

CONTENTS



Editorial

- Public Policies in Food and Agriculture for Health and Nutrition – *Ballayram and Fitzroy Henry* 121

Articles

- How Do Food and Agriculture Policies Impact on Obesity and Non-Communicable Diseases: Experience From Other Countries – *Prakash Shetty* 123
- The Importance of Caribbean Agriculture and Food Policies in Obesity Control – *Fitzroy Henry* 137
- Refocusing Agri-Tourism on Healthy Lifestyles
Carolyn Hayle 146
- Food Trade, Food Security and Health in the Caribbean
Deep Ford 156
- Opportunities to Modify Agricultural Trade Policy in CARICOM to Counter the Rise in Obesity and Chronic Non-Communicable Disease – *Vincent J. Atkins* 172

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Public Policies in Food and Agriculture For Health and Nutrition

Ballayram and Fitzroy Henry^a

In September 2007 the Caribbean Heads of Government signed a historic Declaration which called for multi-sectoral actions to fight obesity and NCDs. CFNI took the opportunity created by this landmark Declaration to elaborate the specific policies in the Agriculture/Food Sector which can impact on obesity and NCDs in this region. In collaboration with FAO, CFNI organized a symposium which included several Agriculture Ministers and senior agriculture and Food specialists in the region to identify clear guidelines on how agriculture/food policies can impact on obesity and NCDs through the availability of healthy foods, the behaviour of consumers to make healthy food choices, and how these in turn can stimulate growth in the food and agriculture sectors.

The overall objectives of the symposium were to:

- Demonstrate the linkages between Agriculture/Food policies and Obesity/NCDs using Global and Caribbean experiences; and
- Show how Caribbean Food Trade Policies can be modified to positively influence Tourism and Health.

Obesity and its co-morbidities, viz., non-communicable chronic diseases (NCDs), are currently the main public health problems in the Caribbean. The challenge is for policy makers to formulate effective strategies and interventions to manage and prevent these health problems. What lessons can be learned from developed countries in dealing with these diseases? What are some broad roles of public policy in preventing and controlling NCDs? What are the NCD burdens to individuals and the public budget? How can food and agriculture policies contribute to the solution of health

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R-L: The Hon. Dr. Christopher Tufton, Minister of Agriculture & Lands, Jamaica; Dr. Fitzroy Henry, Director, CFNI; Prof. Prakash Shetty, Visiting Professor of Public Health Nutrition, Univ. of Southampton, U.K.; Dr. Dunstan Campbell, FAO Representative, Jamaica and Mr. Trevor Murray, Director of Operations for the Caribbean, IICA.

and nutrition problems, traditionally the remit of the health sector?

To answer these questions presentations were made by five keynote speakers. These were Prof. Prakash Shetty who held senior posts in health at the London School of Hygiene and Tropical Medicine and also in agriculture at the FAO. The other presenters were Dr. Fitzroy Henry, Director, CFNI, Mr. Vincent Atkins, Senior Policy Analyst, Caribbean Regional Negotiating Machinery (CRNM), Mr. Hesdie Grauwdie, Agriculture Policy Analyst, FAO and Dr. Carolyn Hayle, Lecturer, UWI, Mona Campus.

The presenters provided information on the impact of obesity and its co-morbidities on the health of the region as well as the opportunities for policy

action to combat obesity within the current policy regime. The main output of the symposium was a declaration of the Ministers of Agriculture supporting initiatives and mechanisms aimed at strengthening regional health and agricultural institutions, and reducing the burden of chronic, non-communicable diseases in the region. Additionally, the symposium provided a set of recommended policy actions for consideration by the Ministers in the short, medium and long term to address the problem of obesity in the region. The papers cogently argue the case for public policies in food, agriculture and health as a focused and deliberate way of addressing critical food and nutrition problems in the region. This **CAJANUS** issue presents the keynote presentations of the symposium.



ARTICLE

How Do Food and Agriculture Policies Impact on Obesity and Non-Communicable Diseases: Experience From Other Countries

Prakash Shetty^a

INTRODUCTION

Alongside the global problem of hunger, poverty and nutritional inadequacies that are diet and nutrition related, developing societies like the Caribbean are facing an emerging epidemic of obesity and chronic, non-communicable diseases (NCDs). NCDs take an enormous toll in lives and health world-wide affecting mostly the economically productive group in adulthood. A considerable proportion of increase in mortality and morbidity is attributable to changes in diet, nutrition and in lifestyles. Until recently it was believed that NCDs were either a minor or non-existent problem in developing countries. Current health statistics disproves this belief showing mortality trends that suggest large increases in NCDs in developing countries. Alongside the developing and industrializing economies of the South, low and middle-income

developing countries suffer the greatest impact of NCDs. Moreover, the rapid rise in these diseases is seen disproportionately among the poor and disadvantaged populations thus contributing to widening health gaps between and within countries. This rapid rise of obesity and NCDs thus represents one of the major challenges to global development in the 21st century and threatens economic and social development of member nations as well as the health and lives of millions of their subjects.

Interventions to prevent these diseases should focus on controlling the risk factors in an integrated manner both at the household and community or population level since the causal risk factors are deeply entrenched in the social, economic and cultural framework of society. Developing countries, in particular, have to recognise that the emerging epidemic of obesity

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ARTICLE 3

and NCDs is a cause for concern and that it needs to be dealt with as a priority as it affects the economically most productive group of individuals of both sexes in societies. The have to learn from the experience of industrialized, developed countries to tackle this crisis since the consequent health and economic burden will affect their development and consume scarce resources.

THE DRIVERS OF DIET AND LIFESTYLE -RELATED DISEASES

There are wide differences in the dietary consumption patterns of the rural populations as compared to their urban counterparts, especially among the urban well to do. The pace of dietary change appears to accelerate as countries become richer and populations become increasingly urbanized. The dietary changes seen with urbanization are both quantitative and qualitative in character and are now occurring faster than in the past. The adverse dietary changes include shifts in the structure of the diet towards a higher energy density diet with a greater role for higher fat and added sugar in foods, greater saturated fat intake mostly from animal sources, reduced intakes of complex carbohydrates and fiber, and reduced fruit and vegetable intakes (Drewnowski and Popkin, 1997). These dietary changes are compounded by life style changes characterized by reduced physical activity at work and during leisure

time (Ferro-Luzzi and Martino, 1996). In general, evidence from individual country surveys shows that urban diets are more diversified than rural ones, richer in micronutrients but also in animal proteins, saturated fats, pre-processed products refined carbohydrates. They also contain lower intakes of fiber and higher intakes of alcohol. These shifts in dietary intakes and consumption patterns along with changes in physical activity patterns in urban settings will alter the health status of the population and will consequently contribute to a health transition.

The effect of changes in per caput incomes will be reflected in a shift in consumer diets mainly away from staples and increasingly towards livestock and dairy products, fats and oils. A shift is also expected in the nature of the habitual diet with increasing consumption of processed food and an increased occurrence of eating outside the household with more reliance on pre-prepared snack or fast foods. While changes in prices and incomes will have a determining role in the emerging food consumption patterns, a number of other factors having to do with the structural transformation of the economies of many developing countries will contribute to the shift. Diets evolve over time, influenced by many factors and complex interactions. Prices, individual preferences and beliefs, cultural

traditions, as well as geographical, environmental, social and economic factors all interact in a complex manner to shape habitual dietary consumption patterns. For the large and growing proportion of humanity living in urbanized market economies, it is availability and accessibility of foods together with societal determinants of food choice that mainly modulate the habitual diet.

Migration is an important ecological experiment. Comparisons of the health of migrants with native or indigenous populations over a time frame provide insights into ethnic variations in the predisposition and the occurrence of chronic disease. Migrant studies enable us to study the interaction between genetic and environmental determinants of several NCDs such as diabetes (NIDDM), cardiovascular disease (CVD) and risk of some cancers. Studies of migrants, demonstrate for instance, that the adoption of diet, lifestyle patterns and socio-cultural practices of the indigenous population by the migrants results in the acquisition of disease patterns similar to that of the native population. This underscores the importance of environmental factors in NCD risk. Migrant studies also provide evidence for the unmasking of a probable genetic predisposition to the risk of early onset adult NCDs following migration and the consequent environmental changes. However,

rural to urban migration of people of similar genetic background is as powerful an environmental determinant as international migration is. Studies in Kenya have shown how diet related disease risk increases with migration of individuals from rural to urban environments over small distances and short periods of time (Poulter, et al, 1990). Thus the environmental change resulting from increased urbanization in developing societies will increase the risk of NCDs and impose a greater health burden on urban communities.

Thus the combination of the changes in the structure of the habitual diet, alongside a more sedentary lifestyle will contribute to the 'epidemiological transition' where communicable disease risk is replaced by non-communicable disease risk. This 'nutrition transition' will thus be associated with an increase in chronic diseases such as obesity, diabetes, hypertension, heart disease and cancer, and in turn contribute to a greater economic and health burden of urban developing societies (Popkin, 1994; Popkin, 2002).

The Challenge of Urbanization and Globalization to Food Systems

The increasing urbanization of developing societies alongside the process of globalization has a major impact on their food systems. The term 'globalization' refers to a complex, multi-dimensional and pervasive process. It has as much to

ARTICLE 3

do with trade liberalisation, as it has with technological, legal, economic, political, social and cultural change reduction in barriers to the cross-border movement of goods, services and capital; an increased flow of commodities, technologies, information, financial capital, modes of distribution and marketing; and, to a certain extent, migration of peoples and labour (Shetty, 2003). A common feature of this process of globalization is a convergence, although at differing speeds of practices and processes across different countries. In terms of food systems, changes are occurring all along the food chain from production and processing to retailing and marketing.

Global influences, through capital flow and foreign direct investment, are increasingly being exerted on the food systems of developing countries resulting in changes in food consumption patterns and their consequent impact on health and disease risk. Economic development fuelled by global changes results in a series of interrelated changes in diet, nutrition and lifestyles which accompany the development process observed in societies. These include changes that result from increasing affluence associated initially with the ability to meet food needs and improved health and nutrition and improvements in the surrounding environment and living standards

leading to a demonstrable increase in life expectancy and the quality of life. However, the attainment of food adequacy is usually accompanied by a change in the pattern of food consumption, which is demand driven along with mechanisation, and sedentary lifestyles is often detrimental to health in the long run.

Food systems are changing, resulting in greater availability and diversity of food, although access to this food is by no means universal. Many of these changes are closely associated with urbanization, increasing incomes, market liberalization and foreign direct investment. Competition for a market share of food purchases tends to intensify with entry into the system of powerful new players such as large multinational fast food and supermarket chains. The losers tend to be the small local agents and traditional food markets and, to some extent, merchants selling "street foods" as well as other food items. The supermarkets bring with them significant improvements in standards of food quality and safety at competitive prices and convenience, factors which are highly attractive to an increasingly sophisticated consumer. Thus these changes in food systems affect availability and access to food through changes to the food production, procurement and distribution systems and the food

trade environment. In turn this brings about a gradual shift in food culture (towards a more universal one), with consequent changes in dietary consumption patterns and nutritional status that vary with the socio-economic strata. Indeed, the lower socio-economic population groups drift towards poor-quality, energy-dense but cheap and affordable foods.

The main drivers to changes in food systems and dietary patterns are urbanization, increased income, capital flow and market liberalization in turn influencing changes in food supply which affect the diets and lifestyle patterns which impact on physical activity levels and consequently on nutritional status, health and disease risk (Kennedy, Nantel and Shetty, 2004). Lang (1999) describes changes to agricultural and food systems. These include massive use of agrochemicals and hybrid plants and, more recently, genetically modified plants; changes in food processing designed to produce uniform quality, size and shape, particularly suited for brand name products; and changes in distribution and marketing systems supported by computer systems for ordering, delivery and improved corporate control over markets. These food system features are already well in place in developed countries, and are now rapidly moving into developing country

markets, impacting agriculture systems, squeezing small farmers out of business and contributing to the process as well as adding to the burden imposed by increasing urbanization.

It is thus evident that the determinants of this emerging epidemic of obesity and NCDs are complex and include macro and micro level drivers, i.e., individual and population level environmental factors (Shetty, 2000). Intervention and prevention strategies that are developed to reduce this global burden of obesity and NCDs will hence need to address a complex range of individual and population level environmental determinants. It is my intention to look at food and nutrition policies to illustrate how they can contribute positively and negatively to this changing health scenario and address the question whether the lessons we have learnt from this can help us to address the challenges that economically developing societies like the Caribbean are facing.

FOOD AND AGRICULTURE POLICIES THAT INCREASE THE RISK OF OBESITY AND NCDs

Food and agricultural policies are mainly driven by political, social, economic and other considerations with health often taking a backseat or being ignored com-

ARTICLES

pletely. There are innumerable examples of the neglect to consider health sector as one of the important stakeholders while determining food and agricultural policies. Recent attempts to explore this situation by economists and policy analysts have highlighted the US food policies and agricultural subsidies as one classic example (Institute of Agriculture and Trade Policy, 2007). Attention is drawn to the fact that while public policies that help shape food and physical activity environments for people are issues that are addressed, absent from public discussion thus far however, has been discussion of the impacts of agricultural policy (Muller, Schoonover & Wallinga, 2007). In addition to summarizing trends in the supply and consumption of certain foods produced in the USA, and examining the federal agricultural policies that impact on child health and nutrition, these authors correlated negative trends in individual health with the nutritional value of foods produced, the price of those foods, and US agricultural policies that encouraged their production. They even raise the important issue of how ironic it is that the food assistance and nutrition programs for children - in itself a form of agricultural policy - is needed in large part to fix the problems that other aspects of the US agriculture policy have created.

