The Modernization of Fiji's Food System and the Resulting Implications on Fijian Society

A Synthesis

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Abstract

Beginning in the early 19th century, Fiji's contact with several industrialized nations of Europe and the west contributed to rapid changes in its food system– changes that have had massive effects on Fiji's economy and politics, on both local and global scales, as well as on the health and identity of the people who call Fiji home. Using a longitudinal model, the author traces the modernization of the Fiji food system from before European contact, through the period of colonial rule, the introduction of the cash economy, and the beginnings of urbanization to its status in the spring of 2009. In addition to history and empirical fact, this synthesis includes analysis in the form of the resulting implications of Fiji's food system modernization on aspects of contemporary Fijian society. Through the extrapolation of current trends in the ever-changing food system, questions of future food security begin to arise, which are explored at the end of the paper.

To E .H. Schultz

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Vinaka vakalevu.

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Introduction

The Importance of Food

On the surface, the concept of food is fairly simple. Food provides living things with the energy to continue living, and without it all living things would die. However, in the human realm, food transcends its status as merely a physiological necessity. Using food as a lens for cultural analysis, it becomes clear that "the act of eating lies at the point of intersection of a whole series of intricate physiological, psychological, ecological, economic, political, social, and cultural processes" (Beardsworth 1997, 6).

Definition of Terms

Food

In the English language, food is quite a broad term, and its definition, which includes certain specific items and excludes others, is often taken for granted. As could be predicted, because of cultural differences, the translation of the concept of food from English to Fijian is not one-to-one; e.g., the Fijian concept of food, which is *kakana dina*, refers only to starch food[1] (Pollock 1985, 202). However, in contemporary Fiji the English definition of food is becoming mainstreamed because of western influence. For the purposes of this synthesis, the definition of food will include all edibles, both meal and non-meal, and drinkables.

People

The term "Fijian," as used in the paper, refers to both the Fijian language, as well as the national identity of all people who call Fiji their home. However, when the term "Fijian" is used in conjunction with the term "traditional," it can be assumed that "Fijian" means

[1] More information on the traditional Fijian definition of food can be found in Nancy Pollock's study titled *The Concept of Food in a Pacific Society: A Fijian Example*.

"indigenous Fijian." The term "indigenous Fijian" refers to any person that has ancestry in the Fiji islands, excluding all other ethnicities. The term "Indo-Fijian" refers to Fijians who trace their ancestry to India, and includes those descendent of both indentured laborers and free immigrants. In keeping with the common Fijian definition, the term "European" refers to those who trace their ancestry not only to European nations, but to Australia, New Zealand, the United States, and Canada as well.

The Food System

Succinctly stated, the modern food system includes all processes involved in feeding a population, and thus comprises the growing, harvesting, processing, packaging, transporting, marketing, consumption, and disposal of food and food-related items. For the purpose of discussing the traditional Fijian food system, the packaging, transporting, and marketing sections have been renamed "exchange," the disposal section has been omitted, and "the symbolic use of food" has been added.

Purpose of This Study

As of now there exists a vast assortment of scholarly work that pertains to different aspects of Fiji's food system, be it historical, contemporary, or on a specific focus, such as nutrition or economic development. The goal of my research is to produce a synthesis that brings together a great deal of said research into one document that is to be used as an interdisciplinary introduction for anyone seeking to have a holistic understanding of Fiji's food system, past and present, and its widespread implications on Fijian society. While one could easily spend years writing volumes on the topic of the modernization of Fiji's food system, this article is intended to serve as a quick, accessible resource that will brief those interested before they conduct further, more specialized, research. The implications on Fijian society that will be discussed in this paper, such as nutrition, may

evoke negative connotations, and I would like to make it very clear that this is not meant to be a "fall-from-grace" narrative. All analyses of the past and present status of the food system will be as objective as possible, while still being conscious of the constructivist epistemology to which I subscribe. For any perceived social problems I may come across throughout my research, it is not my intent to enact, or suggest steps for enacting, social change. As an outsider who has spent a relatively short amount of time in a foreign culture I believe doing so would be imperialistic. It is, however, my intent that this information is made available as a resource for those of this culture to use in the pursuit of social welfare.

