



World Health Organization

Globalization, Diets and Noncommunicable Diseases



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Preface

Noncommunicable diseases have become a major health problem not just in developed countries but also in developing countries. Already 79% of the deaths attributed to the noncommunicable diseases occur in developing countries. The rising trends are a consequence of the demographic and dietary transition, and the globalization of economic processes. Scientific evidence shows that unhealthy diet and physical inactivity as well as tobacco use, recently highlighted in the World Health Report 2002, are major global determinants of noncommunicable diseases. Examples from several countries show that changing these determinants is possible and can have a strong effect on the trends in noncommunicable diseases.

Although national responses are crucially important, international work and global perspectives are badly needed. For this, WHO is, in response to the request from its Member States in the World Health Assembly 2002, preparing a global strategy on diet, physical activity and health. This work emphasizes integrated prevention by targeting the three main global risk factors: unhealthy diet, physical inactivity and tobacco use. In this process, WHO is looking at a number of issues related to globalization and global nutrition transition.

This publication is a collection of papers written by experts in the fields of nutrition, epidemiology, economics, and marketing. We hope that this report will make a valuable contribution to the discussion on nutrition transition, globalization and noncommunicable diseases. The views expressed in these papers are those of the authors. We are grateful to the authors for their effort.

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Dietary Transition in Developing Countries: Challenges for Chronic Disease Prevention

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Introduction

During the entire human history populations have experienced changes in ecological relationships that have modified their diet and physical activity and eventually altered their disease pattern. Early human populations were hunter-gatherers. Population growth was low and stable at the time of their existence. However, there was a dramatic shift to domestication of plants and animals for agricultural food production about 10,000 years ago and subsequent changes in disease profiles [1].

In the beginning of the agricultural period population size and density increased significantly. The reasons for the increase are complex. It was assumed that the abundance of food would have led to a better-nourished and healthier population with a reduced rate of mortality and a continuous and steady increase in population size. The empirical evidence suggested that this did not happen [1]. The shift from gathering and hunting to agriculture also produced an increase in infectious and nutritional disease rates. It is assumed that the more sedentary way of living related to agriculture increased parasitic diseases that were spread by contact with human waste and by a steady supply of disease vectors due to domesticated animals [1]. Also Cohen [2] came to the conclusion that farmers suffered more from infection and more from chronic malnutrition in comparison to their forebears living on wild resources and had reduced life expectancies. Diet tied to cultivation of only a few crops lacked diversity and therefore also lacked the full range of nutrients [3]. Although episodes of hunger were less frequent among farmers than among hunter-gatherers, they were more severe. Farmers, however, were exposed to fewer physical demands on the skeleton, in terms of peaks of mechanical stress, than hunters and gatherers.

Infectious diseases have been the leading cause of death throughout most of human existence. During the last centuries and especially during the last decades, however, many demographic, social, economic, ecological and biologic changes led gradually to a decrease in occurrence of communicable diseases [4]. This development included the expansion of education, rising incomes, industrialization, urbanization, and improved medical and public health technology. Due to a varying pace in these processes, the health transition is not occurring uniformly in all countries [5]. An epidemiological transition model that was introduced 30 years ago is often applied to explain the differences in occurrence of diseases within and between countries. It proposes that disease patterns shift over time so that infectious and parasitic diseases are gradually, but not completely, displaced as noncommunicable diseases (NCDs) become the leading causes of death [4]. A concept of dietary transition is used to describe the changes in production, processing, availability, and consumption of foods as well as changes in nutrient intake. A nutrition transition model is extended to consider also anthropometrical measures and physical activity [6,7].

The role of nutrition in epidemiological transition

Concurrent with epidemiological, dietary and nutrition transitions, including change in physical activity pattern, a demographic shift occurs, yielding longer life expectancy and reduced fertility [8]. This change is associated with an increase in the proportion of deaths occurring in older people. However, the emergence of NCDs as important causes of morbidity and mortality is not only due to reductions in infectious disease mortality and population ageing; it is also due to real increases in the age-specific incidence and mortality of several noncommunicable conditions [9,10]. An etiological model for adult chronic diseases emphasizes the influence of adult risk factors e.g. unhealthy diet and lack of physical activity [11]. Studies have revealed that there is a consistent relationship between unhealthy diet and the emergence of a range of chronic non-infectious diseases – including coronary heart disease, cerebrovascular disease, various cancers, diabetes mellitus, dental caries, and various bone and joint diseases [12]. But it is not only the adult lifestyle that determines the risk level of chronic diseases. Diet and nutrition throughout the life cycle affects the later health outcomes [11].

The Barker hypothesis, also referred to as “the thrifty phenotype hypothesis” states that poor foetal and infant growth, as a result of early malnutrition, “programmes” the development of NCD risk factors e.g. hypertension and impaired glucose tolerance [13,14]. Some researchers prefer the term “metabolic imprinting” to emphasize that these adaptive responses are results of malnutrition in specific early development periods when susceptibility is limited to a critical ontogenic window [15]. Also, it is suggested that the effects are persistent, lasting throughout adulthood. Disease pattern in some countries may also interact with Barker’s hypothesis, e.g. expectant mothers are more susceptible to malaria than non-pregnant women [16], and mothers suffering from malaria during pregnancy have a higher probability of giving birth to low birth weight babies [17]. Very few studies have been carried out in the developing world concerning foetal and infant growth and later disease outcome, mainly because of the lack of appropriate prenatal and antenatal records. Studies that have used adult stature as a proxy for childhood stunting in populations, where the early age malnutrition is common, have found inverse association between stature and hypertension in Brazil [18] and between stature and other NCD risk factors: 2-hr glucose, 2-hr insulin and total cholesterol in Mauritius [19].

The thrifty genotype –theory is an additional way of explaining the emerging rates of noncommunicable diseases. It was first introduced by an American geneticist [20] and thereafter often applied to explain the high prevalence of diabetes and other chronic conditions in populations. The thrifty genotype is described to have a high efficiency in utilizing food allowing survival in times of food shortage. In the dietary transition, with change from food scarcity to food sufficiency, the thrifty genotype no longer confers a survival advantage but enhances the susceptibility to obesity and diabetes [21,22].

Dietary transition

The industrial revolution in the last 200 years has introduced radical changes in methods of food production, processing, storage, and distribution [12]. Economic development together with recent technological innovations and modern marketing techniques have modified dietary preferences, and consequently, led to major changes in the composition of diet. There was a shift towards high-fat, refined carbohydrate and low-fibre diet [23]. The dietary transition took place first in the industrialized world. For example, it is estimated that the per person consumption of fat and refined carbohydrates has increased 5 to10 fold in England over the past two centuries, while the consumption of fibre-rich grains has declined substantially [12]. The longer-term adverse health effects of a diet rich in fat, especially saturated fat, and sugar, but deficient in complex carbohydrate foods that are the main source of dietary fibre, have only become apparent over recent decades.

Popkin [24] has studied the differences in nutrition transition between Western countries and the current economically developing world. He identified certain unique components that characterise the transition occurring in the low- and middle-income countries today. The shift in diet that took place within 100-200 years in the West occurs within a few decades in the developing world [24,25]. The speed of the transition and the factors influencing it vary from country to country and also within a country between various subgroups [24]. It is also a interesting phenomenon that both undernutrition and overnutrition are found in the same countries, even in the same households [24]. There may be also some biological differences (e.g. larger prevalence of thrifty genotype) between the earlier and newly developing nations that explain the intensity of the shifts in diet and chronic diseases.

Among the emerging trends in the global diet there is an increased availability of vegetable fats at affordable prices even for the lowest income group [7]. Although the Westernization of the global diet continues to be associated with increased consumption of animal fats (meat and milk), the dietary transition in developing nations typically begins with major increases in domestic production and imports of oilseeds and vegetable oils [7].

The accelerating factors for the rapid transition include globalization, e.g. exposure to the global mass media, shift in occupational structure including the trend from labour-intensive occupations and leisure time activities toward more capital-intensive, less strenuous work and leisure. Yach and Bettcher [26] have defined globalization as a process whereby increasing economic, political, and social interdependence and global integration take place in terms of capital, traded goods, persons, concepts, images and ideas. Drewnowski and Popkin [7] suggest that the globalization of the human diet is very much a combined outcome of cultural sensory preferences coupled with the greater availability of cheap fats in the global economy and rapid social changes in the lower-income world. In general, it is difficult to predict whether globalization will lead to homogenization of food, eating, and nutrition due to influence of global compression, or to diversification that could lead to heterogenization of the food and nutrition system [27]. New products may not necessarily lead to changes in nutritional intake. Sobal [27] suggested that “approximately the same amount of beef, wheat, and vegetables can produce a hamburger, burrito, spaghetti, or Chinese noodle dish depending on the cultural orientation of the cook, the use of food preparation techniques and spicing.”

Often overall nutrient intake adequacy improves with an increasing variety of foods [28], but the movement toward more fats, salt, sugars and refined foods quickly moves beyond this more optimal state to one in which diets contribute to rapidly escalating rates of obesity and chronic diseases [29]. Salt-sensitive hypertensive or fat-sensitive cardiovascular disorders that may not have been expressed on a traditional diet may become prevalent [30]. This transition is accelerated by a high urbanization rate [7], which is usually accompanied by decreased physical activity level [31,32,33], and increased overweight and obesity [34,35,36].

Urbanization and diet

Urbanization is an example of social change that has a remarkable effect on diet in the developing world. Over the period 2000-2025, the urban population in the developing world is expected to double, up to 4.03 billion, and the rural population is expected to increase from 2.95 billion to 3.03 billion [37]. The urban population in developing countries is growing three times faster (3% annually) than the rural population [38]. At the same time the number of the urban poor is increasing.

Ruel et al. [38] explained that urbanization increased labour-force participation of women and it indirectly affected the diet of the family. Money management itself is one new skill that must be mastered when moving to cities [30]. Whereas the food supply of rural populations comes from its own production, the food supply of urban populations has to be purchased, providing new options and new norms and values. With a monetary economy come more store-bought and processed foods, rather than fresh animal products and garden produce [30].

Traditional staples are often more expensive in urban areas than in rural areas, whereas processed foods are less expensive [38]. This favours the consumption of new processed foods. Also Dirks and Duran [39] examined traditional food of the South (“soul food”) in the USA a century ago, when the situation resembled the situation of many nations today, and discovered that the staples were more expensive in urban than in rural areas, and thus, this led the urban African Americans seek more novel foods. The transition towards new foods was also connected to greater dietary variety and more abundant protein and energy supplies.

The shift from traditional staples to processed foods in urban areas is also strongly enhanced by the advocacy of Western culture through mass media, commercial marketing, and through other channels related to globalization [27]. Subsidies paid on staples, often on cereals [40], may also modify the staple preferences. Urbanization independently leads to increased consumption of new types of grains, e.g. rice or wheat, rather than corn or millet, and more milled and polished grains [7,41].

Ready-made bread is an example of food that is easily accessible from stores and street vendors and that is replacing traditional staples in many economically developing societies, especially in urban environments. It is more convenient than traditional cereal and root staples, which require time and effort for preparation before eating. Mintz [42] explained that in many nations, along with economic development, tubers and roots are gradually replaced by rice in the diet, and further, rice is gradually replaced by wheat.

The transition in staple consumption is often accompanied by increased consumption of fat, especially saturated fat, as well as sugar and other refined carbohydrates [30]. Thus, even if the starchy staple itself is rarely the main source of fat in the diet, it often determines what types of condiments are eaten with it. Many sauces that are eaten with rice and tubers are much less fatty than cheeses, processed meat, meat products (like sausages) and fat spreads that are eaten with bread. Increased consumption of fats, including saturated and trans fatty acids, and cheap vegetable oils that are more available due to globalization, makes urban people more vulnerable to some nutritional disorders. Also salt and simple sugar intake will increase at the same time. Poverty fosters adverse effects of urbanization. Popkin [23] has estimated that a shift from 25% to 75% urban population in very low-income countries would be associated with increased energy intake from fat and from sweeteners, 4% of energy intake and 12% of energy intake, respectively.

Meals away from home

It is becoming more common to eat meals away from home or to eat prepared meals (take-away or from grocery stores). Egyptians ate 46% of meals away from home in 1998, which is considerably more than in 1981 (20%). However, it has to be taken into consideration that these figures from Egypt include also the meals eaten at the homes of relatives [40]. There was a five-fold increase (the inflation factor was taken into consideration) in household expenditure on prepared meals from 1960s to 1990s in Mauritius [43].

Eating away from home is not only related to economic development, but also to urbanization: the mobile carts of street vendors have become the fast-food restaurants of the urban poor [30]. It is also related to a shift in work environment, e.g. working outside the home vs. a domestic role [44]. People who were unemployed or who had irregular income consumed street vendor foods more often than people who were regularly employed [44]. Fouere et al. [45] discovered that devaluation of the currency led to increased use of street foods in the capital cities of Senegal and Congo. The women who were interviewed explained that buying sandwiches from the vendors saved not only on the cost of the food ingredients but also of the cooking fuel and preparation time.

Eating away from home is common not only among low-income people. Western fast foods are becoming popular among the higher socio-economic groups in the less industrialized countries. Almost half of Malaysian urban Chinese, the majority of them belonging to the mid-income group, ate take-away foods more than once a week [46]. Of them, 54% of men and 37% of women preferred Western fast foods (fried chicken, burgers or pizza) to other types of take-away meals. The researchers also noticed that the younger age groups especially favoured eating these foods.

Current trends in food availability and food consumption

The Food and Agriculture Organization (FAO) on the United Nations has published information on country-specific annual food supply including data on production, import, stock changes, export, domestic utilization and waste. These figures give a rough, but plausible estimate on the food supply situation in various parts of the world [47]. Although the data do not take into consideration, for example, the differences in food availability in various population groups or household food waste it gives an overall picture about the trends in food consumption on national level. The supplies for cereals, starchy roots, legumes, vegetable oil, vegetables, fruit, sugar, milk, meat, butter, ghee, poultry and fish are given in Figures 1-18.

Tables 1 and 2 summarize food consumption trends, and Table 3 macronutrient intake trends, in countries that are experiencing transitions in diet and that have recently published articles on it. These countries are China, Chile, Cuba, Egypt, India, Iran, Malaysia, Mexico, Morocco, South Africa, South Korea, Tanzania, Thailand, and Tunisia. Since dietary assessment methods and time-periods monitored varied from country to country, information presented in the summaries should be used mainly to examine the trends in food consumption and nutrient intake within countries. Inter-country comparison should be carried out with caution.

Cereals and bread

According to data on food supply from the Food Balance Sheets, cereal availability has increased in developing countries during the last 30 years. However, the supply for traditional cereals like millet, sorghum, and maize has decreased given way to more widely used global grains: wheat and rice. Overall there seems to be a clear shift from coarse grains to more polished grains. This supports the finding by Popkin and Bisgrove [41] who reported a similar change in food consumption in countries experiencing dietary transition.

Bread consumption reflects sales figures of bakery bread. Consumption of bakery bread has increased e.g. in Iran and Tunisia [48,49]. The rising trends of eating away from home or eating meals prepared away from homes together with urbanization will also increase the demand of bakery breads [45,50].

Starchy roots

Various roots like cassava, yam and sweet potatoes are commonly eaten foods in various parts of the world [51]. However, their supply has strongly decreased in developing countries during the past decades. The supply of Irish potato, which originates from South America, but which has become a staple in Western diet, has increased in the economically developing world while the supply of sweet potatoes has decreased. This may indicate that Western dietary habits are being adopted in the developing world.

Legumes

Various legumes provide a considerable amount of protein in the developing world diet [52,53]. However, their availability and consumption are decreasing in many countries, giving way to animal products. This shift will also lead to change in the type of fat consumed. While legumes, which are often cooked with some vegetable oil, will get consumed less often, the proportion of saturated fat intake will increase with the increased amounts of meat products in the diet. The availability of pulses has dropped at the same time as the supply of vegetables and animal products has gone up in both developing and developed countries.

Vegetables and fruit

There were contradictory trends in the supply of vegetables and in the consumption of vegetables. According to the Food Balance Sheets, the availability of vegetables has increased while, according to the survey information, the consumption has decreased in many countries (Table 1). Dietary assessment methods may underestimate the true vegetable consumption. Almost all the traditional main dishes worldwide include vegetables, which may not always be regarded as vegetables but merely as flavouring agents of the dish. For example onions, tomatoes, and peppers are basic ingredients in various stews and sauces. The assessment of total vegetable consumption and changes in it are challenging also because the perception of vegetables varies. For example yams and potato are regarded as vegetables in many ethnic groups while others categorize them as starchy roots.

Many green leaves that are either gathered from wild plants or cultivated, are prepared for a dish together with meats, fish, seafood, legumes or nuts. Mushrooms may also be added to dishes to substitute more expensive ingredients like meat. Rural populations usually have better access to vegetables. However, they may only be consumed in small amounts if they are gathered or grown as cash crops. Bourne et al. [54] discovered that the vegetable consumption among the urban African population in the Cape peninsula was very low. When purchasing power increases domestic vegetables will often be replaced or supplemented by imported and more exotic ones, which also increases variety in vegetable supply [50].

Fruit consumption increases with economic status [45,50,55]. Imports of fruit allow more fruit variety in the diet. The fruit supply was larger in late 1990s than in early 1970s in both developing and developed countries. The increase was greatest in Asia. The consumption trends varied from country to country (Table 1) and the assessment of fruit consumption and changes in it face similar challenges as the assessment of vegetable consumption.