Muller, Schoonover and Wallinga (2007), argue that the US agricultural policies have resulted in growing crop specialization (with 85% of 'Farm belt' acreage solely for two crops - corn and soya) and the crucial role of farm payments for these 'program crops' leading to overproduction and low prices consequently promoting agribusiness investment for the novel use of High Fructose Corn Syrup (HFCS) and soya bean oil. Underproduction of healthier crops such as fruits and vegetables results in higher prices for these healthy components of the diet. Emerging agribusinesses promoting policies favouring chronic over production and over supply, erosion of real market price and promotion of cheap food as a policy according to these authors make the case for these policies and their consequences to have contributed to drive the obesity epidemic in the USA (Muller, Schoonover, Wallinga, 2007). Box 1 summarizes the impact of the US agricultural policies that comes at the expense of encouraging local, diversified and healthy food systems and argues for public health professionals to best support a healthier food system by not only championing the nutrition programs at the individual and population level, but also by collaborating with other organizations to shift the overall direction

of farm policy toward a healthier and more sustainable food and farming system (Institute of Agriculture & Trade Policy, 2007).

FOOD AND AGRICULTURE POLICIES THAT MAY INADVERTENTLY CONFLICT WITH THE HEALTH ISSUES

The Food and Agriculture Organization's (FAO) Food Balance Sheet (FBS) data indicate that countries in the European Union (EU) have reached and exceeded the recommended intake levels for

level with actual intakes being far lower than FBS data estimates. For example in the UK, FBS data suggests availability of F & V per person per day exceeding 500 gm while data of actual intakes is only around 240 gm (Henderson & Swan, 2002).

While the EU has been promoting fruit and vegetable consumption, until recently some agricultural policies associated with fruit and vegetable were in conflict with the general aim to increase con-

Box 1: Health Impacts of the US Farm Policy

- US Farm policy aimed at driving down price of few commodities (corn and soya) while prices for fruits and vegetables increase with relatively little government support.
- Cheap commodities - added as sugars and fats in food and thus US Farm policy has directed food industry investment into producing low cost, processed foods high in sugars and fat. These are more readily available and more affordable than fresher, healthier choices.
- Livestock industry benefits from low commodity prices and promotes more meat consumption.
- Agricultural research supports current agricultural practices and comes at the expense of encouraging local, diversified healthier food systems.

Summarized from Institute for Agriculture & Trade policy, US, 2007.

fruits and vegetables (F&V), i.e., 400gm per person per day (Schmidhuber and Shetty, 2008). However careful examination and comparison with actual daily intakes suggests that this may indeed mask wastage at the household

sumption. The EU subsidizes farmers who are unable to sell their fruits and vegetables by providing what is called 'withdrawal compensation' for their destruction rather than promoting consumption of fruits and vegetable by

ARTICLE 3

making them available cheap, particularly to low income households (European Public Health Alliance, 2006). This EU withdrawal compensation which keep prices of fruit and vegetables high by limiting availability is an example of agricultural policies which may inadvertently be in conflict with health goals and hence a threat to public health (European Public Health Alliance (EPHA), 2006). It is estimated that withdrawal and destruction of quality fruits and vegetables cost 117 million Euros every year. The EPHA report concludes that the withdrawal compensation must come to an end and all products must be marketed at a lower price and this would result in encouraging consumption, especially in low-income households. This is a good example of paradoxical national policy and is highlighted here only to emphasize that the health sector cannot achieve much unless it understands the whole situation at the national level and acts to influence and change opposing policies and deals with the other national economic interests to achieve its goals. Fortunately, it is precisely this level of intervention that has brought about some changes in the recent reform of the common market organization for fruits and vegetables with the withdrawals for free

distribution to schools to be 100 percent paid by the European Community (CAP Reform, 2008).

FOOD AND AGRICULTURE POLICIES THAT PROMOTE BETTER HEALTH OUTCOMES

There are two outstanding country level examples of integrated, multi-sectoral food and nutrition policies that have been based with health of the population at the core. These are the country experiences of Norway and Finland and need to be held up as examples of how food and agricultural policies can help to prevent obesity and chronic diseases while promoting healthy diets and eating habits. It may not be out of context to mention that the success of the approaches of these countries from the 1970 onwards to achieve the objectives set out may be difficult to reproduce in this 21st century given the remarkable changes that have occurred in the food systems since then and may require more aggressive and complex approaches to achieve these health objectives in this globalised world. Nevertheless they illustrate the need for national and regional approaches involving the cooperation of all major stake-holders if we need to attain the goal of better health and nutrition of the population.

Norwegian Nutrition and Food Policy

Following the World Food Conference in Rome in 1974, the Norwegian government produced a white paper on *Norwegian nutrition and food policy* (Norum, 1997). While being aware of the concern of the agricultural sector that the policies may result in reduced consumption of meat and dairy products, the central question addressed was the means to be used to influence the production and consumption of food products in accordance with the objectives of the policy, i.e., the encouragement of healthy dietary habits. To achieve this a wide range of stakeholders collaborated and a range of policy measures was used (see Box 2). These approaches were

complemented with a National Health Screening Service as well as encouragement to the farmers to increase production of food grains, potatoes, vegetables and low-fat milk.

Measures were also introduced to stabilize milk and meat production and to avoid over production. Subsequent follow up showed that knowledge of diet and health increased and positive attitudes concerning healthy dietary habits resulted. Dietary surveys showed that while energy intakes did not alter, the contribution of fat in the diet reduced and total carbohydrate intakes increased with no change in the consumption of free sugars. There was a dramatic reduction in the population mortality attributed to coronary heart disease

Box 2: Policy Measures to Achieve the Goal of Encouraging Health Dietary Habits in the Norwegian Food and Nutrition Policy

- Public and professional education and information.
- Setting consumer and producer price and income subsidies jointly in nutritionally justifiable ways.
- Adjustment of absolute and relative consumer food price subsidies.
- Ensuring low prices for food grain, skimmed and low-fat milk, vegetables and potatoes.
- Avoidance of low prices for sugar, butter and margarine.
- Making regulations to promote provision of healthy foods by retail stores, street vendors and institutions.
- Regulation of food processing and labeling.

Norum, 1997.

Box 3: Important Aspects of the Successful Public Policy in Finland – the North Karelia Project

- Inter-sectoral collaboration
- Presence of a responsible agency - national focal point
- Nutrition education programmes
- Support for voluntary organizations
- Food labeling policies
- Food pricing policies
- Research and demonstration
- International collaboration

Puska, 1997

over a 20 year period thus establishing the role of the Norwegian food and nutrition policy in reducing the prevalence of diet related diseases and in improving the health of the population.

Experience from Finland –The North Karelia Project:

Prevalence of high cholesterol levels and extremely high mortality rates due to cardiovascular disease (CVD) were a feature of the population health in Finland in the 1960s and early 1970s. The North Karelia Project was a response initiated in 1972 to the growing public concern to this situation in Finland (Puska, et al, 1995). The intervention that involved the whole North Karelia province and 5 years later was extended to cover the whole of Finland had several public policy measures outlined in Box 3. A

key to its success was community organization – working within the community and with its numerous organizations with close community involvement. The overall science base was the framework for an intervention that was flexible, based on continuous monitoring and feedback and taking advantages of the naturally occurring possibilities. The intervention used multiple strategies: from innovative media and communication activities and systematic involvement of primary health care to environmental changes, collaboration with food industry and policy changes. The project worked in close collaboration with national health authorities; its activities benefited from and contributed to national health policy and long term sustainability was based on strong leadership and an appropriate institutional basis. The reduction in

cholesterol levels and a dramatic drop in CVD mortality demonstrated the success of the intervention.

OBESITY AND NCD PREVENTION: LESSONS FROM OTHER COUNTRIES

Obesity and non-communicable diseases like heart disease, diabetes mellitus, and cancer are preventable diseases and there is good scientific evidence that prevention is a viable option to the costly treatment. The emerging epidemic of obesity and NCDs in developing countries like the Caribbean is thus not inevitable - but preventable thus saving lives and reducing the economic burden on overstretched health budgets of these nations. While an individual's diet and lifestyle and perhaps genes may dictate the risk of these chronic diseases, preventive strategies have to operate both at the individual and the population level. Examination of the causal chain of exposure leading to disease (WHO, 2002) illustrates the role of the immediate physiological and pathophysiological causes in the outcome and disease sequelae, e.g., high cholesterol or blood pressure, proximal causes such as diet and inactivity play a role and these in turn are influenced by distal socio-economic causes which may include income, education and occupation. The latter, i.e., distal socio-economic causes become even more significant and important if the

general environment we live in and the rapidly changing food system we are exposed to in our increasingly globalised world does not favor adherence to healthy diets and lifestyles. To quote the late Professor Geoffrey Rose, "It makes little sense to expect individuals to behave differently from their peers; it is more appropriate to seek a general change in behavioural norms and in the circumstances which facilitate their adoption". He also stated, "The primary determinants of disease are mainly economic and social, and therefore its remedies must also be economic and social" (Rose, 1992). Thus population-based strategies that seek to shift the whole distribution of risk factors have a much greater potential to control the population incidence of the disease. And unlike targeting only high-risk individuals, population-based prevention is the most cost-effective and the only affordable option for major public health improvement in obesity and NCD rates. The positive experience from the innumerable intervention studies and country experiences also underscore the fact that major changes in disease burden and risk can take place in a surprisingly short time.

Where Can the Food and Agriculture Sector Intervene?

The answer to this question is self evident. Food and agriculture sector

ARTICLE 3

operates at the population level – and on the distal socio-economic causes of the causal chain of exposure leading to disease outcomes and their sequelae. They function mainly by primordial prevention, i.e., preventing the risk factors from emerging. Hence food and agricultural policies contribute to primary prevention of disease by reducing known risk factors. Thus they promote and contribute to an enabling environment that favours a healthy food system that promotes healthy dietary habits and lifestyles. Thus any activity or preventive strategy or intervention indulged in by the health sector has to involve the close cooperation of the food and agriculture sector, which has a very significant role. Thus it is implicit that the health sector recognizes that population based prevention strategies have to be a collaborative effort with partners from many sectors (multi-sectoral) and that at the national level the food and agriculture sector is one of the most important and crucial partners in this endeavour to achieve good health for the population. It is useful if the health sector also acknowledges that while there are both positive and negative impacts of food and agricultural policies on national health goals, compromises have to be made taking into consideration the overall national economic and agricultural goals and that unreasonable demands are not made on those

sectors. A good example and one that is most controversial is recommendation of the WHO/FAO Consultation (2003) that calories from sugar should not exceed 10% of total dietary energy. The controversy arose from a conflict of interest between sugar producers and processors on the one hand and nutritional and health experts on the other. This may create the impression that health experts are against national interests by undermining agricultural activities which may appear to have a negative health impact – e.g., sugar cane cultivation for instance in the Caribbean being attacked in order to achieve the goal of lowering free sugar intake of populations to those recommended by these international agencies (WHO/FAO, 2003). This is an example where the two sectors need to communicate and address each other's concerns and arrive at compromises that will further both the national economic interests and at the same time not undermine the national health agenda and goals. The food and agriculture sector can contribute to both short and medium term as well as long term preventive measures which are outlined in Box 4. What better opportunity than to conclude by drawing your attention to the paper presented to the Caribbean Commission on Health and Development by the Director of CFNI which provides a multi-sectoral and integrated approach to

Box 4: Contributions of Food and Agriculture Sector to the National Health Agenda

Short and Medium Term:

- Food labeling.
- Promoting access to healthy foods: (production, storage, transportation, marketing) fruits & vegetables, low fat milk, etc.
- Regulating the production and retailing of processed foods, street foods, etc especially in an urbanized, globalised context.
- Appraise the role of supermarkets in increasing the availability of foods with low energy density low fat, low sugar); low salt foods.

Long Term:

- Promoting an enabling environment that ensures access to healthier food choices at affordable costs to the consumer, while guaranteeing producers a sustainable livelihood.
- Contributing to the national economy through trade and growth of markets.

address the challenge of obesity in the Caribbean region, (Henry, 2004).

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The Importance of Caribbean Agriculture and Food Policies in Obesity Control

Fitzroy Henry^a

The potential impact of agriculture and food policy on obesity and chronic diseases may not be obvious at first glance, but careful analysis shows how profound and predictive that link can be. In 1996 our Caribbean Ministers of Agriculture in their Declaration on Food Security stated that *“Food and nutritional security in the Caribbean is also related to chronic nutritional life style diseases such as obesity, stroke and heart attacks....”* Now more than a decade later the implications of this Declaration are even more relevant to the link between agriculture and health given:

- The increasing prevalence of chronic nutrition related diseases in the region;
- The loss of traditional preferential markets and over two decades of structured economic reforms; and
- The effects of the globalization process on food trade and on health.

More specifically, new concerns have emerged in Caribbean countries that also make it imperative for

policy-makers to reassess the role of agriculture and its relationship to health in particular.

- There is an urgency to establish food and nutritional goals so that the agriculture and food systems can deliver adequate and nutritionally appropriate quantities of food, especially to low income and vulnerable groups;
- Chronic non-communicable diseases cut across socio-economic, spatial and demographic lines, and are associated with a sedentary life style and changes in diets which can be linked to domestic and import food policies.

These nutritional and epidemiological transitions provide strong arguments for a conceptualization of agriculture policy that combines food access, availability, and nutritional and health considerations, and for forging links among agriculture, health and nutrition, trade and other sectors. These multi-sectoral interactions remain to be fully appreciated and exploited by regional policy makers. This needs to be corrected in light of the prevailing

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ARTICLE 3

nutritionally related health problems in the region. It is also an urgent task in light of the globalization process that is expected to take deeper root after the current economic downturn is reversed.

This means that food policies that are limited to the acquisition of cheap foods without regard to their contribution to public health are short sighted and could retard the fight against obesity and chronic diseases.

The transition to obesity and chronic diseases is characterized by a shift away from diets based on locally grown indigenous staples (grains, starchy roots), locally grown fruits, vegetables, legumes, and limited foods from animal origin, to diets that are more varied and energy-dense, consisting of foods that are more processed (including processed beverages), more of animal origin, more added sugars and fats, and often more alcohol.