Methodology

Because my study is in the form a synthesis, the majority of my research included the use existing data. Sources comprised books, collections of scholarly articles and articles from peer-reviewed journals, as well as newspaper articles and websites. Given the limitation of one month to produce this paper and broad scope of this study, it was not feasible to conduct extensive field-based research in any one category of the modernization of the food system. However, in addition to my use of secondary sources, I also referenced lectures from the Multiculturalism and Social change seminar of the SIT program, interviews with street food vendors, and participant observation from my travels in Fiji, which included farming in a Fijian village, a visit to a cane farm in Labasa, touring a copra processing facility in Savusavu, and meal times during my homestay in Suva.

The Traditional Food System

For us humans, eating is never a 'purely biological' activity. … The foods eaten have histories associated with the pasts of those who eat them; the techniques employed to find, process, prepare, serve, and consume foods are all culturally variable, with histories of their own. Nor is the food simply eaten; its consumption is always conditioned by meaning. These meanings are symbolic … they also have histories. (Mintz 1996, 7)

The earliest inhabitants of Fiji were likely descendants of the Lapita people and evidene of the first settlement site is dated at 3575 B.P (Thaman 1990, 24). Given that these people likely arrived by sea, the coastal environments they first inhabited largely shaped their dietary patterns (Beardsworth 1997, 13). As coastal settlements became established, populations likely began to move into the interior, and the food system would have evolved accordingly. Archeological evidence of widespread agriculture in southeastern Viti Levu as early as 3500 B.P. and 2500 B.P. in the Lau group, and the pre-European-contact food system was "undoubtedly a highly diversified hybrid mix of domesticated and wild plants and animals, coupled with similarly diverse and sophisticated foraging and fishing strategies drawn from both Polynesian and Melanesian traditions" (Thaman 1990, 24-5).

Growing & Harvesting

Traditional foods grown and gathered in Fiji, most, if not all of which are still used today, included wide varieties of starches, leafy vegetables, fruits, and seafood.[2] The times during which traditional growing and harvesting of fruits and vegetables, as well as the gathering marine resources took place provided the basis for the Fijian calendar, e.g., "Vula I cukicuki = August; when the yam fields are dug and planted" (Parkinson 1990,

[2] For a comprehensive list of agricultural and marine resources see Thaman 1990, 36-74.

174-5). Food was often intercropped, which likely provided higher crop yields and/or other agronomic benefits.

Processing & Exchange

Food processing is defined simply as any process that yields a food that is markedly different in appearance from the original starting material (Talagi 1983, 120). Traditional food processing was often used for the purpose of preservation. Classic examples of traditional food preservation techniques include the drying of shaved cassava or yams so as to produce a storable powder, the pit preservation method of staple carbohydrate foods such as breadfruit and taro where said carbohydrate staples were soaked in water and buried in leaf-lined pits where they were left to ferment, and the sun-drying and smoking of fish (Aalbersberg 1990, 156; Jansen 1990, 472). Because of these preservation measures, food was available in times of drought, warfare, and cyclones. Traditional food exchange networks also existed prior to European contact. Foods such as taro and yams, deemed high status foods, were bartered in exchange for other goods and services (Parkinson 1990, 176). Trade between islands with different, necessary, resources often engaged in reciprocal exchange; e.g., wood for building houses would have been traded for various desirable foodstuffs (Thaman 1990, 77).

Consumption

In the realm of consumption there exist several topics worth exploring, and include cooking, eating, and health. While some foods, such as fruits and special preparations of seafood, could be eaten raw, most Fijian food was cooked, where the main source of fuel was, of course, firewood. Common traditional methods for preparing food include cooking over an open fire, baking in an earth oven, and steaming in clay pots (Ravuvu 1983, 25-7). Meals were often taken twice daily, in the morning and evening, and

although there was no formal midday meal, fruits, coconuts, and roasted root crops were often eaten between meals (Ravuvu 1983, 28-9). Ideally, the traditional Fijian meal consisted of a cooked starch, meat, and boiled greens. Drinks were also taken with meals and included fresh water from either rain or streams and juice from green coconuts; fruit was also considered a drink (Ravuvu 1983, 39). Meals were commonly taken with family and people were served according to age and sex, eldest makes being first to eat, except in the case of visitors, as they would be the first to be offered food (Ravuvu 1983, 29)[3]. Insofar as health, Thaman notes, "at the time of European contact with the Pacific Islands, the people were almost universally reported to be a sturdy, healthy people of superior physical type" (1990, 77-8).

