being an insider, I was familiar with the social norms and thus made it easier to navigate my way around the two communities

3.5.2. Cultural Insider and Yet Different

While in many ways my cultural insider status provided some entry points, the research participants also expected me to adhere to particular cultural norms on the basis of this insider status, which impacted the research. Most notable of these were age and gender. Firstly, being a young researcher, I was often shunned by elders which resulted in much frustration. Many of the research participants inquired about my age and I speculate that my contribution to society and the wider literature on the Mauritian food system was questioned by many of them due to my age. Since all of the research participants were older, I assume that it upset the power balance where the younger one asked the questions and the elder ones provided answers. However, I tried to convey to my best abilities that I am in their space to learn from them and respect the power relations in place.

Secondly, being a female researcher proved to be quite challenging in the field. The Mauritian society is still predominantly patriarchal²⁸. Being a female researcher thus meant that I was going against the norm and challenging some of the principles upheld amongst

28 There is a strong movement to move away from a chauvinistic society currently supported by the government. The Protocol to the Convention on the Elimination of Discrimination against Women was ratified in 2008. Since independence was achieved in 1968, there has been a drive for the social empowerment of women. However, based on a report produced by the Committee on Elimination of Discrimination against Women commissioned by the Office of the High Commissioner for Human Rights, there is still room for much improvement in order to achieve gender parity in various fields across the island.

members of society. Throughout the research process, I reminded myself of the context and thus I had to be sensitive to the power relations in place and respect them. Even though my age and gender did somehow impact the research study, to some extent those limitations revealed a lot about the Mauritian society at large and the way they relate to food.

3.5.3. Power Struggle

During the research process, I had to come to terms with being perceived as more privileged than the research participants. By the fact that I am undertaking my tertiary education in a different country gave me the status of being privileged. The constructs of my identity thus became contentious because there was a clear social fissure between many of the participants and myself. This so-called privileged status may have resulted in a certain form of animosity which in turn caused potential participants to refuse to participate in the data collection process.

3.6. ETHICAL CONCERNS

According to Marshall and Rossman (1995), there is a whole array of ethical concerns once a researcher enters into the lives of research participants. In this research context, ethical research social practice consisted of the full disclosure of the purpose of the research being carried out. Thereafter, research participants were provided with a brief explanation of the ways in which their input could contribute towards furthering the knowledge on the topic of nutrition transition in the Mauritian context. Informed consent of the research participants was sought as it was deemed necessary in order to use the data generated from the interviews and / or interactions and cite them.

Additionally, the anonymity of the research participants has been ensured throughout this research process. As such, fictitious names are used in the following chapters to preserve their anonymity. As James (2000) refer to food consumption as ‘positional consumption’ which implies that one’s food consumption patterns can be associated with either moving up or down in the prevailing social hierarchy. As such, the description of food patterns can become an issue of contention and therefore to gather factual information, research participants were guaranteed anonymity.

The proposed research methodology applied to this research project was endorsed by the University of Cape Town: Faculty of Science Research Ethics Committee. See Appendix A: Ethics Clearance Form.

3.7. LIMITATIONS

There were many hurdles faced while conducting this research project and the main one was people's initial lack of interest in participating in the research study. I started by walking the streets of Tranquebar, Port Louis with my research assistant, Ashley and we knocked on many doors without any success as people were either at work or otherwise occupied. Also, many people declined to participate in the study. In hindsight, I found out that preceding my fieldwork, two major national surveys, namely housing and population surveys, were conducted throughout the whole country. They were both time-consuming surveys which then resulted in a form of 'fatigue'. Many potential research participants were thus unwilling to dedicate any more time to answering questions.

Another major challenge faced preceding the data collection phase was to find a research assistant with good local knowledge in both sites. I was referred to Paul, a potential research assistant and local resident of Bambous Virieux. However, Paul had to leave the country and as such, this caused a setback in the research process. Thus, I had to resort to adopting another strategy and since I felt comfortable enough to be in Bambous Virieux on my own, I decided to walk the site, meet people and conduct interviews on my own.

Moreover, I struggled to obtain factual socio-economic data pertaining to the sites. During fieldwork, I got in touch with the local municipality in Port Louis and the District Council office in Savanne which is the governing body in Bambous Virieux, but micro level socio-economic information was unavailable. The national library was consulted for historical data and the history of Port Louis was well documented and yet all the records I consulted had little or no mention of Tranquebar. Thus in order to provide some background information, I had to resort to using information available from travel websites, newspaper clippings and magazines.

In like manner, information gathering from academics²⁹, government officials and other related people proved to be challenging. Many governmental departments, institutions, non-governmental organizations, university academics, local supermarket chains, food distributors and food importers were approached for secondary data collection. After having flown back to Cape Town and started analyzing the data collected during fieldwork, I realized that there were gaps in the data. Therefore to bridge this information gap, academics from the University of Mauritius and relevant government officials were contacted with very little success. Numerous phone calls were made, emails sent out but few replied to my data requests. Nevertheless, the core of the dissertation being to investigate the lived experience of a changing food system in Mauritius, did not suffer from such information gaps.

A greater volume of secondary data would have been valuable to portray some of the changes in the food system and complement research participants' accounts of the lived experience of a changing food system. However, the aim of the research study is to investigate the lived experience of a changing food system, therefore the aforementioned secondary data is not central to the study. The research study hinges on the research participants' experience of the changing Mauritian food system and as such, the advancement of the study was not compromised.

3.8. CONCLUSION

The methodological approach used in this research study was determined by the research questions. They shaped and framed the approach adopted, be it from the choice of study sites, sample size, research participants to the methods employed. The research is predominantly qualitative in nature whereby the lived experience of a changing food system is investigated. Some quantitative secondary data was collected in order to support or negate the arguments put forward by the research participants. In this chapter, I have explained the methods used to collect data and the type of data collected. Different methods were used to ensure a holistic understanding of the lived experience of a changing food system.

²⁹ Some academics from the University of Mauritius were contacted during the fieldwork phase and thereafter, however I was unsuccessful in setting up one-on-one or phone interviews with them. Numerous emails were sent and phone calls were made but to no avail.

Descriptions of the study sites are provided in order to contextualise the research study. Explaining the assumptions in the choice of methods and sites bring to the forefront the assumptions about reality. In addition, acknowledging that my positionality, *i.e.*, the constructs of my identity as a Mauritian female researcher influenced the outcome exposes some of the power dynamic and hierarchy in place in the Mauritian society. The methodology employed during the research and as explained throughout this chapter was used to collect data in order to answer pertinent research questions.

4. ECONOMIC DEVELOPMENT IN MAURITIUS

4.1. INTRODUCTION

The theory on nutrition transition is largely centred on the economic factors driving dietary changes noted across the globe. There is a plethora of macrolevel factors triggering and furthering the ‘Westernisation of the global diet’ which have been discussed in Chapter 2. The literature identifies globalisation as one of the major contributing factors to the spread of nutrition transition (Hawkes, 2000; Hawkes, Chopra & Friel, 2009; Kennedy, Nantel & Shetty, 2004; Lang, 1999; Popkin, 2006). Globalisation leads to the convergence of economic, social and cultural systems across countries (Hughes & Lawrence, 2008; Kennedy, Nantel & Shetty, 2004) and therefore influences the food supply as well as food demand. On the demand side, factors such as urbanisation, income growth and social status drive the change while on the supply side of the food sector, trade liberalisation is recognised as a significant causal factor (FAO, 2007). Lang (1999) states that globalisation has significantly altered the food system; from agriculture, processing, distributing and marketing. Hence this chapter contextualises Mauritius in the process of globalisation and engages with the economic restructuring that has resulted thereof.

The change in the socio-economic systems realised through globalisation pertains largely to increased income, urbanisation and the share of women constituting the active labour force (Hawkes, Chopra & Friel, 2009). The aforementioned changes all have impacts on the food system with the general trend being the distancing from the so-called traditional diets to the adoption of an energy-dense, high-fat, high-calorie, nutrition-poor diet. The economic changes that have contributed to the rapid economic development impacted the Mauritian food system. The literature suggests that nutrition transition is almost inevitable once factors such as globalisation, including *inter alia*, trade liberalisation, increased income, urbanisation are present within an economic system. Therefore this chapter describes the macrolevel structural changes noted in the Mauritian economic system as nutrition transition results from such changes.

Before delving into historic political discourse that has influenced the development of Mauritius, it is crucial from the onset to define the term traditional food system in the local context, as used throughout this dissertation.

4.1.1. The Ambiguous Term ‘Traditional Food System’ in the Mauritian Context

The term ‘traditional food system’ used and described throughout this dissertation refers to the food system that was prevailing before significant development occurred after independence in 1968. In other words, it is used to describe the food system that was typical of Mauritius approximately 45 years ago.

Although the term ‘traditional food’ is used, it should be noted that there is no such thing as to some degree the system has always been evolving. A purely indigenous Mauritian food culture might no longer exist because of Western influences currently reflected in dietary patterns (Uusitalo *et al.*, 2005). Especially in a place like Mauritius where there have been cultural influences from around the world. Mauritius has a very rich food culture due to the diversity of background of Mauritians. Every Mauritian descends from a genealogy of immigrants, indentured labourers from India, slaves from West Africa, traders from China and European colonisers (Carillet & Presser, 2010). Therefore the traditional food culture itself is a mix of food traditions from various parts of the globe. Every ethnic group has their signature dish and their particular food preparation methods. The prevailing dietary habits across the country are derived from a wide spectrum of food traditions mirroring a multi-ethnic society.

In addition, thanks to changing agricultural practices and technology, the food system has been evolving to adapt to the needs of the population. However, the participants did articulate changes as from a traditional system to a modern one. In keeping with the terms articulated by the participants and in order to retain their voices, the terms traditional and modern food systems have been used throughout this document.

I tried to gain insight into the traditional food system that was prevailing in Mauritius for as far back in time as research participants could recall. Most of the participants belonged to the older generation meaning that they have been part of the traditional Mauritian food system. It was strategic to target people who have lived through the traditional Mauritius as they would

have more insight on traditional foods and the existing food system. Therefore weaving all of their accounts together yields a very rich and cohesive picture of the food system that prevailed in the past. The current food system as seen through the participants' lens is further explored as they describe their daily encounters revolving around food and capture their lived experience of the current changing food system.

4.2. THE MAURITIAN SOCIETY: A PRODUCT OF GLOBALISATION

Before delving into the structural change, it should be pointed out that the Mauritian society could be argued to be a result of the process of earlier phases of globalisation. There is a multitude of definitions available for the process of globalisation. In essence, it means the idealised system of the flow of people, ideas, goods and money. Therefore Mauritius being a multi-ethnic and multi-cultural society populated under the French and British rule is not new to the concept of globalisation. Different waves of immigration brought people from Africa, Asia and Europe to the island (Maurer, 2011). As such, the ethnic diversity experienced in Mauritius is a result of globalisation. As documented in the literature, globalisation is strongly associated with large scale changes and indeed, Mauritius underwent structural changes as Europeans colonised the island, slaves brought in from West Africa, indentured labourers shipped from India and traders arrived from China. Along with different groups of people came a richness of cultural diversity which is currently being eroded. However, as stated above, the Mauritian society evolved under the influence of globalisation and therefore there is no true traditional food system. It has been a society in some form of transition over the last two centuries, but the transition has been occurring at an accelerated pace in the post-colonial era.

4.2.1. The Colonial History of Mauritius

Colonialism played a significant role in shaping the Mauritian economy. Mauritius has a long history of colonisation and experienced different waves of occupation ranging from the Dutch, French to the British. The earliest records suggest that the island was discovered by the Arabs but they did not stay on the island and as it was unoccupied, it was re-discovered by the Portuguese in the 16th Century (Yeung Lam Ko, 1998). The first wave of colonisation began in 1638 and ended in 1710 with the settlement of the Dutch (Republic of Mauritius,

2013). Even though the Dutch only occupied the island for a short span of time, they shaped the island in various ways. For instance, they introduced a number of species, amongst was the sugarcane plant. They also removed ebony forests and hunted the Dodo to extinction (Yeung Lam Ko, 1998; Republic of Mauritius, 2013). After the departure of the Dutch, the French settled on the island in 1710 and it became one of their successful colonies after the arrival of a French Governor named Mahe de Labourdonnais (Republic of Mauritius, 2013).

Under French colonial rule, sugar cultivation increased significantly. It was during this period that the first sugar factory was established in 1744 (Frankel, 2010). Other crops were introduced and cultivated, however sugarcane being an important cash crop on the global economy received much attention. According to Frankel (2010), under the French rule, slavery was common practice to sustain the booming sugar economy. The British Empire eventually captured and reclaimed the island but the French settlers were allowed to stay on the island. Neveling (2012) states that the British reinforced the sugar industry to benefit the empire at large which prompted the integration of the Mauritian economy into the capitalist world. According to Neveling (2012), the large scale sugar production on the island was paralleled by the overthrow of sugar as the most important food import in England. Therefore sugar became an important crop in the Mauritian economy as well as for the British Empire thus explaining its long history of sugarcane cultivation.

4.3. POST-COLONIAL ECONOMIC DEVELOPMENT

Mauritius, a small island with a population of 1.2 million has become a significant economic player on the African continent. Mauritius gained its independence from the British in 1968. Through a plethora of economic structural changes, Mauritius improved its economy from one once classified as underdeveloped to an upper middle income country. Those macroeconomic changes have placed Mauritius on the global economic front (Zafar, 2011).

Yeung Lam Ko (1998) and Chernoff and Warner (2002) state that Mauritius lacked the favourable conditions for fast economic growth recorded from the 1960s. Instead Mauritius was endowed with geographical remoteness, tropical climate along with the associated tropical diseases, the small size of the local market and natural disasters. In addition, its heavy reliance on sugarcane made it very vulnerable to external global market shocks

(Chernoff & Warner, 2002). Through waves of substantial economic restructuring, Mauritius managed to realise economic growth and has been termed a ‘paradigm of fast sustainable growth’ by Chernoff and Warner (2002:3). Despite the lack of natural resources, Mauritius managed to enter the global market. The following section explains the different periods of economic development experienced in Mauritius.