Fats and oils

There has been a considerable rise in vegetable oil supply worldwide. Dietary transitions start with increased consumption of cooking oils [7] and the observed remarkable increase in vegetable oil availability in the developing countries suggests a dietary transition is occurring. The relative increase in the availability of oil has been larger in the developing countries than in the industrialized countries in 1970-1999, 124% and 50%, respectively.

Butter and ghee consumption has been much lower than oil consumption in the developing world. However, while the per capita supply of these saturated fats was decreasing in the industrialized countries between 1970 and 1999, the supply had an upward trend in the developing countries. The average butter and ghee supply had almost doubled in the low-income countries and in Asia between 1970 and 1999.

Although the supply of vegetable fats has increased over the past 30 years the food consumption figures do not support the finding. Almost every country that had information about vegetable fat consumption reported decreasing trends (Table 2). The discrepancy may occur from the fact that people usually report only the visible fat consumption. A major part of fat is hidden in prepared dishes and therefore reliable consumption trends are difficult to estimate unless the amount of oil used in cooking is frequently updated in food composition and recipe databases. Still, individual preferences regarding the amounts of fat used for food preparation are difficult to detect. The dietary assessment of total fat intake does not provide information about the quality of fat, which is regarded at least as important as the quantity of fat in NCD prevention and health promotion [56].

There are some health and safety concerns expressed regarding the use of cheap vegetable oils in the developing countries [57]. The quality of the less expensive cooking oils and fats is not always well monitored. Edible fats and oils often contain partially hydrogenated lipids that will lower dietary intake of essential fatty acids and increase the intake of trans fatty acids [57]. Large metal containers used for storing oils may facilitate adulteration of products and promote peroxidation during a long storage. Some fat-soluble carcinogens have been detected in materials used for packing of oils. Also, there may not be sufficient regulations and/or follow-up system to guide and monitor the use of synthetic antioxidants in oils in every country [57].

Milk and eggs

Milk availability, and at the same time the saturated milk fat availability, has increased throughout the world since 1970, except in Africa. Milk and egg consumption trends, however, varied from country to country. Processed milk products like powdered or condensed milk are more available in urban areas [50].

Sugar and soft drinks

Sugar availability has increased throughout the developing world while in the industrialized countries it has decreased. Only India and Morocco reported in their survey results that the sugar consumption has decreased.

Rising trends both in supply and consumption of sugar and sweetened drinks is not a surprising finding. The Western fast food industry carries out widely distributed campaigns in the developing world and the most striking phenomenon of them are the advertisements for carbonated soft drinks. There is hardly any urban area in the world that does not have bright-coloured banners featured in public places and advertising the popular soft-drinks.

Meat, poultry and fish

The meat supply has increased worldwide from 1970 to 1999. The meat supply has increased especially in Asian and South American countries. The increase has been only modest in Africa. The consumption figures do not support these trends. Consumption was decreasing according to the survey results from various countries. Meat is consumed in different forms nowadays than, for example, a few decades ago. Processed meats have become more popular and sometimes e.g. sausages or canned meat are not regarded as “real” meat, leading to an underestimation in meat consumption.

Poultry supply and consumption has consistent increasing trends worldwide. Since chicken and other poultry are most often consumed as fresh or frozen meat, not as processed, it may be easier to determine their intake more precisely than red meat. Also fish supply and consumption has increasing trends worldwide.

Energy providing nutrients

It is clear that the energy density of diets is increasing worldwide (Table 3). The energy percentage of fat in the diet has a rising trend in all the countries with data on macronutrient intake (Chile, China, Cuba, Iran, Malaysia, Mexico, South Africa, and Thailand). Only in Chile, the highest income quintile seemed to have about the same percentage of energy from fat in the diet both in 1988 and in 1998. The share of energy from animal protein has increased enormously in China in 40 years (3.1% → 18.9%).

The results show that fat and sugar are getting a larger proportion in the diet of countries in transition. It seems that urbanization is enhancing this development. Earlier data from China, Brazil and India have shown that the “combination of increased fat and sugar combined with reduced physical activity is most pronounced where the rate of urbanization had occurred rapidly” [58].

Health consequences of dietary transitions

Noncommunicable diseases, together with injuries and violence, are now causing about 60% of the deaths worldwide. Every third death is cardiovascular, and coronary heart disease is the number one killer in the world. In all regions of the world, except in Sub-Saharan Africa, NCDs are the leading cause of deaths, and the majority of world’s NCDs deaths occur in the economically developing countries [59].

“Strong evidence shows that an unhealthy diet and insufficient physical activity are among the major causal factors in coronary heart disease, cerebrovascular strokes, several forms of cancer, type 2 diabetes, hypertension, obesity, osteoporosis, dental caries, and other conditions. Consumption of vegetables and fruit, the amount and quality of fat ingested, and the intake of salt are the most important elements of the dietary prevention of both cardiovascular diseases and

cancers. Maintaining normal weight and adequate physical activity throughout the life span are the most effective ways of preventing diabetes and many other chronic diseases” [60].

The emerging new disease profile will lay a heavy burden on governments in many less industrialized countries. The management of NCDs is extremely costly. Population based prevention is a more efficient solution to tackle the problem. Many countries cannot afford expensive medications and heart surgeries. In addition, there will be the cost of lost workdays and disability. This concern is economically relevant because NCDs usually affect the most productive part of the population.

Possibilities for altering adverse trends

Massive marketing and advocacy of Western values and products including high-fat, high-sugar and low-fibre fast foods and soft drinks are carried out by multinational corporations through modern mass media and other sales promotions. These marketing efforts especially target youth, and obviously have a better feasibility to modify the dietary behaviour of urban than rural population because global communication reaches first the areas of large residential density. Highly elaborate means of marketing and sales promotion are used with considerable economic resources. This includes lobbying to food policy decision makers and influencing normative guidelines.

The changing and unhealthy patterns of nutrition in the world are often linked with globalization. While globalization can clearly bring benefits in global alleviation and control of infectious diseases – and is seen by many as inevitable – there are obvious negative consequences for NCD related risk factors. For example, it gives transnational companies a powerful means to promote consumption of foods and drinks that replace healthier traditional food choices.

Some countries have had innovative interventions for promoting healthy dietary habits. An example is South Korea [61]. The trend of pursuing healthy foods already began in the mid 1980s when NCDs became a major health concern in South Korea. This trend reflects efforts to solve health problems by improving diet. The traditional Korean diet is low in fat and high in vegetables. Therefore the country has put a lot of effort to advertise and teach the public that the traditional Korean diet is healthy and that adoption of Western eating habits may have unfavourable effects. They are also working on the revival of the traditional diet using an approach that is acceptable to the contemporary Koreans, e.g. publishing traditional recipes with slight modifications [62].

The North Karelia Project that was carried out in Eastern Finland was able to produce favourable changes in diet, e.g. proportion of saturated fats was decreased while the proportion of unsaturated fats and vegetable consumption increased. Salt intake also decreased considerably [62,63]. Mass media and community involvement together with changes in legislation and in environment were the main tools in this intervention which eventually influenced the dietary habits of the whole Finnish population. Pietinen et al. [64] estimated that between 1972 and 1992 a major decrease in total serum cholesterol (1 mmol/l on average) took place because of changes in the diet.

In 1987, the Ministry of Health in Mauritius launched a nationwide health promotion programme, the goal of which was the prevention of cardiovascular diseases. During the nutrition policy and dietary education intervention in 1987-1992, a remarkable positive effect was observed in the diet and in the serum cholesterol level [65, 66].

In countries with high levels of literacy, strong school health programmes, media that emphasize the need for “healthy living” and “healthy policies” could make a significant contribution in educating the youth as well as the adult population [57]. Community participation is essential in health promotion interventions to achieve the goals [67]. Globally, schools and community organizations like youth and women’s groups could play an important role in educating both young

and adults on adverse effects of unhealthy diet and physical inactivity. For example, in Singapore [68] a school programme included health education for both teachers and students. In addition, for more rigorous sport activities at school, environmental modifications like provision of water coolers, and reduction of sugar content of all drinks available in school were also part of the intervention. In a one-year period the programme was able to reduce overweight by 10% among the students.

One of the strongest promoters of healthier lifestyle is education, especially in women. There are several papers addressing the benefits in terms of reduced NCD risk factor levels. Marshall et al. [69] discovered that people with higher education level, both among Hispanics and non-Hispanics, had a less atherogenic diet. Bhandari and Smith [70] have reported that female education had a positive effect on diet in China. These women ate more nutritious foods, and the effect was independent of the effect of income. Gupta et al. [71] found that the smoking rate was lower in India among women who had more years of education. A study from Malaysia showed that the education level of mothers was an important determinant of nutritionally balanced diet in children [72] and they recommended this as a strategy to improve child nutrition.

Each country has its unique characteristics in the aetiology of NCDs not only in terms of the environment but also in terms of social, economic, and cultural influences [73]. Therefore it is important to start with the problem assessment at the local level and get a good understanding of the surrounding community [67,74]. Research and surveillance are important supporting components of successful programmes that aim to modify health behaviour. Based on survey results and sound theoretical frameworks, new interventions can be developed [68]. As the examples from South Korea and Finland show, innovative approaches that take into consideration the local culture and conditions may provide useful tools in promoting healthy diet and healthy lifestyle in general [61,67].

Policy priorities

Vorster et al [75] emphasize that in dietary transition where a traditional monotonous diet, which is often associated with nutrient deficiencies, gets more diverse with increasing intake of animal products and decreasing intake of staples, there is a stage when the “rural diet” becomes more adequate but can still remain prudent. This is the stage that is regarded as an optimal diet, which includes plenty of whole grains, legumes, vegetables and fruit and just moderate amounts of animal products. Many informed people in developed countries have now returned to this type of diet to decrease their risk of NCDs. In rich industrialized countries such as the United States, meat intake is declining, and fat intake has an inverse relationship with socio-economic status [7].

The key policy priorities for chronic disease prevention in many developing nations include diet. However, there are no general dietary guidelines for reducing e.g. saturated fat and sugar intake, which could be applied everywhere. Diet varies from community to community. In Sri Lanka for example an important source of saturated fat is coconut milk [69] while, in many African countries, the major source of saturated fat is meat. Therefore a local dietary assessment is an important starting point for planning and implementation of dietary interventions. The fact that increasing numbers of daily meals are eaten away from home should be taken into consideration.

In many countries, improving birth weight is also a special focus, because of the association of low birth weight with diabetes. Undernutrition still needs a lot of attention, and must be taken into consideration in food and nutrition policy development. There is a need for public health programmes that are able to address underweight and overweight simultaneously. For example, public health policies that aim to reverse undernutrition for one at risk member of a household, by improving either the energy density of the food supply or food insecurity, might have the undesired consequence of contributing to overweight and obesity in another member of that household [69].

Global research and development are needed to identify successful ways to “de-link” social and economic development from adverse changes in diet and physical activity. Better understanding of

factors affecting changes in dietary intake in the economic and social development of the society and under the influence of globalization will help in planning, implementing, and modifying diet and health intervention programmes for the developing world. These changes will determine in large part the course of cardiovascular disease and other NCDs epidemics [76].

The World Health Organization, with its mandate for global health, has recently started to upgrade its work for effective global chronic disease prevention. WHO's global strategy for NCD Prevention and Control, presented to and endorsed by the World Health Assembly in 2000, called for effective integrated prevention of major noncommunicable diseases by targeting three main risk factors namely tobacco, unhealthy diet and physical inactivity [60]. Based on this, work for diet and nutrition in NCD prevention was started. A policy paper on "Diet, physical activity and health" was presented and endorsed by WHO's Executive Board in January 2002. The respective Resolution of the World Health Assembly 2002 endorsed the outline of the work and asked for development of global strategy in diet, physical activity, and health [61].

To strengthen the evidence base for the global strategy, a WHO/FAO Expert Consultation took place in January 2002 in Geneva to review the evidence and present recommendations concerning diet, nutrition and the prevention of chronic diseases. WHO's work starts from recognizing the great transition that is taking place in the developing world – greatly contributing to the NCDs epidemics. It also analyses the determinants of these changes and carefully identifies needs for action on national, regional and global levels, in partnership with Member countries and seeking broad collaboration with a whole range of partners. Progress in global dietary patterns can lead to changes in NCDs rates and health gains hardly matched by any other interventions.

Conclusion and recommendations

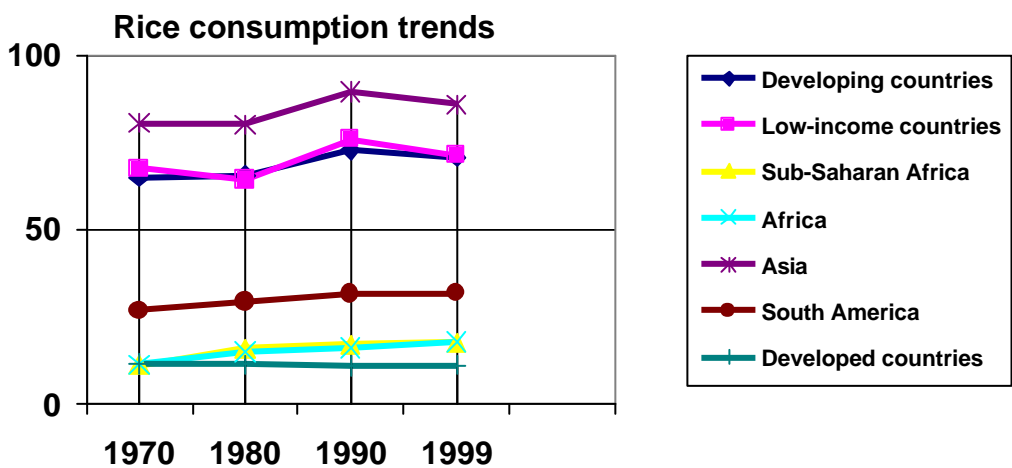
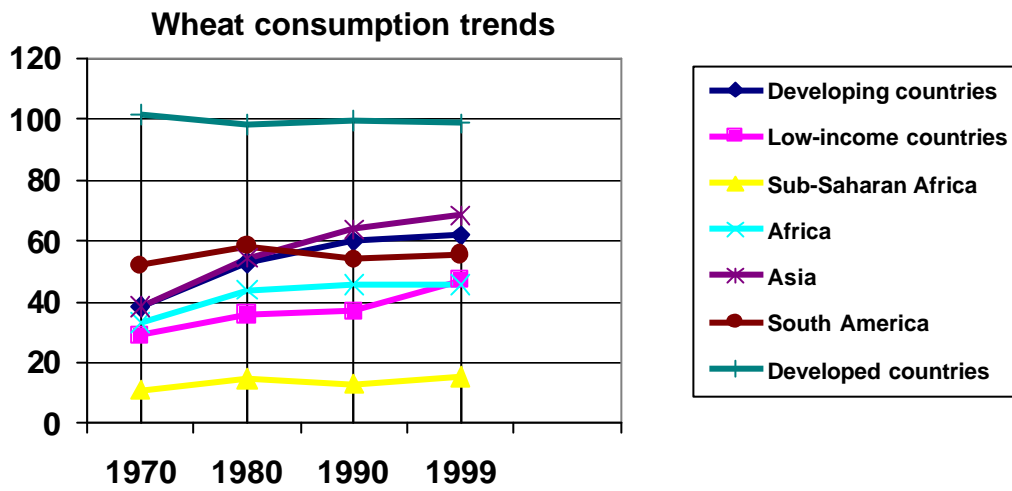
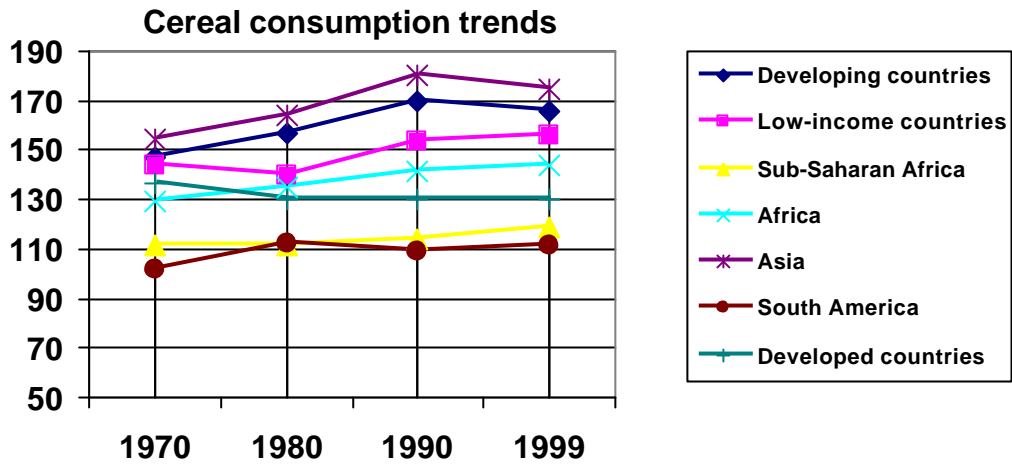
Global diet is going through a remarkable transition: staple foods are becoming more refined and processed, fat and meat intake is increasing, processed dairy products and other processed foods are consumed more than before, and larger number of meals are eaten outside home, making households more reliant on the food industry, food vendors and markets. The dietary transition is associated with the escalating trends of NCDs.