The Symbolic Use of Food

The type of food one eats (or abstains from), how that food is presented and for what occasion it is used for has significant ties to personal and group identity. In the case of traditional Fiji, food played a vital role in social activities, and as Ravuvu explains, "no ceremonial function is considered complete without a presentation of food or *magiti*" (1983, 41). It was common for a *magiti* to be presented at life crisis ceremonies such as birth, marriage, and death and was always the best food that those giving could provide (Ravuvu 1983, 42). It is likely that being able to provide copious amounts of high quality food as *matagiti* elevated the social status of the giver, as others would view the giver as capable of going above and beyond meeting their own needs. It should also be noted, that certain foods were traditionally considered to be sacred, or *tabu*, and were thus not consumed. An example of this is found in the sub-culture of the Navua river people who would not eat eel because as "it is inhabited by their clan spirit" (Parkinson 1990 174).

[3] For a more in-depth look at traditional eating practices, see Ravuvu 1983, 28-34.

Transition

A century or so of colonial influence and most recently, political independence, rapid expansion of air, sea and road transport, increasing foreign aid, expertise and influence, greater access to western education and the media and, in general, increasing monetization and integration of Pacific Island societies into the global cash economy have all arguably led to 'development' and have drastically changed Pacific-island urban and rural landscapes and lifestyles (Thaman 1990, 23).

Fiji's contact with Europeans and peoples of other ethnicities throughout the past couple centuries has had a great deal of influence on its food system. In order to better understand how Fiji's food system shifted from the pre-European times to how it exists today, it is necessary to understand the forces of change. Important forces of change, which will be discussed in this section, include early European contact, cession, the period of indenture, and free immigrants, WWII, and urbanization.

Early European Contact

Some of the first Europeans to come in contact with Fijians were sailors who visited Fiji to replenish supplies and or to gather beche-de-mer and sandalwood in the early nineteenth century. Baxter notes, "the Europeans had little difficulty obtaining local foodstuffs because the items traded for food were highly prized and the mode of transaction was familiar to Fijians" and goes on to explain that "Fijians also quickly adapted to monetary exchange" (1980, 4). There are several missionary accounts of the beginnings of Fiji's involvement in the cash economy. Early European influence also included the importation of produce such as fowls, pigs, and various fruits (Baxter 1980, 5). Furthermore, the 1884 missionary journal of Webb tells that Fijians were "taking kindly, very kindly to [their] imported food, tinned meats, salmon and sardines, bread and biscuits" (Baxter 1980, 6). Although it is known that the reports of many missionaries

were often romanticized and exaggerated, the introduction of imported foodstuffs into the diet of Fijians marks a turning point for the modernization of the food system.

Cession, the Period of Indenture, & Free Immigrants

Fiji was annexed by the United Kingdom in 1847 and remained a British colony for over one hundred years until 1970. During this time, massive changes to the food system, among other aspects of Fijian society, took place– one of the most notable being the sugar industry, which "started as a colonial strategy to promote economic growth" (Narayan 2004, 2). Because indigenous Fijians generally disliked working in the plantations, the colonial government was prompted for recruit labor from India. From 1879 to 1916, roughly 60,500 Indians were brought to Fiji on ten-year indentured labor contracts (Naidu 2009, personal communication). Baxter notes, "the establishment of the Indian population from the late nineteenth century entailed considerable demand for non-indigenous staples… [such as] rice, wheat, flour, and dhal (lentils)" (1980, 6). In addition to the Indian indentured laborers, there was also an influx of free immigrants from India, known as the Gujarati, and also from China. While most of the indentured laborers who remained in Fiji became farmers after the expiry of their contracts, the Gujarati opened many new businesses, many of which were food-related and on a large scale, and the Chinese "were among the first market gardeners in Fiji" (Thaman 1990, 83). There is no doubt that the period of colonial rule, in addition to the new populations that were introduced during the time, had a great deal of influence in food and agricultural systems in Fiji.