4.3.1. The Different Waves of Economic Development

The fast economic growth can be attributed to three different periods of its history which was initiated in the 1960s (Chernoff & Warner, 2002). It was a time of crucial importance in its history as negotiations began with the British Empire for economic independence which prompted an investigation in its economy, highlighting its limitations and possibilities (Yeung Lam Ko, 1998). This led to the identification of the economic barriers at the time. They consisted of the lack of natural resources, the small extent of the domestic market, geographic isolation and the lack of social and technical capital (Yeung Lam Ko, 1998). All of the above factors pointed to the fact that economic diversification and industrialisation was inevitable to achieve economic growth.

From 1970 to 1982, Mauritius experienced the second wave of economic growth following the implementation of reforms and measures for economic diversification (Chernoff & Warner, 2002; Yeung Lam Ko, 1998). It is widely acknowledged in the literature that Mauritius has maintained a successful economy since the early 1970s. The existing institutional framework was thus revolutionised which facilitated industrialisation and development leading to an economic growth of 6% per annum. Chernoff and Warner (2002) and Yeung Lam Ko (1998) state that the third wave of economic growth occurred from 1983 onwards following economic diversification from sugarcane monoculture to the manufacturing, tourism and services sector. Chernoff and Warner (2002) suggest that the economic growth experienced during that era is largely attributed to the establishment of an Export Processing Zone (EPZ) which is further discussed in Section 4.3.3.1.

4.3.2. *Economic Diversification as a Measure for Economic Development*

The macrostructural changes that occurred in the Mauritian economy allowed it to transition from a sugar monoculture to an economy heavily reliant on tourism and the tertiary sector. At the onset of the independence era, the economy was largely built on sugarcane monoculture but has since diversified to comprise light manufacturing, financial services, information and communication technology and tourism (Zafar, 2011). The post-colonial success of its economy has been attributed to various factors such as a comprehensively diversified economy, political stability, robust institutional establishments, open trade policies, investment in the human capital and the ability to adapt to global economic changes (AEO, 2006; Zafar, 2011).

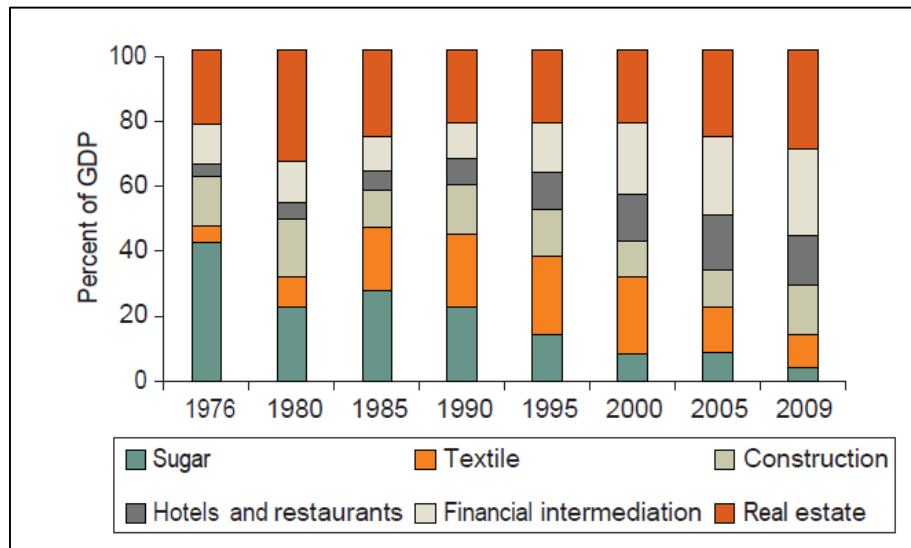


Figure 4.1: The change in the sectors contributing to GDP, 1976-2009
(Source: Zafar, 2011:96)

Figures 4.1 above and 4.2 below show that the economic diversification from primary to tertiary sector was paralleled by a significant growth in GDP. The average real GDP growth since the early 1970s has been over 5% compared to an average of 3.2% within the rest of Sub-Saharan Africa (Zafar, 2011). Figure 4.2 represents the growth in GDP experienced from the mid 1970s to 2013.

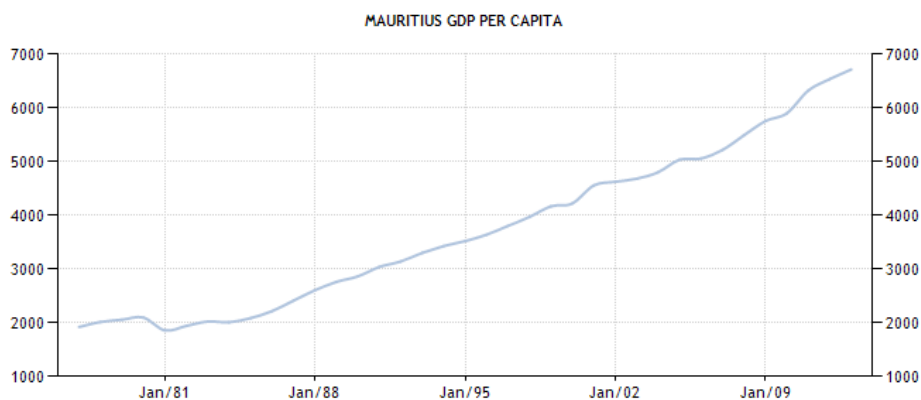


Figure 4.2: Growth in GDP per capita, 1976 – 2013
(Source: World Bank, 2013)

From the 1970s to 2008, there has been a notable sevenfold increase in the GDP per capita. This was realised through economic diversification from sugar to textiles to a larger service-based economy. The economic diversification and restructuring came as a response to changes in the global economy (Zafar, 2011). The economy was re-modelled with a strong focus on international trade. It is believed that this has been the determining factor in its economic success. Zafar (2011:99) states that the success hinges on “a managed embrace of globalisation and the cultivation of market access.”

4.3.3. The Mauritian Trade Liberalisation Regime

Evidence has proved that the Mauritian economy has shifted from a protected economic system to a very liberal system. The epitome of trade liberalisation in Mauritius was the establishment of the EPZ sector which attracts foreign investment and contributed towards creating jobs. The EPZ sector and its contribution to the economy is further discussed below.

4.3.3.1. Export Processing Zone in Mauritius

As previously stated, the EPZ sector has been a crucial factor in shaping the Mauritian economy, contributing significantly to its economic growth from 1984 to 1988 (Chernoff & Warner, 2002). The EPZ Act (Act 51 of 1970) was promulgated in December 1970 in Mauritius (Chernoff & Warner, 2002; Hein, 1988; Yeung Lam Ko, 1998). An EPZ is defined as “an administratively and sometimes geographically distinct area enjoying special status allowing for the free import of equipment and other materials to be used in the manufacture

of goods earmarked for exports (Basile & Germidis, 1984 cited in Hein 1988). According to Hein (1988), the establishment of an EPZ sector is common practice in developing countries and Mauritius was the first country in the African regional block to develop an EPZ sector. The EPZ sector created opportunities for jobs and therefore absorbed a large share of the unemployed population. Employment in the EPZ is credited with reducing the unemployment rate from 21% to 5% from 1982 to 1988 (Chernoff & Warner, 2002).

The socio-economic climate at the time triggered the enactment of the EPZ Act as an attempt to bring about economic reform. It stemmed from the movement towards independence which triggered a shift in the way economic practices were undertaken on the island. As negotiations began for independence, there was the need to establish whether the economic independence would result in success or lead the colony into despair. Therefore, the British Government commissioned an inquiry³⁰ into the state of the economic affairs and the areas of potential growth (Chernoff & Warner, 2002; Hein, 1988). The Meade Report, as it became to be known, highlighted the concerns relating to the volatile nature of the agricultural sector and the sugar industry which represented the largest share of the Mauritian economy, limited land resources and concluded that the island was heading towards the Malthusian trap. However, the report indicated as there is limited potential for the growth of the sugar industry due to limited land resource, the manufacturing sector should be further explored as potential engine of growth (Chernoff & Warner, 2002; Hein, 1988; Lamko, 1998; Zafar, 2011).

The recommendations as stated in the Meade's Report coupled with unemployment rate reaching 27% towards the end of the 1960s highlighted the need to establish a robust economic sector in which labour costs was viewed as value added (Hein, 1998). The purpose of the establishment of an EPZ sector was to promote companies, local and foreign-owned, to investigate export opportunities of value-added goods (Hein, 1998). Due to the positive economic ramifications, the growth of the EPZ sector warranted the establishment of the Mauritius Export Development and Investment Authority in 1984 as regulatory body to promote the export of goods manufactured on the island. The EPZ sector comprised textiles and garments, electronics, jewellery, diamonds, precious stones, toys and Christmas decorations as shown below (CSO, 1986 cited in Hein, 1988).

³⁰ The commission was headed by James Meade, a Nobel Prize Winner, which led to the publication of the Meade Report.

Table 4.1. The growth of the EPZ sector from 1976 to 1986

Industry	1976		1982		1986	
	Value (Rs. Million)	%	Value (Rs. Million)	%	Value (Rs. Million)	%
Textiles and garments	202.8	65.7	863.0	69.9	4 116.0	81.3
Electronics	61.3	19.9	2.4	0.2	-	-
Jewellery, diamonds & precious stones	7.1	2.3	78.9	6.4	256.0	5.1
Toys & Christmas decorations	7.4	2.3	29.8	2.4	58.0	1.1
Other	30.0	9.7	261.4	21.1	630.0	12.5
TOTAL	308.6	100	1235.2	100	5060	100

Source: (CSO, 1986 cited in Hein, 1988)

The above table represents the success of the EPZ sector as it evolved from being a non-existent sector before the 1960s to yielding a total of approximately Rs 5 billion within less than two decades. A growth of approximately 1500% was realized from 1976 to 1986. Hein (1988) argues that this was made possible through tax incentives whereby a tax holiday was granted to some companies operating in the sector for a period of 20 years thereby promoting FDI in the country. Subramanian (2010) states that Mauritius has achieved unprecedented levels of economic growth in Africa partly because globalisation was embraced and policies were implemented accordingly. Its openness to FDI has been crucial in the sustained growth of its economy since the late 1960s.

4.3.3.2. *Access to preferential markets*

Mauritius has benefitted from preferential markets and partners, especially the European Union (EU) in the trade of sugar, textile and clothing (Chernoff & Warner, 2002; Zafar 2011). Those preferential markets allowed Mauritius to demarcate itself from the rest of the other sugar and textile producing countries and thus boosted its economy from the 1970s to 1990s. The EU Sugar Protocol of the Lomé Convention permitted the African, Caribbean and Pacific Group of States (ACP) to export sugar to the EU at a preferential price, set at approximately two or three times of the world market prices. At the convention, Mauritius successfully negotiated and secured approximately one third of the quota set by the Sugar

Protocol thus making it the biggest beneficiary amongst the ACP countries (AEO, 2006; Laaksonen, Mäki-Fränti & Virolainen, 2007).

Due to the volatility of the price of sugar on the world market, prices have fluctuated significantly during the course of history. In the aftermath of the sugar price boom in the 1970s, Mauritius still benefitted from the Sugar Protocol due to secured and sustained income from the EU as approximately 80 to 90% of the sugar production reached the EU market (Laaksonen, Mäki-Fränti & Virolainen, 2007).

Therefore, sugar production laid the foundations for its economic development with approximately 95% of the export revenue being attributed to sugar in the 1960s (Laaksonen, Mäki-Fränti & Virolainen, 2007). The access to various markets has allowed Mauritius in the 1970s to 1980s to accumulate capital which has been used to foster the service-sector development and socio-economic advancement (Zafar, 2011). This contributed to the establishment of a welfare state and thus promoted the development of the human capital. This created a larger impetus for development across the country.

Subramanien (2010) states that following the trade agreements with large trading blocs such as the EU, Mauritius successfully negotiated a quota for the export of sugar set at 90% above the market price from 1977 and 2000. Trading above global prices guaranteed substantial positive returns that furthered its development (Subramanien, 2010). This accumulated to an additional 5.4% of the GDP per capita on average over the years and according to Subramanien (2010), this additional income has largely contributed to expanding economic development as well as investment in the social and technical capital.

Therefore, the restructuring of the economy reaped its benefits. As such, Mauritius was the highest ranked country in Africa in 2010 (Zafar, 2011) with relatively low rates of unemployment and poverty compared to the rest of the African continent. The economic restructuring also bore social benefits as a significant decrease in poverty levels was noted. During the mid 1970s, it is estimated that approximately 40% of the population was living under the then poverty line, however through a wave of economic development, this figure was significantly reduced to 11% by early 1990 (Zafar, 2011). Thereafter, poverty decreased

slowly to 7.3% in 2009 (Zafar, 2011). All of the above contributed towards establishing Mauritius as a significant player in Africa and the rest of the world.

4.4. CONCLUSION

Based on the information provided above, Mauritius has gone through several waves of economic development. The economic model adopted by Mauritius prior to independence in 1968 was dictated by colonial powers to further their empires. In the post-independence era, the government inherited economic as well as social problems (Yeung Lam Ko, 1998). Due to the fact that Mauritius exhibits a small island economy which is vulnerable to external market shocks coupled with a volatile cash crop, *i.e.*, sugar, economic diversification was needed. As such, through trade liberalisation in the form of the establishment of an EPZ sector. Through various measures put in place, the EPZ sector attracted manufacturing firms to invest in manufacturing goods in the country as well as make use of the large labour pool available at the time. The successful economic diversification occurred as Mauritius evolved from sugarcane monoculture to the rise of the service sector, tourism, manufacturing, construction amongst others. Economic diversification resulted in economic growth which in turn caused the GDP per capita to increase fourfold from the late 1970s to 2013 (Worldbank, 2013).