Agendas on noncommunicable diseases are often left aside in the policy planning of the less industrialized countries, because undernutrition and communicable diseases still need a lot of attention. However, NCDs are "silently" becoming a heavy burden for many countries. It is important to find cost-effective solutions to change unfavourable trends. Diet, together with physical activity, should get a major focus in public health policies in combating the emergence of NCDs.

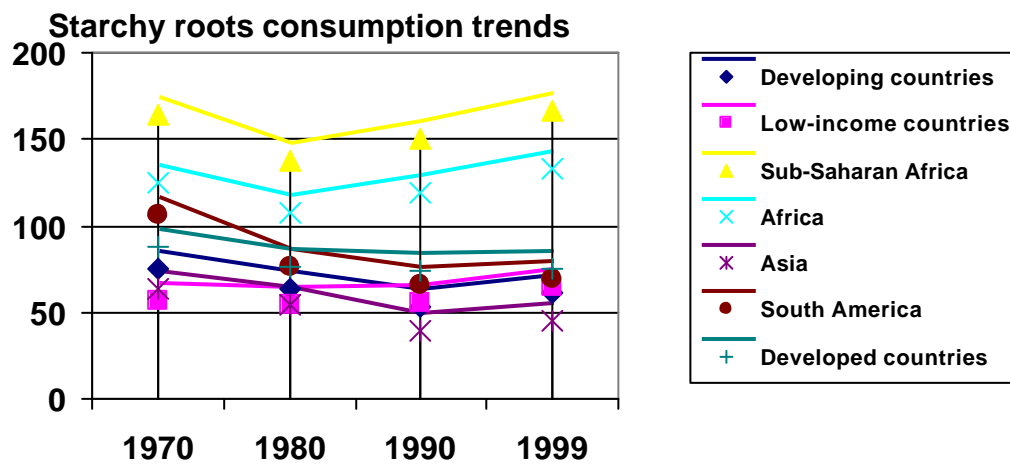
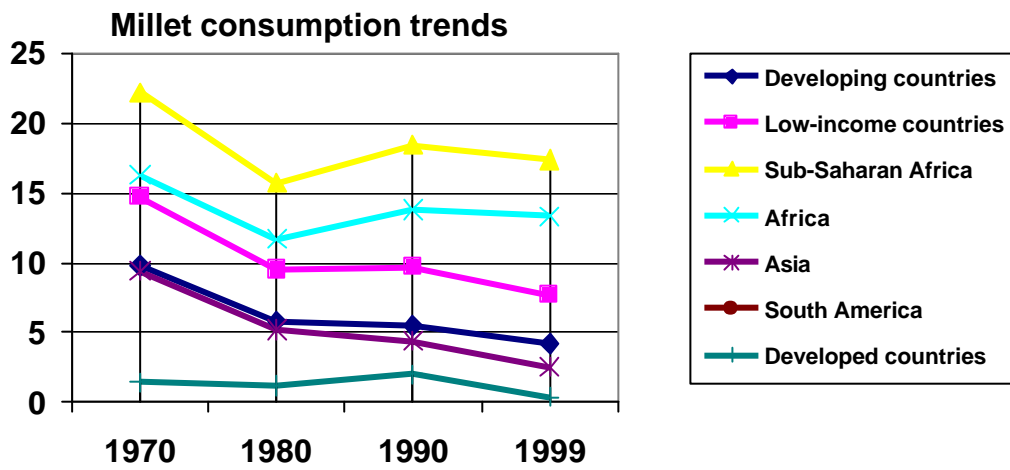
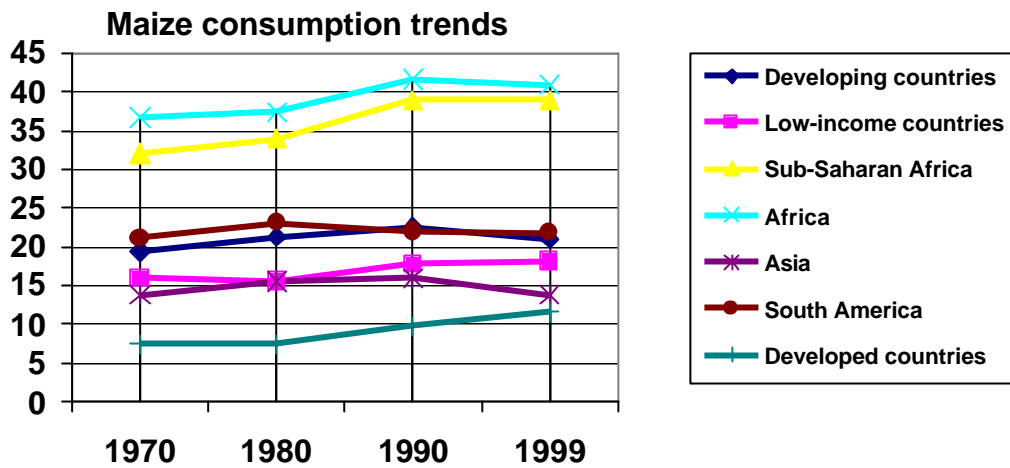
International and national food and nutrition authorities should work together in searching for ideas about how to promote a healthy diet. Dietary globalization usually increases the variety in the traditional, formerly monotonous diets, and thus, improves their energy and nutrient adequacy. At the same time, care should be taken that the diets do not become too Westernized in terms of substantial increases in the intakes of fat, especially saturated fat, salt and refined carbohydrate, but that they stay prudent and health promoting. This is a challenge in a world where the multinational fast food companies aggressively look for new markets, but examples from various parts of the world show that, with well-planned interventions and persistent efforts, the adverse trends can be modified.

Summary

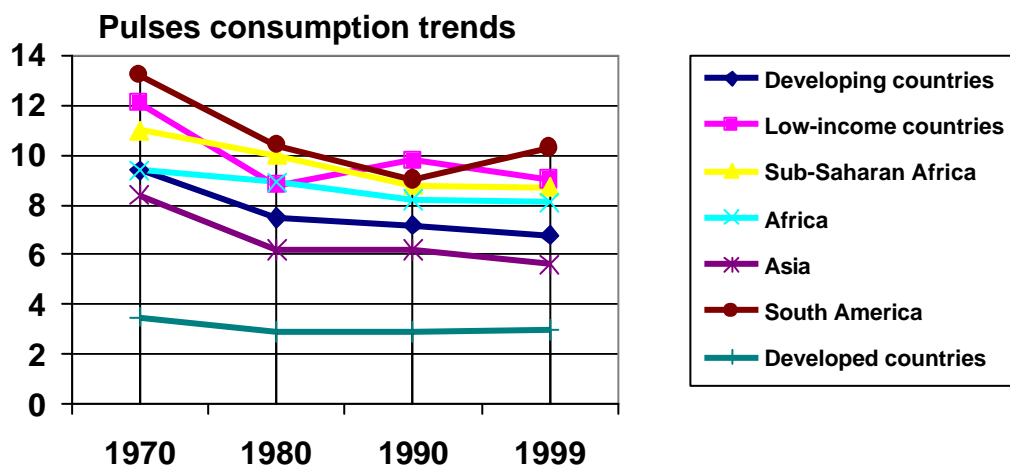
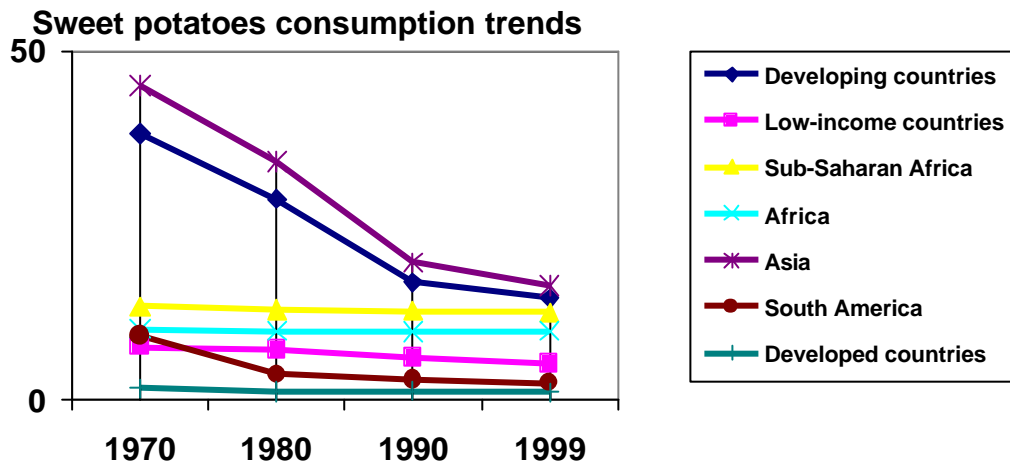
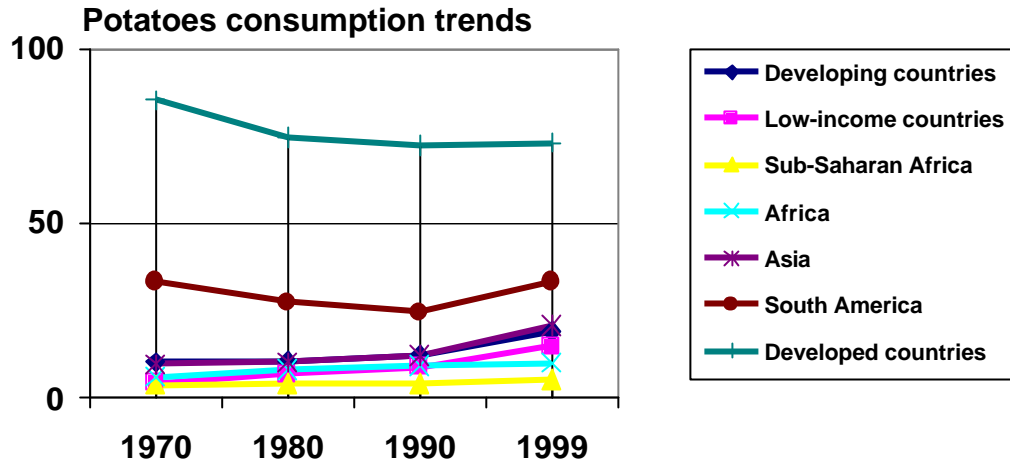
Eating habits and dietary intakes are changing rapidly in the developing world. Substantial increases in the intakes of fats, refined sugars and salt have led to imbalanced nutrition and overnutrition. At the same time chronic diseases are becoming more common while undernutrition as a public health problem still persists in many parts of the world. High urbanization rate, shift to modern technology, and industrialization under the influences of Westernization and globalization have accelerated the speed of the changes, which makes the transition distinct from the respective transition in the Western countries earlier in the last century. The transitions are unique in each country depending not only on the physical environment but also on social, economic, and cultural characteristics of the society. The World Health Organization, with its mandate for global health, has recently started to upgrade its work for effective noncommunicable disease prevention.



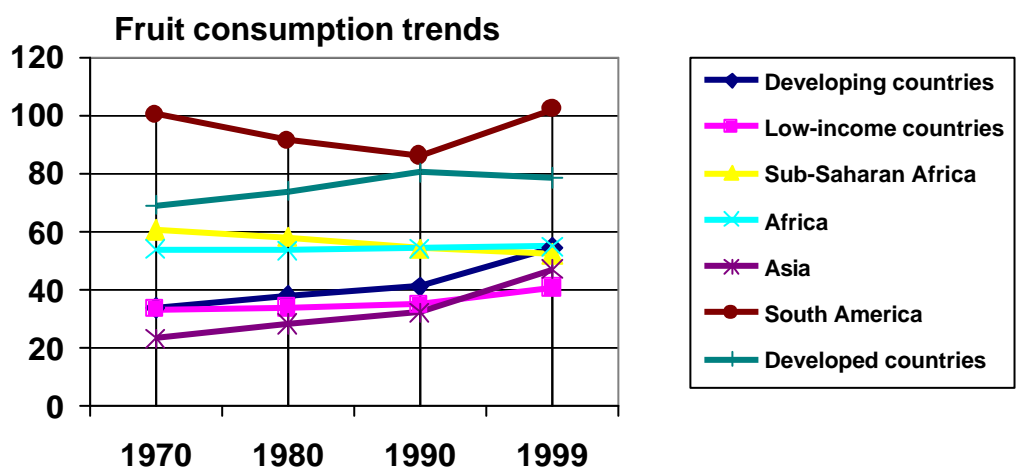
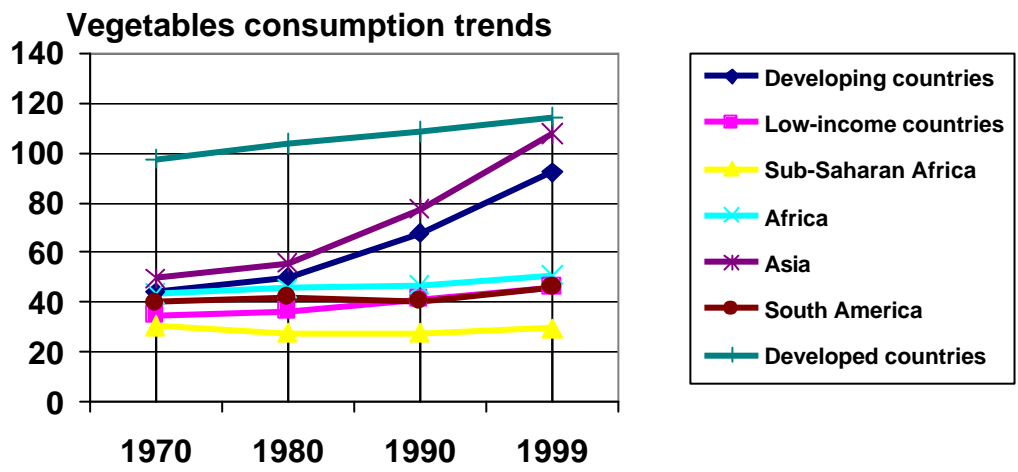
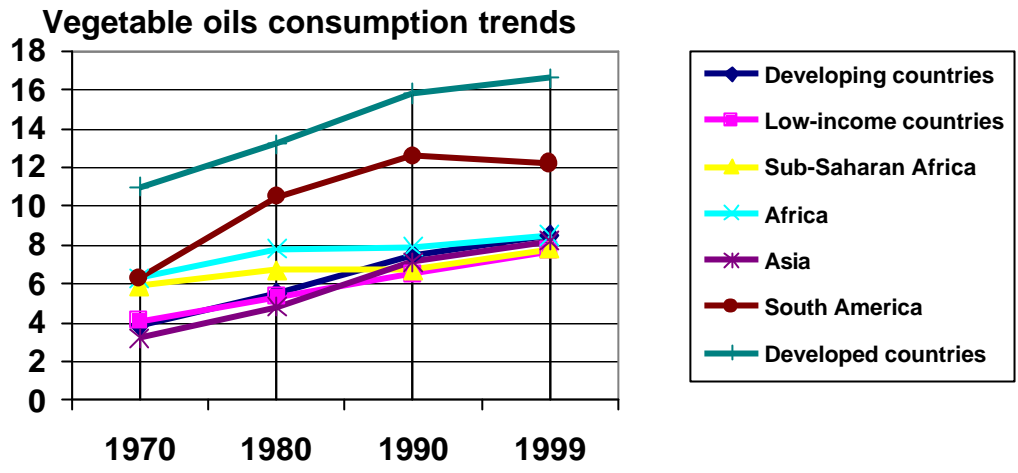
Figures 1-3 Per caput supply (kg/year) of cereal, wheat, and rice in 1970-1999 according to Food Balance Sheets