WWII & Urbanization

The Second World War, rapid urbanization that followed, paved the way for drastic changes to the modernization of Fiji's food system. Although Fiji was not invaded during

WWII, New Zealand and American troops were stationed in Fiji during the war. The thousands of allied servicemen stationed in Fiji "brought with them vast quantities of material goods and … immediately established roads, hospitals, airstrips, harbors and prefabricated 'cities' with all the infrastructure" (Douglas 1966, 111). Many said material goods, in the form of foodstuffs, such as Coca-Cola, would later go on to become mainstays of the Fiji beverage industry, and the infrastructure that was created aided not only in the movement of goods, but also in the movement of people. As Thaman notes, "urbanization and the exodus of people from rural villages have had major roles in the deterioration of traditional food systems" (1990, 83). Migration into urban areas has largely lead to the standardization of the cash economy and the dependence on rural agricultural production and imported foodstuffs– the cash economy and import dependence having now bridged the urban-rural divide.

The Modern Food System

> Fiji is no longer food-self-sufficient and almost certainly will never be so again … there will always be a need for appropriate imported food, particularly staples and protein foods, such as rice, flour and frozen and canned meat.... [Such foods] have become the dominant foods in most urban areas, such as Suva, and increasingly important fare in most isolated islands and rural areas (Thaman 1990, 85).

Growing & Harvesting

Subsistence Production

Given all the changes to the Fiji food system, participation in the subsistence sector of production still exists to some extent. Subsistence producers grow food, but do not sell it, and thereby produce food only for their own needs. Often, but not always, participating in the cash economy in some way or another, subsistence producers include such people as indigenous Fijian villagers as well as urban wage earners with urban gardens (Shaw

1983, 37-8). Also noteworthy, in indigenous Fijian villages there is currently a "shifting emphasis to less labor-demanding staples such as cassava and sweet potato" (Thaman 79, 1990). Such trends suggest a declining importance of traditional foodstuffs.

Mixed & Commercial Production for Local Sale

Even with the widespread adoption of imported foods into the diets of many Fijians, the local production of foodstuffs on the mixed and commercial levels remains an extremely important facet of the food system in everyday life. Foods grown today are often a mix of indigenous foods and imported fruits, vegetables, and animals introduced by Europeans and immigrant populations. Mixed producers are defined as "those who produce food for themselves and sale, and for whom food sales are a significant source of cash income," and while the operations of commercial producers are similar to those of mixed producers in that they may produce food for their own consumption, commercial producers engage in agriculture on a much larger scale (Shaw 1983, 38). It is because of the efforts of many mixed and commercial producers that local markets are supplied with fresh produce. In a photo essay on the topic of food and national development, Thaman notes that most commerical production farmers in the Suva area are of Chinese and Indian descent and farm on leased land (1983, 72). This shows how heavily urban populations depend on the efforts non-indigenous Fijians.

Mixed & Commercial Production for Export

In the sub-category of mixed and commercial production there exists a substantial amount of production for export. Production and harvesting for exports includes seafood, taro, kava, ginger, and coconuts, among others, with the most important to the Fijian economy being sugarcane. Most fish that is caught and sold for export is wild, as Fiji's attempts of developing an aquaculture industry have yielded disappointing results. Fiji's

development plan set aquaculture goals in the 1980s that were modeled after preexisting aquaculture operations in Southeast Asia, but failed largely due to the fact that, unlike Southeast Asia, Fiji has little history of indigenous aquaculture (Gulick 1990, 394). Small-scale ginger production for export is often coupled with local production on the commercial scale, and foods like taro and coconuts are grown and harvested, and in the case of coconuts, sometimes processed, for export on larger scales. However, no export crop matches the scale and economic importance of the commercial production of sugarcane. Beginning in the 1970s, governmental pressure on sugarcane farmers, who are also engaged in small-scale production of other agricultural products for sale at local markets, have been pressured to grow more sugarcane for export, and thus urban produce markets have become "increasingly expensive to the urban and peri-urban rural populations" (Thaman 1983, 94). Sugar still exists as Fiji's dominant export, but the words of Narayan, "the Fiji sugar industry is at the crossroads" (Narayan 2004, 11). The ending of trade agreements with the European Union, the falling world prices of sugar, the non-renewal of land leases, and milling and transportation inefficiencies are all taking a huge toll on the industry (Narayan 2004, 11). And the national economy is not all that is suffering; farmers are feeling the effects, as well. Cane farmers, such as Hemant Singh of Labasa, report difficulties with land leases and thus have to find other informal work to supplement their income generated through farming, and thus live lives "full of struggle and sweat" (Delaivoni 2009, 4). The economic and social repercussions of further decline in the sugar industry will lead to a significant drop in export revenue, as well as exacerbate the problem of unemployment and urban squatters.