The macrostructural changes discussed in this chapter have resulted in the improvement on society as the government invested in social and technical capital thus impacting society as a whole. The change from underdeveloped to upper middle income is accompanied by changes in living standards, incomes and hence improved lifestyles. The macrolevel changes experienced in the economic system impact on the food system as well as society as a whole. There has been a change from an economy built on agriculture to one that is highly diversified thus affecting the agricultural practices, the types of foods available on the market, the availability of food and the price of food. As such, the changes experienced in the Mauritian food system as a result of the macrolevel economic changes discussed above will be further explained in the following chapter. The findings of the lived experience of a changing food system in urban and rural Mauritius are presented. The following chapter is purely a descriptive account of the lived experience of a changing food system and recollection of the traditional food system in place in Mauritius.

5. THE LIVED EXPERIENCE OF THE TRADITIONAL AND THE CONTEMPORARY FOOD SYSTEMS

5.1. INTRODUCTION

As argued in the literature review, there is homogenisation of dietary habits across the globe from traditional to Western based diets. The Westernisation of the global diet involves adopting a diet high in fat, caloric sweeteners and processed foods (Drewnowski & Popkin, 1997; Popkin, 2004: 2006; Popkin *et al.*, 2001). The main driving force behind the spread of the nutrition transition across the developing world is globalisation which is by large the causal factor behind changes in social systems, increased income, urbanisation and the absorption of women in the labour force (Hawkes, Chopra & Friel, 2009). As such, globalisation has significantly changed food systems by altering the production process, access to food and its distribution (Kennedy, Nantel & Shetty, 2004). There are multiple changes noted in the Mauritian food system over the years. For instance, the distancing from the traditional Mauritian diet which consists of simple diets mostly based on locally grown fresh produce to the increasing adoption of Western-based diets. Coupled with the aforementioned change is the substitution of simple diets by processed foods, the disappearance of various starchy staples, subsistence agriculture and farming to commercial production of commodities and the significant increase in the consumption of meat products and convenience foods.

There is a body of literature on the various factors driving the spread of nutrition transition across the globe. All of those factors occur on a macroscale level. Factors such as globalisation, lowering of trade barriers, integrated market systems and FDI drive socio-economic changes on a national scale. Such changes involve the restructuring of agri-food systems, raised national incomes and improved standards of living which all impact the lifestyle which are eventually mirrored in dietary habits. Even though those changes are well documented in the literature, there is virtually no understanding of the lived experience of such changes on the micro level. Changes on a national scale have localised consequences on populations. The large-scale economic changes discussed in the previous chapter have largely

influenced the experience of nutrition transition. Hence the understanding of the local experience of such changes is deemed important and this chapter tends to bridge the gap, relating to the lived experience of local changes during the process of dietary transition.

The understanding of the lived experience of those changes is sought from people embedded in the changing system itself. Thus, a sample group was chosen based on the criteria previously discussed in Chapter 3. A rural and urban site was selected in order to identify similarity and differences in characteristics of the nutrition transition in different contexts in Mauritius. All of the research participants were long term residents, some of them moved after getting married, some of them moved to be located closer to their place of work and / or family and the majority were born and raised in the respective study sites. Having been long term residents, all of the research participants were accustomed to the prevalent foodscape.

Uusitalo *et al.* (2005) argue that nutrition transition is the result of the penetration of Western influences in a traditional food culture and the shift occurs at different rates amongst sub-populations due to different socio-economic forces at play. In other words, the aforementioned changes at a national level are experienced differently by sub-populations. Hence one of the premises of this dissertation is to investigate and understand the lived experience of a changing food system in an urban and rural community in Mauritius. The dietary shift is a phenomenon noted across Mauritius, however there are differences in the manner those dietary shifts are experienced locally. As such, the focus is shifted from the changes noted on the macro to the micro level. Researching two different communities acknowledges that nutrition transition is occurring on a national scale with some aspects of the dietary shift being experienced differently due to different socio-economic factors at play.

This chapter seeks to describe the lived experience of a changing food system as the daily realities of the research participants are presented. One can only understand their lived experiences through the sharing of their stories which provides insight onto the tangible and intangible factors. On the one hand, the tangible factors being the changes in the food system such as the change in the structure of the diet, the adoption of Western-based foods, the increase in consumption of meat and meat-based products, as will be further discussed in this chapter. On the other hand, the intangible factor in this particular instance refers to the

emotional connection to food, the dialogue constructed around food and food as a bearer of culture.

It is to be pointed out that every individual is situated in the food culture in a particular way and therefore experiences change differently. Some of the participants choose to focus on aspects of the food culture they like while others focus on what they dislike. This is a purely descriptive account of the lived experience of the changing Mauritian food system and Chapter 6 addresses the changes in the food geography.

5.2. THE OLD AND THE NEW DIETARY PATTERNS

5.2.1. Similar Traditional Food Narratives in Tranquebar, Port Louis and Bambous Virieux

Across the range of participants in both study sites, similar accounts of the traditional Mauritian food system were reported. They all described diets characterised by high consumption of seasonal locally grown vegetables and starchy staples, low consumption of meat and meat-derived products. The typical traditional food system described by the literature corroborates with the research participants' description.

Similar traditional food narratives reveal more than just the foods consumed, it provides an indication of the socio-economic system back then. It indicates an economy largely built on agriculture-with little to no food imports- and one that has not yet been industrialised. Additionally, it also indicates that there was little socio-economic inequality amongst sub-populations thereby depicting more or less a homogenous society. Also, most foods were locally grown, home-cooked, prepared by women and meals were eaten together with the family. It provides an indication of the types of social structures in place with particular reference to women's role being bound to the kitchen. Therefore, it can be inferred that they were as not as active as men in the labour force. As food crosscuts various aspects of life, it provides information on the established economic and social structures and linkages. These themes will be further explored in the research participants' accounts. Scholars argue that nutrition transition involves structural shifts in the diet from traditional diets high in complex carbohydrates and fiber to modern Western diets high in meat, processed foods and dairy products (Drewnowski & Popkin, 1997; Popkin 2004; 2006; Popkin *et al.*, 2001; Uusitalo *et*

al., 2005). The Mauritian diet has changed from a local vegetable-based diet to one that is more diverse, with an increased consumption of processed, refined and animal-derived foods. The local traditional diet is explained below.

5.2.2. *Manzé Létan Lontan*

‘Manzé létan lontan’ is a Kreol term meaning ‘the food we consumed back in the day³¹’. This refers to a traditional food system and a way of life which portrays Mauritius prior to the development era which begun in the aftermath of independence in 1968. This term was used repeatedly by the research participants during conversations and it captures a sense of nostalgia. In both study sites, the way research participants described and referred to the traditional food system emoted feelings suggesting that it was better in the past. They referred to life as being difficult but a lot simpler. Many of the research participants mentioned that their parents struggled to put food on the table everyday and yet they enjoyed life a lot more. People were actively more involved in the food system as they participated in agricultural activities, rearing of cattle or engaged in some form of trade with their neighbours. People were more connected to the food system in place then.

Following my interaction with research participants, it was clear that food is more than a necessity or a commodity. Food represents so much more as there are many memories attached to it. Food brings memories of people, times of hardship and times of abundance. The mention of the traditional food system evoked strong feelings amongst the participants. Many of them distinctly remember the taste, smell and texture of the foods they used to consume in their childhood. Those feelings and memories are attached to simple meals based on a variety of vegetables and other fresh produce prepared in particular ways as discussed below. The food stories presented throughout this chapter captures a sense of the lived experienced of changing dietary patterns as experienced by the research participants.

³¹ Please note that independence has been used as a temporal indicator to mark the commencement of economic development in Mauritius. This is in keeping with research participants’ articulation of temporal changes. Economic independence from the British Empire is used as a milestone. Whenever the term ‘back in the day’ is used by participants, mention is made to a time prior to 1968.

5.2.2.1. *Simple diets*

One of the central tenets of the traditional Mauritian food system was simple diets based on some starchy staples and vegetables. The foods widely consumed were locally grown plants such as dasheen, tapioca, breadfruit, jackfruit, gourds such as pumpkin, bitter gourd, bottle gourd, ridge gourd, and vegetable pear amongst others (See Box 1 below for a description of the abovementioned foods). Leaves of many of these gourds were also widely consumed. Indigenous foods typical of Mauritius consisted of Indian breads such as farata and puri, salted fish, vegetables, tomatoes and pickled fruits (Uusitalo *et al.*, 2005). A wide range of pulses were also an integral part of the diet. Mrs Rose, one of the research participants from Bambous Virieux, stated the following:

When I was growing up, times were hard. We didn't always have a lot of food but we ate what was available. We had vegetables day in and day out. We ate the vegetables that were available, those that were available in and around the area. My mother used to forage the adjacent unoccupied field for food. Very often I used accompany her and help carry food back home. In that way, we would get a generous supply of vegetables. The usual foods consumed were tapioca, dasheen, jackfruit and all sorts of leaves and stalks. We did eat meat, but only occasionally (Mrs Rose, 08/08/2011).

The food story above represents more than just an account of people's diet, but it partly reveals the kind of social structure that was in place and the way in which food interacted with it. Based on Mrs Rose's narrative, the types of food consumed indicating that poverty was rife with people having to collect wild foods for consumption. According to Mrs Uma, a research participant from Bambous Virieux, the consumption of vegetables and simple diets was widespread. She extrapolated her lived experience to conclude that it was the norm. People led simple lifestyles and as such ate simple meals. In addition, not only was the food system itself structured in a different way but life was very different back then. A different way of eating echoes a different way of living.

Box 1: A description of selected local foods

Arouille is the local term for dasheen. It is a starchy root vegetable.

Bouillon is the French word for broth.

Brede is the term used to describe edible leaves and stalks. Leaves and stalks of various plants, especially gourds are widely consumed.

Calebasse is the local term for bottle gourd. It grows on vines and is a long elongated vegetable which resembles a bottle. It has a light green skin with white flesh.

Chouchou is the local term for vegetable pear /chayote. It grows on vines and strongly resembles a pear. It has a thick green skin with spikes and white flesh with a melon texture.

Cresson is the local term for watercress.

Farata / Roti is derived from the Hindi word 'Paratha'. Depending on the thickness, it can either resemble a flatbread or a pancake. It is deeply embedded in the Mauritian food culture and even though it is traditionally an Indian staple food, it transcends all ethnic groups in the country. Faratas are made of simple ingredients, namely flour, oil and water. Traditionally, it is cooked on a 'tawa' which is a flat metal (heavy cast iron) plate.

Fruit a pain is the local term for breadfruit. Breadfruits grow on trees and they grow up to a few kilos. It has a rough and thick green skin with a cream compact flesh. The flesh can be consumed in a number of ways and it can also be processed into flour.

Galette manioc is a flapjack-like pastry made from tapioca.

Giraumon is the local term for pumpkin.

Greau is a type of flour obtained from grinding durum wheat. It is widely used to make puddings and sweet treats.

Manioc is cassava. It is a starchy root vegetable. It can be steamed, fried, or turned into dessert. Once cooked, it becomes very fibrous. It can also be processed into flour. Tapioca is a product of cassava.

Margose is the local term for bitter melon. Bitter melon is a slightly elongated jagged type of melon. It can be cooked or used raw in salads. It is very bitter, hence the name.

Mouroume is the local term for moringa which resembles bean stalks.

Pain maison is the most common type of bread consumed. It is a bun with a crispy crust and weighs about 100g. Both the price and weight are regulated by the government.

Patole is the local term for ridge gourd. It is an elongated type of gourd, with a smooth green skin and white flesh. It resembles an English cucumber and has a similar texture.

Puri is similar to farata (as described above) with similar ingredients used. It is smaller in size and it is deep fried as opposed to the farata which is cooked on a flat metal plate. It is customary to serve puris at Indian weddings.

Pe-tsai is the local term for Chinese cabbage. It is widely grown and consumed.

Songe is the local term for taro leaves. Taro leaves are bright green, large and flat and heart-shaped. They appear to be waterproof due to a thin coating on top of the leafy.

Vermicelli resembles angel hair pasta and is used to make traditional puddings.

Zac is the local term for jackfruit. It grows on trees and has a thick green skin with a light brown flesh with pips. It can be consumed in a number of ways but is particularly known for being served at traditional Indian weddings. It has a high starch and fiber content.

Many of the participants mentioned one particular dish that they used to consume quite extensively, namely ‘bouillon.’ Bouillon is a French word describing a liquid along with some condiments and vegetables and / or meat that is brought to the boil to form a broth. The Mauritian version of bouillon consists of water and green leafy vegetables being brought to the boil together. Anjani, a participant from Port Louis recalls

In my family, we ate bouillon all the time because my father loved it. We ate bouillon made from different types of leaves. Bouillon chouchou, petsai, cresson. You see, my father worked the land and on a hot summer’s day, bouillon would be the go-to meal. We all enjoyed it because it is so refreshing. Bouillon with rice and some pickled fruits to give it a bit of a spicy kick would make for a typical meal that I had when I was growing up (Anjani, 23/08/2011).

The above food narrative speaks about ‘bouillon’ which was very much appreciated by Anjani’s family. In addition, it also pictures what can be termed as an inexpensive dish. It does not require much to prepare it as it is essentially water with leafy vegetables. The leaves can be found on creeper vines. It reflects the economy Anjani’s family was situated in. An economic climate that did not allow families to spend a lot of money on food and one that forced them to find creative means of feeding their families. It paints a picture of widespread poverty in Mauritius.

My parents had a jackfruit tree in the front garden. I don’t think any of family members planted the tree; it must have been there when my parents settled on that piece of land. It was a very big tree that produced very big fruits. In season, the tree would produce many fruits and if you didn’t pick them on time, they would just drop and smash on the ground. The ripe jackfruit was used to make various traditional dishes. Sometimes, you could get a jackfruit that would be big enough to feed the family for days (Laure, 29/07/2011).