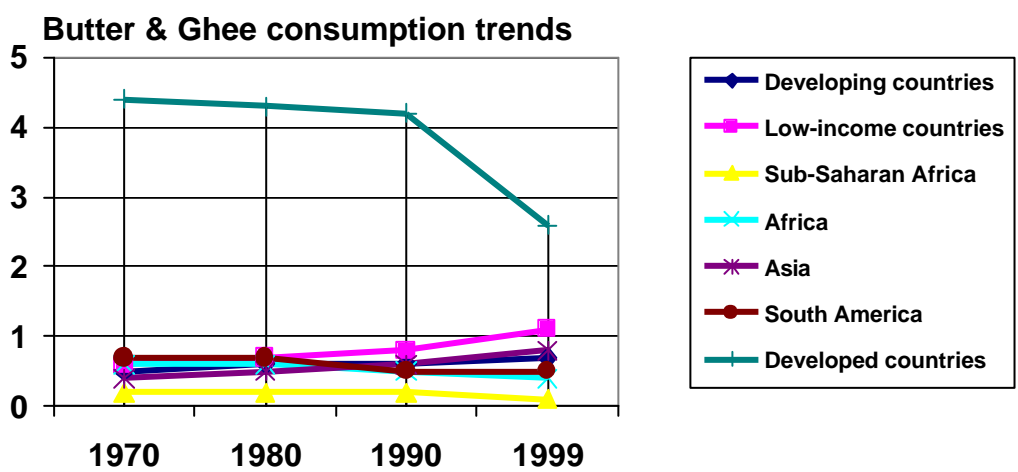
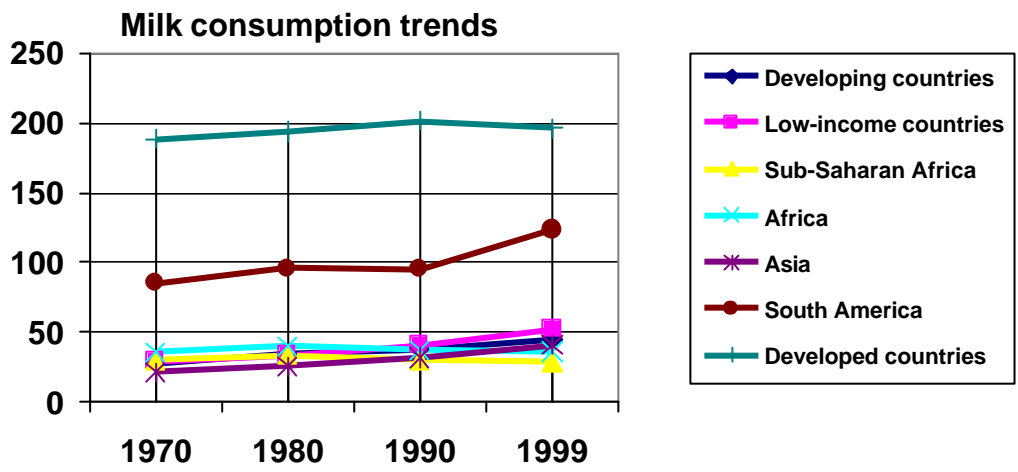
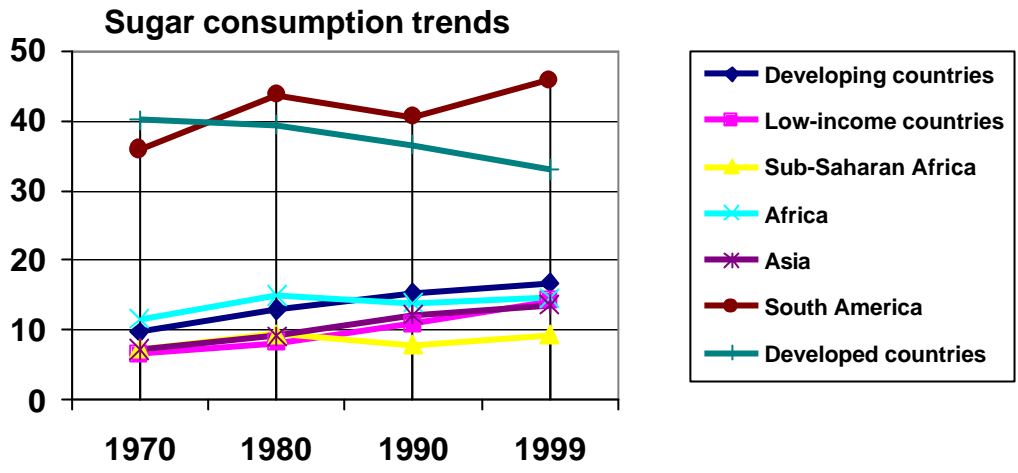
Figures 4-6 Per caput supply (kg/year) of maize, millet and starchy roots in 1970-1999 according to Food Balance Sheets



Figures 7-9 Per caput supply (kg/year) of potatoes, sweet potatoes and pulses in 1970-1999 according to Food Balance Sheets

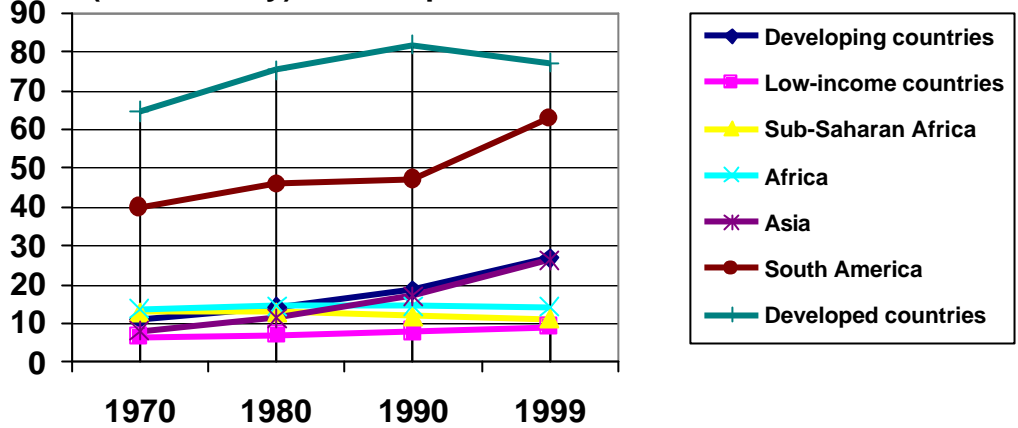


Figures 10-12 Per caput supply (kg/year) of vegetable oils, vegetables and fruit in 1970-1999 according to Food Balance Sheets

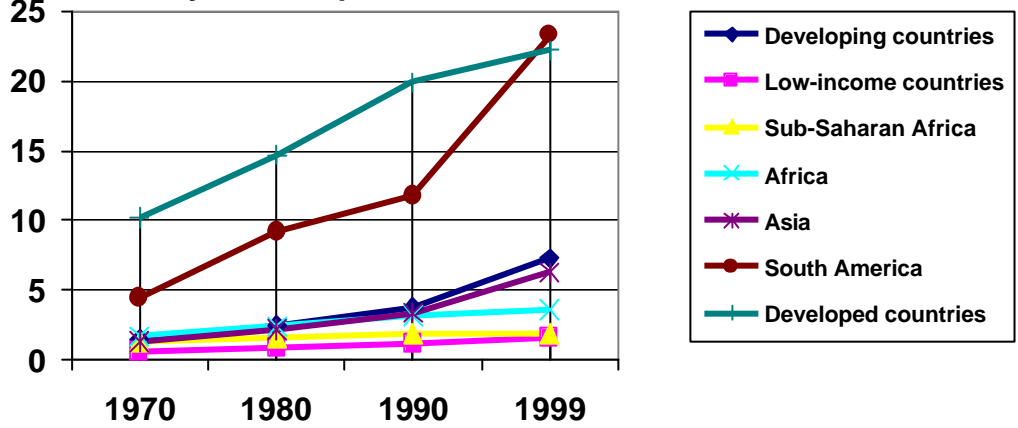


Figures 13-15 Per caput supply (kg/year) of sugar, milk and butter in 1970-1999 according to Food Balance Sheets

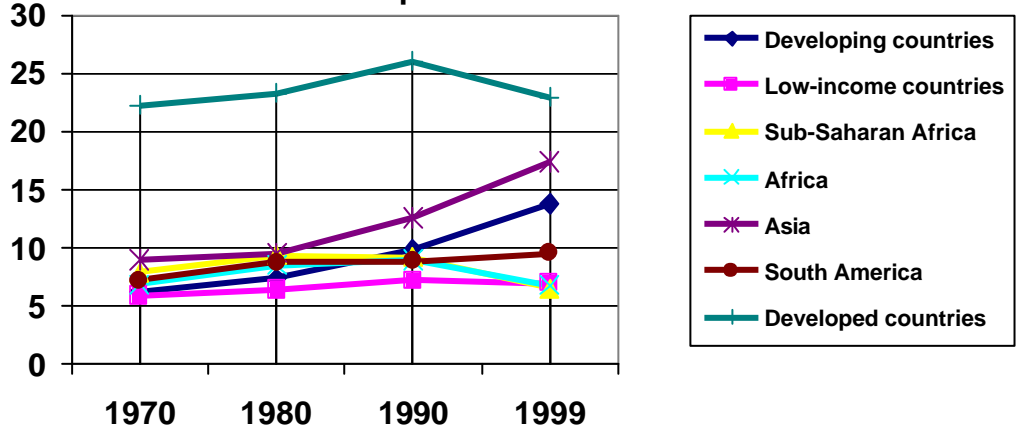
Meat (incl. Poultry) consumption trends



Poultry consumption trends



Fish & Seafood consumption trends



Figures 16-18 Per caput supply (kg/year) of meat, poultry, fish and seafood in 1970-1999 according to Food Balance Sheets

Table 1. Consumption of cereals, bread, legumes, vegetables, and fruit in selected low and middle income countries.^a

Country Survey Year	Cereals, total	Bread	Wheat	Rice	Legumes	Vegetables	Fruit
China [77]							
1989-97							
-Urban	67						
-Rural	161						
India [78]							
1975-79					36	99	21 (1990-91)
1995 (Rural)	321		274	3.2	14	61	19
Iran [48]							
1985							
-Rural		355		104		755	
-Urban		561		86		284	
1995							
-Rural		435		107		432	
-Urban		332		100		334	
Mexico [79] (incl. tortillas)							
Purchased quantity index							
1984	27					8	
1998	12					5	
Morocco [80]							
1970/71							
-Urban	433				15	323	129
-Rural	671				13	184	126
1984/85							
-Urban	463				17	364	112
-Rural	663				15	241	68
South Korea [61]							
1969						271	19
1998				246		284	198
Thailand [81]							
1960				440		82	6
1995				306		113	74
Tunisia [49]							
1975							
-Rural	155	20			5		
-Urban	74	74			6		
-City	37	99			6		
1985							
-Rural	145	32			4		
-Urban	59	84			5		
-City	35	101			5		

^a The consumption is given as grams/day unless an index.

Table 2. Consumption of meats, fish, eggs, dairy products, dietary fats and oils, sugar and soft drink in selected low and middle income countries.^a

Country Survey Year	Meat	Poultry	Fish	Eggs	Dairy products	Fats & Oils	Sugar	Soft drinks
India [78]								
1975-79					100	16	31	
1990-91	5		17					
1995	1				600	12	23	
Iran [48]								
1985								
-Urban	138			29	182	32	41	
-Rural	50			20	164	18	40	
1995								
-Urban	65			22	153	33	50	
-Rural	58			18	203	32	60	
Mexico [79]								
Purchased quantity index								
1984								
Urban								
Rural	6				15	2	12	5
1998	3				9	2	7	4
Urban								
Rural	5				11	2	12	6
	3				7	1	7	5
Morocco [80]								
1970/71								
-Urban	21	4	7	2	31	16	27	
-Rural	13	2	2	1	27	12	31	
1984/85								
-Urban	14	6	10	4	44	16	25	
-Rural	8	5	4	2	20	13	29	
South Korea [61]								
1969								
1998								
Thailand [81]								
1960	18			4	71 (in 1986)	20	0.2	
1995	71			21	29	14	14	
Tunisia [49]								
1975								
-Rural	10	2	2	1	37	18	14	
-Urban	14	2	8	2	20	20	14	
-City	19	2	10	3	55	18	11	
1985								
-Rural	8	3	1	2	26	19	15	
-Urban	16	4	7	4	38	22	16	
-City	24	7	10	7	55	23	20	

^a The consumption is given as grams/day unless an index.

Table 3. Intake of energy and energy providing nutrients (percentage of energy) in selected low and middle income countries.

Country Survey Year	Energy, kcal	Protein E%	Fat E%	Carbohydrate E%
Chile [82]				
Food expenditure by income quintile, National Household Survey				
1988, lowest	1640	10.9	23.2	56.3
highest	2200	11.8	29.5	53.1
1998, lowest	2010	11.1	24.8	53.9
highest	2494	11.9	28.9	56.0
China [77]				
Annual Household Consumption Survey				
1952	2270	3.1 (Animal protein)	11	
1992	2328	18.9	22	
China Health and Nutrition Survey, adults (20-45 yrs)				
1989			19.3	68.7
1997			27.3	59.8
-Urban			21.4 (-89) → 32.8 (-97)	
-Rural			18.2 (-89) → 25.4 (-97)	
Cuba [83]				
Food Consumption Survey Between 1980-89				
		11- 15	27 - 48	40 – 58
Egypt [40]				
n>6000 households				
1994, urban women Cairo				
			27.5	
			30	
Iran [48]				
Food Consumption Survey 1995				
-Urban	2444		24	
-Rural	2836		19	
Malaysia [84]				
3-day record				
-Urban men	2275		30	
-Rural men	2024		19	
-Urban women	1718		30	
-Rural women	1711		20	
Mexico [79]				
National Nutrition Survey (women, 18-49 years)				
1988	1721	14.6	23.5	59.7
1999	1636	12.7	30.3	57.5
Mexico City				
1988	1707	15.9	24.8	56.7
1999	1568	13.0	32.7	54.8
South Africa [85]				
THUSA (1996-98)				
Urban men		11.8-13.2	26.0-30.6	57.3-64.0
Urban women		12.1-13.4	27.7-31.8	61.5-55.6
Rural men		11.6-12.1	22.5-22.9	67.5
Rural women		11.4-11.3	3.6-22.5	67.0-68.4
South Africa, Urban [86]				
1940			16.4	69.3
1990			26.2	61.7

Table 3. Intake of energy and energy providing nutrients (percentage of energy) in selected low and middle income countries. (Cont'd)

Country Survey Year	Energy, kcal	Protein E%	Fat E%	Carbohydrate E%
Tanzania [87]				
1987				
Urban				
High income		17	43	40
Low income		15	15	70
Thailand [81]				
National Nutrition Surveys				
1960	1821	10.8 (31% animal protein)	8.9 22.2	78.9 64.3
1995	1751	13.2 (51% animal protein)		

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Globalization and Food: Implications for the Promotion of “Healthy” Diets

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1. Introduction

The World Health Organization estimates that within the next few years noncommunicable diseases (NCDs) will become the most important global cause of morbidity and mortality (WHO 1997). The role of diet in the aetiology of most NCDs is extremely important. The shift towards refined foods and meat and dairy products (what has been termed the “nutrition transition”) is increasingly occurring in middle and lower income countries with resultant rises in obesity and NCDs (Popkin B et al. 2001). Furthermore, it seems that once again the poor are the most vulnerable, with an increasing number of households occupied by both over and under nourished occupants. Traditionally it has been assumed that these changes in the diet are mostly due to income levels and personal preferences.

The growing concentration and power of large corporations, the ease of the movement of capital, cheaper transport and communication and increasing integration of markets and regions, processes usually subsumed under the term globalization, have a critical role to play in the present and future generation of global health. Influential studies are beginning to draw attention to the impact of these processes on important influences on health such as the environment (McMichael 2002), health systems (Price et al. 2001), drug provision and tobacco consumption (Bettcher et al. 2000). The findings of Chaloupka and Laixuthai (Bettcher et al. 2000), showing an almost ten per cent increase in cigarette consumption in countries that were forced to open their markets to American cigarettes, is a pertinent example. More recently, a WHO Technical Report on “Confronting the Tobacco Epidemic in an Era of Trade Liberalization” (2001) used a broader range of data also demonstrates a positive relationship between trade liberalization and tobacco consumption, with the greatest correlation in low-income countries.

In the field of nutrition the focus has largely been upon the impact of global restructuring of agriculture and the food industry on food security and agricultural sustainability. The relationship between globalization and the distribution, marketing and consumption of food within the context of an increasing diet induced epidemic of chronic disease is relatively under explored.

This paper will outline the epidemiology of the epidemic of over-nutrition and noncommunicable diseases globally. It will be argued that to develop effective interventions requires an understanding of the determinants of diet requires an examination of not just individual consumer behaviour but also what Fine & Leopold (1993) have called the “systems of provision”. Consumption is also influenced by ways in which food is produced, distributed and sold. It is here that the nexus between diet and globalization occurs. The interaction of the forces of globalization and agriculture, processing, retailing and marketing will be explored with a particular focus on how this impacting on the availability and consumption of different diets. The paper will conclude with an exploration of how the recent developments in WTO could influence the ability of governments to formulate effective public health responses to these changes in diet.

2. The Epidemiology of Malnutrition

2.1 Undernutrition

Undernutrition remains by far the most important single cause of morbidity and mortality globally, accounting for 12% of all deaths and 16% of disability-adjusted life years lost (Murray & Lopez 1996). Traditionally Undernutrition has been associated with developing countries (DCs) with approximately 175 million children under five in DCs estimated to be underweight which is associated with 54% of all deaths in this group (accounting for more than 6 million children) (Pelletier et al. 1996). Taking micronutrient deficiencies into account the figures are especially alarming: 2 billion women and children are anaemic (James et al. 2001), 250 million school age children suffer from vitamin A deficiency and 2 billion people are at risk from iodine deficiencies (MI 2000).

2.2 Overnutrition

Conversely, overnutrition and its associated risks of noncommunicable diseases (NCD), including ischaemic heart disease (IHD), diabetes, stroke and hypertension are perceived as a developed country problem. For example, recent surveys in the United States have found more than half (55%) of the adults to be overweight and nearly a quarter to be obese (Flegal KM et. al. 1998). Similarly, obesity levels have risen sharply in Europe albeit from lower levels. For example, the prevalence of obesity doubled to 16% in England from 1980-1990 and is continuing to increase (Bennett et al. 1995). This epidemic of obesity extols significant societal and personal costs in the forms of increased risk of disease and death, health care costs (Must et al. 1999; Allison et al. 1999a; Allison et al. 1999b) reduced social status, educational attainment, and employment opportunities (WHO 1998).

However there is now increasing evidence that the problems of over-nutrition are growing rapidly in all parts of the world even in countries where hunger remains endemic. A number of recent reviews have shown significant increases in the prevalence of over-weight and obesity in developing countries. For example, Grummer Strawn et al. (2000) analysed surveys from 38 countries and found levels of overweight and obesity in women to exceed those of the USA in the Middle East and North Africa and almost the same to the USA in Eastern Europe and Latin America. China is another country that is experiencing a rapid increase in over-weight and obesity in children and adults (Popkin & Doak 1998). In countries such as Brazil (Monteiro et al. 2000) and Mexico (Martorell et al. 1998) obesity is ceasing to be associated with higher socio-economic status and is becoming a marker of poverty as is the case in developed countries. Some poor households in these countries are now suffering the double burden of under and over nutrition amongst household members.