Final Thoughts

Rural migration because of the attractiveness of urban life has also contributed somewhat to the decline in enthusiasm about farming. However, programs such as the Tutu Training Center in Taveuni, assist students as they establish themselves as young farmers (Chandra 2007). Programs like Tutu aid in the stimulation of the economy through the creation of jobs and encouraging a decreased dependence on imported agricultural products.

Processing, Packaging, & Transporting

Local Operations

The transportation of locally grown produce is one of the more basic forms of participation in this sector of the food system. Food is grown and harvested by farmers who are engaged in mixed and commercial agricultural production and then transported to markets where it is sold by vendors. In a photo essay, Thaman notes "Chinese and Indian market gardeners, colporteurs (transporters of produce), and middlemen have played a major role in providing fresh local food to the rapidly expanding urban population of Fiji" (1983, 93). Also providing food to the people of Fiji are the various locally owned food processing and manufacturing businesses. Examples of said businesses include giants such as The Flour Mills of Fiji (FMF)[4], Punjas[5], The Hot Bread Kitchen, Sprint Beverage Company, and Rewa Dairy. Modern food processing in the Fiji is quite different from traditional processing, with the most common form of processing being "the baking of highly-refined wheat flour into breads, biscuits, and pastries," with another common form being "beverage making, which is dominated by soft-drink

[4] For further information regarding the company history of FMF, please reference (Flour Mills of Fiji, 2008).
[5] For further information regarding the company history of Punjas, please reference (Punja and Sons).

manufacture, but also includes local fruit juice extraction" (Crawford 1983, 139). Modern food processors in Fiji often rely on imported foodstuffs, including wheat from Australia, soft-drink flavoring from Europe, and, in the specific case of Rewa dairy, milk from abroad. Currently, Rewa Dairy's annual production is ten million liters annually, and because of the April 2009 devaluation of the Fiji currency that will result in an increase in prices of imported foods, there has been "a rush for dairy items," reports Prasad (2009, 1). The blow to Fiji's international purchasing power as a result of the devaluation of its currency has led the Fiji government to evaluate the idea of self-sufficiency in the dairy industry (Ritova 2009, 3).

Multinational Corporations Operating in Fiji

There are many multinational corporations operating in Fiji that provide services in the form of processed foodstuffs– foodstuffs that have solidified their place in the food system through their adoption into dominant contemporary Fijian society. Examples include restaurants, such as McDonalds, Pizza Hut, and Kentucky Fried Chicken, and production facilities, such as Coca-Cola[6], Fosters[7], and Nestle. Much like multinational tourism operations, multinational food processors, besides creating jobs, do little to aid Fiji's economy, as revenue often does not stay in Fiji.

Imported Foods

On the most basic level, imported produce, such as apples from New Zealand, are transported directly to markets. Social change that has taken place due to exposure to the west through colonization and modern media have created demand for, and dependence on, imported foods, such wheat flour, tinned fish and meat, rice, tea, etc. Furthermore, the

[6] For further information regarding the company history of Coca-Cola in Fiji, please reference (Coca-Cola Amatil).
[7] For further information regarding the company history of Fosters in Fiji, please reference (Fiji Times 2007).

millions of international tourists who come to Fiji every year also contribute to the importation of foodstuffs, as "tourists generally demand food consistent with their dietary habits" (Shaw 1983, 35). Currently, Fiji operates under a trade deficit; that is, as a country it imports more than it exports– a deficit that is only made up for by tourism. Many of these imports are food-related. In an effort to curb imports in Fiji, tariffs have been considered. However, this approach would likely fail as many people are now dependent upon imported foods, thus rendering demand "inelastic (i.e., a very large proportional change in price will only lead to a very small proportional change in quantity demanded" (Halapua 1983, 82). The use of tariffs is an unrealistic economic policy, as it will only serve to increase the amount of money spent by the consumer on imported food products.