The evidence from food balance sheet data shows that for the Caribbean region:

- Energy from fats and sugars has exceeded the recommended population goals from as early as the 1960s and has increased consistently up to the present.
- Imports of both fats and sugar have been increasing over the years.
- While the contribution of fruits and vegetables has been increasing since the 1960s, consumption remains well below the recom-

mended population goals. In addition the contribution of imports to our consumption continues to outstrip that of local production.

These points show the failure of the food system to address current health concerns and underscore the need to go beyond the supply side of the food equation and address demand side issues, particularly the nutritional dimensions. It is therefore strategic to apply incentives to increase the availability of more fruits and vegetables and disincentives to reduce the consumption of fats and sugars.

These are basic and incontestable reasons to rethink our agriculture and food policy in the region, building upon the production/sustainability orientation that already exists but incorporating issues related to diets, nutrition and health. The conceptualization captured in Figure 1 suggests a systems approach, and also clearly demonstrates that health issues cannot be mere appendages to agricultural policies but must be an integral part of policies and strategies of several sectors of the economy. In the past, the issues of health status, food security, diets, and agricultural trade, have been approached in the region as originating from disparate, unrelated sectors of the economy. However, there are strong links between and among these sectors, and recognizing and acting upon them can contribute to the sustain-

ability of human development in the Caribbean.

At the national level evidence suggests that the under-nutrition profiles of most Caribbean countries, while fairly good, can be improved, since pockets of malnutrition and micro-nutrient deficiencies exist in several countries. Indeed, rapid urbanization and imbalances in diets have resulted in the co-existence of under-nutrition and obesity within many households in the Caribbean region. This is an additional reason why food security must embody aspects of health and nutrition, rather than being concerned only with production and availability of food.

Figure 1, which focuses on the food-health path, is a useful way of disentangling the interplay of some of the complex factors that contribute to the health profile in the region. Three important aspects of this figure should be emphasized.

- Many factors, seemingly disparate and unrelated, impact on nutritional and health status of the population. For example, foods to be consumed must first be made available through domestic and import sources. However, households' accessibility is a function of income, prices, marketing, distribution, etc.
- Good nutrition depends on access to adequate and nutritious foods, which in turn depends on the quality of diets, food pre-

paration practices, educational levels, and age and gender distribution within the households.

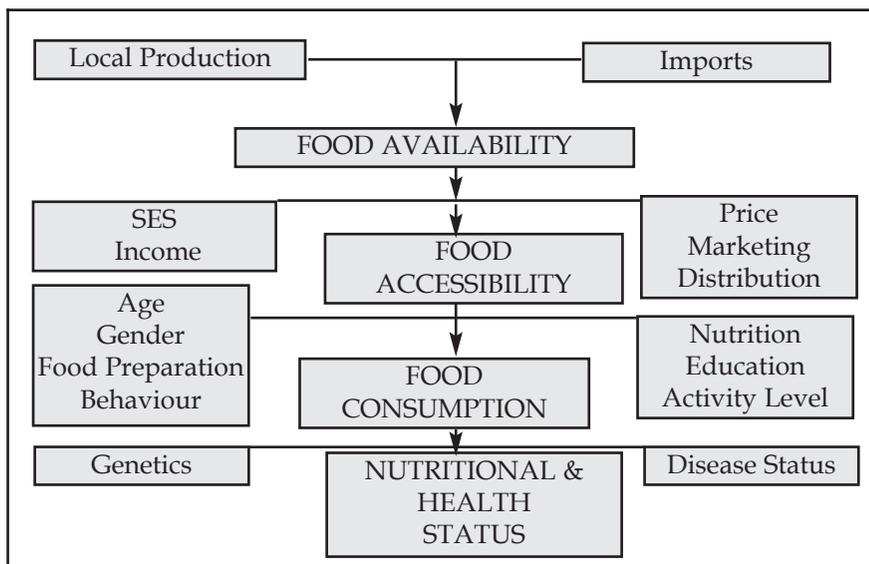
- As a logical extension of the two previous points, any conceptualization of food security must be cognizant of the inter-relationship between agriculture, food, health, nutrition and other sectors.

Rethinking Agriculture/Food policy

There are two major elements that should guide this paradigm change:

- The first relates to the failure of the food system to meet the nutritional and health requirements of the population. Clearly, health and nutritional concerns are an integral part of, and can guide policies to achieve food security. It is for this reason that nutritional goals must be established so that the region's agricultural and food systems can deliver adequate and nutritionally appropriate quantities of food, especially to the poor and marginalized groups of the society.
- The second relates to the needed shift in emphasis to enhance those nutritional goals. Currently, as in the past, the emphasis in the region with respect to food security is on the supply side. This is understandable. The litany of constraints to production and distribution that

Figure 1: The Food-Health Path



farmers face in the region appears to be insurmountable. Additionally, concerns about import food dependency, reducing the food deficit, increasing food production and improving competitiveness and quality of produce, compounded the problem on the supply side. Nevertheless, there is urgency on the demand side to improve access to, and distribution of, adequate and healthful food through efficient marketing channels and through availability of income. The current disproportionate focus by regional policy makers on the supply side of the food security equation must be corrected in light of the prevalence and negative impact on nutrition-related chronic

diseases in terms of quality of life and the consequent loss of labour productivity in the region.

Attempts to address the health and nutritional trends described above must include a change in the thinking towards agriculture and food planning mechanisms. Table 1 presents some of these policy options with evidence from other jurisdictions of their potential impact and feasibility.

EVIDENCE AND ISSUES IN TABLE 1:

Incentives that Subsidize the Production of Local, Nutritious Foods

- In Finland's North Karelia Project the availability of low fat foods was increased in the

ARTICLES

community and in addition legislative actions and governmental policies made soft, low fat butter available to all Finns and offered price supports for berry farming. These efforts increased consumer demand for low-fat food products.

- In the Five-A-Day intervention in the United States participants who received farmers' market

coupons reported significantly greater consumption of fruits and vegetables and when an educational component was provided along with the coupons the consumption was even greater.

Price is a factor in food purchases. Lowering by half the prices of fruits and vegetables can result in doubling their sales. Therefore although there

Table 1: Agriculture and Food-Related Policy Options to Combat Caribbean Obesity and NCDs

Policy Options	Potential Impact (in 5 years)	Feasibility (Political/Practical/Financial)
Incentives that subsidize the production of local, nutritious foods.	XXX	XX
Levy taxes on selected foods high in fat, sugar, and calories.	XXX	X
Require that calorie (and fat) content is prominent on marketed foods so that the public can make healthy substitutes.	XX	XXX
Discontinue the excessive use of sugar-and fat-containing foods offered in cafeterias and school vendors and encourage students to make healthy diet and lifestyle choices.	XX	XX
Require manufacturers to use national dietary guidelines on product packages that are safe and appropriate.	XX	XXX

XXX = very high

XX = high

X = moderate

ARTICLE 3

is evidence that by providing subsidies to specific agricultural products consumers can increase consumption of healthful foods, developing such policies is subject to considerable political and economic pressure.

EVIDENCE AND ISSUES IN TABLE 1:

Levy Taxes on Selected Foods High in Fat, Sugar and Calories

The issue of taxing unhealthy foods has received increasing attention especially in the wake of the Global Strategy on Diet, Physical Activity and Health, which was approved by member countries of the WHO in 2004. Unhealthy foods are cheaper and more accessible than ever before. In recent decades, the real price of food has fallen, in particular for energy-dense foods that contain higher levels of fats and sugars. Pre-packaged foods, fast food restaurant meals, and soft-drinks, all of which tend to be high in fat, sugar and calories, are all more easily accessible and cheap.

Just by imposing the tax may not create a strong incentive for consumers to make changes, especially if manufacturers decide to absorb the entire tax, leaving retail prices and consumers behavior unchanged. The literature reports that the tax rates imposed are often too small to affect purchases.

Another problem would be to decide what foods are taxed. The

tax base has to include nutritionally equivalent foods, however infrequently the latter are consumed. No benefits accrue if the tax simply induces substituting one snack food for another. How consumers might substitute from particular types of highly processed food is not yet clear and it is only hoped and assumed that consumers would for example substitute fruits and vegetables for snack foods.

It can be concluded that a relatively small tax on snack foods, say 1%, would have very small impact on dietary choices and thus negligible impact on weight and health; however higher tax rates, say 30%, appear to influence consumer food choices and weight when the tax base is broad. However such results are tentative since the full range of consumer substitution possibilities is difficult to model and may not correspond to previously observed consumption patterns.

Governments may choose to address food related health problems by taxing imports of high-fat or high-sugar foods; however, such efforts will have to comply with rules governing international trade. Fiji tried to ban the import of mutton flaps, an extremely fatty food, but to comply with its WTO obligations it had to ban the sale of all mutton flaps, not just imports. This kind of broad treatment would be necessary to grant

subsidies to healthy foods, but taxing unhealthy domestic foods alone would probably not pose a problem under WTO rules. Furthermore, avenues for using other regulatory and economic policies to improve the consumption of healthy foods may be acceptable under the WTO Agreement on technical barriers to trade and the agreement on agriculture if countries can justify them as contributing to legitimate national health objectives.

POLICY RECOMMENDATIONS

Expected Outcome 1

Food imports and local production policies aligned, in the context of global trade, to the recommended population food goals.

Activities:

- Review national food policies from a nutrition/health needs perspective and support the production of affordable complex carbohydrate foods.
- Examine food imports and assist in the development and implementation of ways to balance the importation of fatty foods (e.g. milk and meat) and the low fat foods (grains and other cereals).
- Promote the production, supply and consumption of legumes, ground provisions, fruits and vegetables and low

fat foods to meet the recommended national dietary goals.

Expected Outcome 2

Laws, regulations and regulatory practices instituted that will:

- enable people to make healthy dietary choices.
- make more food available to support nutritionally desirable diets.

Activities:

- Develop regulatory guidelines for people in the food service sector taking into account nutritional considerations, e.g. legislation on nutritional labeling, code of advertising, healthy choices for fast food franchises.
- Strengthen regulatory bodies through training and monitoring the use of dietary guidelines in the food industry and trade.
- Promote the concept of small increases in consumer taxes on selected high calorie, non-nutritious foods.

Expected Outcome 3

The private sector is fully aware of food, nutrition and health relationships, and participates in the implementation of the dietary recommendations for the improvement of public health.

ARTICLES

Activities:

- Create awareness among the private sector food trade groups (producers, importers, manufacturers, retailers and vendors) about the relationship between diet and nutrition-related chronic diseases and promote the concept of incentives for the increased production of a wide variety of appealing low fat, high complex carbohydrate and high fiber foods.
- Train private sector entities in the conservation of nutrients in the manufacturing, processing and packaging of foods.
- Encourage food service establishments (hotels, restaurants, fast food outlets and vendors) to offer a variety of health-promoting foods and also to display information about caloric and fat content of meals e.g. on menus, place mats and food wrappers.

CONCLUSION

The Caribbean region is still at an early or mid-way part of this nutrition transition. Fortunately, significant traditional agriculture, food system, and food habits still flourish or at least survive. Several countries in the region still produce significant amounts of food to sustain traditional diets based on

fruits, pulses, and roots, the main sources of complex carbohydrates. However, the processes of globalization and economic reforms are rapidly displacing these traditional diets and leading to health problems that impact significantly in term of costs on the health system. The recommendations above offer an opportunity to advance agriculture and food policies that can alter the pattern of obesity and chronic diseases epidemiology towards a more healthy Caribbean population.

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Participants at the Symposium.

Refocusing Agri-Tourism on Healthy Lifestyles

Carolyn Hayle^a

INTRODUCTION

This paper articulates the need for re-positioning Jamaica's agri-tourism towards healthy lifestyles, with a focus on wellness. The concept of wellness is used to denote an interactive process of becoming aware of and practicing healthy choices to create a more successful and balanced lifestyle. The need to re-position Jamaica's agri-tourism is motivated, firstly, by the imperative to promote healthy lifestyles given the increasing prevalence of chronic non-communicable diseases in the region (as well as in the countries where Jamaica's tourists originate). Secondly, Caribbean tourism is at a cross roads. Many developing countries, including Jamaica, now depend largely on tourism as the major engine of economic development and social progress. However, there is growing evidence on the slowing down of the industry in recent years, which motivates the need to create new

value added products based on strong sectoral linkages.

IMPERATIVES TO REFOCUS AGRI-TOURISM

Several reasons necessitate the repositioning of Jamaican tourism as a healthy lifestyle destination. First, the industry has been slowing down in recent years. The February 8, 2006 edition of the Gleaner newspaper indicated that the Caribbean registered a decline (or slowing) in economic activity in 2005. The Caribbean Development Bank attributed this to weaker performance in the tourism sector. An article in the Observer newspaper in Jamaica on February 17, 2006 confirmed that the number of visitors to the Caribbean grew in 2005, but the pace was much slower than in the previous two years. Both pieces of information coupled with the findings of Clayton, et al. (2004), indicate the urgency of creating new value added products based on strong sectoral linkages.

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ARTICLES

Second, Sharpley (2002), argues that one additional reason for the unevenness in tourism growth is that international tourism is still dominated by the industrialized world. The extent of the dominance is reflected in tourism receipts: developing nations received 30.5 percent of international tourism receipts in 1997, while developed countries received 63.8% (Shaw and Williams, 1994). This means that growth in the industry tends to be relatively strongly affected by the larger business cycle in the developed economies. Hence, a broader based industry would be less markedly affected by events in North America and Europe.

Third, non-communicable chronic diseases are the main public health problems in the Caribbean and these diseases are caused by lifestyle choices related to diets and physical activities. This information addresses not only the domestic population but also provides an avenue for creating an interesting shift in Caribbean tourism which has global appeal. According to the Caribbean Food and Nutrition Institute (CFNI), health development is an integral part of agriculture development (CFNI, 2006). CFNI also noted the significant amount of money that must be spent in the Caribbean to treat diseases caused by improper diets and lifestyles. For instance, estimates for four Caribbean

countries suggest that if everyone with diabetes and hypertension in these countries were to be treated for these diseases the direct cost alone, viz., cost of doctor's visits, drugs and hospitalizations, would be approximately US\$1 billion per annum. While health was seen by CFNI as the link to agriculture development, the tourism system offers an equally valid opportunity for the development of world class value-added products based on uniquely Jamaican properties.