2.3 Obesity and NCDs

This rapid “nutrition transition” is manifesting itself through increases in many NCDs such as IHDs, diabetes and cancers in developing countries. Though only accounting for a quarter of lost DALYs presently, the rapid rise has led the WHO to estimate that NCDs will be the major cause of death in DCs by 2020 (WHO 1998).

The experience of developed countries clearly demonstrates that the cost of treating the morbidity and mortality associated with increasing obesity and related NCDs will be overwhelming for DCs. The cost of medical therapy to screen and reduce cholesterol levels is at least US\$ 10,000 per life year saved (McKinley 1993). The direct medical costs of obesity are estimated at 7% or US\$ 40 billion in the USA alone (Posten & Foreyt 1999). Since treatment is so expensive and unaffordable, prevention of excessive weight gain, either through dietary modification or increased physical activity, is an extremely important element in combating the rapid rise of NCDs.

3. Sloth and Gluttony?

At one level the causes of this epidemic of obesity are straight forward – too many calories coupled with reduced physical exertion. In Europe and North America fat and sugar account for more than half the caloric intake and refined grains have replaced whole grain (in the USA 98% of consumed wheat flour is refined). Many people in the developing world likewise are abandoning traditional diets rich in fibre and grain for diets that include greater consumption of sugars, oils and animal fats. For all developing countries combined, the per capita consumption of beef, mutton, goat, pork, poultry, eggs and milk rose by an average 50% per person between 1973-1996 (Per-Pinstrup & Pandya-Lorch 2001). The transition towards a more energy dense diet is also occurring at much lower income levels than previously. “Whereas in 1962, a diet deriving 20% of its energy from fat was associated with a GNP of US\$ 1,900, the same diet was now associated with a GNP of only US\$ 900 (both in 1993 dollars)” (Drewnoski & Popkin 1997). This has been attributed to the wider availability of vegetable oils and, to a lesser extent, dairy and meat products. The cost of treating

the outcomes of over-nutrition are out of the reach of all DCs there is an urgent need to develop comprehensive prevention strategies in response to these worrying trends.

4. Prevention Strategies

4.1 The Medical Model & Its Limitations

A medical model approach has been the dominant paradigm in prevention strategies. The goal has been to disentangle the individual risk factors for various chronic illnesses as exemplified by the seminal case-control and cohort studies of Richard Doll on smoking and cancer. With the refinement of methodologies grew more sophisticated “webs of causation” (Krieger 1996) which highlighted the multiple causal factors, their possible interactions and the subsequent need for evermore sophisticated multivariate analysis. This reached its zenith with the huge CHD trials of the Seventies which recruited thousands of men, cost hundreds of millions of dollars and attempted to delineate the various risk factors for CHD, intervening in those who were marked as being at “high-risk”.

The practical outcome of this endeavour has been public health, which has emphasized the identification of various risks and risky behaviour and consequently the isolation of individuals at greatest risk. Individual lifestyles become a major risk factor for ill health and health policy becomes a process of prescribing relevant behaviour changes through health education to the population and, possibly, treatment for those at “high-risk”. For example, Beaglehole (2001) recently lamented that the International Heart Foundation had once again focused upon individual lifestyle changes (eat less fat, cut down on salt intake) etc. This ignores repeated and expensive failures in attempts to change diets through improving knowledge alone. As Nestle et al. point out when discussing the North American diet:

“Despite two decades of recommendations for fat reduction and the introduction of nearly 6000 new fat-modified foods within the last five years, the population as a whole does not appear to be reducing its absolute intake of dietary fat. Although the reported percent of calories from fat declined from 36-37% in 1967 to 34% in 1991, reported energy intake has increased from 1989 to 2153 calories per day, so absolute reported grams of fat are the same.” (Nestle et al. 1998)

This narrow approach of nutrition education is not surprising as it builds upon a long history of dietary guidelines that very rarely acknowledge the wider cultural, economic and environmental influences on diet (Nestle & Jacobsen 2000). Even within the narrow remit that they work in many instances authorities producing these guidelines have been heavily influenced by the agricultural industry to modify the messages. Nestle (1993) cites a personal example of working with the US Department of Agriculture to pass the Food Pyramid Guideline. Release of the Pyramid was delayed by a year as the meat industry objected and the language had to be changed from “eat less meats” to the more euphemistic “choose lean meat”. The reliance on individual education also fits neatly into dominant theories of consumption in the social sciences that focus upon the qualities of the goods and individual tastes at the expense of the broader context in which the goods are produced and distributed (Fine and Leopold 1993).

Rose (1992) has highlighted some of the practical problems associated with this individual approach:

- 1) the difficulties and costs of screening;
- 2) the very poor results from the large intervention studies in changing individual behaviour of even those at high risk;
- 3) the palliative and temporary nature of this approach;
- 4) the enormous costs involved; and,
- 5) the problem that “a large number of people at a small risk may give rise to more cases of disease than the small number who are at high risk”.

Concentrating on those at high-risk may therefore, have relatively little impact on the overall incidence of the disease. Obversely, making a small change across the population can have a large impact. For example, it has been estimated that the rise in obesity in the USA between 1980-

1994 could be explained by an average daily increase in 35 year old adults of only 3.7 kcal above maintenance energy requirement for men and 12.7 kcal above that for women (Khan & Bowman 1999). Professor Beaglehole (2001) re-enforces the potential impact that population changes in diet can make:

“...a 2% reduction in of mean blood pressure...has the potential to prevent 1.2 million deaths from stroke (about 15% of all deaths from stroke) and 0.6 million from coronary heart disease every year by 2020 in the Asia Pacific region alone...and could be readily achieved in many populations by reducing the salt content of manufactured food” (p.662)

4.2 The Obesogenic Environment

Egger & Swinburn (1997) buttress the epidemiological arguments for focusing on the broader environment with a biological rationale:

“Dietary fat is very energy dense and has a limited effect on suppressing appetite and enhancing fat oxidation. This makes reducing dietary fat an obvious choice for reducing total energy to treat or prevent obesity. A reduction in dietary fat with an otherwise free choice of food promotes a modest weight loss, which is initially less than that from a conventional low energy diet. However, the long-term results are similar...but ultimately weight loss is limited by the high settling point of fat stores for people living in an environment that promotes obesity. To keep fat stores below this point often requires considerable effort, which is difficult to maintain in an unsupportive “obesogenic” environment” (p.479)

The United States provides an example of an “obesogenic environment”. About 170,000 fast food restaurants and three million soft drink vending machines have seduced Americans out of their homes so that a recent survey found that only 38% meals eaten were “home-made” and many have never cooked a meal from basic ingredients (Gardner & Halweil 2000). An average restaurant meal provides 1000 to 2000 kcals (up to 100% RDA for most adults) and the portion sizes are getting bigger (Nestle & Jacobsen 2000). This is compounded by an increasing tendency to snack in between meals. In the UK 75% of adults and 91% of children consume a snack food at least once a day (Key Note 1989). This behaviour is encouraged from a young age with most schools in the United States hosting fast food restaurants and soft drink vending machines.

Increasing number of people in developing countries are also finding themselves in such environments. Popkin (1999) has begun to connect the process of urbanization with changes in diet and penetration of televisions into homes and markedly reduced physical activity in urban centres of China. Between 1989 and 1993 the share of rich urban Chinese households consuming a low fat diet (less than 10% of calories from fat) fell from 7% to 0.3 % and proportion consuming a high fat diet (more than 30% of calories from fat) increased from 23% to 67%. Transitions in diet that took more than five decades in Japan have occurred in less than two in China.

5. Changing the Obesogenic Environment

There is evidence from studies that when this “obesogenic” environment is challenged – through a combination of price manipulation, public education and clear nutrition labeling – then adverse trends in diet can be reversed. Both Norway and Finland are examples of countries that have successfully reversed high fat, energy dense diets in their populations that has resulted in significant decreases in serum cholesterol levels and deaths from coronary heart disease. In the case of Norway this was based upon a wide range of measures that included (Norum 1997):

- Public and professional education and information;
- Setting of consumer and producer price and income subsidies jointly in nutritionally justifiable ways;
- The adjustment of absolute and relative consumer food price subsidies
- Ensuring low prices for food grain, skimmed and low fat milk, vegetables and potatoes;
- The avoidance of low prices for sugar, butter and margarine

- The marking of regulations to promote provision of healthy foods by retail stores, street vendors and institutions ; and
- The regulation of food processing and labeling

In developing countries, Mauritius provides an example of a successful comprehensive programme that reduced mean serum levels as well declines in hypertension, smoking and heavy alcohol use. Once again the use of mass media, price policy, widespread educational activity in the community, workplace and schools and other legislative and fiscal measures were key planks in the prevention strategy (Dowse et al.1995).

In summary, if we are to understand shifts in the consumption of food and design effective intervention strategies necessitates an analyses of what Fine & Leopold (1993) have called, the system of provision of food:

“In explaining consumption, it is not sufficient to depend upon its proximate determinants – in tastes, prices or habit – nor to swing to the opposite extreme and render the system of production the sole or main determinant of what is consumed, important though it is. Production is itself variously organized...production is connected to consumption by shifting systems of distribution, by retailing as well as the by the cultural reconstruction of the meaning of what is consumed.” (Fine and Leopold 1993 p.4)

It is here, with the revolution in the production, process, retailing and marketing of food, that the nexus between diet and globalization occurs. Two key questions arise:

1. What is the influence of globalization on these systems of provision? and
2. How will globalization impinge upon the ability of public health authorities to reverse this trend?

6. Globalization, Food and Diet

Globalization is a contested term that has many different meanings. For our purposes it is useful to identify and analyse at least three important components that have direct relevance to the diets of people:

1. The recent explosion in cross-border trade facilitated by the progressive lowering of tariffs, increased mobility of capital and labour and cheaper cost and increasing speed of communication have accelerated pre-existing economic, political and social interdependence. This in turn has encouraged the formation of large transnational corporations that increasingly organize food production, distribution and marketing on a global scale;
2. Along with the greater movement of capital and people there has also been a greater diffusion of cultural influences across national borders;
3. Globalization is also associated with issues of governance with the formation of new global institutions (i.e. World Trade Organization) that increasingly impinge upon national states and the re-definition of the role and influence of existing global institutions (e.g. increasing role of the World Bank on global health policy).

In the context of food systems globalization is nothing new. Trade in food has been documented since settled agriculture became the norm. This does not mean that the current phase is not qualitatively different. The sheer pace and scale of change is unprecedented. The global value of trading in food grew from US\$ 224 billion in 1972 to \$438 billion in 1998; food now constitutes 11% of global trade, a percentage higher than fuel (Pinstrup-Andersen & Babinard 2001). This increase has been accompanied the consolidation of agricultural and food companies into large transnational corporations (TNCs) (Table 1).

Table 1. Top ten transnational corporations in food manufacturing and processing by total sales in 1998 (Source: FT 500, Financial Times, 28 January 1999, excepting Cargill, website: www.cargill.com)¹

	Sales	Profits	Chief Products	Employees
	(US\$ billion)			
Philip Morris	56.11	6.31	Tobacco, cereals, beverages	152,000
Cargill	51.00	4.68	Cereals, seeds, oils, beverages	80,600
Unilever	50.06	7.94	Oils, dairy, beverages, meals	287,000
Nestlé	49.96	4.11	Beverages, cereals, infant food	225,808
Pepsico	20.92	1.49	Beverages, snacks	142,000
Sara Lee	20.01	-0.53	Meat and bakery	139,000
Coca-Cola	18.87	4.13	Beverages, foods	29,500
McDonalds	11.41	1.64	Restaurants	267,000

These TNCs have developed global brand names and have evolved global marketing strategies albeit with adaptation to local tastes. They are defined by the global sourcing of their supplies, the centralization of strategic assets, resources and decision-making and the maintenance of operations in several countries to serve a more unified global market. For example, Hillsdown Holdings is now one of Europe's largest food conglomerate with a total of 150 subsidiary companies in Europe. It has important market share in such products as red meat, bacon, poultry and eggs. It also supplies the majority of its non-animal feed requirements from ten mills and its own chicks from its commercial hatcheries. Finally it has started to integrate downstream processing activities through the control of twenty-five abattoirs and several food processing, distribution and meat-trading companies (McMichael 1994). In Europe, the rise of large retailing conglomerates are playing an increasing role in defining food tastes and quality (Marsden et al. 2001, Wrigley 1998).

An important strategy for these large TNCs to penetrate into new markets is to purchase large and often majority shares into local food producers, wholesalers or retailers. These companies are called affiliates. Affiliates of the largest one hundred companies grew from 2,070 in 1974 to 5,173 in 1990 and in value from US\$ 121 billion to US\$ 517 billion. Most of this foreign investment is from the companies in one developed country to another. For example in 1993 US food companies invested US\$ 54.4 billion in companies based in Europe alone while European companies invested US\$ 31.1 billion into American affiliates (Handy et al. 1996). However food companies from the West are now using this strategy to penetrating into developing countries. For example, sales from US affiliates in South America doubled between 1987 to 1993 and increased by 282% in Mexico. China is another country that is experiencing significant investment from TNCs into local companies in order to produce, distribute and retail global and locally adapted products (Handy et al. 1996).

The simple potato is an example of the simultaneous transformation of diet and the globalization of agriculture. To ensure a steady supply of genetically standard fresh potato crops McCain re-organized traditional agricultural communities in Eastern Canada through monopoly contracts specifying most aspects of production and creating a monocultural region. At the same time the aggressive promotion of fried chips allowed McCain's to generate large profits from frozen French fries before moving onto other high value-added products. The interstices between this process of globalization and changes in diet are therefore multiple. It remains a challenge to link changes in consumption patterns to those in production, distribution, retailing and advertising.

The next part of this paper examines these changes in more detail and attempts to link these changes with the possible health impacts.

¹ This table was kindly provided by Tim Lang (personal communication)

6.1 Agriculture and Processing

All aspects of the production and processing of food have been transformed in the last three decades. To simplify changes will be examined by examples of changes in wheat, durable foodstuffs and meat (Friedman 1994).

Wheat: The New Deal price support programmes began to lead to large accumulation of surplus wheat in the United States after the Second World War. Through the Public Law 480 the United States was able to export to Third World countries at concessional prices. Wheat exports grew 250% between 1950-1970 with the Third World share increasing from 19% in the late 1950s to 66% in the late 1960s. In this period per capita consumption of wheat grew by 63% in the Third World while consumption of other cereals only rose by 20% and root crops fell by 20% in the same countries. This system allowed Third World countries to cheaply feed an increasing urban working class and can explain some of the changes in diet associated with urbanization. For example, in Senegal a rural worker consumes about 158kg of millet, 19kg of rice and 2kg of wheat a year while his urban counterpart in Dakar consumes 10kg of millet, 77kg of rice and 33kg of wheat (Delpeuch 1994). Further evidence for this comes from a FAO study that correlates levels of urbanization with imports of food (Table 2).

Table 2. Urbanisation and food imports (study of 43 developing countries between 1970-1980) (FAO 1990)

Average increase in urban population as a share of total population	Average increase of imports as a proportion of total food available
1-5%	6.6%
5-10%	12.5%
>10%	14.8%

The food crisis of the mid-1970s, by which time many countries were reliant upon wheat imports, saw the price of wheat rise dramatically and countries having to incur increased debt to pay for these imports. It also led to some countries such as Mexico, Columbia, India, Pakistan, Turkey and Argentina to switch over 80% of their total area planted in wheat to semi-dwarf seed varieties, displacing rain-fed crops such as coarse grains, oilseeds and pulses. While this has allowed them to dramatically reduce their food imports it is at the expense of the more varied traditional crops usually cultivated for domestic production (McMichael 1994).

More recently the reductions in agricultural subsidies related to GATT agreements and the emergence of new producers has seen the large grain companies, traditionally tied to large family wheat farms, amalgamating into transnational corporations and diversifying into the durable foodstuffs and livestock. This process has also increased the involvement of financial and capital institutions in the agricultural sector (Friedland 1994).

Durable Food: The perennial problem of overproduction of agricultural produce in developed countries (the food supply contains 3800 kcal for every adult and child in the United States), and the relative inelasticity of food demand, has led to the need to add value to raw agricultural products in the manufacturing of food. In the United States for example “farm” value has remained virtually unchanged in recent years while “market” value (incorporating added value of the manufacture, retail and food services) has doubled and is now three times as large farm value (Goodman & Watts 1997). In 1991 16,143 new products were introduced in UK supermarkets alone with over 77% of these being new types of food (Marsden 1997). This represents a 100% increase over the previous decade. This challenge of creating profits in saturated markets has been met by what Goodman, Sorj and Wilkinson (1987) have referred to as “appropriation” and “substitution”. An example of appropriation has already been mentioned with McCain's transformation of farming in Canada through monopoly contracts. Friedland (1981) shows how Bud

Antle have been able to supply year round lettuces and tomatoes through development of monocultural, industrial farming in the Western United States.