Exports

Foodstuffs make up a considerable amount of Fiji's total exports, and include refined sugar from sugarcane on a large scale as discussed earlier, copra, coconuts, ginger, taro, fish, and most recently, bottled water. The production of copra, or coconut oil, which was Fiji's first plantation crop, "has declined in recent years due to devastating hurricanes, falling world prices and poor yields of aging palms" (Robertson 1990, 13). The Fiji Agricultural Sector Review reports, "the [copra] industry has been surpassed by ginger, kava, and taro as an export earner" (1996, 5). Similarly, the sugar export industry is finding it difficult to compete in the world market as a result of the recent withdraw of support of the European Union due to the current political climate. The Reserve Bank of Fiji announced in its latest economic review "domestic exports feel by 26.5 percent in the first two months of the year compared to the same period last year;" the decline in exports was "mainly underpinned by lower receipts from sugar, mineral water, and fish"

(Fiji Sun 2009, 8). A few government initiatives are now in place to help increase Fiji's domestic exports. One example is the recent devaluation of the currency, and because this makes the prices of Fiji's exports more competitive by giving other countries greater purchasing power, "export receipts are expected to rise" (Fiji Sun 2009, 8). However, the goal of increasing Fiji's exports does not rely on devaluation alone. Industry development programs, such as the expansion of the honey industry, which aims to "have Fiji self-sufficient with honey and export," are already underway (Prasad 2009, 12).

Marketing

The places where food is sold, as well as the food advertisements that consumers come in contact with have changed dramatically due largely to the standardization of the cash economy and the adoption of neoliberal economic policy that have paved the way for the modernization of the food system.

Where People Buy Food

In rural and urban areas alike, fresh agricultural products, both local and imported, are sold in produce markets. Large corporate supermarkets such as RB Patel, Foodtown, New World, Morris Hedstrom, and the Hot Bread Kitchen, which supply a wide variety of local and imported, processed and fresh foods, have solidified their place in the urban marketing subdivision of the modern Fiji food system. However, with the recent currency devaluation, import food prices are increasing, and "struck off the shopping list now for many families that could previously afford it were imported items such as Milo, cocoa, coffee, apples, cornflakes, and cheese" (Prasad 2009, 3). Given the rise in import food prices, many people are now depending more heavily on local goods at produce markets. In the informal sector, especially in urban areas, it is common for food to be sold by streetside vendors often from makeshift or portable stalls. Examples of typical street

foods in urban areas of Fiji include streetside produce, barbeque, traditional Fijian pastries, fruit juice, ice cream, as well as Indian snack foods. While street food vendors provide quick and easy access to food, their participation in the informal sector the economy means that the government does not tax their earnings, and thus they contributing nothing to a federal budget that is stretched thin and desperate for resources.

Advertisements

Before examining local advertisements, it is worthwhile to consider international advertisements for Fiji's export foodstuffs, one example being Fiji Water. Beginning in 1990, the Natural Waters of Fiji has been supplying bottled water from Fiji to advanced industrial nations such as Australia, New Zealand, Japan, the United States, Canada, and the United Kingdom[8]. Advertisements on the company's website use such rhetoric as "virgin ecosystem," "primitive rainforest," "uncontaminated and uncompromised" to sell their bottled water (Natural Waters of Fiji, 2009). Through their advertising, the Natural Waters of Fiji company shapes the international perceptions of Fiji and reinforces the stereotype of the exoticism of Fiji. With the relatively recent modernization of the food system, local advertising of foodstuffs has become very widespread. Not only is food advertised on television, in the newspaper, and on radio, but also it is not uncommon for one to see companies such as FMF, Sprint, and Fosters advertising in the form of signage in villages and schools. While many products are marketed specifically to adults, such as Fiji Bitter (a beer produced locally by Fosters), which plays off of consumer identity by being advertised as "The Sportsman's Beer," the majority of advertisements are aimed toward a larger demographic, of which children, who are more easily influenced than

[8] For further information on the fascinating history and local politics of the Natural Waters of Fiji company, please reference (Kaplan 2007).

adults, are a part of. In a government press release in 2007 it was reported that "The Ministry of Education supports the move by the National Food and Nutrition Centre to ban the use of children in food advertisement especially foods that are low in nutritious value," for they recognize that "the power of advertisement to influence behavior is an indisputable fact and children being children are susceptible to such influences" (Fiji Government 2007, April 20). As noted by Thaman in study of advertisements in thirty editions of daily newspapers in Fiji, "of some 678 advertised food items… over three-quarters (77%) were foods high in refined carbohydrates, sugar, salt, and saturated fats, and low in fiber and vitamins and minerals" (1990, 83). Fresh fruits and vegetables do not receive advertising space, thus contributing to a decrease in their consumption– the implications of which will be discussed later in this paper.