The traditional staples consisted of breadfruit, rice and to a lesser extent tapioca and jackfruit. Other than rice, the aforementioned staples were all locally grown. The production of

breadfruit and jackfruit did not require much effort because they grow on trees thus requiring very little care. In season, many of the participants mentioned having to distribute jackfruits and breadfruits to their neighbours and relatives. People made use of the resources available locally thus making them seasonal consumers.

A couple of participants mentioned consuming other foods as substitute for the above-mentioned starchy staples during difficult times. Some of them mentioned eating boiled pawpaw and green bananas. Uncle Gaby shared his story.

You see, my parents were very poor. We had no assets whatsoever. We rented a small house; you could barely call it a house. Very often during the course of the month, we ran out of money so my mother had to make a plan to provide for all of the hungry children. There was a banana tree at the back of the house. Pretty much everybody had at least one banana tree. So my mother picked the green ones and they would serve as dinner. You see, she peeled them, boiled them and added some spices. Sometimes the boiled bananas would make up our entire dinner and at others, they were served with some vegetables. They were very filling, maybe not the best tasting food but very filling. (Uncle Gaby, 16/09/2011).

It is interesting to note the way people interacted with the food system. As times were hard, people found creative means to put food on the table, even if that means that they had to forage unoccupied fields for wild foods or prepare a dish out of pieces of leaves and stalks. The consumption of such atypical type of food as stated in Uncle Gaby's narrative reinforces the notion of a poor society struggling to produce and acquire food. In addition, it points out to a certain food coping mechanism that became accepted over the years and thus became part of the food culture.

Such a food practice speaks far more than food itself as there is a poignant emotional connection attached to the consumption of such an atypical food, as mentioned by Uncle Gaby. He starts his food narrative by presenting his family's socio-economic status at the time, thereby bringing up his emotional connection to the consumption of boiled bananas. Perhaps, in that particular instance, the memory of eating boiled bananas brought back times of hardship his family has had to face. As previously stated, food is more than a commodity; it brings memory of people, place and culture. After the sharing his story, Uncle Gaby proceeded to clarify that occasionally he consumes boiled bananas.

The above account echoes a simple meal consumed on a regular basis. There were other similar examples used by other participants such as boiled pawpaw and breadfruit. According to numerous other research participants, the consumption of green bananas, pawpaw, breadfruit and jackfruit was common. Due to the fact that there were rice rations³² in the country, people had to be reliant on other staples which would be as nutritious and filling as rice. In addition, many of the participants pointed out that banana, pawpaw, jackfruit and breadfruit trees were widely available at the time, therefore everyone had easy access to such foods.

When I was a kid, on pay day my father would go to the grocery store on his way home. He used to buy groceries and carry them on his bicycle back home. We knew that on pay day or the day after, we would eat tinned fish (pilchards) curry. That fish curry would cook and simmer for hours on the firewood. You could smell the fish and the spices cooking together from far away. While it was cooking, my mom prepared rotis, it was a given that tinned fish curry would be accompanied by rotis. The fish curry that I am referring to was a delicacy. Usually, my father would only buy one can of tinned fish and my mom would make sure that it would feed the whole family (Rumilla, 2011).

Diets were largely reliant on seasonal fruits and vegetables with very little processed foods consumed at any time. Considering that most people grew their own foods or had relatively easy access to fresh produce, processed foods were considered to be exotic and hence a luxury. Processed foods were mostly imported at the time because Mauritius was still an underdeveloped country with limited capacity to process food locally. Therefore, processed food indicated a different lifestyle, one that was led by the wealthiest in society and one that required a certain purchasing power to achieve. In other words, processed foods were aspired foods. For instance, tinned fish was considered to be a luxury even though fresh fish was widely available at the time.

Based on Rumilla's account above, it is clear that tinned fish was considered to be luxury food. It can be partly attributed to the fact that a can of Pilchards was only accessible to her family on pay day. As she stated, it was considered as a luxurious meal. Other research participants also mentioned that tinned fish brought memories of good times and festive occasions. However it no longer holds the same status. The emotional connection with certain foods has changed as a result of the changing food system and evolving lifestyles. For

³² Rice rationing in Mauritius will be further discussed in Chapter 6.

instance, tinned fish which was once considered an exotic and luxurious item has been rendered mundane in the current food system. The place of prominence of certain foods has been displaced in the contemporary food system. In the next few paragraphs, the modern food system is discussed in further details.

5.2.3. Manzé Azordi Zour

There are some changes which are not site-specific but have occurred on a national scale. This section explores some of the aspects of the nutrition transition recorded in both sites, thus representing the transition on a national level. ‘Manzé azordi zour’ is a Kreol term meaning ‘the food we now consume’ which refers to the present evolving food system. Undoubtedly, the Mauritian food system has undergone significant changes in terms of the meal structure, food components, preparation methods, increased dependence on processed and convenience foods in the last few decades. The traditional food culture is increasingly being substituted by elements of the Western food culture. A changing food system mirrors significant changes on the social and economic front. For example, most of the food narratives listed in the previous section was based in the context where Mauritius was still classified as an underdeveloped country. Significant socio-economic changes occurred following independence in 1968. Therefore the contemporary food system is associated with a different picture of Mauritius—one that has undergone rapid economic development which has led to a drastic change in the quality of life.

5.2.3.1. The disappearance of some staple foods

The formal food system has been displacing local food production and sale. There has been a decline in consumption of home produced goods and an increased dependence on processed foods most of which are imported. The nutrition transition operates in such a way that the long established staples and dominant foods are eroded from the food system and instead replaced by new food items. As the base of food staples narrow, there is an increased dependence on Western-based foods. Due to globalisation, the demand as well as the supply side of the food system is influenced, therefore the decrease in demand for traditional staples is paralleled by an increase in the production and / or imports of processed foods, typical of a Western-based diet.

It was repeatedly mentioned that many of the traditional foods have disappeared or have become less available from the market³³. For instance, some staples such as breadfruit, tapioca and dasheen, which were widely available and consumed about forty years ago, have now disappeared from our plates.

Who eats arouille anymore? You hardly ever see it these days. I thrived on it when I was younger and it's a pity that it isn't available just like it used to be (Uma, 02/08/2011).

The disappearance of some of those traditional starchy foods has caused an increasing number of people to become more reliant on a narrower base of staples than before. This is a phenomenon referred to as dietary convergence, typical of nutrition transition whereby a decline is noted in the number of staples in the food system (Kennedy, Nantel & Shetty, 2004). This is coupled with a larger share of the population consuming increasingly similar meals. Maya, a research participant from Bambous Virieux emphasizes the fact that when she was growing up, she used to eat a variety of staples, other than rice.

When I was growing up, we didn't eat nearly as much rice as we do now. As rice was a rationed commodity for a long period of time, therefore there was not always enough rice for the whole family for the whole month. Almost every day, my grandmother used to make rotis (Maya, 10/09/2011).

The changing food system in Mauritius has displaced some of the key items in the traditional food system, thus resulting in the distancing from traditional food commodities. Some traditional foods have become increasingly rare or completely disappeared from the market because people have altered their eating habits. Thus the market has adapted to consumers' demands. The changing food system erodes some aspects of the traditional food system, which is driven to varying degrees by the demand and supply sides of the local food system.

As the base of staples has been narrowed over the course of the years, the reliance on rice as the main staple has increased. All of the participants stated that they do purchase rice on a regular basis and for most of them it is their sole staple food consumed on a daily basis. Mauritius has always been entirely dependent on rice imports as rice is not locally grown due

³³ The disappearance of certain foods from the market will be explained in Chapter 6.

to non-favourable climatic conditions. In the year 2007, the volume of rice imported amounted to 79 541 tonnes for domestic consumption totalling approximately Rs 1.1 billion (Rajkoomar, 2008). In order to curb such heavy dependence on rice imports, in 2012, *Vita Rice Limited* started the venture of rice cultivation in Mauritius, specialising in high-quality low glycemic index rice for domestic consumption as well as for export. Under this rice growing scheme, it is anticipated that 1500 hectares of land will be dedicated to rice production. The annual production is expected to be about 1000 to 1200 tons (Vita Grain Group, 2012).

During World War II, there was a shortage of rice on the global scale due to carrying ships being targeted by torpedoes (Maurer, 2011). Consequently, the shortage of rice affected the local food system in Mauritius. Therefore, the government implemented a food rationing policy which resulted in rice rationing and every household was allocated a certain amount of rice per month. The rice was known to be of poor quality³⁴. The rice embargo was lifted in the 1970s (Maurer, 2011) thus making rice more readily available on the market. The increased availability of rice resulted in a decrease in the consumption of some of the traditional starchy staples. Rice became the staple food. It is speculated that rice represented more than a just a food item, it illustrated a new way of living. In the Mauritian socio-economic climate prevailing at the time with looming economic development, perhaps it represented modernity.

As stated above, rice could have potentially been once a marker of a higher social status and thus fostered its adoption in the Mauritian diet. As a result, the base of staple foods was narrowed down to rice. There are various types of rice available on the Mauritian market and the most widely consumed are basmati and ration rice. Basmati rice having a more refined look and being significantly more expensive than the ration rice counterpart is associated to a better lifestyle. For instance, Kassila, a research participant from Bambous Virieux provided insightful information on the topic of rice when questioned about the volumes of rice purchased and consumed.

I buy rice every month. My family consumes a lot of rice. Pretty much every dinner comprises rice. I buy rice from the superette on the Main Road. I also

³⁴ The name 'ration rice' has been kept to describe rice of a lower quality, e.g, parboiled rice, which is of a different grain and lower in quality than Basmati rice. When the term 'ration rice' is used in the contemporary context, it does not refer to rice rations or embargo but refers to a particular type of low quality white rice which is widely consumed on the island.

buy a small packet of basmati rice when I go to Mahebourg. I only use it when I have guests over or to when celebrating a family member's birthday (Kassila, 25/08/2011).

The premise for using basmati rice as opposed to the common ration rice consumed for special occasions was questioned and Kassila responded that ration rice is not special enough. She further proceeded to add that it is a poor man's food and that some people even feed it to their animals. Therefore, it is not appropriate for special occasions. Kassila's food narrative captures the essence of the social nexus of the different types of rice widely consumed in Mauritius. Ration rice is less polished than basmati rice; the grains are coarser and bigger in size and it is considered to be a poor man's food. Basmati rice is considered to be more refined and more aesthetically pleasing. As people climb the social ranks, they tend to gravitate towards the consumption of basmati rice. Also, basmati rice is more expensive than ration rice which then in turn reflects a certain status symbol. More people stated consuming ration rice as opposed to basmati rice in Bambous Virieux and *vice versa* in Tranquebar, Port Louis. The fact that research participants in Tranquebar, Port Louis consumed more Basmati rice on a regular basis reinforces the positional consumption which is a concept put forward by James (2000) as described in Section 2.3.1.1. Positional consumption (James, 2000) is a subtle force driving nutrition transition as it is perceived that the consumption of certain food advances one's position in the social hierarchy.

Some other foods have become less available on the market. For instance, prior to the development in the late 1960s, seafood was not considered to be luxurious. Seafood formed part of the poor man's regular diet.

Now I live in the city but I was born and raised in the north of the island in a fishermen community. Everyone that I knew back then ate fresh seafood and it was not considered to be a luxury... I used to eat seafood such as fish, all kinds of fish you can possibly think of that was still available then, prawns, lobster and saltwater crabs. Crabs used to sell for only a couple of cents. What was once a poor man's food is now luxury food. Now a crab goes for a couple of hundred of rupees (Darren, 20/09/2011).

Overfishing in the Mauritian waters coupled with the high demand for seafood from the tourism industry has spiked the price of seafood thus it is not accessible to every Mauritian. There is a certain prestige attached to the consumption of certain seafood products such as crab, lobster, mussels and prawns. The above-mentioned seafood products are accessible only

by the wealthy and are considered to be luxury food. The food social status nexus of seafood evolved from being easily available and readily accessible to being very scarce and expensive and thus affordable only by the wealthiest in society.

5.2.3.2. *The new food commodities in the diet*

Western foods consumed by Mauritians on a regular basis are breakfast cereal, cheese, meat such as mutton, pork and beef, processed meat, lettuce and salad greens, coffee, salty snacks, burgers, French fries and soft drinks amongst many others (Uusitalo *et al.*, 2005). Part of the data collection consisted of questioning the research participants about the food items purchased on a regular basis. Based on research participants' accounts on what constitutes a typical meal in their household and the food items consumed on a regular basis, undoubtedly new food items have been introduced in the Mauritian diet. Across the spectrum of research participants, the new food items repeatedly reported are processed foods such as cheese, tinned fish, noodles, pasta, canned mushrooms, canned tomatoes and ready-made sauces, frozen goods such as peas, corn, mixed vegetables and fish cakes, processed meat such as burger patties, sausages, chicken nuggets amongst others. Unequivocally all participants, to varying degrees, reported to consume processed foods and have adopted various new food items which were inexistent in the traditional food system. Some of those foods have become deeply embedded in the current food system.

Back in the day, there was no concept of canned tomatoes, all sorts of pasta or chocolate spread. Yet, nowadays those foods are widely consumed and so do I. We eat very differently from what we used to back in the days (Yvette, 18/08/2011).

5.2.3.3. *Comparative assessment of the types of foods consumed between the two sample groups*

Research participants were asked to describe their regular shopping lists and the analysis of the types of foods consumed revealed a subtle difference between the sample group in Tranquebar, Port Louis and that in Bambous Virieux. One of the premises of the phenomenon of the nutrition transition is the distancing from traditional diets which are low in calorie, high in complex carbohydrates and low in fat for the adoption of diets that are predominantly energy-dense, high in calorie and high in fat.