Substitutionism involves the progressive reduction of agricultural products to simple industrial inputs (which can be organic in origin) but allows replacement by increasingly non-agricultural components (Goodman et al. 1987). Margarine, manufactured from cheaper intermediate ingredients as a substitute for butter, provides an early example of substitution; the rise of artificial sweeteners now accounts for more than half of US per capita consumption. We are now in a better position to understand the tendency of foods to be stripped of their nutritional content (as in white bread) and to be supplemented by chemical additives (such as colourings and flavourings). Sugar and salt are the two most commonly added ingredients with fats and oils also added in large doses to increase the “added” value of foods (taking advantage of the biological fondness to sweetness and the easier to overcome satiety to sweet and fat foods (Egger & Swinburn 1997)). Substitutionism also accounts for the increased tendency of agricultural products to serve as industrial raw materials that become re-constituted into other food commodities.

Livestock: Three key factors have facilitated the explosion of meat production: a revolution in maize production based on hybrids requiring intensive mechanical and chemical inputs; substitution of forage crops by soya and a new capital-intensive feedstuffs industry that interposed itself between crop and livestock production (Friedman 1994). A globalized sector has emerged over the last two decades with global sourcing of feed inputs and global marketing of meat-related commodities. Sanderson (1986) has captured this well:

“Regardless of nationality of ownership, the world steer reorganizes beef production to meet international standards through expensive feeds and medicines, concentrated feedlots and centralized slaughtering. The displacement of traditional marketing and processing means that small sideline producers lose access to markets...As a result they lose milk and meat”.

Friedman (1994) takes this further by reminding us that the world steer might serve the palates of the global urban elites while many others have to make do with meat that has been produced through extensive grazing in the Amazon and Central America with devastating ecological and social repercussions. Boyd and Watts (1997) have vividly captured the remarkable rise of chicken as a chosen food source. Consumption of chicken in the USA has risen from ½ lb. chicken per head in 1928 to 5lbs in 1945 to 70lbs in 1995 (this is more than 1000% increase) and now outstrips consumption of beef. This has been made possible by the control of broiler production by a few massive vertically integrated corporations (the top four corporations accounted for 45% of USA broiler output in 1990). Chickens are now genetically uniform and programmed to reach market weight in as little as forty days assisted by the supply of chemically manipulated feeds. All parts of the production process are not only controlled by the same companies but also more geographically concentrated. This concentration of control and location allow the use of production techniques associated with the new global economy such as “just-in-time” inputs and “flexible specialization”. Such specialization allows the food corporations to create and market multiple products from chickens – Tyson Foods alone has 4,600 different chicken products.

6.2 Retailing

The other important global change has been the rise of large retailers especially in Western Europe. Table 3 shows the level of concentration in selected countries.

Table 3. Concentration of Retailers in Selected Western European Countries (Marsden et al. 2001)

Country	Market share of top retailers	Number of retailers
Norway	89	4
Germany	80	5
Austria	73	4
Finland	72	2
Belgium	68	4
Sweden	61	3
UK	61	5
France	59	5

The last decade has seen the relatively rapid demise of small independent food retailers in many of these countries: Spain lost 34,000 food stores between 1988 and 1995, while between 1971 and 1991 the UK lost 120,000 food shops, (West) Germany 115,000 and France 105,00 (Dawson & Burt 1998). This growth of what Raven et al. (1993) have called the hypermarket economy has important effects for food choices in these countries. On the positive side consumers enjoy increasing choices of food. For example the large retailers in the UK, usually through their own label products, have aggressively marketed “healthy” low fat foods with clear nutritional labeling; they have also introduced and promoted chilled ready-to-eat meals. On the other hand, the positioning of large retailing complexes on the outskirts of towns has led to what has been called “food deserts” as poor inner city and rural areas are bereft of superstore development and ailing independent grocers forced to charge higher prices to low income customers. This desert is quite often filled by low-cost stores specializing in frozen foodstuffs such as hamburgers, chips etc. (Dowler 1995). Marsden et al. (2000) quote a health official pointing out the downside of attempts by the large retailers to gain competitive edge through the promotion of “healthy” foods as this goes against universalistic principles of health provision:

“We don’t need claims that such and such a product has a 25% reduction in fat, but that we need a small reduction of fat in everything. So that everyone can go out and choose a low fat diet more easily.”

Marsden et al. (2000) highlight another important consequence of the growing concentration of retail power:

“Decisions about food safety and quality are ever more closely tied to the retailer and the assumed ability of the consumer to choose. As the ability of retailers to regulate their supply chain is variable, so to is their willingness to develop food standards above the state baseline. The result is, that based upon consumers ability to choose where to shop, they enjoy differentiated rights to food quality” (p.46).

6.3 Marketing of Food

Analysis of the globalization of the food industry is therefore very important in understanding the direct ways in which global diets are being affected. This analysis has not touched upon the indirect effects globalization has on diets and nutrition through changes in food security, rural employment and urbanization. However while examination of the changes to the supply of food is necessary to explain dietary changes it is not sufficient. Food, more than any other commodity, is closely connected with perceptions of the self and form part of much wider social intercourse. As Barthes puts it:

“When he buys an item of food, consumes it, or serves it, modern man does not manipulate a simple object in a purely transitive fashion; this item of food sums and transmits a situation; it constitutes an information; it signifies” (Barthes 1979).

It is for this reason that many are alarmed at the rapid spread of a particular kind of food culture particularly associated with the “West” and the “Western Diet” – the fast food culture exemplified by

McDonalds. Ritzer (1998) has summarized the remarkable rise of chains such as McDonalds and how they are influencing other parts of society:

- Fast food services accounted for nearly a third of total sales of the entire food service industry in the United States at nearly US\$ 81 billion in 1993. For the first time they exceeded sales in traditional full-service restaurants and gap is expected to grow.
- McDonalds and other similar chains are taking full advantage of the opportunities of globalization. By the end of 1993 one third of McDonalds stores were overseas and accounted for half of its profits, four out of every five new restaurants is now opening abroad rather than at home. Many developing countries have also developed their own versions of McDonalds.
- Over 500 university and college campuses have fast food restaurants and over 5,000 schools have contracts with fast food restaurants. More than 95% of American school children recognized Ronald McDonald second only to Santa Claus.

Lang (2001) cites a Gallup poll that found that within a comparatively short period of their introduction in China, 65% of the Chinese population recognized the brand name of Coca Cola; 42% recognize Pepsi and 40% recognized Nestle. Barnet and Cavanagh (1994) have cogently argued that the global marketing and “the systematic moulding of taste by giant corporations” are a central feature of the new globalization of the food industry. Lang (2001) provides an example of such a process:

“In Vietnam, for instance, international branded ice cream is better funded and has the advantage of up-market foreign cachet, both expanding the market in dairy products (in a low dairy consumption country) and their market share” (p.94)

Nestle & Jacobsen (2001) estimate that in the United States alone the food industry spends over US\$ 30 billion on direct advertising and promotions – more than any other industry. “In 1998, promotion costs for popular candy bars were US\$ 10 million to US\$ 50 million, for soft drinks up to US\$ 115.5 million and McDonalds just over a *billion* dollars” (italics in original) (p.18). Food advertising in the developing countries is lower, but they are growing fast as incomes increase. In Southeast Asia, for example, food advertising expenditures tripled between 1984 and 1990, from US\$ 2 billion to US\$ 6 billion. Mexicans now drink more Coca Cola than milk (Jacobsen 2000).

The uptake of the Western high fat, high sugar diet is especially pervasive amongst the newly urbanized populations where these foods become associated with being “modern”. The savings in preparation time, the convenience and sometimes the value for money of street and fast foods are other important reasons for the rapid changes in diet (Maxwell et al. 2002) This may help to explain the exponential rise in obesity in these populations.

6.4 Summary

This section has attempted to outline the profound changes that have occurred along the whole “system of provision” in food. The increasing concentration and consolidation of TNCs is allowing large economies of scale, the increasing use of substitutionism and appropriation to develop new foods quite often with increased content of sugar, salt and fats, penetration of developing country markets through heavy subsidies and huge marketing budgets. Traditional responses to promote healthier diets and improved public health have traditionally relied upon the State to take the lead as shown in the Nordic country examples. The next section will examine how the rise of international trade treaties and global governance structures impact of the capacity of national states to mount credible responses to changes of diet.

7. Global Governance

The establishment of large trading blocks such as NAFTA, EU, APEC and the increasing importance of trade institutions such as the World Trade Organization (WTO) has been another defining feature of globalization. Many commentators have focused upon the impact of these changes on food security. However, the various treaties could have wide ranging impacts on the ability of national states to follow the experience of Finland, Norway and Mauritius in implementing comprehensive approaches that encourages their populations to adopt healthier diets and behaviours.

Box 1 Brief background to WTO & GATT

The WTO emerged in 1994 as a result of the Uruguay Round of multilateral trade negotiations. After eight years of negotiations, the 124 participating nations agreed to significant and dramatic changes to the previous multilateral trade regime, then known as the General Agreement on Tariffs and Trade, or the GATT. These included a stronger and legally binding dispute settlement mechanism, the inclusion of more nations, especially developing and least developed countries, and a major expansion of rules beyond border measures, such as tariffs, to rules covering the domestic regulatory heartland of government authority. For the first time agriculture and trade in services were included in the agreement. Broad public health concerns are deemed to have been dealt with in three places in the General Agreement on Tariffs and Trade (GATT) which forms the basis for WTO action. These are Article 20 of the GATT, its consequent elaboration in the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS) and the General Agreement on Trade in Services (GATS).

7.1 GATT

As part of Article 20, governments are given rights to adopt or enforce measures to protect human, animal or plant life or health. However, the nature of these necessary public health measures is not defined. In the process of dispute settlement there is a danger that the decisions of the WTO dispute settlement body will prioritize the interests of trade and restrict definitions of what are considered to be necessary public health measures.

The WTO agreement stipulates that in a trade dispute products must be compared to “like” products without consideration of the methods or practices which have produced them. Thus a country should not exclude a good produced in a foreign nation, even if they deem that the production of that good involves risks to health or society. For example, a country should not ban imports of foreign beef derived from cows fed with antibiotics or hormones, even if local regulations ban or limit such practices. The United States has argued that genetically-modified (GM) products are technically “like” to non-GM products, especially in those cases where genetically modified organisms have only been used in part of the production process, and so countries have no grounds for imposing import restrictions. Similarly, products made by compromising labour rights and/or safety standards are considered to be identical to those, which have been produced with respect for these standards.

The requirement to treat “quite like” products as “similar” even though they might differ in fat, alcohol, salt, fibre or any content whose level is important for health, could also complicate government attempts to promote healthier diets. Similar problems would arise if countries restricted access, imposed higher taxation or set higher prices for products with negative health impacts, even though the products themselves would not pose any immediate health danger. While it has been suggested that trade in hazardous products should be outside WTO agreements, or at least set out in exceptions, problems relating to the use of economic incentives such as taxation to guide consumption towards healthier alternatives would remain.

Dispute settlement decisions made within the WTO framework to date suggest that “least trade restrictive measures” should be used to address public health and safety concerns. As a result there seems to be pressure to use labeling as a guide to matters of health concern in place of more systematic regulatory mechanisms - for example, taxation or banning of access, advertising or use. Although labelling can improve consumer choice and address concerns about allergens in food, important debates about its efficacy remain. These include:

- a) how far consumers can actually make a choice and how labelled products will be dealt with in mass-catering;
- b) how much data can be presented on labels and how far this represents a real exchange of information;
- c) the extent to which labeling represents an “individualization” of regulation, with responsibility for decisions about difficult health and safety issues being passed on to consumers. The process of labeling could also be seen to be undermining the basic responsibilities of public health and environmental authorities to provide sufficient safeguards covering production processes.

7.2 Agreement on the Application of Sanitary and Phytosanitary Measures (SPS)

This agreement deals with issues related to food safety and animal and plant health regulations. The agreement:

- encourages members to base their measures on international standards, guidelines and recommendations where they exist
- recognizes the rights of governments to take sanitary and phytosanitary measures but stipulates that they must be based on science, and should not arbitrarily or unjustifiably discriminate between member nations where identical or similar conditions prevail.

The WTO agreements are based on relevant international standards. It is, however, not always defined who or what should be the body which sets the international standards, thus creating scope for industry-led self-regulation. WTO standards with regard to food are defined by a recognized international body - the FAO/WHO Codex Alimentarius; but even here concerted lobbying by private interests could mean that future standard setting is compromised. Special attention has been drawn to the large share of non-governmental actors representing private sector interests in the Codex Committees in comparison to other non-governmental bodies. In the period 1989-1991, 96% of non-governmental participants on Codex Committees represented industry. (Avery et al 1993).

Other well-established international bodies might find their guidelines ignored. For instance the International Agency for Research on Cancer (IARC) studies on carcinogenicity received little consideration in the beef-hormone case, which has been fought between the United States and the EU.

7.3 GATS

It could be argued that at least GATS grants governments some freedom to regulate supply as long as it does not discriminate against foreign goods. However the General Agreement on Trade in Services threatens to further restrict this limited policy freedom. Grieshaber-Otto and Schacter (2001) have closely analysed the potential impact of GATS on alcohol control strategies globally. They point out that for the first time global trade treaties will directly impinge upon the ability of nation states to control the distribution, advertising and retailing of alcohol. It is not difficult to generalize this to other foodstuffs. They conclude with the following statement:

“...GATS specific commitments on National Treatment and Market Access reduce the ability of governments to restrict access to committed service sector markets. Commitments in the areas of distribution services include alcohol distribution unless specifically excluded. Commitments in advertising services overlap with many other service sectors. These commitments may entail novel GATS prohibitions against restrictions on alcohol advertising that are neither anticipated nor intended by member countries. ...It is increasingly apparent that both the general and specific obligations of the existing GATS have the potential to restrict alcohol-related public health policies. For example, applicable GATS rules prohibit restrictions on market access for alcohol (including the number of retail outlets), the nature and amount of advertising, and even the ownership structure of alcohol retail outlets (public or private, for-profit or not-for-profit). On-going negotiations are designed to place even more restrictions on governments' ability to shape public health policies on alcohol.”

Bettcher et al. (2001) and Campaign for Tobacco-free Kids (2001) have highlighted how the agreements under WTO are also making it more difficult for developing countries to resist the entry of cheaper foreign cigarettes. It is worrisome that if governments are finding it difficult to resist free trade and control of such well-established public health hazards as cigarettes and alcohol their room for manoeuvre around diet will be extremely limited.

8. Conclusion

“We are what we eat” is a common refrain and reflects the great importance food and diet has. Unlike other commodities the globalization of the food systems and diets challenges more fundamental issues of political, social and cultural sovereignty. This paper has highlighted how the process of globalization is accelerating the commodification of food through restructuring of agriculture and the promotion of free trade in food grains and products. Through processes such as appropriation and substitutionism food production and processing is being transformed into one that more closely resembles other industries. The rise of huge food companies and retailers is also transforming the ways in which food is marketed and sold. Food is becoming a commodity that is being literally removed from its roots. This is having impacts not just on the nature of farming but also the perceptions of diet and cooking.

One response has been the establishment of local networks between farmers and urban associations as urban dwellers attempt to “reconnect” with their food. On a larger scale governments will be increasingly faced with the challenge of participating in a world trade system that may well undermine their own local agriculture or at least distort it to serve the niche palates of the North. At the same time globalization does raise the prospect of cheaper food and greater choice. International agencies such as WHO and public health professionals need to assist national policy makers and public health professionals to understand the broader determinants of the nutrition transition and support their efforts to implement effective and comprehensive strategies.

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The Impact of Economic Globalization on Noncommunicable Diseases: Opportunities and Threats

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I. Economic Globalization

1. Concept of Globalization

Globalization as defined by Daulaire is “*the flow of information, goods, capital and people across political and economic boundaries*”. More than a flow, globalization is an integration of a network of networks.

Globalization gains widespread currency as it affects almost all aspects of contemporary life. It is described as a process that is changing the nature of human interaction across many spheres, particularly those of politics, institutions, economics and trade, social and cultural life, the environment, and technology. It is changing temporal, spatial and conceptual boundaries that separate individuals in society. (Lee 2000 in Owen 2001) It seemingly shrinks the planet as barriers to trade are dismantled, transport and communications costs fall, and global production systems are formed and managed by giant multinational corporations (Asian Development Outlook 2001). Mass education and advancement of literacy facilitate world trade, communication and integration of networks.

Because of the actual and potential impact on human society, the benefits and costs of globalization (the subject of various debates and conferences) are extensively being studied. Daulaire, however, argues that globalization needs to be seen not as something inherently good or bad. It should be taken as a relentless force and an inevitable trend that needs to be understood in order to channel benefits for human well-being. Effective responses, Daulaire adds, can harness, if not mitigate, the threats that come with it.

Globalization presents itself both as an opportunity and a threat that needs to be examined in order to arrive at important policies and decisions on health (Walt 2000). Health policy makers and public health practitioners, therefore, are challenged to understand globalization. Although there is growing literature on the importance of globalization for health, there is no consensus either on the pathways and mechanisms through which globalization affects the health of populations or on the appropriate policy responses. (Woodward, Drager, Beaglehole & Lipson 2001)

Several drivers of globalization were earlier classified. These include **(1) international trade liberalization, (2) worldwide advancement of information and communications technology, (3) increasing cross border capital flows and (4) international labor migration** (Pinstrup, Andersen & Babinard 2000). **Political influences, economic pressures, changing ideas and increasing social and environmental concerns** were detailed by Woodward, Drager, et. al. as driving and constraining forces of globalization.