Consumption

Food consumption in Fiji has changed dramatically since the proliferation of western foods and schools of thought, urbanization, and the influence of the media. Shaw briefly outlines the different food consuming groups in Fiji, which are as follows: rural villagers with low cash incomes, rural villagers with moderate incomes, rural non-village consumers, urban low-income consumers, urban middle and upper-income consumers, and tourists (1983, 33-5). As a quick note, in the realm of rural villagers with moderate to low cash incomes, it is not uncommon for people to gather and sell local freshwater marine resources and eat tinned fish (Thaman 1983, 24). Such economic activities, which may seem a bit backwards, are standard in the contemporary Fiji food system, as people in rural areas often depend on the cash economy and seek less expensive substitutes for foods they can gather from their lands that will yield a high price in markets.

In urban and rural areas alike, the general trend regarding the foods consumed has been one of a high calorie diet of energy dense foods, animal far, sugar, salt, and decreased amounts of fiber. Imported foods make up for a considerable portion of the common diet, and there has also been an adoption of Indian and Chinese foods, mainly curries and chop suey respectively, into contemporary Fijian society– however, this adoption of a different ethnicity's food items does not always equate to tolerance of that ethnicity, as ethnic tensions run deep in Fiji. Meal times and food at meals have also changed considerably. Especially in urban areas, the western practice of eating three meals daily (the first of which is often simply bread and tea), often on one's own or with just their nuclear family, has largely replaced traditional eating practices. In the beverage sector, much has changed since pre-European times. Soft drinks and fruit juices with added sugar are common in most households, and the adoption of alcoholic beverages and social kava drinking is now widespread. Recently the state has lowered the drinking age in bars and restaurants in resorts from 21 to 18, which will likely contribute positively to tourism revenues, as "it brings consistency in line with other countries' legal drinking age with those holidaying in Fiji" (Fiji Times 2009, 3). The transition of ceremonial kava drinking to social kava drinking has resulted in huge increases in consumption, which have had various social implications. Contemporary social kava drinking, which often serves as an alternative to alcohol, is used largely to combat stress. The most common implications for increases in kava drinking, as reported by Fijians in Rakiraki and Nasawana, include personal impacts, such as laziness and short temper; family-related impacts, such as domestic conflict and extra-marital affairs; and economic impacts, which include the failure to complete work at one's job (Newland 2009, personal communication).

Identity

In addition to gastronomic function, food is also a language that describes identity. One theory that explains why European foods were so widely adopted and are in such high demand in contemporary Fijian society is the personal identity component. As Talagi explains, "Since the Europeans made their appearance in the Pacific, anything associated with them was considered as progress… so purchasing and eating European flour, rice, bread, cakes, and ice cream has been seen as progress and improvement in status" (1983, 125). Similarly, concepts of beauty have changed due to a proliferation of western values, and have thus affected consumption patters, most often in women.

Nutrition & Health

The various health implications associated with changing consumption patters are increasing and is a topic of great interest to researchers. The World Health Organization defines health as "not merely the absence of a disease or infirmity, but a state of complete physical, social, and mental well-being" (Taylor 1983, 59). The diets of many Fijians contain large amounts of processed foods that, in many cases, are nutritionally inferior to traditional foods and therefore lead to nutrition-relation complications. Some of these complications manifest themselves in the form of economic consequences as, "productivity losses due to nutrition-induced, or nutrition-exacerbated sickness and work absences are increasingly widespread in the Pacific" (Thaman 1983, 5). Other nutrition-related complications take the form of non-communicable diseases. Foods that are high in calories/energy dense, and contain animal fat and high levels of sugar and salt are a major contributor to the development of high blood pressure, cardiovascular diseases such as coronary heart disease and hypertension, and type-2 diabetes (Taylor 1983, 64-8). Also, current intakes of tea, which are very high, inhibit iron absorption up to 50%, thus