CHANGE AND THE CARIBBEAN REGION

Changing the Caribbean model of tourism will not be a trivial task. As the World Bank Report on the Organization of Caribbean States (OECS) points out:

Improving the business environment implies tough choices for the governments of the sub-region. This report does not offer a silver bullet for growth but does suggest a strategic agenda for both governments and the private sector to consider if they are to improve their capacity to compete globally (World Bank, 2005).

The OECS Report proposed three components for this strategy:

- the formulation of a strategic sub-regional vision for the economy and key sectors;

ARTICLES

- the pursuit of greater openness, competition and a more level playing field in the domestic market; and
- the building of new capacity in the labor force both in the private and public sectors.

The Report concludes that these actions are crucial in order to compete in the new globalized economy, in addition to the promotion of innovation and the adoption of new technologies by the private sector. This indicates the range and depth of changes required to ensure that the Caribbean tourism product remains competitive.

It is equally clear, however, that the Caribbean has significant (but still largely undeveloped) points of competitive advantage. The region's close geographic proximity to North America causes it to be heavily influenced by North American culture and its development patterns. Yet the Caribbean draws its traditions from at least six cultures: the British, Spanish, Dutch, French, West African and Taino. These cultures have blended together to create the unique culture of the Caribbean. This creates a distinct potential advantage in being able to offer each of these generating markets elements of their own culture which can be linked to the social reference points in those markets. Tourism market research

can provide the vehicle for creating Caribbean products for various markets. This point is supported by Tarlow (2005):

Research your market and then do more research. Lack of data often causes major tourism business miscalculations. Take the time to make sure that you understand what your research problem is and then do the research that will lead you to useful and practical answers. Learn how to prioritize. Too many tourism businesses fail because they try to be all things to all people. Niche marketing is an example of learning to prioritize. Try to appeal to an audience that matches your product.

Jenkins (1991) suggests that a country developing a tourism policy must take into account the role of government, ownership and control, international vs. domestic concerns, the scale of tourism development and integrated vs. enclave issues.

THE WELLNESS INDUSTRY

Jamaica's master plan for the tourism sector focuses on community-based tourism, that is, small business enterprises embedded within the tourism sector. The tourism system and other theories related to tourism suggest that globalization and development

offer an avenue for the application of tourism as a catalyst for national development. This is a new approach and has to be created for each country based on its own strategic choices.

The point of convergence between health, tourism and agriculture is wellness. This suggests that by understanding both the macro and micro elements of tourism, health and agriculture, a viable linked economy based on the wellness industry can be created. More particularly, wellness offers a much needed life line for the small business sector, the engine of growth for any economy. Additionally, using Porter's cluster approach and adopting a strategy now being used by Jamaica Trade and Invest (formerly JAMPRO), several linked supply chains can be fostered, nurtured and strengthened. This too is essential for competitiveness. The long term yield is the sustained robust industry clusters based on Jamaican resources and competing at an international level.

Without a doubt, the wellness industry can become an engine of growth for the Jamaican economy. This industry is a composite of several other industries and can be focused mainly on identifying opportunities for small enterprises located within

these identified industries. The development of a wellness cluster requires confidence in Caribbean products, a willingness to cooperate and collaborate across industries and agencies, a confidence in Caribbean innovativeness, ingenuity and goods and services to establish a long term competitive advantage in the global market place.

Two definitions of wellness are offered below. The purpose is to establish the parameters of the discussion. These are:

- Wellness is an interactive process of becoming aware of and practicing healthy choices to create a more successful and balanced lifestyle (Valayer, 1999).
- Wellness is the condition of good physical and mental health, especially when maintained by proper diet, exercise and habits. (www.answers.com).

From these definitions wellness is preventative in scope and covers a wide range of individual experiences including, social, occupational, spiritual, physical and emotional. Both definitions put forward the idea that wellness is a process based on healthy lifestyles choices. This process allows for easy connection between two major sectors of the Caribbean economy, viz.,

ARTICLES

agriculture and tourism and one cross cutting sector, health. A Jamaican illustration of wellness is offered in Figure 1 for consideration.

The synergies among agriculture, tourism and health focus on the heartbeat of Caribbean life. They also introduce the idea of nutrition, recreation and leisure and physical and mental health and provide a natural fit among agriculture, tourism, health and Caribbean lifestyles (Figure 2). From an international perspective, goods and services offered in the wellness industry have to meet international standards. This then bolsters Jamaica's competitive arsenal as its products have to be compliant with these international demands. This also suggests that Jamaican human, natural and physical resources all have to be certified and accredited to international standards. Again, this is a necessary tool for international competition. In summary the wellness industry provides Jamaica with opportunities for correcting domestic short-comings, creating jobs and establishing international competitiveness.

UNDERSTANDING THE GLOBAL TOURISM SYSTEM

The tourism system is composed of four elements:

- The tourists from the generating regions

- The transit routes
- The destination
- The industry

Several authors support the notion of a tourism system (Liu, 1994; Ritchie, 1993; Valayer, 1999; Richard, 1995). Liu also points out that these four elements are interwoven in functional and spatial relationships, and that a good business model requires an understanding of the entire global tourism system. This is partly because it is important to understand both the demand determinants that push a tourist into a travel decision, and the supply variables that pull the tourist towards choosing a particular holiday destination. Liu (1994) also argues that tourism has a clear business cycle that is usually about six or seven years long, and is fairly well correlated to the world economic cycle, making it essential to understand the larger pattern of economic development and change in order to be able to effectively manage the industry. The acknowledgement of a six to seven year cycle linked to global patterns underscores the need to decrease dependency on tourism and create strategies that would reduce any cyclical shocks.

Given those constraints, a basic tourism system requires specific interventions in effective and efficient systems at both the macro and micro levels to detect, manage

Figure 1: Wellness Synergies

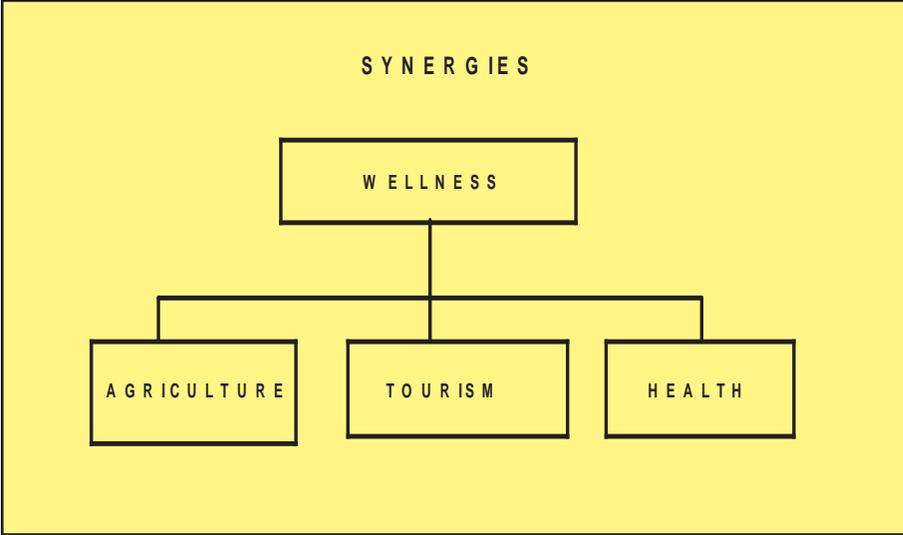
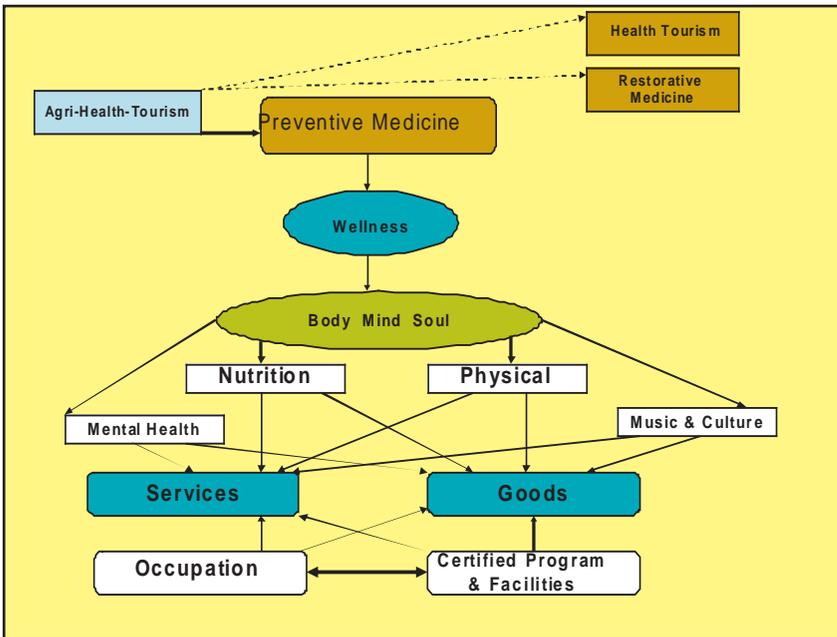


Figure 2: Significance of Wellness to National Development



ARTICLES

and analyze shifts and changes in market demand, consumer profile, consumer behaviour and general shifts in international trade (this also assumes that appropriate strategies are in place to manage the detected changes).

Cooper et al. (2002), argue that destinations need to develop a holistic strategic approach based on their position on the destination life cycle. They extend their argument by developing a strategic framework for sustainability which takes into account not only life cycle stages but also competitive position. The limitation with this approach is that it focuses on one element of the tourism system, the destination, whereas in the case of the Caribbean a complete systems approach is required. The real opportunities are in the tourism system bolstered by policies designed to create a vehicle for moving a well conceived regional negotiated strategy from concept to reality. A suggested application of the system is set as follows:

- **Generating markets:** All information related to the visitor-all elements of the tourism product-must form part of the negotiating strategy for mega-events. This is the essence of long term strategic analysis. This information informs policy. These data must be retained by the host region for future trade purposes and new product development.

- **Transit route:** This, along with the information gained from the generating markets, is the essence of the global distribution system. Strategies for manipulating such data for the purpose of marketing and creating new products must be carefully crafted, monitored and evaluated on a continuous basis.
- **Destination:** This is the essential element of creating and maintaining the economic image of the country in the global market place. This is the engine that drives the previously discussed “pull” and “push” factors.
- **Industry:** At this level the market differentiation strategy should be designed around international standards for the purpose of using human and natural resources, the essence of the Caribbean, as a competitive tool.

Britton (1982) refers to a three-tiered structural model of Third World Tourism. That is, headquarters, branch offices, and small-scale tourist enterprises that he indicated signify the lack of control over tourism by many developing countries. He goes further to point out that many developing countries get locked into international standards and packaging that are designed in developed countries and which do not necessarily fit the needs

of the developing country. This control of local and foreign capitalist firms is perpetuated through communications, tourism expertise, product design, pricing and economies of scale. Telfer (2000), explains that because of the inability of the manufacturing and agricultural sectors within the developing countries to control the quality and supply, the dependency on foreign firms and experts continue. A possible solution may lie in the cluster approach which would ensure:

- Information is accessed by all competitors and all competitors have access to the same information within the same time frame;
- Training policies that support education and training are offered at a minimal cost to the small and medium scale enterprises (SMEs);
- Linkage between firms is approached in a coordinated manner in order to assist them with volume discounts and efficiencies and this must be facilitated by the public sector; and
- Delivery services are customized to fit the SMEs sizes and needs.

Gollub et al. (2007), suggest that a regional cluster-based approach builds reliance among and between stakeholders (public and private) as they become producers and suppliers to each other. This

minimizes leakage while at the same time develops a number of subsidiary industries that would help to absorb the economic downturn when the tourism cycle goes through a low period. A combination of an integrated assessment at the macro level and strategic development of the cluster approach at the micro level can yield diverse industries at varying stages of the business life cycle. This according to Gollub et al. is the strategy used by successful regions.

By working together in clusters all the members seek the solutions to achieve common goals. The significance of this approach to a region/nation is that it provides a tool with which quality of life of citizens can be measured. These measurements become the barometer for determining whether tourism has moved from merely contributing to the balance of payments to contribution to national development, and in particular to:

- Improved prosperity - higher per capita and family income.
- Reduced disparity - lower overall poverty rates.
- Enhanced sustainability - improvement in environmental quality (air and water).
- Increased quality of life (increase in housing, health, social services and recreation).

ARTICLES

A critical component of the cluster-based approach emphasizes, according to the authors, “building domestic capacity instead of defending markets”. Gollub et al. state that in robust societies where this approach is used the intention is to increase competitiveness through the value chain rather than focusing on import substitutions as a defense mechanism to achieve overall growth.

CONCLUSION

The problems facing the Caribbean at both the domestic and international levels are clear. These problems extend themselves to several sectors. The use of an integrated approach such as the opportunity provided through the use of the tourism system and the cluster approach has been explored. Refocusing tourism on healthy

lifestyles not only makes yields in tourism profitability but it may also solve many domestic problems which ultimately result in financial savings. The challenge is for the Caribbean to shed its natural propensity to procrastinate and move aggressively towards embracing wellness as a paradigm shift.

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ARTICLES

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Food Trade, Food Security and Health in the Caribbean

Deep Ford^a



INTRODUCTION

Trade and food security are tied together in the Caribbean through a variety of linkages rooted in the importance of exports and imports to their economies. On the one hand, export-oriented economic activity is a major source of foreign exchange and employment-based income-earning opportunities (linked to both the supply and accessibility dimensions of food security). On the other hand, imports are equally critical to nutritional and stability dimensions of food security, as most of these countries are net food importers. Further, much of the production for national, regional and international trade is dependent on imported inputs, thereby underlining the dynamic synergies between imports, exports and food security. The first section of this paper highlights trade and food security linkages in the Caribbean.