Therefore, across the developing world, an increase in the consumption of meat has been reported. In Tranquebar, Port Louis, seven out of nine of the research participants stated consuming meat on a regular basis. Out of the seven research participants³⁵, one of them reported not consuming meat but she still partakes in the purchase and cooking in order to cater for members of her family. In Bambous Virieux, a lower figure was recorded for the consumption of meat. Many of the participants expressed the desire to consume more meat but are restricted by the price. Six out of the 11 participants mentioned consuming meat on a regular basis; however for most of them, it is prepared as a special meal to be enjoyed by the family over the weekend. Annelise, one of the research participants from Bambous Virieux says:

When I get paid, I make sure that we have some meat on Sunday after mass. Sometimes, I manage to save enough during the week to buy a frozen chicken or at least some drumsticks for the children. (Annelise, 28/07/2011).

Meat is considered as a treat and a luxury food, more so in Bambous Virieux than in Port Louis. All nine participants in Port Louis reported purchasing processed meats such as sausages, canned meat, burger patties and nuggets on a regularly basis. In Bambous Virieux, for the same category of food, *i.e.*, processed meats, only eight research participants³⁶ reported regularly purchasing such products.

Canned foods, with particular reference to mushrooms, corn, peas and beans, are new additions to the Mauritian food system. These types of food products were virtually unavailable two decades ago and once they were introduced in the food system, they rapidly became essential components of the Mauritian diet. All of the participants across both study sites have mentioned purchasing at least one particular kind of canned food. It is interesting to note that across the sample group, most of the participants reported purchasing and consuming canned mushrooms on a regularly basis. Fresh mushrooms are not available on the local market, therefore, canned mushrooms are the only source of mushrooms on the island. It is a product that was introduced approximately 15 to 20 years ago but has since become so embedded in the food system that it is no longer viewed as a new addition to the diet. Conversely, it is seen as part of the Mauritian diet. As new products are used by an

³⁵ Out of a total of nine research participants

³⁶ Out of a total of 11 research participants in Bambous Virieux

increasing share of the population, the perception on certain foods change. They are no longer viewed as Western food items but as essential ingredients in the contemporary Mauritian cuisine.

This also stands true for pasta which is increasingly available on the market and has become an important meal in the Mauritian cuisine. Macaroni is the most common type of pasta consumed. In the food narratives documented about the traditional food system, two of the participants stated that macaroni represents a fond food memory. Therefore, it can be inferred that its introduction on the local food market predates the accelerated pace of nutrition transition experienced over the last two decades. However the reported wide consumption of pasta is a new phenomenon.

Six out of nine of the participants in Tranquebar, Port Louis³⁷ mentioned that they have purchased already-made pasta sauces or cheese sauces in the past. Only two of the participants stated that the above-mentioned are items that are regularly purchased. On the other hand, in Bambous Virieux, only four of the participants³⁸ reported having purchased already made sauces and none of them mentioned it as a regular item on their grocery list.

The above mentioned transitions in the food system contribute towards reinforcing the picture of a rapidly changing food system. Food commodities that were not part of the traditional food system are being increasingly adopted in the modern food system.

5.2.3.4. *The emotional connection with the contemporary food system*

Two of the participants used the term ‘box food’ to refer to the new food items in the system. Some of the research participants referred to some of the new food items in the diet as ‘box food’ because of the packaging.

We now eat a lot of ‘box food’...What I mean by ‘box food’ is frozen fish fingers, burgers, chicken nuggets and sausages. We all eat those kinds of foods nowadays, it has become the norm. When I was growing up, I had no clue what a fish finger or chicken nugget was, and here am I now eating these foods on a regular basis. We have come a long way with respect to what we consume. A drastic change indeed (Jenna, 12/08/2011).

³⁷ Out of a sample group which consisted of nine research participants.

³⁸ Out of a sample group consisting of 11 research participants.

Jenna's account above captures the evolution of food over time. The prevailing Mauritian food tradition evolved from one mainly consisting of fresh vegetables such as gourds, tubers, starchy staples and seafood to a food system that has as major component 'box food.' The term 'box food' is representative of processed foods which is increasingly occupying a larger share of the Mauritian plate. Products which were unknown to the previous generation have become embedded in the present food culture. This captures a drastic move from the traditional food culture to the present Western influenced one. Moving away from diets largely based on seasonal locally grown vegetables to 'box food' shows that some aspects of the nutrition transition occurred over a short span of time, more specifically over one generation.

There is a significant difference between the types of foods consumed by the youth as opposed to the food their parents consumed 30 to 40 years ago. The new generation is more inclined to Western foods and those kinds of foods have become regular food items in their diets. Referring to his nephew, Uncle Gaby points out the following:

Mathew doesn't eat nearly as many vegetables as I did and still do now. He is very much into eating out. His cooking is restricted to frying the contents of a frozen box which is usually some form of processed meat. Alternatively, he eats tinned foods. As you can tell, he didn't grow up in a world where eating boiled bananas consisted of your entire meal (Uncle Gaby, 16/09/2011).

The above narrative partly reveals perception about food. As mentioned by Uncle Gaby, a meal that comes entirely from a box is hardly to be considered food to him. He makes clear reference to the type of food consumed being a result of the type of society one is situated in. For instance, he came from a poor background where food was not always available, causing him to steal sugarcane on his way from school to feed himself during the harsh times. However, his nephew is accustomed to cheap processed foods that are readily available which have influenced his dietary patterns. This argument can be extrapolated to conclude that the prevailing dietary pattern is essentially a result of the type of food available on the market.

Many of the research participants mentioned that the elderly people are more likely to retain their traditional food culture even though there are aspects that have changed. For instance pasta along with some Western-based food items have been adopted as part of the Mauritian

diet. However, there are other food items that remain unpopular amongst the elder generation. This shows that even though nutrition transition is a reality on a national scale, however on a more localised level, some people are relatively further along the nutrition transition. This is particularly applicable to the older generation as opposed to the younger people. The younger generation is more predisposed to adopting Western-based foods as they have lost touch with the typical Mauritian food culture.

For example, how often do you see an old granny eating a pizza? Not very often. The penetration of fast foods in our culture has particularly influenced the young people and not particularly the older generation (Dani, 06/09/2011).

Dani's account makes reference to the younger generation being further along the nutrition transition than the older generation. This can be partly attributed to the fact that the younger generation is more attuned to the Western lifestyles. A changed food system, far removed from the one the previous generation experienced, is their daily experience. The younger generation has been subject to aggressive marketing strategies and is more abreast to the Western culture through the popular media and therefore they are further along a lifestyle transition as well as the nutrition transition.

5.2.3.5. *Volumes of food consumed*

Research participants in both study sites have reported that there has been a considerable increase in the amount of food consumed in the prevailing food system than they did in the traditional food system. From the research participants' lens, this is attributed to the fact that the majority of the population is no longer living in dire poverty. As the population has been lifted out of poverty, this has created means for more of their disposable income to be allocated for food purchase. Also, another reason put forward by the research participants is that the economic progress experienced in the country has been paralleled by a significant increase in the standard of living. This lifestyle improvement meant that people no longer had to struggle to put food on the table but it was more easily accessible. One of the research participants from Bambous Virieux states the following:

When I was growing up, many a times my siblings and I had to go to bed partly hungry. It was no different to our friends, neighbours, we were all poor

and all parents struggled. There was no shame in it, we just had to endure it (Vassen, 27/09/2011).

After recalling what life was like for this 59 year old man, he paused to think whether there are still people living in such poverty as he did in his younger age. As a matter of fact, the level of poverty in Mauritius has decreased significantly since the end of British rule due to the implementation of economic macrostructural policies and measures as discussed in Chapter 4.

Some of them mentioned that food was not largely available as it is today. Even though traditional retail stores were very common, they were not filled with food as supermarkets are today. They did not have countless number of shelves packed with various food items. Conversely, they mostly provided basic food items. This was partly the economic reality at the time whereby the average Mauritian citizen could not afford purchasing large quantities of food. Mauritius was still an underdeveloped country with a high poverty incidence. Food was not as widely available and as widely consumed as it is today and the little that was available was stretched to feed the family.

Nani, an 81 year old research participant from Tranquebar, Port Louis, stated that that the mothers and grandmothers of her generation were highly capable of stretching food supplies for long. For instance, families of six or seven were fed a dinner made from two eggs, supplemented by some rice or bread. The economic reality at the time was harsh and people had to adapt to such conditions, *i.e.*, families could not afford the volumes of food that they would have wanted or merely enough to constitute an adequate nutritious meal. She further explains that the amount of food consumed by a typical family of four today was more than most relatively larger families had about 40 to 50 years ago.

As children, many of the research participants looked forward to dinner time because very often it would be the only meal of the day. According to Anjani, a research participant from Tranquebar, Port Louis, it was common to omit breakfast because they could not afford to feed the whole family breakfast.

...most people struggled to put food on the table for one meal, therefore the concept of having three meals a day was pretty much inexistent and unaffordable (Anjani, 23/08/2011).

Some of the research participants stated that the increase in food consumption occurred as a result of an increase in purchasing power. As the conditions of life changed in Mauritius in the aftermath of industrialisation, income levels as well as the standard of living of Mauritians rose. As a result, Mauritians could afford purchasing a wider range of food products and larger volumes of food.

Additionally, it became apparent that research participants who undertook their grocery shopping at a supermarket consumed far more than those who shopped at a local retail store. This will be further discussed in Chapter 6. During the interview process conducted with the research participants from both study sites, they were asked about the typical items in their food basket during their grocery shopping sessions. Those who mentioned shopping solely from a supermarket listed far more items than those who shopped from their local retail stores. This could be partly attributed to the fact that supermarkets offer a wider range of food products as opposed to retail stores and also due to the fact that they promote bulk buying.

5.2.4. Contrasts between Bambous Virieux and Tranquebar, Port Louis

The prevailing food culture is a mix of traditional and modern Western-based diet. Some aspects of the traditional food system have been retained by Mauritians. The change is towards a more Western-based diet with new food items and new food preparations methods which were unknown to previous Mauritian generations. The food system has undergone profound changes and some of those changes have been adopted and became part of the Mauritian lifestyle. It is not a complete abandonment of the traditional food system nor is it entirely Western-based, rather it is a mix of both. Components of the Western diet have penetrated the traditional Mauritian food system while some aspects of the traditional food culture are still prevalent.

Participants in Tranquebar, Port Louis and Bambous Virieux identified basic food commodities such as rice, oil, milk, pulses, cheese, tea, coffee along with an array of vegetables consumed on a regular basis. One of the food items repeatedly mentioned by the participants in both sites is pasta, which is a Western-based food and relatively uncommon in the traditional Mauritian diet. Pasta has been adopted by the Mauritians and now constitutes a

regular item in the diet. In addition, processed commodities such as frozen peas and corn, canned tomatoes and mushrooms have been adopted as regular items used in the cooking process by most of the participants. The current dietary patterns involve the consumption of certain food items unknown to previous generations but widely consumed inasmuch that they have become embedded in the Mauritian diet.

There were some contrasts between participants' accounts in Bambous Virieux and Tranquebar, Port Louis. As previously stated in the literature review, urbanisation is one of the main causal factors behind the dietary transition noted across the globe. Consequently, it is anticipated that residents in urban centres are at a more advanced stage in the nutrition transition than their rural counterparts. To some extent, this was substantiated by the research participants' accounts.

Based on the data collected, the diet of research participants in Bambous Virieux is closer to the traditional Mauritian diet. Their diets still largely consist of large volumes of vegetables. One of the underlying reasons behind their relatively higher consumption of fresh produce is because some of them grow their own vegetables. A great proportion of the land in Bambous Virieux is under agriculture which employs people in the area and thus people have more access to fresh foods as opposed to processed foods. In addition, Bambous Virieux is one of the largest fishing communities on the island, therefore they consume a lot more fresh seafood as opposed to the other residents.

Even though the basic food items purchased by research participants were similar in both study sites, there were some subtle differences noted other food products purchased on a regular basis. The recurrence of food items such as instant soups, already prepared rotis, biscuits, snack bars, already made pasta sauces, dehydrated stock powder, pre-prepared mashed potatoes was higher amongst research participants in Tranquebar, Port Louis as than those in Bambous Virieux. For instance Dani, a research participant from Tranquebar, Port Louis mentioned buying the typical fresh produce from the wet market and the usual common food ingredients from the supermarkets. However, Dani admitted to buying items such as whipping and dessert cream, lasagne sheets, frozen ready to be deep fried snacks like samoosas, chilli bites, wantons, dimsums *etc.* None of those food items were mentioned by

any of the participants from Bambous Virieux. Those above-mentioned food items are superfluous new items on the market and all of them are processed, to some extent.

The above-mentioned findings echo the different lifestyle of the research participants whereby those in Bambous Virieux are closer to the typical Mauritian lifestyle and diet while their urban counterparts are further ahead in the dietary transition. The basic necessities were similar in both study sites, however beyond those there were subtle differences suggestive of a rural urban dichotomy. Even though Mauritius is a small island where people live in very close proximity and the rural and urban divide is not severe, there are differences in the dietary patterns by large caused by urbanisation. Port Louis has a rich food geography whereby some form of food is available at every street corner. There are mobile vendors, hawkers, large fast food chains, supermarkets and restaurants. Food is abundantly available in the capital city which is in contrast to Bambous Virieux which has very few operating food outlets.

5.2.5. The Emotional Connection with the Traditional and Current Food Systems

As already addressed within the earlier sections of this chapter, there are mixed feelings about the changes experienced in the food system. Some participants described the traditional food system with such passion and vehemence while descriptions of the current food system did not evoke the same type of feelings. By their reaction to the mention of the traditional food system, most participants suggested that it was better back then but they have had to adjust to changing aspects of the food system. This suggests that for some of them, it was not a choice but they are simply adapting to a fast paced life.