The various forces of globalization coming from different fronts are nearly unstoppable in affecting almost all aspects of contemporary life. The contributions of globalization on efficiency improvements and subsequent income effects, however, are being challenged by sectors that bear the heavy burden of adjustment resulting from the opening of the economy to internal and external competition. The impact of globalization goes beyond the productive sector and has affected the environment, health, education and society as a whole.

The tempered and critical view on globalization stems from the unevenness in the distribution of benefits and costs of this contemporary reality. For example, it is very easy for competitive firms and individuals to reap the benefits of deregulation and liberalization policies since they set the standards for success. However, the rigidities in the adjustment process make it extra painful for sectors and individuals displaced by the stiff internal and external competition generated by opening up the economy.

This asymmetry inherent in the globalization process has widened the income gaps between the rich and poor countries, on one hand, and within countries, in an environment of economic growth on the other hand. In addition, the unevenness has created a digital divide and other categories that exclude sectors and persons from participating, and reaping the benefits of globalization.

For purposes of this paper, economic globalization's impact on noncommunicable diseases and its corresponding opportunities and threats shall be discussed. Economic globalization refers to the "development of production and information networks" across boundaries. This global economic interdependence manifests itself in the growth of world trade, the integration of the financial markets and the expansion of transnational corporations. Various factors, in turn, facilitated this commercial integration including, among others, international trade agreements, internal policies of countries to open their economies to internal and external competition as well as the rapid developments in information and communications technology.

2. Commercial Avenues of Globalization

A. International Movement of Goods

The expansion of global commercial interaction followed on liberalization measures that further integrated production and distribution processes worldwide. This integration resulted as barriers to the free international movement of goods, services and capital were gradually dismantled over time. Although the impact of liberalization measures on global trade and output in recent decades has been well documented, a significant surge in global commerce has already been observed even during the latter part of the 19th Century. Industrialization integrated commerce from North America to Central Europe, India and Russia (Bonte-Friedheim, Tabor and Tollin 1997 in Pinstруп-Andersen & Babinard 2000). However, after the two world wars, the growth potentials of worldwide commerce were stunted by inward-looking development strategies. Protectionism (mainly to rebuild the shattered economies) became an instrument of this insular view. There were, however, international efforts to mitigate the wars' aftermath. The International Bank for Reconstruction and Development (IBRD), or the World Bank (WB) was established primarily to reconstruct war-torn countries. Development efforts came later. The International Monetary Fund (IMF), on the other hand, was organized to stabilize the fluctuations in exchange rates due to competitive devaluation of currencies. Meanwhile, the short lived International Trade Organization (ITO) gave rise to the General Agreement on Tariffs and Trade (GATT) to address the barriers to global trade based on voluntary accession.

The objectives of the GATT are clearly stated as the "*reciprocal and mutually advantageous agreements*" with a view of reducing customs duties and other barriers to trade and eliminating all discrimination in international trade. For the eight (8) rounds of multilateral trade negotiations since 1947, the original GATT rules have served as a model for the development of subsequent World Trade Organization (WTO) agreements including the General Agreement on Trade in Services (GATS) and the Trade-Related Aspects of Intellectual Property Rights (TRIPS). The GATT is guided by the core principles of "*non-discrimination*" in trade, national treatment and reciprocity.

The establishment of the World Trade Organization (WTO) in 1995 marked a new era in multilateral trade and investment for a number of reasons. It was part of a single package that included dramatic reductions in tariff of goods and sweeping new agreements to establish rules on services and intellectual property rights. Most importantly, all 138-member countries agreed to legally bind mechanisms for resolving trade disputes. (Labonte 2000)

As the actions towards trade liberalization via multilateral agreements improved market access among trading partners, it has also encouraged foreign investments, promoted efficient resource allocation, and provided consumers with wider choices at affordable prices. The result of the gradual elimination of trade barriers facilitated by the WTO and by GATT is that tariffs in international trade for industrial products now average less than 4 percent in industrialized countries compared to over 40 percent after the second world war (Smeets 1999 in Pinstруп-Andersen & Babinard 2000). In addition, the growth of transnational and multinational companies soared and cross border financial transactions were stimulated. Today, world markets are more integrated than ever before, with 25 percent of global output being exported, compared with some 7 percent 50 years ago.

Multilateral trade agreements, however, were not the sole forces that expanded global commerce. Prior to the formation of the World Trade Organization and the delays and difficulties in the completion of the Uruguay round of trade negotiations, various bilateral and regional trading arrangements became the second best alternatives to multilateral trade agreements.

Regional trading arrangements (RTA), however, did negate the thrust of trade liberalization under multilateral trade agreements. Because national policy tools were inhibited to some extent by the internationalization of capital and production networks, countries grouped together along common territorial boundaries to find regional policy alternatives to strengthen the weakening national policy tools (Higgott in Cook 2001). Regional trading arrangements supplement multilateral initiatives nonetheless. Aside from the establishment of bargaining coalitions, Cook (2001) notes that regional institutions assist multilateral institutions by serving as “good laboratories for new approaches in achieving reforms that may be transferable to multilateral level.”

B. International Movement of Services

In addition to the movement of goods, the globalization of services and ideas has become a significant aspect of the contemporary trading system.

The Trade-Related Aspects of Intellectual Property Rights (TRIPS) agreement set minimum standards for trademarks, copyrights, patents and industrial designs. It essentially aims to strengthen and harmonize certain aspects of the protection of intellectual property on a global scope like requiring 20-year patent for pharmaceutical drugs. The TRIPS agreement has implication for global inequities in access to vaccines and drugs. (Labonte 2000)

The General Agreement on Trade in Services (GATS) of 1994 is a path-breaking agreement that extends trade rules deep into areas of domestic policy. It goes beyond the GATT model to cover government measures related to investment and trade. It covers a sweeping range of so-called non-tariff barriers to trade in services (Labonte, 2000). It consists of a set of rules limiting the intervention of governments and other institutions in the global trade of services by removing obstacles to market entry and providing equal treatment of foreign service providers (Tullao 2000). The agreement allowed four alternative modes of supply where service providers can enter in (1) international or cross border transactions, (2) consumption abroad, (3) commercial presence, (4) and presence of natural persons.

Cross border transactions refer to the provision of a service through an intermediary service like telecommunications. Backroom operation, call services and transcriptions of medical prescriptions that are performed in countries outside the territory where the service is consumed are examples of cross border transactions.

Consumption abroad, on the other hand, is a transaction that requires the movement of the consumer to the supplier's territory. Aside from tourism, a patient seeking medical treatment in a country outside his country of residence is an example of a consumption abroad of medical services.

Commercial presence refers to the provision of a service that requires the movement of a service provider as a business establishment to the country of the consumers. A private hospital in one country setting up branches in other countries is categorized under commercial presence.

Movement of natural persons requires the transfer of individual service providers in supplying a service to the country of the consumers. Individuals or natural persons, in this supply mode, move in contrast to the corporate persons that move under commercial presence. When doctors, nurses, physical therapists and other medical practitioners in one country transfer to another country to render various professional medical services, the supply mode is classified as movement of natural persons.

The following features of GATS are significant for health:

1. All services, including health services are covered by the general GATS rules. These rules include a commitment to provide the same level of national treatment to all foreign investors.
2. All countries have committed to increase the coverage of the national treatment and market access rules.
3. Although GATS rules allow member countries to adopt domestic regulations for reasons of public interest and for the protection of the consumers, such regulations should not be too burdensome that they become restrictions in the flow of services. Health measures that could be covered under the disciplines of domestic regulation range from qualifications required for accreditation and certification of health professionals, to licensing of hospitals, health clinics and other facilities, to performance standards and codes of ethics for health professionals (Labonte 2000). Stringent health requirements and standards may serve public interest in the provision of a service, on one hand, but they can also perform as an implicit barrier to trade, on the other hand.

The GATS facilitates the entry of foreign-service providers, mostly private establishments. With their entry, the possibility of improving the quality of medical services may ensue given the quality of health professionals and technology accompanying this entry. However, the health needs of the poorer sector of society may not be answered by the influx of foreign health providers.

In addition, the GATS rule on public subsidy may also contribute in changing the expenditure pattern of various public health programs. The consumption of health (like education), is a public good given its enormous externalities or side effects. However, being a public good, health is not exclusively supplied by government since there are numerous private health service providers. Under GATS rules, if the private sector participates in the provision of this socially desirable service, they should also be granted similar government support extended to the public health service providers. Public subsidy should be given to all service providers, whether public or private, domestic or foreign. Given the limited funds of the government, this rule may limit the level of subsidy given to public hospitals and may alter the distribution of public health expenditures.

Rules around the “commercial presence” mode have been significant in terms of attracting foreign direct investment. There are push and pull factors that has given rise to the transfer of production, plant and distribution facilities from home to host countries. High cost of production in home countries due to the appreciation of their currencies and increasing wages pushed manufacturing firms to transfer their factories in labor abundant countries. On the other hand, the access to raw materials, a huge domestic market and trade preferential treatment accorded by developed countries can make them attractive sites for investment.

C. Increasing Cross Border Capital Flows

At the onset of the 20th Century, foreign direct investment worldwide grew exponentially, from US\$44 billion to US\$644 billion. Multinational corporations worldwide grew from 7,000 to an estimated 53,600 with some 449,000 foreign subsidiaries (French 2000 in Pinstrops-Andersen & Babinard 2000)

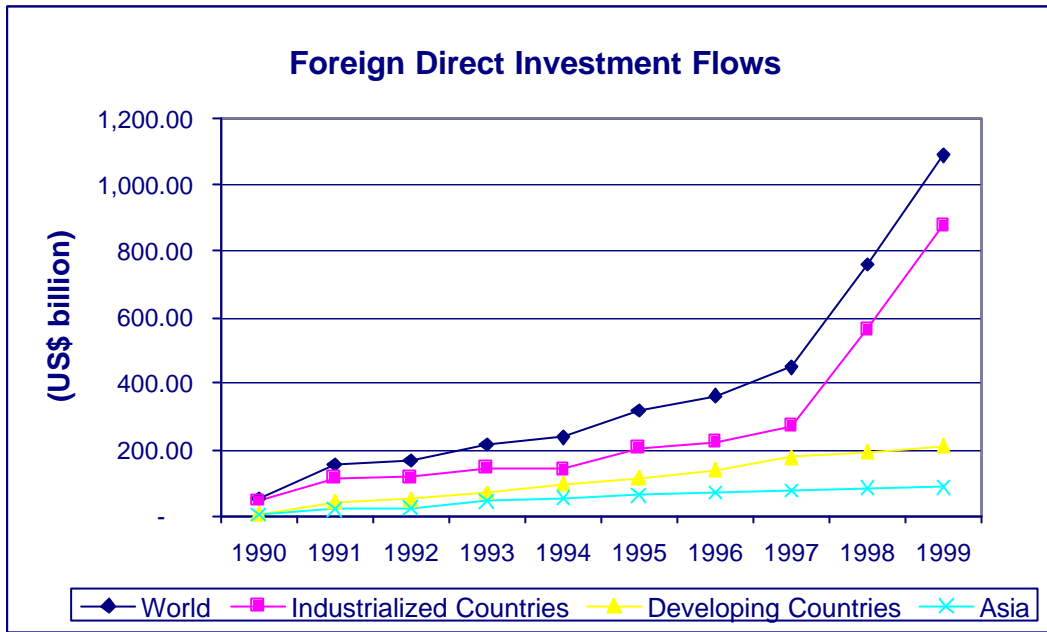


Figure 1. Foreign Direct Investment Flows.

Source: Based on the International Monetary Fund, International Financial Statistics (CD-ROM, March 2001)

The flow of foreign direct investment grew at a steady pace until before the Asian financial crisis of 1997 to 1998 where about 40 percent of foreign direct investment went to developing countries. (Asian Development Outlook 2001)

As developing member countries liberalized trade policies, they opened their economies to capital inflows from other countries. Financial capital flow tripled from the early 1990s until before the Asian financial crisis except for the case of Malaysia. Prime Minister imposed strict controls on inbound and outbound foreign investments to preserve funds within the economy. Foreign investments in developing countries suffered a halt and reversal from US\$188 billion inflows in 1998 to US\$125 billion outflows that same year. There were in fact negative flows as a result of the financial crisis. With globalization, financial markets have been integrated. Capital can now move freely from one country to any part of the world through sophisticated banking system. This integration affects all economies primarily through the close linkages of currencies interacting in foreign exchange markets. The negative effects of this financial integration were clearly illustrated during the Asian financial crisis in 1997 that revealed the vulnerabilities of economies as currencies rapidly depreciated within days and funds from various financial markets exited helpless countries. The subsequent drop in national output and massive employment displacement placed huge social costs on affected countries.

D. International Labor Migration

Accompanying the movement of capital across countries is the international movement of human resources, another mode of supply under the liberalized environment in the trade in services. More than 150 million people migrate worldwide from their place of birth. The largest number of international migrants comes from Asia; Europe and North America (with equal numbers) followed by Africa, Latin America and Oceania with progressively few numbers. More than half of all international migrants live in developing countries, with migration often occurring within the same continent (Migration Report 2002). Zlotnic (1999) examines international migration trends using data gathered from 218 countries by the United Nations. He calculates that from 1965 to 1990, the number of migrants almost doubled from 75 million to 120 million having an average annual growth rate of 1.9 percent. Around 120 million people or 2 percent of the world population now live outside their original place of birth. He adds that 55 percent of these migrants came from low-income countries. In economic terms, “push and pull” factors lead to migration. These are

decisions made by free economic agents who take advantage of relative differences in economic opportunities and income in various localities (Locke 2000).

For the case of South Asian countries, they continue to rely on migration to resolve unemployment and to fuel their economies from remittance income. For South Asians, the favorite destination is the Middle East particularly for lower-skilled migrants. Governments cautiously balance conflicting goals, to maximize labor exports and to seek fair and just treatment for migrants (Migration Report 2002).

According to the Asian Development Outlook (2001), richer Asian countries that enjoyed rapid growth rates in the 1980s and 1990s now have low levels of unemployment and are experiencing a growing need for a variety of skills that are in short supply among the domestic labor force. Although movement of unskilled labor was acceptable, there is a significant flow of skilled and professional work force. This wave of human resource movement benefited China, Japan, Malaysia, Singapore, Taipei and Thailand. Countries with higher levels of unemployment and lower standards of living like Cambodia, Indonesia, Lao PDR, Philippines and Vietnam have become the major suppliers of the migrant work force.

There are other forms of global movement of people that are very temporary and do not seek employment opportunities. One of these avenues is consumption abroad, a supply mode in trade in services that has expanded in recent years. One important example of this mode that has implications on health is tourism. The importance of tourism as a major component of global trade and a significant source of revenues of countries are the rapid developments in transportation, and the growth in individual incomes in many countries, with a vast increase in travel. This applies also to the newly wealthy middle classes of lower income countries.

E. Worldwide Advancement of Information and Communications Technology

The technological transformations associated with globalization focuses on information / communication and transportation technologies. The specific changes are: greater capacity, speed, reduced costs, and increases accessibility. These changes facilitated cross border transactions in globalization. (Lee & Collin 2001)

Being one of the key driving forces of globalization, innovations and development in information and communications technology have multiple impact on health. As an opportunity, this force brings opportunities in advancing health care and dissemination of information. With Internet technology, medical information could easily be conveyed. Low and middle-income countries could now update their medical knowledge of development in the field by having access to databases, journals and reference materials.

Increased knowledge acts, in part, by enhancing the effectiveness of professional medicine of significant health gains from this source has been accumulating. Bunker and colleagues have estimated that professional medicine has added several years to the life expectancy of Americans since 1950. (Bunker 1995 in Powles 2001)

Developed countries are able to control diseases through adaptive means including changes in lifestyle, capacity to utilize knowledge on the causes and treatment of diseases more than the impact of professional treatment and public health programs.

Telecommunication and financial transactions are two examples of cross border transactions. Rapid technological developments and innovations, in the fields of information and communications technology in particular are perhaps the most important drivers of globalization. These changes are encouraging significant economic policy changes. The cost of transmitting information nowadays is a small fraction of its cost twenty years ago. The interconnection of people via satellite and Internet technology brings information to populations worldwide at light speed. The emergence of e-commerce is also redefining the legal norms of commercial transactions.

3. Globalization and Culture

In sociological terms, globalization is the set of processes that connect societies, while fragmenting and transcending the social structures it confronts. Its processes create a common cultural environment where everyone has access to the same information dissemination through the tightly controlled transnational corporate networks of television and film (Cameron & Stein 2000). Global consumption culture has long been propagated by multinational companies to and has since replaced local products. Mass media (with satellite and cable televisions) has proven over time to be the fastest channel to reach global consumers.

The speed and intensity of global connection and integration in the last two decades have provoked serious debate about their cultural and social consequences according to a study by Cameron and Stein for the Canadian Public Policy.

II. Noncommunicable Diseases (NCDs)

1. Trends

In 1998 alone, noncommunicable diseases were estimated to have contributed to almost 60 percent (31.7 million) of deaths in the world and 43 percent of the global burden of disease. Based on current trends, by the year 2020 these diseases are expected to account for 73 percent of deaths and 60 percent of the disease burden. Conservative estimates show that by that time, three out of four deaths worldwide will be due to noncommunicable diseases (Murray & Lopez 1996 in NMH 2002).

Low and middle-income countries suffer the greatest impact. In 1998, of the total number of deaths attributable to noncommunicable diseases, 77 percent occurred in developing countries, and of the disease burden they represent, 85 percent was borne by low and middle-income countries. (WHO 1999)

The ten leading causes of death as of 1990 in developed and developing regions are illustrated below.