Agricultural trade policy in the Caribbean over the past two decades has been closely defined by negotiations directed at liberalizing agricultural trade policies. While the dominant arena has undoubtedly been the World Trade Organization (WTO) negotiations there have also been other multi-lateral and regional approaches of considerable importance. In the context of the latter the Africa, Caribbean and Pacific/European Union (ACP/EU) negotiations and the efforts across CARICOM to establish a CARICOM Single Market and Economy (CSME) and a Common External Tariff (CET) have been paramount. The second section of the paper addresses these policy discussions as they relate to determining food security outcomes in the Caribbean region.

The national and global policies and the global trading environment have over the past two decades contributed greatly to changing the agricultural trading situation in the Caribbean. Most

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importantly have been the increased dependence on food imports and the widening of the gap between agricultural exports and imports, including the declining market share of Caribbean agricultural products on the global marketplace. The third section of this paper provides evidence of this changed situation, both in terms of the general trade balance but more importantly in relation to the specific products that account for the change and the current food security situation in the region.

The Caribbean faces a major challenge of food security and there is an urgent need to develop an integrated food trade policy that both improves the situation over the short run and at the same time builds a sustainable food system for the future. There are several components to such a phased policy development and section four of the paper presents these emphasising the different roles of the public and private sector, jointly and separately, must play to achieve the national and regional objectives related to ensuring food security at all levels.

FOOD SECURITY AND TRADE LINKAGES IN THE CARIBBEAN

The accepted definition of food security has changed considerably over the last three decades since the concept was first introduced in the

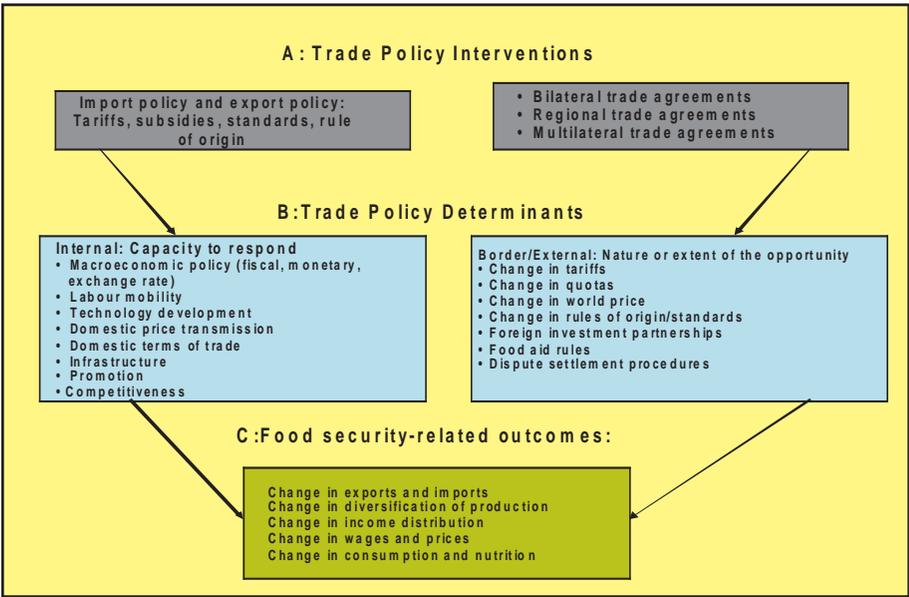
1970s. At that time the emphasis was mainly on volume and stability of food supplies.⁶ In the 1980s, two additional dimensions were added: access, of all peoples at all times; and enough food for an active and healthy lifestyle.⁷ A more recent and perhaps most widely used definition is FAO's 2001 refinement of its earlier 1996 World Food Summit definition. The refined definition is:

"Food security is a situation that exists when all people, at all times, have physical, social, and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life".

The key variables that characterise food security concepts and approaches have therefore come to be: accessibility, availability, stability and utilisation. It is generally accepted that improved trade policy linkages, interfacing effectively with the larger internal and external policy environments, can positively affect these variables. Figure 1 presents these linkages, placing the critical determinants into two categories: those affecting the nature of the internal capacity to respond; and those related more to border and external measures that affect the nature and extent of the *external* opportunity.

The internal dynamic linkages relate primarily to the fact that trade liberalisation will not result

Figure 1: Trade Policy, Trade and Food Security: Linkages



in increased food security unless domestic producers and traders are able to participate in increased trading opportunities. The domestic policy and production environment have to stimulate and be conducive to the required changes. These factors critically affect the ability of firms (including farms) to increase their productivity and/or switch to alternative activities successfully. The result of the linkage between policy and outcome also depends on the situation before the policy change, both in terms of the objectives and nature of the policy, as well as research, production and trading capacity.

AGRICULTURE TRADE POLICY AND FOOD SECURITY

Increases in productivity globally have been determined largely by technological advances - and most Caribbean countries have lost research and development capacity over the past two decades. Generally, in the Caribbean, the national research and development agencies and the government's extension systems are a shadow of what they were in the 1970s. The same applies to both regional technology institutes (such as the Caribbean Agricultural Research and Development Institute (CARDI)) and to

regional agri-cultural coordination units (such as within the CARICOM Secretariat). Falling commodity prices (sugar and tropical beverages) and increasing international debt have contributed to these and other crucial areas such as infrastructure and institutions not being adequately funded. As a result, the productive sectors, for both the domestic and export markets, have not sufficiently increased their efficiency and do not currently have the capacity to respond. Thus, the countries could potentially suffer negative consequences as they open their domestic markets to imported commodities.

Within the above generalised policy framework there remain two different emphases based on different views of dependence on trade for food security and how trade works to increase food security. One approach is the pursuit of food self-reliance. This approach reflects a strategy that allows the sources of food to be determined by international trade patterns and accepts the benefits and risks associated with it. A second approach is the pursuit of varying degrees of food self-sufficiency, above that implied by free trade. This approach reflects the extent to which food supplies are produced in the country. Generally, in the latter approach the supplies of food sourced

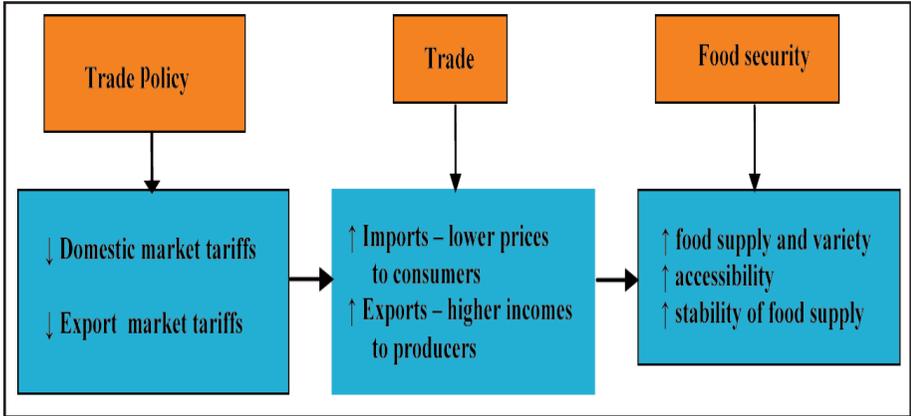
domestically are greater than would be expected if more liberalised trade were pursued. This latter approach is pursued by a wide range of countries that are committed to maintaining a significant agricultural sector, if only for domestic consumption.

Countries emphasise one or the other for a variety of reasons and may have different emphases at different stages of development. Figure 2 presents two views, showing how a more liberalised trade policy can affect food security. Figure 2(a) presents the dominant conventional wisdom that trade liberalisation policies (reducing tariffs) and increased trade enables specialisation, which increases the efficient use of resources and thereby expands economic growth – which in turn leads to enhanced economic welfare and food security. The fundamental linkages between trade policy, trade and food security here are through policy incentives that catalyse increased production and productivity, leading to increased incomes and reduced prices. Therefore, there would be increased food security, represented mainly by an increased and more stable food supply and an increased ability to purchase food.

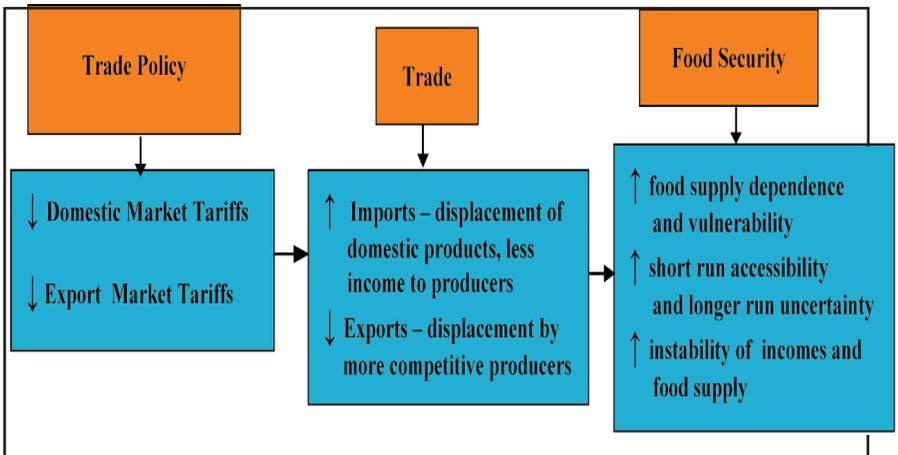
The proponents of the above view [Fig. 2(a)] recognise that the evidence to support it is questionable, particularly in terms of

Figure 2: Trade Policy, Trade and Food Security: Two Views

(a) More Competitive, Lare, Less Rural, Country View



(b) Less Competitive, Smaller, Poor, More Rural and Country View



ARTICLE 3

employment effects and impacts on the poorer strata of society.¹⁰ Market failures related to production structure, the nature of competition and distribution of potential gains cause this view to remain contentious. More liberalised trade, as represented mainly by lower tariffs, implies major changes in the structure of production, affecting what is produced, with what resources and by whom. The assumptions related to the ease of transfer of resources into different activities, particularly local labour, and especially in terms of skills and location, have led to considerable disagreement about the possibility of realising the posited outcomes.

For poorer and smaller countries the linkages between trade policy, trade and food security is better represented by Figure 2(b). For these countries general tariff reduction agreements have not resulted in the trade expansion that they might have anticipated and were promised. Given the low current tariff rates that the poor and vulnerable countries pay in the major developed country markets to which they export their products, further general tariff reductions alone are unlikely to be very beneficial. The experience of most developing countries, taken individually and collectively, makes the case. While both developing and developed countries increased

their exports over the period 1988-2004, the rates of increase were the same and global shares did not change. Further, developing country gains were highly concentrated by region, mainly Asian non-LDC countries and South American countries. The performance and participation of LDCs in both Asia and Africa was greatly inferior to other countries in their regions and they saw their share in global trade decline and their net agricultural trade balances turn or become more negative. In the Caribbean, there was a substantial decline in absolute trade as well as shares in global trade.

Understanding the difference between these two views is important and is largely based on different assumptions or perceptions about the determinants of trade outcome - in other words, about the ability or capacity of countries to influence trade outcomes and participate in what might be an increased opportunity to trade. The challenge remains to manage the linkages in Figure 1 effectively in order to narrow/eliminate the gap represented by the two views in Figure 2.

In the Caribbean trade and food security are tied together through a variety of linkages rooted in the importance of exports and imports to their economies. On the one hand, export-oriented economic activity (sugar, bananas, bauxite,

ARTICLES

tourism) is a major source of foreign exchange and employment – based income-earning opportunities (linked to both the supply and accessibility dimensions of food security). On the other hand, imports (wheat, dairy products, pulses, etc.) are equally critical to nutritional and stability dimensions of food security, as most of these countries are net food importers. Further, much of the production for national, regional and international trade is dependent on imported inputs (fuel, fertilizers), thereby underlining the dynamic synergies between imports, exports and food security.

Table 1 shows that agricultural exports form a high proportion of total merchandise trade for most Caribbean countries, reflecting the importance of that sector to the economy. This share has declined over time; in several countries it is also indicative of an absolute decline of agricultural output and exports. Increasingly, earnings from the services sector fill the gap. Agricultural exports have represented a very high share of agricultural GDP, greater than 40 percent for 11 of the 15 countries, reflecting the dependence of the rural sector on external markets for their livelihoods. The increasing amounts of essential foods that are

supplied by imports reflect increasing national dependence on imported sources of food. Table 2 shows the level of these imports for two points in time. For cereal and livestock products the increasing value of imports also reflect the shift away from local food patterns associated with more root crops. This could be viewed as a trading opportunity for the countries that are the main cereal and livestock product producers in the region. The results for fruits and vegetables and their products points to increased per capita consumption of imported fruits and vegetables in a region that, with the exception of Bahamas, Barbados, Saint Kitts and Nevis and Trinidad and Tobago, have domestic supplies to cover their needs. Table 3 presents the level of imports by country for selected product groups. The agricultural production and trading situation and food insecurity presented in this section has several implications for Caribbean regional agricultural trade policy – especially as the Caribbean states design regional economic strategies that lead to higher levels of agricultural and rural development and food security for the region. The following section addresses some of these policy challenges.