contributing to the already present problem of anemia in Fiji (Thaman 1990, 80). Perhaps the most startling rate of increase of a non-communicable disease in Fiji, as well as other parts of the South Pacific, is that of type-2 diabetes, which, for the purposes of this paper, will be referred to simply as diabetes. Diabetes is largely a lifestyle-related disease, occurring as a result of high sugar and caloric intake as well as decreased physical activity. The specific case of diabetes in the Pacific is somewhat of a puzzle, however, as people in European countries that have similar lifestyles to those in Fiji and are not experiencing the increase in the prevalence of diabetes on the same scale. The other component to the disease must then be genetic. It is likely that indigenous Fijians, as well as many other Pacific Islanders, contain a metabolically thrifty gene that was advantageous in pre-European times when food supply was not always consistent. This gene would allow for efficient food utilization that would lead to fat deposition and rapid weight gain in times of food abundance, thereby making them more fit to survive the periods of famine that were common (Diamond 2003, 600). The recent changes to the food system have allowed for most Fijians, especially those with at least moderate incomes in urban areas, to eat three calorie and sugar-rich meals a day. Such trends, coupled with the increasing prevalence of sedentary lifestyles, often lead to diabetes[9]. As instances of non-communicable diseases have become more common, the life expectancy of the people of Fiji has reduced, and as an indigenous Fijian notes, "my grandfather died peacefully in his sleep at the age of 96, my dad died of a heart attack at the age of 71… and my elder brother died of diabetes at the age of 48… the human lifespan is decreasing… are we making the right choices?" (Naleca 2009, 8). Trends such as this

[9] For further information on diabetes in the context of Pacific Island societies, please reference (Diamond 2003).

have grabbed the attention of the people of Fiji, and work has been done to create policy that helps improve nutrition-related health. Examples of governmental organizations engaged in issues of nutrition in Fiji include the Ministry of Health[10] and the National Food and Nutrition Centre[11]. Various health campaigns in response to nutrition-related diseases include school gardening competitions to increase awareness for nutritious, local foods, and the Ministry of Health's campaign called "Bula 5-30," which encourages the consumption of at least five fruits and vegetables coupled with at least thirty minutes of physical activity daily.

Disposal

The modernization of Fiji's food system has led to increased generation of food-related waste. As of now, said waste is being disposed of in several different ways, of which, many have considerable implications for Fijian society. Several landfills exist in Fiji, however a very common method of disposing of waste, which is often plastic and food related, is burning. The burning of trash carries with it significant implications on ecological and human health. Very few recycling programs exist in Fiji, and the ones that do, such as the recycling containers on the campus of the University of the South Pacific in Suva, do not specify what can and cannot be recycled, and often are full of plastic food wrappers, which cannot be recycled. Lastly, the littering of food-related waste, among other waste, is a common occurrence in Fiji. Much of what is thrown on the street, including plastic shopping bags, food wrappers, and plastic bottles, end up in the ocean and have serious implications on the health of marine ecosystems (Mudaliar 2009, 14).

[10] For information regarding the Fiji Ministry of Health, please visit their website at www.health.gov.fj

[11] For information regarding the National Food & Nutrition Centre, please visit their website at www.nutrition.gov.fj

Conclusion

From the perspective of evolutionary biology, human actions that are beneficial to survival and/or promote reproductive success in a given environment often become adopted into the culture of those human societies. It can thus be suggested that the traditional Fijian food system existed as it did because it was successful in supporting the indigenous Fijian population. The changes to the food system that have taken place in recent history happened at a tremendously fast pace relative to its pre-European evolution. Although several current implications of the modernization of the food system on Fijian society have been discussed, not enough times has passed to truly gauge if the food system, as it exists today is economically and socially sustainable. In looking at the future of Fiji's food system, it is important to consider the topic of food security. Current threats to food security in Fiji include climate change[12], the rise of monocultures in agricultural systems[13], inequity of access in the realm of low-income urban dwellers, the current political climate and its effects on relations with the European Union, the non-renewal of land leases, and the increasing dependence of imported foods in the wake of the April 2009 devaluation. Much has changed in the Fiji food system since pre-European times; the task of addressing its implications on Fijian society is one of all Fijians, and will undoubtedly require hard work and dedication to positive social change on all levels of the food system.

[12] For further information on climate change and its relation to food security, please reference (Laban 1999).

[13] For further information on monocultures and their relation to food security, please reference (Thaman 2008).

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