For instance, the term ‘box food’ articulates a lot about the perception of food. Although ‘box food’ is acceptable to the younger generation, for those who have experienced the traditional system, ‘box food’ resounds with ‘almost not food.’ For some of the participants, food used to be a passionate affair, one to which many hours of the day would be dedicated to by their mothers. Nowadays, with the proliferation of street foods and the availability of convenience foods from supermarkets, cooking has been reduced to a mere mundane activity.

Many of the research participants' parents struggled to put food on the table as poverty was rife and yet there are so many positive and good memories attached to traditional foods. On the other hand, some participants mentioned that they enjoy the variety of foods now available on the market as opposed to then when diets were based on a narrow variety of foods. In addition, some women mentioned being relieved by the introduction of products such as milled flour and ground rice on the market. The food system responds to changes in the economic and social structure of society which in turn reinforces these changes. As such the absorption of women in the labour market has opened up a market for convenience foods as more time is dedicated to income earning activities. However, this transition towards convenience foods as a result of women having less time to dedicate to activities such as cooking, has caused a loss of culture and a way of life which increasingly furthers dietary transition.

5.3. CONCLUSION

This chapter has explored the lived experience of the traditional food system and that of the rapidly changing food system. By presenting the information about the type of foods, quality and quantity of foods consumed in the past, the differences between the food systems- past and present were highlighted. In order to understand the lived experience of the traditional and current food systems, different aspects of the system have been explored. The dietary pattern in Mauritius has evolved from being highly dependent on local and seasonal vegetables to one that is increasingly dependent on Western-based foods. The evolving food system has resulted in the disappearance of certain staple foods as they are increasingly driven out of the market through the introduction of new food items and the associated decline in demand.

There is a strong emotional connection with traditional foods and the way food was prepared. Research participant expressed nostalgia when speaking about traditional foods and this can be partly attributed to food representing more than just a commodity. It is a bearer of memories. The lived experience of the traditional food system has been a challenging one and yet memorable. The current food system evokes different emotions. Some of the participants do not value processed foods and 'box food' as much as they value fresh produce. It is to be reiterated that consumption represents more than a feeding mechanism; in this instance it

represents a loss of lifestyle and culture. Considering the fact that the sample group consisted mostly of older people, they projected more resistance towards the changing system as opposed to the younger generation. However, they have acknowledged that due to economic and social progress, such changes are inevitable.

6. STRUCTURAL CHANGES IN THE FOOD SYSTEM IN MAURITIUS

6.1. INTRODUCTION

As stated in the literature, the nutrition is a multi-faceted phenomenon which not only impacts the types of foods consumed but also its production, distribution and procurement (Lang, 1999). Whilst the previous chapter presented the lived experience of the traditional and the currently changing food system, this one focuses on some of the structural changes in the food system. As a result of the changing food system, the means of food production has been altered whereby short food supply chains have been replaced by increasingly more complex processes (Rayner *et al.*, 2007). The globalisation of the Western diet has impacted food demand as well as food supply. Hence this chapter explores some of those avenues.

One of the most significant differences between the traditional food system and the currently evolving one revolves around food procurement. It has evolved from a process where food supplies were procured from the local retail store, usually not too far away from home, to a food market dominated by supermarkets. This has resulted in the displacement of some aspects of the traditional food system. The above mentioned themes will be further discussed in the following paragraphs.

6.2. CULTIVATION OF VEGETABLES AND REARING OF ANIMALS FOR OWN CONSUMPTION

The economic reality at the time was that Mauritius was an agricultural society therefore most people were involved in agricultural activities. As such, a significant part of the traditional food system was the short food supply chain whereby people were very involved in the cultivation of their food, *i.e.*, they actively participated in the food system. From research participants' description of the traditional food system, it became evident that in the past, people cultivated the bulk of their food. The traditional food system in Mauritius reflected the characteristics of traditional agricultural societies where the majority of the food

consumed was produced locally. Agricultural societies do not partake in passive consumerism which consists of long and opaque chains of food supply (Worsley, 1998). On the contrary, in traditional agricultural societies, the chains of food supply are short and communities are connected to their food system. Agriculture being the main economic activity on the island up until the 1980s means that a larger share of the population was involved in some form of agricultural activities, whether on a large or small scale.

Most of what we ate came from our food garden. I would say that 80% of what we ate was fresh, for example most of the vegetables came from our own garden, the occasional fish was fresh from the sea, caught on the day itself and the eggs laid by our chickens. The rest of our food supplies such as flour, oil, rice, salt and sugar were purchased from the store but other than, the rest was home-grown. Very few of our food commodities came in boxes and tin cans (Maya, 10/09/2011).

In addition, another aspect of the short chain of food supply is that families reared animals for their own consumption. Even though meat did not constitute a significant part of the diet, people reared cattle and chicken. According to some research participants, the proportion of animal sourced foods excluding milk made up a very small proportion of the diet. The consumption of meat was restricted to special occasions. Many of the respondents recall stories of rearing animals in their backyard.

Throughout my childhood, I have had chicken and goats. Every day after school, I used to feed the chicken. At the age of nine, my father taught me how to slaughter a chicken and I have seen him do it many a times. My youngest sister used to collect the eggs and sometimes we would eat them and at other times, we would sell some of them for some extra cash. My father used to bring special grass from his field for the goats. He would carry the grass attached in a bundle on his bicycle and then ride it home. My siblings and I used to feed them. They lived in a very small enclosure in the backyard. My father used to slaughter a goat only on very special occasions and usually it would be following a religious festival or when the whole extended family would get together (Anand, 07/09/2011).

In the current food system, the rearing of animals and small scale agricultural activities for domestic consumption is becoming increasingly rare. To some extent, it is still practised in some villages whose economy relies on such activities, but there has been a significant move towards a cash-based food system. Five research participants from Bambous Virieux, the rural site practised agricultural activities as a means of supplying their diets with more

vegetables and only two research participants from Port Louis practised any food cultivation. However, it should be noted that Bambous Virieux has a long history of agricultural production as opposed to Port Louis where land is limited.

One of the striking differences between the previous food system and the current one is that less food is produced for one's own consumption but instead people rely increasingly on the market. Sam, one of the research participants from Bambous Virieux recalled that when he was a teenager, most of his peers actively engaged in agricultural activities. Nowadays youngsters no longer partake in agricultural activities and due to the diversification of the economy; there are so many more lucrative and attractive economic opportunities. As a result, less people are involved in agricultural activities thus making them more dependent on the market. As agricultural is sidelined, Mauritians become more reliant on the changing food market.

6.3. THE COMMODIFICATION OF MEAT IN THE PREVAILING FOOD SYSTEM

One of the themes emerging from the information gathered from the research participants is the value attached to the consumption of meat. In the traditional Mauritian food system, meat and animal derived foods, except for milk, were considered to be luxurious food items not accessible to all. As mentioned above, the consumption of meat was limited to special occasions. However, participants' dietary patterns reflect an increase in the consumption of meat and animal sourced foods. Since meat has become a regular item in the Mauritian diet, the term 'commodification of meat' is being used to describe this notable shift in diet composition. The increased consumption of meat is one of the main shifts noted in the structure of research participants' diets.

Any type of meat was considered a luxury and was only consumed on very special occasions such as for New Year or to celebrate a wedding (Laure, 29/07/2011).

It was considered to be a luxury because the economic reality at the time was that Mauritius was an underdeveloped country with high levels of poverty. As such, people could not afford

to purchase meat on a regular basis, therefore meat was only consumed on special occasions to celebrate an event. During fieldwork, it became very apparent that meat now constitutes a significant proportion of the diet which mirrors the betterment of living conditions in Mauritius. Uusitalo *et al.* (2005) argues that there has been a rise in the consumption of processed meat, which is typical of Western dietary patterns. Based on research participants' accounts, it became very clear that they all consume relatively more meat than they did when they were younger³⁹.

Food trade figures from the CSO suggest that an increase of about 120% has been noted in the FIB of meat and meat preparations in Mauritian food system from 1998 to 2009. The doubling of the FIB of meat and meat preparations echoes the voices of the research participants.

Now, meat is an integral part of the diet. We eat vegetables for dinner but it is almost like a side dish and my son doesn't enjoy eating vegetables. So, he needs some form of meat component in every dish. Therefore, I alternate between chicken, lamb or venison when it is hunting season. Sometimes, I even make some fish. Only on Mondays and Thursdays, we don't consume any meat products because we fast on those days (Layla and Vassen, 27/09/2011).

The previous account reinforces the fact that meat is no longer considered to be a luxury but more of a necessity and part of the basic components of the diet. Most of the participants, irrespective of the site, mentioned that meat was considered a luxury item, which was not consumed on a regularly basis and was eaten to celebrate special occasions. However, through changes in the food supply, meat no longer upholds such a place in the food system. Some participants suggest that because meat is more readily available, people are more likely to consume more of it.

These days, everybody eats chicken...but when I was growing up, we would have it at least once a month as a treat or on a very special occasion. On top of that, we reared our chicken (Anand, 07/09/2011).

³⁹ Some participants have recently decreased the proportion of meat in their diet due to health reasons. Nevertheless, this is still significantly more than the amount of meat they consumed when they were younger.

As a result of the commodification of meat, it now constitutes a larger proportion of the diet as it did previously. Never before in the Mauritian food habits has meat occupied such a prominent place. It represents one of the elements of the nutrition transition whereby the consumption of high fat foods increases along with a noted decline in the consumption of fibre-rich foods. As mentioned by Anand (07/09/2011), vegetables, which would constitute the bulk of the diet now, only count as garniture components. This shift points out to traditional food consumption patterns being substituted for Western-adapted ones.

The commodification of meat is a reality for all Mauritians; however for some people meat on a daily basis is out of their price range. Nevertheless, meat is consumed more often than it was 40 years ago. The fact that meat is so readily available is a clear indication of the large shift in diets. 40 years ago, people reared their own animals for meat consumption or purchased from their neighbours, as opposed to the present system where meat is available from supermarkets but yet not accessible to all due to high prices.

Some of the participants from Bambous Virieux expressed some disappointment when discussing the topic of meat as they would like to consume meat on a more regular basis. There is some prestige attached to the consumption of meat while a diet largely based on vegetables is seen as the poor man's diet. There is a body of literature on meat consumption and social structures and one of the arguments put forward is that the causal factors behind meat consumption are economic and social at large (Gossard & York, 2003).

As the daily realities of the research participants were further investigated, it became clear that other than the changes observed on a macroscale, there were more subtle changes noted in the current food system. For instance, the introduction and exposure to convenience food ingredients has altered food preparation practices. As a result, cooking has been rendered simpler to accommodate the needs of a larger pool of women absorbed in the working sector.

6.4. FOOD PREPARATION

A major aspect of the traditional food system that has evolved is food preparation. Food was prepared in a very particular way requiring a set of skills passed on from mothers to daughters. Food preparation was a long process and it was prepared in a different way as it is

today. For instance, firewood was used for cooking; this implies that there was the process of gathering the wood before the actual food preparation process. Most of the research participants mentioned growing up in a household where firewood was used for cooking. Consequently, food preparation was a slower process.

Sometimes, after school, my brother and I had to go look for wood. We didn't have to do it every day but only when my mother would ask us to. There was a special designated area for cooking outside. Back then, everyone used firewood, I can't recall of anyone owning a gas stove. It was the norm (Sam, 07/09/2011).

One of the research participants, Vassen from Bambous Virieux states that the move from firewood to gas stove cooking is an indication of lifestyle change and evolving food system in Mauritius.

Back in the days, firewood was our only option. Now, people don't have time to collect wood and slow cook food for hours. A gas stove makes cooking so much easier and faster. Long ago, cooking on firewood was the norm whereas now the norm is a gas stove. You see how things have changed (Layla and Vassen, 27/09/2011).

Some of the foods consumed by previous generations are still consumed today, however, the food preparation process has changed. In some instances, the core of the dish still remains the same but different ingredients or new ingredients are used in the preparation method.

In my time, pasta used to be considered to be a very special meal... it was cooked with condiments such as thyme, parsley and onions. Nowadays, my children and grandchildren, eat pasta with cheese and breadcrumbs, which was unheard of during my time (Nani, 27/07/2011).

According to the participants, convenience cooking was a concept that was nonexistent. People used to grind their own ingredients instead of simply purchasing them from the store. The following excerpt captures the change in the food preparation observed over the years. It provides an example of the distancing from traditional food preparation ways to more convenient and modern ways.

Gréau pudding is a good example. My mother used to grind the wheat using a machine that looked like two perfectly shaped oval rocks stacked on top of each other with a small gap in between them and a handle on the top one. After grinding, she would grill the granules. Afterwards, she would cook the granules with sugar, milk and some other ingredients. Then leave it to rest and there you go, you have a pudding. Nowadays, all you need to do is boil the milk, sugar and other desired ingredients while you walk to the store to get the grilled granules and eventually mix them all together to make a pudding. A process that used to take most of the day to execute now only takes a few minutes (Darren, 20/09/2011).

Moreover, many of the participants recall their parents making their own spice mixes used in their daily cooking. Some mentioned that they used to grind and prepare their own curry mix and that involved sourcing all the seeds, roasting them and grinding them on a ‘roche cari’ However, they argue that now, they can purchase commercially produced curry powder sachets from the store, and even though the taste does not compare to freshly ground spices, the convenience makes up for it.

Not only is the food different, but the way of cooking has changed. I grew up without a refrigerator, therefore everything we consumed then was fresh and I can’t recall eating frozen meat or fish. ...the condiments were fresh from the garden, no mass-produced bottled dried herbs were used (Yvette, 18/08/2011).

As mentioned above by the research participants, many aspects of the traditional food system in Mauritius have changed. Traditional foods are being replaced by increasing Western food norms, time-consuming lengthy food preparation is being substituted by convenience cooking and people are far removed from the food production process. Additionally, one of the other aspects of the changing food system is the change in purchasing pattern observed over the last couple of years. This will be further discussed below.