ARTICLE 3

Table 1: Share of Agriculture Exports in Total Merchandise Exports (%)

	1990-1992	2001-2003
Antigua & Barbuda	2.7	0.2
Bahamas	1.8	1.0
Barbados	27.9	28.8
Belize	69.0	64.1
Dominica	67.4	37.7
Dominica Republic	54.8	63.8
Grenada	65.2	40.5
Guyana	42.9	32.9
Haiti	18.4	6.5
Jamaica	21.2	21.3
St. Kitt-Nevis	41.5	10.3
St. Lucia	65.4	68.3
St. Vincent and the Grenadines	77.5	69.4
Suriname	9.7	7.2
Trinidad and Tobago	5.7	5.3

Table 2: Caribbean Food Imports – 1990 and 1995

	Caribbean Imports, 1990 and 2005			
	1990 Value (US\$000)	1990 % of Total Value	2005 Value US\$000)	2005 % of Total Value
Animals Fats	9,152.32	0.79	5,958.76	0.27
Cereals	501,786.21	43.56	931,025.78	4.68
Edible Offals	11,832.1	1.03	18,168.89	0.83
Eggs	17,292.62	1.50	36,557.47	1.68
Fruits	39,999.24	3.47	118,150.85	5.42
Honey	1,065.12	0.09	559.58	0.03
Meat	117,007.33	10.16	250,209.91	11.47
Milk	136,269.46	11.83	215,367.50	9.87
Nuts	2,098.86	0.18	7,093.63	0.33
Oilcrops	77,168	6.70	150,703.43	6.91
Pulses	28,431.02	2.47	37,318.34	1.71
Spices	4,052.78	0.35	10,433.52	0.48
Starchy roots	21,663.07	1.88	52,852.07	2.42
Stimulants	16,526.16	1.43	37,122.19	1.70
Sugarcrops	137,610.48	11.95	237,788.15	10.90
Vegetables	30,041.15	2.61	72,309.53	3.31
	1,151,996.10	100.00	2,181,619.60	100.00

Source: FAOSTAT, 2006.

Table 3: Imports as a % of Domestic Supply of Selected Food Groups

	Fruits	Milk	Vegetables	Cereals
Antigua and Barbuda	14.7	48.9	15.9	98.72
Bahamas	45.9	95.1	27.1	99.53
Barbados	78.9	78.4	28.5	110.35
Belize	0.3	86.3	25.9	29.24
Cuba	0.0	38.1	0.7	63.17
Dominica	0.1	54.9	9.7	97.67
Dominican Republic	0.9	11.5	1.2	65.03
Grenada	0.4	95.0	18.7	176.15
Guyana	0.5	61.4	14.1	19.50
Haiti	0.0	46.8	3.3	62.00
Jamaica	0.3	80.6	5.9	100.02
St. Kitts and Nevis	33.8	81.5	68.7	100.01
Saint Lucia	0.6	94.5	76.4	100.02
St. Vincent and the Grenadines	0.4	86.6	13.8	205.86
Suriname	1.4	35.6	13.8	22.50
Trinidad and Tobago	11.6	95.5	50.4	103.91

FAOSTST, 2006

NATIONAL AND GLOBAL POLICIES CHANGES AND FOOD SECURITY IN THE CARIBBEAN

Trade policy in the Caribbean countries in the immediate post independence period sought to promote greater self reliance through expanding national food production. National trade policies in the 1960s and 1970s were therefore characterized by negative lists to promote import substitutes, guaranteed prices for isolated remote areas, and marketing boards to promote expansion and facilitate exports of non-traditional products. Many of these trade policies were implemented to provide market space and time to achieve competitiveness for many segments of the domestic agricultural sector.

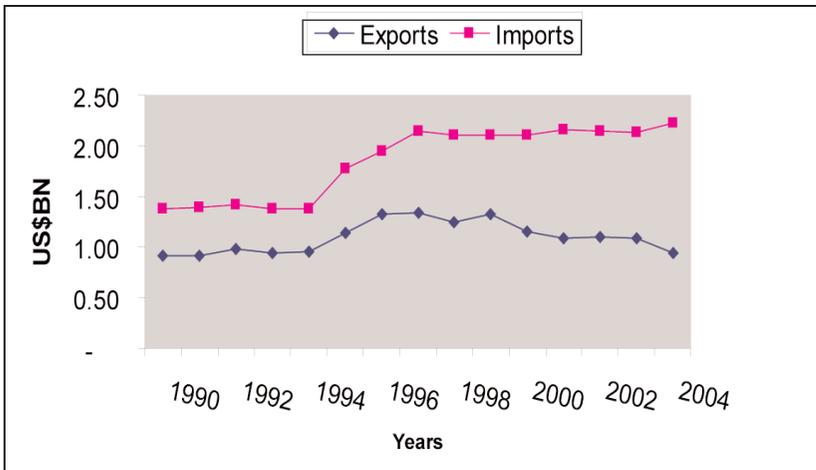
These policies are not dissimilar to trade policies in developed countries and larger developing countries that provided subsidies and delayed the opening of their markets. In many of the developed countries, export subsidies and high import tariffs have contributed to enabling their rural areas to achieve the levels of productivity and competitiveness they now enjoy. These developed country policies also contributed cheap food imports that increased food security in some of the poorest developing countries. Thus, trade policy in both developed and developing countries has been, and continues to be, characterized by government interventions to increase food security and rural welfare.

ARTICLE 3

Trade liberalization was promoted in many Caribbean countries in the 1980s as a part of a package of policies that established conditions for receiving structural adjustment programme loans from the World Bank. Further, Caribbean countries participated in the Uruguay Round negotiations and joined the World Trade Organization (WTO) at its formation in 1994 committing themselves to a multilateral trade policy directed at lowering tariffs and – especially important from the Caribbean standpoint – agricultural product tariffs. The outcome in terms of agricultural exports and imports

for CARICOM countries, after more than ten years of embracing this trade liberalization policy, is shown in Figure 3. The decrease in tariffs has opened their markets to more imports and has led to lowering of their preferential margins in developed country markets, resulting in loss of markets for their major export commodities. As a result, the gap between agricultural exports and imports continues to widen in several countries with significant percentages of their populations living in rural areas and dependent on livelihoods related to agricultural activity.

Figure 3: Caribbean Agricultural Trade Trends, 1990-2004



Source: FAOSTAT, 2006.

ARTICLES

More recently, the policy framework can be characterized by two sets of policy approaches—firstly, those considered under more national control, essentially what Caribbean Governments can do internally related to trade and food security, and secondly, those where there is more (or less) shared control, at both the regional and international levels. These latter are evidenced in the different negotiating arenas in which Caribbean states participate, for instance the African-Caribbean-Pacific/European Union (ACP/EU) and Doha Round (WTO) negotiations.

In the national context the main program areas directed at stimulating increased productivity and expansion have been through:

- providing policy support (price incentives);
- human resource development (training opportunities);
- technology generation (research and extension system strengthening);
- agri-business development (investment code reform and investment promotion);
- marketing development (market information system and product promotion assistance);
- infrastructure (land and water resource development); and
- improved institutional arrangements to reduce logistic costs.

The Regional Transformation Program started in 1996 and more

recently the Jagdeo Initiative to remove constraints to agricultural and rural development applied at the national are indicative of these policy commitments. Despite the policies being in place at the national level the results have not been encouraging as the agricultural sector has been on the decline. This is not wholly a result of neglect at the national level but there is a recognized lack of:

- adequate resources, whether technical or financial, to support the subprogrammes.
- clear and precise priority areas and associated actions required to tackle constraints and access opportunities.
- awareness by producers and traders of potential opportunities.
- a truly integrated approach that effectively links resources and opportunities at the national, regional and international levels; and
- certainty in the global trade policy environment, with losses of market access much more visible than gains. The latter is related to issues in the context of the region's external policy engagement.

The CARICOM subset of Caribbean countries has committed to a Common External Tariff (CET) as a way of promoting its own development and protecting

against external disruptions of the regional and national marketing arrangements. Under the CET the general commitment was to a maximum CET level of 40 percent on agricultural goods; across the region most applied tariffs for agricultural goods are below this level. Rates are now linked to multilateral trade negotiations and are affected by commitments made in these negotiating arenas. For the Caribbean, currently the two most important arenas are the WTO negotiations under the Doha Round and the EU/ACP Economic Partnership Agreements (EU-ACP EPAs). Under the Uruguay Round CARICOM countries generally set similar bound rates and with their CET commitment these tariff rates largely reflect external trade policies for different products or tariff lines. Table 4 shows the gross summary across total tariff lines for Caribbean countries. It indicates that generally the simple average of applied tariffs for the Caribbean countries is 19 percent while that of bound tariffs is almost five times that (90 percent). These rates can be compared with the applied and bound tariffs 21 and 48 percent respectively for developing countries globally. These average levels disguise specific trade policies associated with particular products. For instance tariff rates by HS code reflect the fact that some commodities such as milling products are rated at between 0 and 5 percent,

while others such as fresh and frozen fish or fresh and dried fruit are rated at 40 percent. Within the WTO Doha Round the most directly related food security policy measure that Caribbean countries are negotiating is the Special Products (SP) clause. The SP modality agreed by WTO Members in the 'July package' document (paragraph 41) and extended in the 2005 Hong Kong Ministerial Declaration (paragraph 7) would allow:

"Developing country Members will have the flexibility to designate an appropriate number of products as special products, based on criteria of food security, livelihood security and rural development needs. These products will be eligible for more flexible treatment. The criteria and treatment of these products will be further specified during the negotiation phase and will recognize the fundamental importance of special products to developing countries."

'July package' (2004), paragraph 41 (emphasis added)

"Developing country Members will have the flexibility to self-designate an appropriate number of tariff lines as special products guided by indicators based on criteria of food security, livelihood security and rural development".

Hong Kong Ministerial declaration (2005), paragraph 7 (emphasis added)

There has not been final agreement on this measure as the Doha Round has not been completed.

Table 4: Summary of Agricultural Tarrif Statistics for Caribbean Countries

	No. of Matched	Simple Average		Standard Deviation		Minimum Rate		Maximum Rate	
		Bound	Applied	Bound	Applied	Bound	Applied	Applied	Bound
Antigua & Barbuda	603	106	16	16	14	100	0	220	45
Barbados	533	113	21	28	15	100	0	223	224
Belize	598	101	19	4	17	70	0	110	91
Dominica	608	113	21	22	25	100	0	150	135
Grenada	611	99	18	29	15	0	0	200	40
Guyana	613	100	21	0	21	100	0	100	100
Jamaica	611	97	17	15	17	0	0	100	75
St. Kitts & Nevis	597	110	13	29	20	10	0	250	40
Saint Lucia	614	115	16	26	15	100	0	250	45
St. Vincent/ Grenadines	596	116	17	27	15	100	0	250	40
Suriname	353	20	24	1	18	10	0	20	50
Trinidad & Tobago	612	91	17	27	16	0	0	156	60

Source: Khaira and Ford, 2007.¹²

However, the measure recognizes that domestic markets in developing countries are critical initial outlets for products produced by mainly their poor small farmers. These producers do not operate in an environment that enables them to compete on export markets or against imported products given that the public investment in communication, education, rural roads and technology development that has generally been afforded the competing products has not yet been available to them. It is by and large recognized that rural area public investment with liberalization has the potential to increase returns more than without liberali-

zation; but this can be better achieved with a phased rural development strategy that allows time to increase agricultural sector production capacity and competitiveness. A special products policy approach provides necessary investment and policy flexibility. Analytical work based on indicators of food security have yielded a number of products that should be seriously considered as SPs in the Caribbean, mainly based on the supply, access and stability aspects of food security.

In the case of Belize, using data-based indicators to demonstrate the products' links to the criteria of food security, livelihood security

and rural development, the process identified several products (including rice, maize, meats, fruits, vegetables and sugar) as possible special products. That most of these products were also on Belize's list of sensitive products helped confirm the validity of the analytical process and the importance of these products to Belize's development goals. At a Caribbean regional level, with an effective CET, the analysis suggested that a number of products could be excluded from SPs consideration – for instance, tropical perishable products such as a range of fruits (pineapples, mangoes, oranges, avocados, plantains, golden apples, water-melon), vegetables (bora, eschallot, thyme) and root crops (yams, tannia, dasheen, eddo) that are unlikely to be imported from other countries (or if they were to be imported would be expensive). However, processed products should be prioritized when evaluating special products, whether at the country or regional level. Our case studies and analysis, including of intra-regional trading patterns, made clear the greater potential of these products.

TOWARDS AN IMPROVED TRADE POLICY FOR THE CARIBBEAN

By way of conclusion, this section presents some of the most critical considerations for an integrated and

improved food-trade policy for the Caribbean. The experience in the Caribbean reinforces the point that trade liberalization alone is not enough for development – and if it is not pursued in an integrated manner it can actually lead to increased food insecurity and poverty. Thus, it is necessary to work on several policy and programme areas in an integrated manner, and ensure that the work is based on sound analytical processes. The processes themselves should be responsive to changes in the international and national environments and should pay particular attention to the sequences and complementarities between the various policy and programme interventions. An Improved Trade Policy for Food Security in the Caribbean should take the following into consideration:

Firstly, it should be explicitly recognized that in an era of globalization and in the post-Uruguay Round international economic order that is committed to increased trade liberalization, the ability of small countries generally – and island states in particular – to compete economically in the world market has become critical to the survival of their agricultural sectors and rural communities. It is thus crucial to understand the peculiar characteristics of small countries in relation to concepts of and approaches to achieving

ARTICLES

increased competitiveness so that their agricultural sectors can continue to contribute to the food security of their populations. Increased market access provides an opportunity, but it is investment to develop supply-side capacity, enterprises and entrepreneurship that will enable the achievement of competitiveness and sustainability. Public/private sector partnerships and large/small private sector partnerships are essential and should be actively cultivated and promoted. In small countries continuous technology development, scale economies and expanding market share are dependent on these partnerships.

Secondly, the barriers hindering trade are changing from traditional trade policy barriers (tariffs, quotas) and rapidly are becoming more non-tariff barriers based on quality, safety and technology. Trade policy has to recognize this and be prepared to improve capacity to meet the standards in their own production and trading systems as well as negotiating in the context of non-tariff barriers where private safety and quality standards will increasingly play a dominant role. If not managed effectively, or left unattended, national regulatory systems of safety and quality standards can be impediments to maintaining and expanding trade. Managed successfully, they can be a stimulus to trade and enhance the

opportunity to exploit comparative advantage to the mutual benefit of all. In the multilateral arena, where the harmonization, transparency and appropriateness of safety and quality standards must be established, it is becoming increasingly complex and difficult for institutions to implement and regulate the quality and safety standards set. Thus, Caribbean countries should be preparing to effectively participate in these aspects of trade policy affecting income earning opportunities and food security.