6.5. FOOD PURCHASING PATTERN

The prevailing purchasing pattern observed amongst the research participants is that the bulk of the grocery shopping is done at the supermarket. Most of them mentioned that the local traditional retail store⁴⁰ is a backup plan when they run out of food commodities. In both study sites, most of the research participants reported a notable move away from traditional

⁴⁰ In this particular context, retail store refers to mom and pop stores.

retail store to supermarket purchasing. This mirrors the supermarket revolution which has swept the country over the last decade. There are mixed feelings about the distancing from traditional ways of grocery shopping because on the one hand, local retail stores were a central part of community life in the past and on the other hand, supermarkets while they do offer better products do not provide the social feel as retail stores do. Customers are very satisfied with supermarkets due to the wide range of products offered at lower prices. Wet markets still dominate as the main selling point of fresh fruits and vegetables.

6.5.1. The Disappearance of Local Traditional Retail Stores

Based on observation during fieldwork in both study sites, it became apparent that many of the retail stores had closed down. Initially, it was assumed that some of the retail stores had closed their shutters due to lunch or tea breaks. However, seeing that they remained closed at all times of the day made it very clear that the shutters were permanently closed down as the stores were no longer in business. The research participants confirmed the fact that many of the retail stores in their vicinity closed down in the last five to ten years. To many of the participants, retail stores closed down because they were outcompeted by big supermarket chains and other players in the food industry. As people flock to supermarkets, those traditional stores suffer incremental loss. Laure, a resident of Port Louis recalls,

I think, about six or seven retail stores have closed down since we moved in the area, over 20 years ago. Most of the stores have closed down in the last 10 years or so. One store closed down because of a fire and the rest were forced out of business (Laure, 29/07/2011).

When referring to the traditional retail stores, many of the research participants provided anecdotes, stories and a lot of memories attached to those stores. During research, it became apparent that the local traditional retail stores were more than mere food selling points. They were the life of the community and the meeting place for many people. It was a focal point of the community life. The local store was a place of conviviality and discussion, in other words, a place of prominence in the community life.

If I remember correctly, when I was growing up, there were about two stores on every street and they were the heart of the community. The store was the place where all the men in the area used to hang out to enjoy a drink and talk

about politics, world events or the latest news in town. With the closing down of retail stores, the community has lost the sense of connectedness because no one hangs around the supermarket. In a way, to some extent, this has altered the social life that existed previously (Dani, 06/09/2011).

Many of those retail stores are small family businesses passed on from one generation to the next. Up until the mid-1990s, retail stores remained the only selling point of food commodities, except for fresh produce. However, the landscape of the food market has significantly changed causing supermarkets to be favoured over traditional retail stores.

Due to food rations about 50 years ago, every household were registered at specific 'la boutik Sinoi' where people would collect their monthly basic food commodities. Every family was allocated a certain amount of rice, oil, flour etc... Now, most of them are out of business. Suddenly, we all became supermarket shoppers (Sam, 07/09/2011).

The rise of supermarkets in Mauritius has caused retail stores to lose their clientele and thus force them out of business. Some local stores have managed to remain in business, most likely because they offer a credit facility to their customers. Shopkeepers have established a relationship of trust with the customers, and as a result can offer credit facilities whereby commodities purchased during the month can be paid off on pay day or at the end of the month. This helps members of lower income groups because it makes food accessible to them in times of financial hardships.

Some retail stores remain in business because they manage to make some profit mainly on the sale of bread⁴¹, newspapers and the occasional food and household items. People make their unplanned and unexpected purchases at retail stores. For example, if between supermarket shopping trips, they run out of a certain item, then they use the retail store as a backup plan.

41 Most of the research participants purchase bread on a daily basis. The bread purchased is a bun made of white flour. In the common language, it is known as 'pain maison'. Bread is baked at local bakeries everyday and delivered to retail stores by the baking companies. Therefore, early in the morning, people go to the closest retail stores to buy their daily bread. This is common practice amongst the Mauritian population. The weight and price of 'pain maison' is fixed by the Ministry of Trade, Commerce and Consumer Protection. The weight is fixed at 100 g and the price as of June 2012 is Rs 2,70 (approximately \$ 0.08).

Say I'm preparing food and I realise that I've run out of salt, so then I rush to the local store and buy a packet of salt. I can't wait until my next supermarket in Mahebourg⁴² trip to buy salt. I only go to the retail store when I really have to. Also, you know, sometimes, a family member comes to visit and I don't have any soft drinks at home, so then I send one of my neighbour's kids to the shop to buy a bottle of cool drink (Mrs Veena, 26/08//2011).

Retail stores still have a place in the Mauritian society but they have lost the place of prominence in the food retail sector. They are still present but they are increasingly being replaced by supermarkets. This noted shift from retail store to supermarket food purchase reflects broader changes in Mauritian lifestyle.

6.5.2. The Rise of Supermarkets in the Mauritian Food Economy

As stated above, the decline of food purchase from local traditional stores has occurred as a result of increasing supermarket purchase. The new food system has been displacing some of the food distribution practices established over a long period of time. Supermarkets are known as the “markers of a modern economy (Abrahams, 2009:122).” They offer a large variety of products, all housed under one roof. Hawkes (2008) argue that supermarkets further nutrition transition by firstly introducing new food items on the shelves. Through aggressive marketing measures and competitive prices, customers are drawn to supermarkets. They are set up in such a way so as to increase the number of visits and the amount spent per visit per customer (Hawkes, 2008). Due to their large economies of scale, in-house branding and high efficiency, they offer highly competitive prices.

Mauritius has experienced a wave of supermarket expansion over the last 15 years. In the early 1990s, few large supermarkets were present on the island, however in the mid 1990s, a rapid growth was recorded in the supermarket sector. As a result, an increasing number of international brands have established their presence on the local food market. They are Carrefour, Pick n Pay, Shoprite, Spar, amongst others. There has been a significant increase in the number of locally owned supermarkets. Winner's is a local supermarket chain which grew significantly from 1994. The figure below shows the supermarket points on the island:

42 Mahebourg is the closest economic hub to Bambous Virieux.

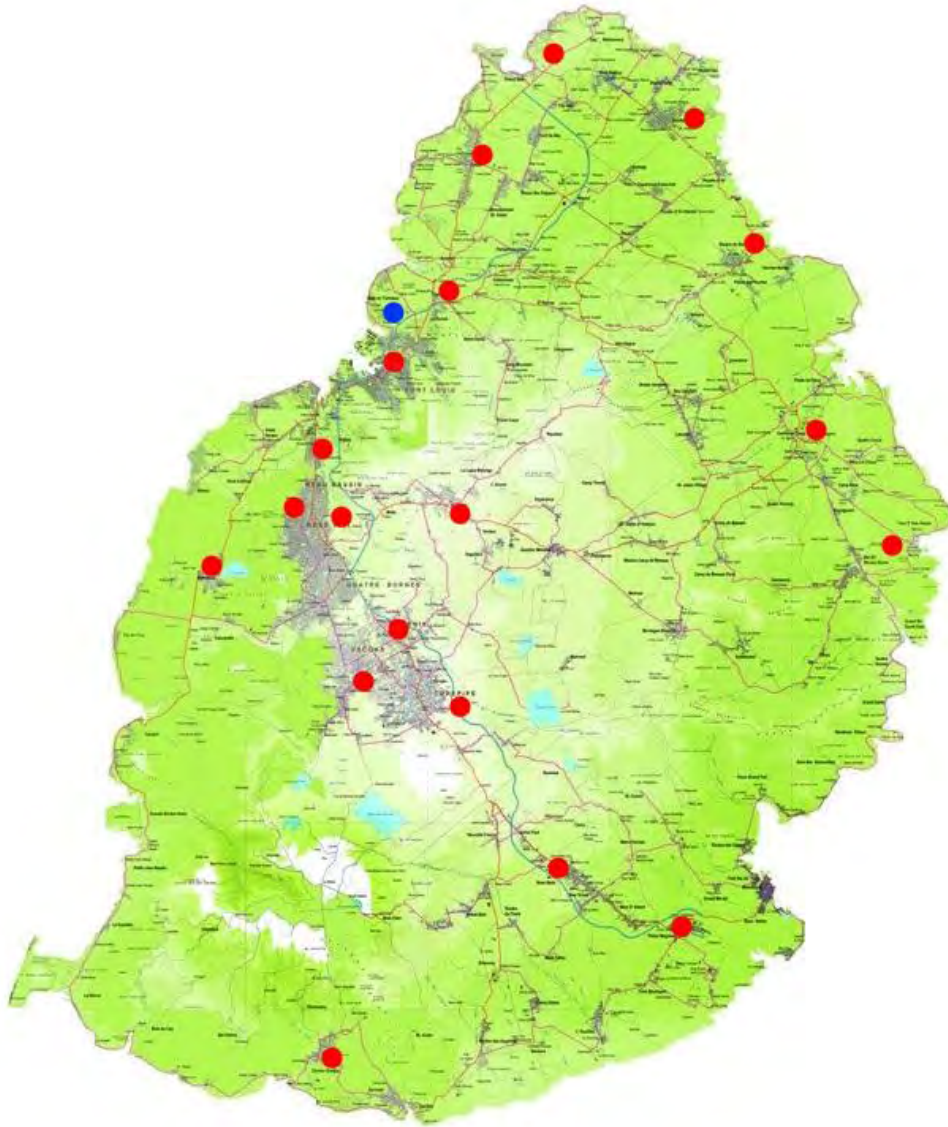


Figure 6.1. Winner's retail points

The blue dot in Figure 6.1 represents the first Winner's supermarket established in Mauritius and since 20 branches have been noted across the island since 1994. Even though, the figure above is limited because it only provides the growth of one local supermarket chain, it encapsulates the essence of the growth noted across the island. The new food system is displacing traditional food selling points.

The rise of supermarkets in the local food economy may cause potential consequences the health of consumers. Hawkes (2008) state that supermarkets specialise in processed foods because they offer the largest profit margins. It is also an issue of concern because they

promote customers to buy more than initially intended and foods on promotion are usually high-fat, high-sugar foods.

Supermarkets are far more prominent in the food landscape in Port Louis than it is in Bambous Virieux. In fact, Bambous Virieux only has one superette and the inhabitants have to travel either to Mahebourg or Flacq to access supermarket foods, see Figure 3.5 in Section 3.3.2. Tranquebar, is in the vicinity of the CBD in Port Louis and therefore has experienced a larger diffusion of supermarkets. As such, a larger share of research participants in Port Louis reported to purchasing food commodities from supermarkets than in Bambous Virieux. All nine of the research participants from Tranquebar stated that they regularly purchase food from supermarkets. Three of the research participants stated that food purchase occurs on the route to and from work while the rest of the sample group in Port Louis make special trips to supermarkets- some are within walking distance in and around the study site while most of them are located in the CBD which is still within walking distance. In Bambous Virieux, eight of the research participants mentioned conducting supermarket purchase on a regular basis. This involved planned trips to another area and as most of the research participants use public transportation, they can only buy a limited amount of goods. Therefore, they are less likely to buy superfluous items and purchase mostly the essentials.

6.5.3. *Wet Markets*

The literature states that in many developing countries undergoing nutrition transition paralleled by changing food systems, traditional markets are favoured over supermarkets in the fresh produce trade sector (Arda, 2006). The latter argues that there is a perception of freshness attached to traditional markets which favours them over supermarket retail of fresh fruits and vegetables (Arda, 2006).

Wet markets⁴³ have retained their place of prominence in the sale of fresh fruits and vegetables in Mauritius. They have survived the various changes in the food system and they

⁴³ The way wet markets function in Mauritius is that vendors purchase a license from the municipality or district council and each vendor is assigned a particular spot at the market. Wet markets are held on a particular day(s) during the week in a specific area. Depending on the geography, some wet markets serve a large area while others serve smaller communities. Some wet markets have been formalised. For example, some of them are now housed in an open building (warehouse-like) so that vendors are protected from the weather. When markets are formalised, vendors are provided with a space with running water

still dominate the fruits and vegetables market in Mauritius. They have retained their clientele and they serve both urban and rural areas. Wet markets are important features of the Mauritian food economy because they are the main trading centres of fresh produce. All of the research participants, except for one, have mentioned going to wet markets to purchase fruits and vegetables on a regular basis. Port Louis houses one of the biggest and most popular wet markets in the country and it operates every day. As a result, some of the research participants frequent the wet market on their way back from work while others make planned trips to purchase their fruits and vegetables.

Every Monday, I take a bus to Mahebourg. You know, I don't have to pay my bus fare so I don't mind taking the bus⁴⁴. Once there, I go to the wet market and I always buy from the same vendors, therefore, I know exactly what stall to go to. I pack all my vegetables in my raffia bag and then I take a bus back home if I don't have any other business to attend to in Mahebourg (Uncle Gaby, 16/09/2011).

Many of the residents of Bambous Virieux travel to Mahebourg on a Monday which is the set day for the wet market in order to purchase their fruits and vegetables. For many of the research participants in Bambous Virieux, the trip to the wet market in Mahebourg is an outing and constitutes a pleasurable activity even if that entails travelling for about 45 minutes on a bus or taxi. The mundane activity of grocery shopping was highly valued and for many housewives regarded as an opportunity to be out of the home. This reveals a lot about the complexities of food and the way it intersects life. There is more to food than its consumption as it is a complex matter. To some of the research participants, food shopping provides an escape from their daily routine and it echoes the social facet of food.

6.6. CONCLUSION

This chapter has provided an insight into the lives of participants and their daily realities with respect to the changing food system. The nutrition transition in Mauritius has caused various aspects of the traditional food system to change. Some traditional foods have disappeared from the market as they are being replaced by new food items. Some of those changes in the

which is made at their disposal for washing their produce. Many of the markets in Mauritius have not been formalised as of yet.