Thirdly, much of establishing an effective trade policy for food security is hinged on there being an agreed vision for food security across the CARICOM region. A clear vision and programme for the agriculture and food sector should be articulated within the context of a broader national development strategy for each country and for the region as a whole. This agricultural sector and food security vision should include an assessment of options for the future of traditional commodities, and the role of non-traditional commodities and non-farm rural activities, and importantly nutrition and health goals and delivery systems. This vision should be informed by the goals of the region as a whole, and anticipated changes in the global trade and economic environment. Thus, an integrated food security policy and strategy should

ARTICLES

be prepared and implemented with the active participation of the government departments responsible for agriculture, food policy, international trade, domestic trade, health, social transformation, education, economic planning and finance.

Fourthly, the process should have time boundaries and proceed in a phased manner. Considerations in

increased health costs) and having the policy outcomes reinforced by trade policy initiatives. Over the medium term trade policy should explicitly be linked to food security and poverty alleviation policies and given the small open economies trade policy should be recognized as contributing to the pursuit of food security as a fundamental human right. Finally,



Section of Participants at the Symposium showing several Caribbean Ministers of Agriculture.

this regard might be as follows: In the short run, attention should be paid to developing the vision, upgrading laboratories related to food quality, standards, testing and food product development, better understanding the link between the changed food consumption patterns and nutrition and health (including

trade and product information should be linked to nutrition and health information, and communicated to the widest cross section of house-holds. Throughout the process attention should be paid to continuously strengthening the institutional frameworks serving the food security and trading sectors.

Opportunities to Modify Agricultural Trade Policy in CARICOM to Counter the Rise in Obesity and Chronic Non-Communicable Disease

Vincent J. Atkins^a

INTRODUCTION

This paper seeks to review some of the opportunities for Caribbean countries to modify their agricultural trade policies, in the context of the World Trade Organisation (WTO) Agreement on Agriculture (AoA), in order to address the problems of obesity and chronic non-communicable diseases (NCDs). After the introduction, this article presents data and perspectives on the enormity of, and contributing factors to, the obesity problem. It then discusses salient aspects of international trade policies and highlights opportunities within these policies for the promotion of healthy diets. Several recommendations for policy action are advanced. Finally, the main conclusions of the paper are summarized.

THE OBESITY NON-COMMUNICABLE DISEASE PROBLEM IN THE CARIBBEAN

The Caribbean Food and Nutrition Institute (CFNI) estimates that over the period 1970-1990 the incidence

of obesity grew by almost 400 per cent and is now the leading cause of death and a principal contributor to chronic non-communicable diseases (NCD) in the Caribbean. Rapid increases in the levels of food energy availability have surpassed recommended population goals since the 1970s and are believed to be the major factor responsible for the dramatic rise in obesity in the Caribbean. The increase in energy availability stemmed primarily from increases in sugars and fats availability resulting from declining real prices of these commodities.

Obesity is a main risk factor for the non-communicable chronic diseases (NCDs) such as diabetes, cardiovascular diseases, osteoarthritis and some cancers, which have increased significantly in Caribbean countries. Estimates by the Caribbean Epidemiological Centre (CAREC) in 2004 indicate that mortality by diabetes among females in the Caribbean rose from just over 40 per 100,000 in 1985 to over 70 per 100,000 in 2000 (CAREC, 2004).

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The corresponding figures for males were 30 and 50 per 100,000, respectively. Similarly, mortality from hypertension among females rose from under 35 per 100,000 in 1985 to over 40 per 100,000 in 2000. The corresponding rates for males were 25 per 100,000 in 1985 to 35 per 100,000 in 2000.

The increases in obesity and related diseases have been at tremendous costs to the Caribbean countries. The World Health Organisation (WHO) estimated that the combined annual direct and indirect cost of diabetes in Latin America and the Caribbean was \$65.2 billion in 2000 (Runge, 2007). The Caribbean Commission for Health and Development, in its 2004 report, estimates the economic burden of diabetes in The Bahamas, Barbados and Jamaica to range from US\$23.3 million to US\$140.1 million. The corresponding estimate for hypertension was US\$37.4 million to US\$191.6 million. While the data for other Caribbean countries is not readily available there is little doubt that obesity and chronic non-communicable illnesses impose a significant economic burden on all Caribbean countries.

Runge (2007) observes that the economic consequences of obesity are serious and growing and that these consequences increasingly burden lower-income countries with added health care costs and lost productivity. He notes also that at the individual level obesity

imposes costs by limiting personal opportunities in many ways, only some of which can be quantified. James and Wasantwisut (2007) point out that the loss of productivity and increases in medical costs due to preventable diseases is a frequent finding in many developing countries. They indicate that productivity loss due to obesity in China, for example, accounted for as much as 3.6 per cent of Gross National Product in 2000 and may increase to 8.5 per cent in 2025.

The increasing rates of obesity in developing countries have often been attributed to the 'westernization' of the global diet, a phenomenon characterized by the replacement of dietary cereals and pulses with diets high in animal proteins, sugars and animal fats as a consequence of rising incomes (Drenowski and Popkin, 1997). However, there may also be evidence that globalization has impacted agricultural and food industries and has altered the type and cost of the chief sources of dietary energy (Drewnowski, Hanks and Smith, 2007). Consequently, low cost vegetable oils and caloric sweeteners have become a key feature of the nutrition transition in developing countries.

Jeffery and Harnack (2007) argue that while both energy intake and expenditure are plausible and probable contributors to obesity, energy intake is a conceptually

more appealing primary cause. Reviewing per capita food disappearance trends over time and trends in energy intake by individuals they conclude that energy intake, which is entirely behavioral in nature, is the more appealing primary cause of obesity rather than energy expenditure, which is only partly behavioural in nature. Energy intake in the Caribbean has increased markedly since the early days of rampant under-nourishment during the 1960s and earlier. It is estimated that the Caribbean now has available more than 160% of its average fat requirement and more than 250% of its average sugar requirement (Henry, 2004). Global agricultural trade policies, particularly subsidies which benefit the production and trade in fats and sugars have been blamed for the significant rise in consumption of these products and the resulting problem of obesity and NCD which it occasioned.

Prior to the Uruguay Round of negotiations of the General Agreement on Tariffs and Trade (GATT) which concluded in 1994, agricultural policies, with few exceptions, remained outside the purview of multilateral trade negotiations. Food production and trade were considered critical to national food security and therefore largely exempted from the trade liberalisation policies agreed

to for the non-agricultural sector; average tariff levels were, therefore, considerably higher for agriculture than for non-agricultural goods; the sector benefited from large grants of subsidies (domestic support) by governments, and export subsidies, which had been abolished for non-agricultural products, were permitted, under certain conditions, for agriculture. The widespread use of these interventionist measures, particularly in developed countries with the financial resources to grant domestic support and export subsidies, resulted in significant distortion in the production and trade of agricultural products. Less efficient producing-countries which benefited from the grant of export subsidies and domestic support, generally developed countries, were able to dominate production and trade at the expense of more efficient, and often developing countries, which were forced to abandon or limit production and depend on food imports to meet domestic food demand.

The Uruguay Round of multilateral trade negotiations sought to correct the distortions caused by the unilateral interventionist policies of countries, by setting itself the objective of achieving the greater liberalisation of trade in agriculture and bringing all measures affecting import access and export competition under strengthened and more

operationally effective GATT rules and disciplines (WTO, 2007). One means of doing so was to promote competition by increasing disciplines on the use of direct and indirect subsidies and other measures affecting directly, or indirectly, agricultural trade. The disciplines proposed were the subject of the WTO Agreement on Agriculture (AoA), which became operational from 1 January 1995.

The AoA introduced disciplines in three main areas (i) market access - which deals with the various trade restrictions confronting imports; (ii) domestic support - which deals with the subsidies and other programmes under which governments provide assistance to agriculture, including through guaranteed prices and farmers' incomes; and (iii) export competition - which deals with measures used to make exports more competitive than they would have been otherwise .

Market Access Commitments in the AoA

The disciplines introduced in the area of market access required both developed and developing countries to undertake the same types of actions but granted the flexibility to developing countries to undertake lower levels of concessions and to implement those actions over a longer period of time. Developing countries were, therefore, granted Special and

Differential Treatment (S&DT) in the implementation of their commitments.

The Agreement required all WTO members to convert all their non-tariff measures, such as import quotas or other quantitative restrictions, into their tariff equivalent, a practice referred to as "tariffication" (in many instances countries converted these non-tariff measures into tariff levels which provided a far higher level of protection than the measures which they replaced, a practice called 'dirty tariffication'). Having "tariffied", developed countries were required to reduce their tariffs on agricultural products by a simple average of 36 per cent over a period of six years. They were required to undertake a minimum cut of 15 per cent on each tariff line. It is worth noting that the obligation was to reduce the average level of tariff by the agreed percentage, once the minimum cut per tariff line was achieved. It did not matter that a country could undertake the minimum cut on some tariff lines, notably the more sensitive products, and offset this by more significant cuts on less important products and still meet the tariff reduction obligation without necessarily improving market access for the products of interest to trading partners.

Developing countries were required to reduce their tariffs by

ARTICLES

an average of 24 per cent over 10 years with a minimum cut of 15 per cent per tariff line. Some developing countries opted to offer “ceiling bindings” instead of “tariffing” and reducing tariffs over time. Under that option developing countries established a maximum tariff at which each tariff line would be bound from the beginning of the agreement. For example, several Caribbean countries bound their agricultural tariffs at 100 per cent, which means that as of 1 January 1995 the maximum tariff which can be applied on these products is 100 per cent, a figure which is well above the rate of 40 per cent which is generally applied on primary agricultural imports in CARICOM. Once the ceiling binding was established the developing country had no obligation to reduce its “bound” tariffs from that level. As in the case of developed countries, developing countries have the option of determining the tariff treatment for each tariff line. The obligation is to ensure that the minimum cut per tariff line is achieved and that the average cut is attained or, as in the case of countries like those of the Caribbean which chose ceiling bindings, to ensure that the ceiling binding is not surpassed.

The ongoing discussions on reforms to AoA which is taking place under the Doha development Agenda proposes several changes

in the market access provisions of the AoA. Principal among these changes is an agreement for further reduction of tariffs beyond the post Uruguay Round levels, using a tiered formula comprised of four bands; that tariff lines occurring in the higher bands will be reduced at a greater rate than tariff in the lower bands and that for developing countries the cuts in each band will be equivalent to two thirds the cuts undertaken by developed countries. The starting point for the cuts will be the bound rates of tariff arrived at following the reduction under the Uruguay Round. Both developed and developing countries will have the option of designating products as sensitive, which will not be subject to the same rate of tariff reduction that would otherwise apply. In addition, developing country members will be able to designate products as special product on the basis of food or livelihood security and rural development. The precise treatment of these products is yet to be agreed but it is expected that they would be either exempted from tariff reduction or, like sensitive products, be subject to lower rates of tariff reduction. Moreover, developing countries will have the flexibility to use a special safeguard mechanism to guard against surges in imports based on price and volume triggers.

Implications of the Market Access Commitments for Health

In the context of a trade strategy aimed at providing incentives to trade in healthy foods the market access commitments under the AoA provide scope for both developed and developing countries to implement their tariff reduction commitments in a manner which can provide incentives either to restrict the imports of selected products through higher tariffs, and therefore less steep reduction in tariffs, on these products or to encourage the imports of desirable products through steeper cuts which would result in lower tariff levels. While no a prior judgement can be made as to whether a strategy of restricting trade will achieve desired results in a particular situation, it is important to note that where the relevant diagnostics/analysis points to the suitability of trade measures to influence domestic supply and demand for specific products, the scope exists within the framework of the AoA for developing countries to use selective tariff reduction strategies to influence the price of imports and thereby affect the functional relationship between price and the quantity of the product which consumers demand.

The tendency is for Caribbean countries not to reduce high tariff levels on agricultural products either as a strategy to protect

domestic markets from competition against cheaper imports, particularly in cases where those imports have benefited from subsidies or because of the heavy dependence of some developing countries on revenue generated from import duties. Average tariff levels on agricultural products far exceed the average tariff on industrial products and in many instances the Common External Tariff on agricultural imports is fixed at 40 per cent. Moreover the bound rate on most agricultural products in CARICOM is at 100 per cent or above. If a CARICOM state wishes to adopt a policy to promote the use of healthy foods or to limit consumption of foods with a high propensity to contribute to obesity, overweight and NCD, the selective use of tariff measures may be used to influence the trade in these products and thereby influence the price and availability of and accessibility to these foods. The selective use of tariff measures to promote domestic production of agricultural commodities either for exports or for domestic consumption may also contribute to sustaining income-generating agricultural production among vulnerable groups, particularly in rural communities in developing countries where agriculture is the main economic activity or in urban settings where marketing of agricultural products is an important means of earning

ARTICLE 3

income. Accessibility to healthy diets is as much a function of the income earning capacity of vulnerable communities as is the availability of these healthy choices.

The flexibility to designate products as sensitive and special product being negotiated under the Doha Development Agenda (DDA) will allow Caribbean countries the opportunity to promote domestic production of specific goods by maintaining higher tariff on competing imports. The criteria of food and livelihood security may be based on indicators which could include the contribution of the product to nutritional well being. A declaration on food security adopted by Caribbean governments in 1996 clearly states that "food and nutrition security in the Caribbean is also related to chronic nutritional life style diseases such as obesity, stroke and heart attack". On that basis one would expect that the choice of special products in these countries would take into account foods which are important to sound nutritional practices.