44 The 148 000 Senior citizens (60 years and above) are entitled to travel freely on public transport (National Human Rights Commission).

eating patterns are occurring incrementally while some of them have been drastic. Not only has the way people eat change but also in the volumes of food consumed and this is partly attributed to the rise in the living standards in the country. Meat which was once considered to be a luxury food item is now widely consumed. In addition, people have moved away from growing the majority of their food to purchasing most of the food consumed. The Mauritian economy was once based on agriculture and yet very few research participants mentioned engaging in agricultural activities for domestic use. There has been a move away from food production to food purchasing. Furthermore, one of the fundamental changes in the Mauritian food system is the disappearance of traditional retail stores and the rise of supermarkets. 'La boutique sinois' as they were referred to were at the heart of community life but they have been displaced by large local and international supermarket chains.

The comparison between the two study sites has revealed that the research participants in Tranquebar, Port Louis are at a more advanced stage of the nutrition transition than the Bambous Virieux sample group, irrespective of the social strata. In Bambous Virieux, more of the traditional values have been retained in the food culture while in Port Louis, the research participants admitted to consuming increasingly more Western-based foods. Research participants from both study sites have expressed their despondency about the distancing from the traditional food pattern as they are reminiscent of the past. However there are mixed emotions about the prevailing food system as there are certain aspects of the new food system that are appreciated and some of it loathed. Navigating the lived experience of the changing food system with the research participants has revealed a lot about the traditional Mauritian food culture and the prevailing one. There are many changes that have been brought about to the food system over the years.

7. CONCLUSION

The dietary transition is a multi-faceted process characterised primarily by the substitution of traditional diets with Western-based diets. The nutrition transition not only influences the composition of the diet but also affects the way food is cultivated, processed, distributed and consumed. All societies have been going through some form of transition to a certain extent through history which is influenced by social and economical factors as well as technological advancement. Uusitalo *et al.* (2005) state that the spread of the Western diet across the developing world occurred as a result of the globalisation of the Western world which now represents more than a geographic place. Instead, it represents an aspirational lifestyle. The literature indicates that the nutrition transition has resulted from the process of globalisation which has significantly shaped the economies as well as societies. The rise of globalisation has resulted in the proliferation of trade liberalisation which has been a significant causal factor in furthering the process of nutrition transition.

The purpose of this dissertation is to understand the lived experience of a changing food system in Mauritius. Most of the research studies have focused on producing information on a national scale which has proved to be crucial to understand the spread of the nutrition transition across borders. However, such studies have failed to capture the essence of the dietary transition at the localised level within a country. Different countries are at varying levels along the spectrum of transition because it occurs as a result of largely economic practices but also due to social and cultural norms. This idea was extrapolated to understand the varying levels of nutrition transition within a country, thus acknowledging the local cultural and social forces. As such, this dissertation emerged from a gap identified in the literature whereby most decisions regarding economic measures to be implemented to guarantee competitive markets on the global scene are made at international, regional and national levels, far removed from consumers. The consequences of such economic measures trickle down to consumers and therefore it is considered as essential to understand the lived experience of the changes in the food system.

7.1. THE TRADITIONAL MAURITIAN FOOD SYSTEM

As discussed in Section 5.1.1., there is no traditional Mauritian food system *per se*, as the population is itself a product of globalisation. However, research participants articulated a traditional and a modern food system. The traditional model represents Mauritius in the early 1960s, *i.e.*, a society with generalised poverty where simple foods were the norm. The economy was based on agriculture and it absorbed a large proportion of the labour force. Mauritius was self-sustaining with regards to agriculture with the country being a net exporter of food. Foods consumed were by large local and seasonal. The so-called traditional Mauritius also infers that women were responsible for food preparation. These food stories gathered from the research participants reveal more than the type of food consumed at the time. They echo the social structure that was in place and the way food interacted with those structures. For instance, most of the food stories are set out in a context of community-wide poverty. Over the last two decades, there has been a transition from the traditional model to a Western-based model.

Mauritius is going through a nutrition transition, and it is not only the food consumed that is undergoing change but the food system as a whole. Part of the transition involves the change in dietary habits from traditional staples rich in fibres, carbohydrates and low in fats to adopting a new dietary pattern similar to a Western one. The Western diet is described as highly processed, full of fats and sugars (Popkin *et al.*, 2001).

7.2. MAURITIUS: MICROCOSM FOR NUTTRITION TRANSITION

Uusitalo *et al.* (2005) state that Mauritius is a microcosm of nutrition transition due to its size and the significant economic growth experienced over a short span of time. Mauritius has presented all the inevitable factors leading to nutrition transition as identified in the literature. To begin with, it underwent rapid economic development following independence in 1968. To address the economic issues inherited, the prevailing economic system had to be revolutionised because its economy was based on the monoculture of sugar. Therefore, economic diversification was required to build a more robust economic system. Due to limited land resources, there was limited potential for the development of the economy, as such the manufacturing sector was highlighted for future development.

Hence to promote the manufacturing sector, an EPZ sector was established thus attracting FDI to the country. This resulted in significant economic growth in the form of declining levels of unemployment, rising incomes and investment in the social and technical capital. Investing companies in the EPZ sector were granted various benefits with the most enticing incentive being a tax holiday over a 10-20 year period. In addition, economic growth was also stimulated through the reduction of tariff barriers across trading blocs.

Those macrostructural changes in the economy have impacted the Mauritian food system in such that its status changed from a net food exporter to a net food importer. The change in food imports as a total of food exports is depicted in the chart below. As food is an indicator of the socio-economic systems in place, this shows that Mauritius evolved from a traditional society whose food system was largely based on the local food produce to one that has become increasingly dependent on food imports.

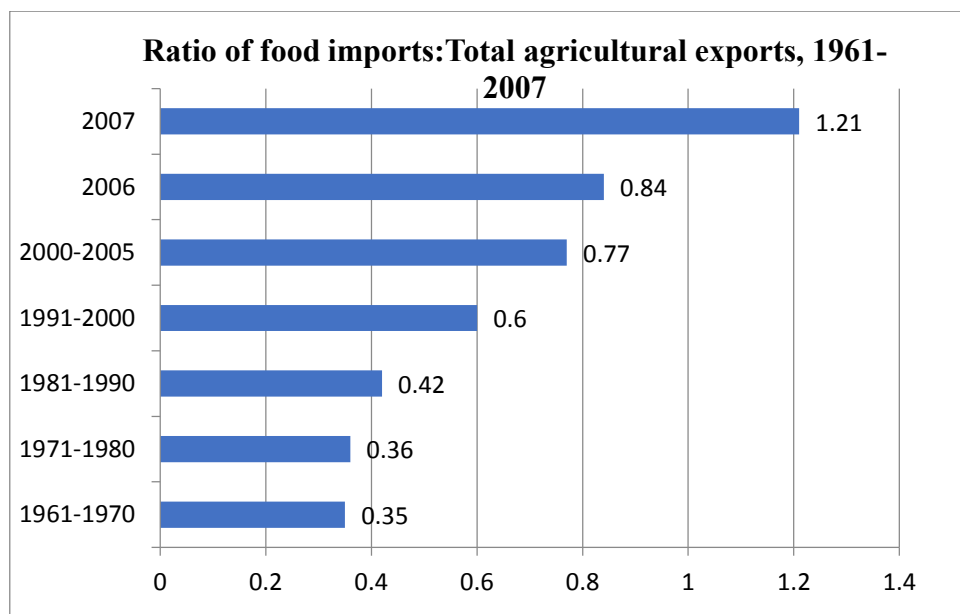


Figure 7.1: Ratio of foods: total agricultural exports, 1961-2007

Source: CSO (2012)

7.3. THE LIVED EXPERIENCE OF A CHANGING FOOD SYSTEM

In this research I have attempted to provide a description of the changing food system in Mauritius focusing on the lived experience of such changes. Through a sample group in a rural and urban area, I have highlighted the different experiences in two locations in

Mauritius. Data collection was undertaken in the form of semi-structured in-depth interviews, observation and documenting research participants' narratives about food. A total of 21 research participants were interviewed with nine from Tranquebar, Port Louis and 12 from Bambous Virieux.

The research concluded that food is more than just a mere commodity consumed for sustenance. Conversely, food reveals much about the social systems in place and acts as a cultural marker. As narrated by many of the research participants, there are scores of memories attached to the traditional foods, be it the taste, the smell, the preparation, the significance of certain meals or the people it brought together. There are less memories attached to 'box food' which is a term used by some participants to describe the prevailing food system. 'Box food' is the epitome of the current food system whereby a meal can be made entirely from frozen ingredients from a box.

Based on the food narratives, food also indicates the type of lifestyles led. For instance, the consumption of simple based diets with a large proportion of vegetables indicates a traditional lifestyle and as it emerged from the interviews, it is also associated with poverty and the lack of progress. Based on interaction with the research participants, it became clear that there is a prevailing belief that the poorer sub-population is more traditional than the affluent counterpart. People who have adopted a Western-based diet are perceived to be further along the nutrition transition and by extension further along the development path. Uusitalo *et al.* (2005) state that part of the transition is explained by societies adopting the prevailing lifestyle of economically developed societies.

This association of poverty with traditional foods is captured in a popular song in Mauritius. An extract of the song reads:

Brède mouroume baton mouroume
maléré contant manzé
Brède mouroume baton mouroume
maléré gagne lapéti

The meaning being that the poor have an affinity to eat moringa leaves and moringa stems. The moringa plant is a type of wild food that is very commonly found in open fields, side of

the road and people's backyard. It is an edible plant and is considered to be a poor man's food.

Undertaking research in two study sites in Mauritius has revealed that there are differences in the way the transition is experienced due to localised factors. Unanimously across the two sample groups, research participants have reported consuming an increasing amount of processed foods. Processed foods such as canned tomatoes, mushrooms, peas and corn are on the rise. Processed meats are increasingly being adopted as essential components of the Mauritian diet and yet that is a concept that was widely unknown a decade or so ago in Mauritius. According to research participants, yet a significant increase in the consumption of meat has been recorded.

The main driver, as recognised by the research participants has been the rapid economic development. This has impacted lifestyles as the level of poverty decreased nation-wide as well coupled with a significant decrease in the rate of unemployment. Due to the fact that Mauritius managed to secure preferential trading rates with the EU, sugar was sold approximately 90% over the market price. Therefore, this additional income resulted in investment in the social and technical capital of the country as well as the development of infrastructure and services. According to the participants, the rapid economic development from an underdeveloped country to an upper middle income nation, inevitably means that some of the traditional ways have to be abandoned to embrace the new forces shaping society.

In addition, progress was equated to the Western lifestyle and this resonates with James' argument (2000) presented in Chapter 2. As the research participants view progress imbedded in the types of food consumed, it can be argued that positional consumption is a significant factor in the spread of the nutrition transition. Food represents more than a mere commodity; it indicates lifestyle and the types of social norms in place, therefore the consumption of Western-based foods signifies economic progress and advances one's position in the social hierarchy.

The food system has evolved in such a way leading to some of the traditional staples to disappear from the local food market. For instance, cassava and tapioca, widely used staples

in the traditional Mauritian food system has virtually disappeared from the food market, as reported by the research participants. Part of the lived experience has been that Mauritians have had to adapt to the new food system, whilst the younger generation embraced it, the older generation resisted it to some extent. Nevertheless the macroscale structural changes in the food economy trickled down to every consumer thus involuntarily inducing changes in the dietary patterns.

It is also believed that the traditional food system has been eroded by the ‘bright lights effect’ which made new food products on the market attractive and desirable. The ‘bright lights effect’ refers to the novelty of food items on supermarket shelves. As the changing food system displaces the so-called traditional food system, there is a transition towards supermarket purchase. The *modus operandi* of supermarkets is such that they introduce new food items on the market, undertake aggressive marketing for more shopping trips and promote more money to be spent per transaction (Hawkes, 2008). The supermarket effect coupled with the propensity to experience new products, results in an advancement along the nutrition transition spectrum.

The urban and rural sites did not differ significantly in the types of foods consumed but there was a sharp contrast in the manner food shopping was undertaken. In Bambous Virieux, the food landscape is dominated by a superette and a few traditional retail stores. Port Louis, being the capital city is saturated with food retail points, ranging from street foods to restaurants to superettes and supermarkets. As such, research participants reported undertaking food shopping haphazardly, if and when required, on the way to and back from work. On the other hand, in Bambous Virieux, grocery shopping was more of a structured process as most of the research participants travelled approximately 16km by public transportation to the nearest economic centre, Mahebourg. Grocery shopping is considered to be more of a valued activity by the research participants in Bambous Virieux than those in Port Louis. The latter have also reported consuming a larger volume of foods and this is partly attributed to the widespread availability of food in the capital city.

It can be concluded that social, economic and cultural practices impact on the spread of the transition. The findings of this research study concur that nutrition transition is occurring in Mauritius as a result of the rapid economic development. However, the spread of nutrition

transition occurs at different pace within different groups due to varying levels of socio-economic factors. For instance, there has been a rapid increase in the number of supermarkets in Mauritius which based on the literature represents a modern food economy (Abrahams, 2009). However, there is a significant difference in the number of supermarkets servicing the two study sites. Bambous Virieux has one small supermarket whilst there are many supermarkets of varying sizes in the vicinity of Tranquebar, Port Louis. As supported by the data, research participants in Port Louis frequent supermarkets more often than those in Bambous Virieux. Due to the remote location of the study site from the large supermarkets, scheduled trips have to be arranged to other areas to enjoy the facilities offered by supermarkets.

To reiterate, the aim of this research study is to undertake an assessment of the lived experience of a changing food system within the Mauritian context. This research study emerged as a result in a gap identified in the literature whereby most studies are undertaken at a national level and intra-country differences are not acknowledged and investigated. There is a growing body of literature advocating for the importance of localised social and cultural factors. Therefore, this dissertation has investigated the different experiences of a changing food system in urban and rural Mauritius.

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9. APPENDICES

Appendix A: Ethics Clearance Form