Domestic Support Commitments in the Agreement on Agriculture (AoA)

The domestic support measures/subsidies which developed countries grant to their agricultural sector along with subsidies to promote exports of the over-supply of the agricultural products resulting

from these domestic support measures are believed to be the most significant causes of distortion in agricultural markets. Domestic support to agriculture fuels an increase in domestic production which surpasses domestic demand for those products. In order to maintain high producer prices in the domestic market the over-supply is disposed of on the world market at prices which are often lower than the prices which would obtain in the absence of these subsidies and sometimes at prices which are even lower than domestic cost of production, a practice known as dumping. In order to facilitate that, governments in countries where domestic support is provided subsidises the cost of exports in order to compete with cheaper exports from non-subsiding, and often developing, countries. The net result of the domestic support measures, and accompanying export subsidies, is to squeeze out imports of agricultural products from lower cost producers by maintaining artificially low prices on world markets, while domestic consumers in the subsidising country pay an artificially high price for these products. High tariffs are sometimes necessary to ensure that the subsidised exports are not re-exported to the sub-sidising country.

The AoA distinguishes between domestic support measures which

directly influence production and trade of agricultural products and those which do not. Measures which influence production levels and which were therefore production – and trade-distorting, the so-called “amber box” measures, were required to be reduced by 20 per cent over six years in the case of developed countries, and by 13 percent over 10 years, in the case of developing countries. The starting point for these reductions was the level of domestic support provided in the period 1986-88.

Domestic support measures which had minimal impact on production and trade, referred to as “green box” measures could be provided freely once they met the criteria of being minimally trade-distorting. A list of examples of this type of support is contained in an annex to the AoA and includes: government services such as research, disease control, infrastructure, certain forms of income support, and public stockholding for food-security, assistance to re-structure agriculture and direct payments under environmental and regional assistance programmes. Governments in both developed and developing countries were not required to make any reduction to these types of support to agriculture. The loose criteria for classification of measure as a “green box” measure led to the situation in which as some

countries undertook their WTO obligations to reduce the amount of the support granted under the amber box, they increased the amount of support granted under the green box, sometimes using measures whose legitimacy as minimally trade-distorting was seriously questioned. Consequently, countries succeed in meeting their obligations under the AoA without any significant decline in the total level of support granted to their agricultural sector.

A third category of support called “blue box” measures, used mainly by the EU but also by the US and a few other countries were allowed and not subjected to reduction commitments. These measures comprised certain direct payments to farmers under schemes where farmers were required to limit production of certain crops.

As an Special and Differential Treatment (S&DT) measure for developing countries, the AoA in Article 6.2 allows these countries to exempt domestic support measures granting certain government assistance programmes aimed at encouraging agricultural and rural development, from reduction commitments, even if these measures would have otherwise qualify as trade distorting and therefore subject to reduction commitments. These measures include investment and agricultural input subsidies to low-income producers in

developing countries as well as incentives granted to encourage diversification away from growing illicit narcotic crops. Additionally, developing countries were allowed to exempt domestic support granted to support the production of specific crops, up to a value of 10 per cent of the annual value of production of these crops (product-specific support) in addition to domestic support up to 10 per cent of the gross value of agricultural production in any year (non-product specific support). These limits were referred to as the de minimis levels of support and comprised domestic support measures which would have otherwise qualified as trade distorting and therefore subject to reduction commitments.

Health Implications of Domestic Support Reduction Commitments for Caribbean Countries

Very few Caribbean countries have the budgetary resources to grant support to their agricultural sectors on the scale granted by developed and more advanced developing countries. In some instances the terms under which some Caribbean countries gain access to support from international financial institutions such as the IMF and the World Bank, under structural adjustment programmes for example, limit their abilities to grant domestic support to the productive sectors, including agriculture. Notwithstanding these

difficulties, however, where feasible, domestic support measures may be used to encourage or maintain the production of specific commodities either for domestic use or for exports. Programmes geared towards encouraging the consumption of foods critical to good nutritional well being, domestic support may be useful means for encouraging the production of these foods.

The scope for Caribbean countries to use domestic support to agriculture as a mean of promoting the production of healthy foods exist and is restricted to the limits defined in the AoA. Minimally trade - distorting (green box) measures may be used to an unlimited extent to support development, production, processing and marketing of healthy foods. Similarly the flexibilities granted under article 6.2 to encourage agricultural and rural development, to assist low income producers and to grant investment and agricultural input subsidies may also be incorporated in a strategy geared towards encouraging production of fruits, vegetables and other healthy products for consumption and income generation. There are no limits on the amount of support which Caribbean countries may grant under article 6.2 once the objective is within the scope of the Article.

Caribbean countries also have at their disposal the flexibility granted by the provision on *de minimis* levels of support, which would allow up to 10 per cent of agricultural Gross Domestic Product and 10 per cent of the annual value of production of a specific product to be provided as domestic support towards the production of that commodity or to support the agricultural sector generally. Selective grant of such support to promote production of healthy foods can be undertaken under a programme of obesity, overweight and NCD prevention.

There is little evidence to suggest that Caribbean countries fully utilise the flexibilities granted under the AoA to grant support to their agricultural sectors mainly for the reasons stated at the beginning of this section. Moreover, a policy of using domestic support to increase the supply of healthy foods could be undermined by imports of cheaper substitutes. Where programmes are being implemented to promote domestic production of healthy foods and to regulate the consumption of foods which contribute to unhealthy diets, the selective use tariff measures may be necessary to preserve the gains from the use of domestic support measures. Coherence in domestic agricultural policy, external trade policy and health policies is necessary to

ensure the effectiveness of programmes aimed at reducing obesity, overweight and the incidence of NCD.

Commitments on Export Competition in the AoA

Export subsidies, that is, payments made to encourage exports also distort trade. These measures are often necessary to dispose of the surplus generated from the grant of domestic support to agriculture. While domestic support measures tend to keep competing imports out from the domestic markets of the country which provides such support and create higher internal prices for consumers, export subsidies tend to depress world market prices and make imports cheaper for countries dependent on food imports. The cheaper world market prices, however, work against the interests of producers in countries in which farmers do not benefit from the grant of domestic support, usually farmers in developing countries.

Very few Caribbean countries have the resources to subsidise their agricultural exports. The practice is most widely used on temperate products, mainly in the European Union (EU). Subsidised products of significance to the problem of obesity and NCD include dairy products and beef. The AoA required WTO members to submit a list of those products to

ARTICLE 3

which they granted export subsidies and prohibited the grant of such subsidies to products not included on that list. WTO members were also required to cut both the amount of money which they spent on export subsidies as well as the volume of exports that received such subsidies. In the case of developed countries the requirement was to cut the expenditure on export subsidies by 36 per cent of the 1986-1990 levels over a period of six years beginning in 1995. Developing countries were required to reduce expenditure on export subsidies by 24 per cent over 10 years. With respect to the volume of exports which benefited from export subsidies, developed countries were required to reduce the amount by 21 per cent over six years while developing countries were allowed 10 years to reduce those quantities by 14 per cent. As an S&DT measure developing countries are allowed, under certain conditions, to use subsidies to reduce the cost of marketing and transportation of agricultural exports.

The use of export subsidies by several industrial countries have resulted in their becoming net exporters of several agricultural products, reversing the trend in which developing countries, on account of their comparative advantages, were largely exporters of primary agricultural produce.

Several developing countries face reducing levels of income from agricultural exports while their food import bills have steadily increased as they become more dependent on imports as a result of the decimation of their domestic agricultural sectors, partly because of the low export prices resulting from the pernicious use of export subsidies by developed countries. In many instances however, domestic agro-processing industries have benefited from imports of low cost intermediate inputs and countries without a viable local agriculture or highly dependent on imports enjoy the benefits of the lower prices of imports resulting from the grant of export subsidies.

Health Implications of the Commitments on Export Subsidies for Caribbean Countries

The limited scope for the use of export subsidies by Caribbean countries exist only in respect of the flexibilities granted under Article 9.4 of the AoA. The provision allows for the grant of subsidies to defray the cost of marketing (including handling, upgrading, processing, internal transportation and freight) of agricultural products to be exempted from reduction commitments by developing countries. Such a provision may be utilised to assist agricultural

producers to improve the competitiveness of their exports and generate income levels which can encourage them to remain in farming. The grant of such subsidies can also be targeted towards domestic production, processing and exports of foods which have favourable health benefits, including fruits and vegetables. Production geared towards exports will impact on the local economy and on domestic nutritional well-being through the improvement of food security, through sustaining income generating activities in rural areas and by creating a surplus of healthy foods which can be consumed locally. The difficulty which most Caribbean countries face is to obtain the necessary budgetary resources to grant such subsidies to their farming sector.

RECOMMENDATIONS FOR POLICY ACTIONS

The WHO adopted a Global Strategy on Diet, Physical Activity and Health in 2004, which is aimed at preventing obesity and overweight and which calls upon its stakeholders to take action at the global, regional and local levels to support the adoption of healthy diets and regular physical activity in order to reduce the prevalence of chronic diseases and their common risk factors, mainly unhealthy diets and physical inactivity. The implementation of any strategy to prevent obesity,

overweight and attendant chronic conditions should, at best, address both the individual/micro and environmental/macro drivers which contribute to these disease conditions. At the macro level, as WHO observes, the sustained political commitment and the collaboration of many stakeholders from both the private and public sector are needed to ensure that an environment conducive to healthy diets and lifestyles at affordable costs are accessible to consumers (WHO, 2007). This means that government, in collaboration with civil society, international organizations and private interest must work jointly to achieve specific objectives in relation to healthy diets and lifestyles. This, of course may be a difficult undertaking in a climate in which the interests of the various parties diverge, but unless that partnership is forged to reduce fat, sugar and salt content of processed foods, to present healthy alternatives to consumers and to align marketing practices with desirable goals the task of changing dietary habits and lifestyles will be much more challenging.

Following are recommendations for policy actions which should be undertaken in order to address the obesity-NCD pandemic in the Caribbean:

- The nutritional adequacy, and in particular the importance of selected foods towards addressing the problem of obesity and

ARTICLE 3

chronic non communicable diseases such as fresh fruits and vegetables, should be taken into account in determining foods which would be considered as meeting the food security concerns of developing countries, in the selection of special products under the WTO Doha Development Agenda. **Special products** are to be treated differently, and more favourably, from other agricultural products in the WTO trade negotiations

- A key contributor to poor dietary habits is lack of basic consumer information. Therefore, the **widespread dissemination of information** on obesity and chronic non-communicable diseases including information on nutritional measures which can be taken to prevent or treat with the problems should be undertaken.
- Adoption of a **holistic, multi-dimensional approach** to dealing with the problems of obesity and chronic NCDs involving all relevant Ministries including Health, Education, Trade and Agriculture. Obesity and NCD's are generally dietary and lifestyle generated diseases and cannot be dealt with by using trade and economic measures such as price changes or changes in food supply, in isolation from other measures such as changes in lifestyle, tastes, cultural practices and traditions.
- Ensure **policy coherence**. Policies and strategies adopted in one forum or government department should complement those pursued in other forum or departments. The strategies and policies adopted by the Ministry of Health should guide those adopted in the Ministry of Agriculture and Trade and Finance in relation to dealing with obesity and chronic NCDs.
- Selective use of **trade measures**. Import duties and excise taxes can be used to affect the supply and price of specific products. When used in combination with other measures such as consumer education, marketing and distribution strategies, trade measures can effectively influence consumer preferences and demand for these products.
- **Production Incentives** for selected food products. Subject to budgetary constraints the scope exists for the granting of domestic support to encourage the production of selected food and agricultural products within the limits of the *de minimis* provisions of the WTO Agreement on Agriculture as

well as under the provisions of Article 6.2 of the same agreement which allows for the grant of domestic support to low income resource poor producers in developing countries. These provisions can be utilized to encourage the production of products favorable to a strategy of reducing the incidence of obesity and NCDs.

- **School feeding programmes** should, as a matter of policy, serve only meals which contribute to acceptable nutritional practices. Similarly, food aid schemes should be based on the supply of nutritious foods, such as skimmed as opposed to whole meal, whole grain cereals as opposed to refined foods etc.
- Pursue a regional strategy geared towards declaring the Caribbean as a Good Health and Nutrition/Wellness destination. Hotels and restaurants should promote a nutritional well-being menu as a hallmark of Caribbean cuisine along with other elements of a wellness programme. The success of a strategy to reduce obesity and chronic NCDs rely on a sustained and comprehensive effort to change the thinking and practices of consumers. That goal should be pursued relent-

lessly and in all segments of society – home, work, recreation.

CONCLUSIONS

Obesity and NCDs are essentially food-related diseases. In large measure they arise because of an excess of food intake beyond the required levels. Surpluses in the availability of energy-dense foods, such as fats and sugars, and the paucity in the availability of facilities to encourage physical exercises have been major contributors to the rise in obesity in the Caribbean. The nexus between food availability and agricultural trade policy is obvious. This paper sought to identify opportunities within the international agricultural trade policy framework for Caribbean countries to adopt agricultural sector policies which would help in the control of obesity and NCD through measures which impact on the availability of nutritionally healthy foods. The paper examined the market access, domestic support and export subsidy commitments which Caribbean countries have made under the Uruguay Round WTO Agreement on Agriculture and the extent to which these commitments circumscribed their abilities to use domestic agricultural policies to support strategies geared at increasing the availability

ARTICLES

of foods which contribute to good nutritional well being and to provide disincentives to consumption of products which are known as primary contributors to obesity and NCD. The paper concludes that notwithstanding the budgetary and other policy and resource constraints faced by Caribbean countries, there is sufficient scope within the Agreement on Agriculture to promote policies geared towards healthy living both through domestic production of suitable foods and through promotion of income generating activities which would grant vulnerable communities access to healthy foods. The paper recommended, however, that trade policy measures be pursued in collaboration with other measures including educational and health promotion activities which would increase the impact of the trade measures undertaken.

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