Table 1. Ten Leading Causes of Death as of 1990 in Developed and Developing Countries.

Source: Global Burden of Disease 1996

Developed Regions	Deaths ('000s)	Developing Regions	Deaths ('000s)
All Causes	10,912	All Causes	39554
1 Ischaemic heart disease	2,695	1 Lower respiratory infections	3915
2 Cerebrovascular disease	1,427	2 Ischaemic heart disease	3565
3 Trachea, bronchus, lung cancer	523	3 Cerebrovascular disease	2954
4 Lower respiratory infections	385	4 Diarrhoeal diseases	2940
5 Chronic obstructive pulmonary disease	324	5 Conditions arising from perinatal period	2361
6 Colon and rectum cancers	277	6 Tuberculosis	1922
7 Stomach cancers	2,141	7 Chronic obstructive pulmonary disease	1887
8 Road traffic accidents	222	8 Measles	1058
9 Self-inflicted injuries	193	9 Malaria	856
10 Diabetes mellitus	176	10 Road traffic accidents	777

Contrary to popular belief, noncommunicable diseases are not “diseases of the rich”. In 1999, cardiovascular diseases, accounted overall for about 1 in 10 deaths in Africa; 3 in 10 deaths in South East Asia; 1 in 3 of all deaths in the Americas, the Eastern Mediterranean and the Western Pacific; and 1 in 2 of all deaths in the European region (World Health Report 2000).

The incidences of noncommunicable diseases leading to death in the pacific island region and in the Fiji islands over the periods 1960 to 1990 were summarized in a study by Popkin, Horton, & Kim in 2001. Countries were grouped by income level.

Table 2. Noncommunicable Diseases in Pacific Island Regions and the Fiji Islands

Source: Popkin, Horton & Kim 2001

Group	Cause of Death	1960s	1970s	1980s	1990s
High Income					
Singapore (year)		(1967)	(1975)	(1987)	(1996)
	All infectious diseases	14.8	18.2	12.5	14.4
	Cancers	14.2	18.2	23.8	25.6
	Diabetes	-	2.3	3.7	2.1
	Cardiovascular Disease	8.2	28.3	35.5	37.8
	Other	62.8	33.0	24.5	20.2
Korea, Rep. of (year)				(1987)	(1995)
	All infectious diseases			5.8	4.6
	Cancers			16.7	21.0
	Diabetes			1.4	3.3
	Cardiovascular Disease			22.0	21.1
	Other			54.2	50.0
Middle-income					
Malaysia (year)		(1965)	(1976)	(1987)	(1996)
	All infectious diseases	18.5	17.6	12.0	13.7
	Cancers	6.5	8.9	10.4	10.1
	Diabetes	0.8	1.5	-	-
	Cardiovascular Disease	9.1	20.0	18.9	18.9
	Other	65.0	52.0	58.7	57.3
Thailand (year)		(1966)	(1975)	(1987)	(1995)
	All infectious diseases	14.0	17.2	7.3	6.4
	Cancers	1.5	3.2	7.3	9.3
	Diabetes	0.2	0.5	0.9	1.3
	Cardiovascular Disease	2.5	4.4	3.5	15.5
	Other	81.2	74.7	81.1	67.5

Table 2. Noncommunicable Diseases in Pacific Island Regions and the Fiji Islands (cont'd)

Source: Popkin, Horton & Kim 2001

Upper low-income					
Sri Lanka (year)		(1967)	(1975)	(1988)	(1991)
	All infectious diseases	6.4	10.1	12.2	9.5
	Cancers	3.7	3.7	5.7	5.9
	Diabetes	1.3	1.2	1.2	1.3
	Cardiovascular Disease	11.9	10.3	30.2	29.8
	Other	76.7	74.7	50.7	53.5
People's Republic of China (year)				(1987)	(1994)
	All infectious diseases			19.3	20.5
	Cancers			15.9	19.3
	Diabetes			-	-
	Cardiovascular Disease			27.5	28.2
	Other			37.3	32.0
Lower low-income					
Kyrgyz Republic (year)					(1995)
	All infectious diseases				12.4
	Cancers				8.4
	Diabetes				1.0
	Cardiovascular Disease				36.8
	Other				41.5
India (year)			(1975)	(1987)	
	All infectious diseases		29.9	17.4	
	Cancers		3.6	3.6	
	Diabetes		0.0	1.3	
	Cardiovascular Disease		8.9	9.2	
	Other		57.6	68.4	
Fiji Islands (year)			(1970)	(1985)	
	All infectious diseases		10.4	15.2	
	Cancers		7.5	10.1	
	Diabetes		3.4	5.5	
	Cardiovascular Disease		20.6	36.0	
	Other		58.0	33.2	

2. Leading Noncommunicable Diseases

Four of the most prominent Noncommunicable diseases are cardiovascular disease, cancer, chronic obstructive pulmonary disease and diabetes. These are linked by common preventable factors related to lifestyle. (WHO 1999) However, according to the Food and Nutrition Bulletin (2001), there are five diet related chronic diseases namely: cardiovascular diseases, diabetes, hypertension, stroke, and cancers.

a. Cardiovascular diseases

Cardiovascular disease is the scientific term used not only to pertain to conditions of the heart [ischemic heart disease (IHD), valvular, muscular, and congenital heart disease] but also hypertension and conditions involving the cerebral, carotid, and peripheral circulation (Popkin, Horton & Kim 2001).

This disease remains the most common single cause of death in old age in both sexes in most countries. Ageing males suffer from higher incidences of cardiovascular disease than females. However, later in life, the rates converge. Coronary heart disease and stroke are the major causes of death and disability worldwide (Men, Ageing & Health 1999). However, the NMH Reader addresses cardiovascular disease and its impact on the female population. Although there are higher incidences of the disease on males, based on total diseases causing deaths, almost 10 million out of 27 million deaths in females are caused by this disease. Of the total number, two thirds occur in developing countries while the disease is already the leading cause of death of females in developed countries (NMH 2002).

b. Cancer

Many forms of cancer can be prevented and effectively treated with early detection. For all malignancies, healthy lifestyles and elimination of potential risk factors like tobacco smoking, are the most effective and often only ways to reduce cancer mortality (Men, Ageing and Health 1999).

Worldwide, more than 9 million people developed cancer in 1997 and more than 6 million died of cancer. Cancer deaths increased from 6 to 9 percent of total deaths from 1985 to 1997 in developing countries, but remained constant at about 21% of total deaths in developed countries (Men, Ageing and Health 1999).

Many studies implicate pesticides in incidences of leukemia and lymphoma, as well as cancers of the brain, breast, testes and ovaries. According to the US Food and Drug Administration (FDA), over 35 percent of the food that they tested in 1998 contained pesticide residues, 53 pesticides classified as "carcinogenic" are presently registered for use on major crops, including apples, tomatoes, and potatoes. Seventy-one (71) different ingredients in pesticides have been found to cause cancer in animals and humans. Consumers union reported the tests of apples, grapes, green beans, peaches, pears, spinach and winter squash have shown toxicity at hundreds of times than those from other countries.

Dietary fat seems to be associated with cancer of the colon, pancreas and prostate. Atherogenic risk factors such as increase blood pressure, blood lipids and glucose intolerance, all of which are significantly affected by dietary factors, play a significant role in the development of coronary heart disease. (Ageing & Nutrition 2001)

c. Diabetes

Worldwide, the number of adults with diabetes will rise from 135 million in 1995 in 1995 to 300 million in the year 2025. Diabetes is a chronic condition, which develops when the pancreas does not produce enough insulin, or when the body cannot use the insulin produced effectively (NMH Reader 2002).

India, China and the US will particularly have the largest incidence of diabetes. In developing countries, diabetes inflicts people aged 45-64 years. In developed countries, the disease strikes people aged 65 years or older. There are more women than men with diabetes, especially in developed countries. For 1995, worldwide, there were 73 million women against 62 million men with diabetes.

As traditional lifestyles disappear Asians now prone to develop this deadly disease. In an office of 20 people in Asia, chances are that two will suffer from diabetes – a blood sugar level higher than the body can control on its own – and five more will be at risk of developing the disease.

High calorie diets, lack of exercise and sedentary lifestyles are largely to blame. Traditional lifestyles and diets that have sustained people over generations are disappearing and Asians are starting to bulge at the waistline.

d. Obesity

Discussions on obesity normally relate the risks of major noncommunicable diseases like cardiovascular diseases, hypertension and diabetes. Earlier identified with Western Pacific Island, diabetes now threatens Asia and the Pacific as consumption patterns and lifestyle changes as a result of globalization. Table 3 summarizes the incidences of obesity as a percentage of the population and broken down by body mass index.

Recent estimates by the World Health Organization and by the Center for Disease Control in Atlanta, indicate that the incidence of obesity is doubling every five years. Current statistics show that 71 percent of adults as compared to 56 percent in 1984 are overweight. Alarming, 30 percent of the overweight population is obese (Coyne 2002).

Table 3. The prevalence of obesity (% of total adult population) by gender.

Source: Popkin, Horton, & Kim 2001

	BMI = 25 to 29.9		BMI >30		BMI <25		Year
	By Gender						
	Male	Female	Male	Female	Male	Female	
Republic of Korea	18.00	19.90	0.80	2.20	18.80	22.10	1995
Malaysia	24.00	18.10	4.70	7.90	28.70	26.00	1990
Philippines	11.00	11.80	1.70	3.40	12.70	15.20	1993
Nauru			80.20	78.60			1994
People's Republic of China	9.10	13.10	1.20	1.60	10.30	14.70	1993
Indonesia	9.30	14.90	0.93	3.00	10.30	17.90	1993
Kyrgyz Republic	26.30	25.60	5.10	11.80	31.30	37.30	1993
Vietnam	0.87	2.40	0.05	0.16	0.92	2.50	1992-3

Levels of obesity, however, should be seen within their cultural and historical contexts, with each particular society and time period establishing broad conditions within which body weight levels occur for the population. In specific times and places, the social demographics of individuals are important influences on body weight patterns (Sobal 2002).

e. *Osteoporosis*

Osteoporosis and associated fractures are major cause of illness, disability and death, and are a huge medical expense. It is estimated that the annual number of hip fractures worldwide will rise from 1.7 million in 1990 to around 6.3 million by 2005. Women suffer 80 percent of hip fractures; their lifetime risk for osteoporotic fractures is at least 30 percent, and probably closer to 40 percent. In contrast, the risk is only 13 percent for men.

Women are at greater risk because their bone loss accelerates after menopause. Prevention is possible with hormone therapy at menopause. Lifestyle factors – especially diet, but also physical activity and smoking – are also associated with osteoporosis, which opens the way for primary prevention. Particularly important are adequate calcium intake and physical activity, especially in adolescence and young adulthood. (Ageing and Nutrition 2000)

III. The Impact of Economic Globalization on Noncommunicable Disease Risk Factors

1. NCD Risk Factors

The most prominent noncommunicable diseases are linked to common risk factors, namely, tobacco use, alcohol abuse, unhealthy diet, physical inactivity and environmental carcinogens. The risk factors have economic, social, gender, political, behavioral, and environmental determinants (NMH Reader 2002).

2. Food

Commodity Trade, Prices, Income & Consumption

One of the major effects of opening the economy to international trade is the enhancement of income and employment brought about by efficiency gains from specialization and expansion of markets. This a priori consequence has been empirically shown in the rapid growth of many Asian economies whose degree of trade openness is greater than some Latin American and African countries that have been bias towards inward-looking economic policies (Asian Development Outlook, 2001).

Although trade has a direct effect of expanding the availability of commodity and level of consumption, the enhanced income brought about by trade can also accompany an increase in the command over commodities most especially food. According to Powles, the most beneficial effect of increased income is the access to food and the consequent increase in body size. Coupled with enhanced access to medication, health services and sanitation, information technology, people could now enjoy a longer life span.

Increasing access to food, however, has reshaped the consumption patterns of people world over. Development and urbanization have significantly redefined consumption culture including the rise of fast food chains, emergence of instant food preparation, significant increase in the consumption of fats, meat and processed food, and the rise of alcohol intake and smoking (Popkin, Horton & Kim 2001).

Multinational companies have established foreign presence to harness the potentials of a huge market. Accompanying the entry of production facilities that has lost their competitive edge in their home markets are companies that cater to the consumption needs of a huge population in the host countries. With the influx of multinational companies that bring about flows of capital across countries, developing countries have imbibed the fast food culture of developed countries. The growth of burger chains, pizza parlors and other fancy food franchises has influenced consumption and behavioral pattern. With changing work environment and family life, people now appreciate the convenience of fast food in their modern living.

In addition, many of the foreign direct investments coming from developed countries use mostly labor-intensive technologies after reaching the standard stage of product cycle. The demand for unskilled labor enhanced the labor force participation of women in host developing countries. As more women entered the labor force, lifestyle changes includes among others the way family activities are carried out. With a substantial amount of time of women devoted to work and raising children, families eat together less often with no time for old-fashioned cooking. Children with two working parents have to be contented with heating ready-made food or having fast food delivered (Ward 2001).

Specialization along the comparative advantage of trading countries resulted in efficient use of their resources. Aside from the income effect, the efficiency gains in production and distribution activities, in turn, resulted in lower price of traded goods including agricultural products and food manufactures. The falling price of vegetable fat in the international market and the rising price of dietary fiber (fruit and vegetables) in the domestic markets are economic factors propelling the nutrition transition in Asia (Reddy 1999). With the growing preference for fatty processed food, the price of foods rich in micronutrients is not helping the situation. In fact, it discourages its consumption because “good” food costs more that the processed food (Ageing and Nutrition 2001).

A Processed Foods

The liberalized trading environment of recent decades has also affected the production, consumption and exports of processed foods. Processed foods are commodities that have been refined or reformulated so that the finished products are more desirable to the consumer. The trade of processed food is not just about the trade of goods, but involves foreign production systems and cross border relationships. (Henderson, Sheldon & Pick 2000)

Processed foods and beverages are often referred to as “value added” products, in that some combination of labor, technology, and materials is applied to raw commodity inputs such as wheat and yeast, and transformed into a product such as bread or pastry. The processing may be minor, as in the case of canned fruits and vegetables, or may be quite extensive, as in the conversion of cocoa, sugar, milk and nut into candy bars. (Agricultural Outlook 1997)

The processed food industry in the United States has been growing in phenomenal proportions since 1992. Leading the industry groups are meat and poultry products, fish, grain mill products, and fats and oils. These comprise 66 percent of US exports of processed foods during 1993 to 1995. Meat and poultry composed more than one quarter, with fish accounting for 12 percent of exports. Meat packing, fresh fish, soybean oil mills, poultry processing, and wet corn milling is a US\$1 billion industry and accounts for 48 percent of US processed foods exports during 1993-95. Meat packing accounts for 10 percent while fresh and frozen fish composes the 10 percent.

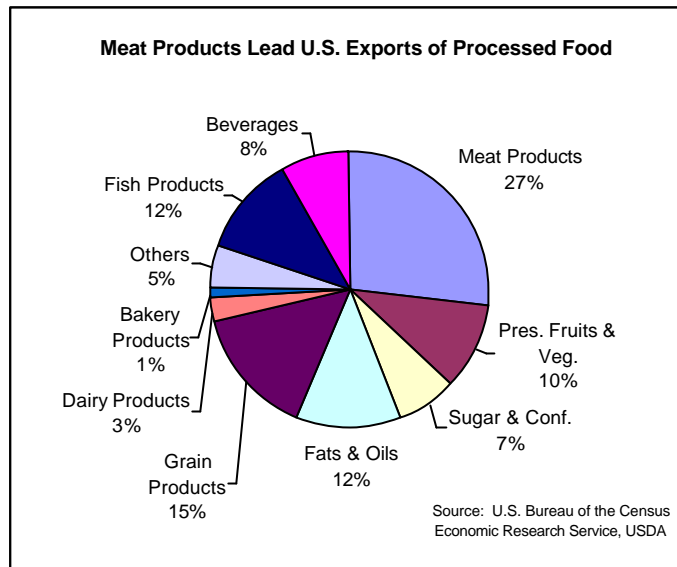


Figure 2. Meat Products Lead US Exports of Processed Food
 Source: US Bureau of Census. Economic Research Service. USDA

US, Western European and Japanese companies, dominates the global food processing market. The 50 largest firms are located in these countries and account for roughly 40 percent of their gross output of manufactured food. (Henderson, Sheldon & Pick 2000)

Table 4. US International Commerce in Food Processing growth rates
 Source: Food Review May-August 1996

US International Commerce in Food Processing	1985	1990	1993
Outbound commerce			
US Exports	11.0	18.7	23.4
Sales by US affiliates abroad	37.2	76.0	95.8
Inbound commerce			
US Imports	10.3	20.1	21.1
Foreign affiliate sales in the US	19.4	47.0	45.8
Total	77.9	161.8	186.1

According to Ruppel, Malanoski and Neff (1996), Americans enjoyed a wide variety of processed food product from all over the world in the same manner that worldwide consumers enjoyed access to US food brands. The table above illustrates the role of the US both as producer and consumer of processed food.

On the global scope, processed food trade grew from 40 percent to 50 percent over the 1965 to 1985 period and grew further to 60 percent in 1995. Developing countries benefited from this market trend. Over the past decade, their industry growth rates have surpassed growth rates of developed countries. Global food exports in 1995 was 3.5 times as high as that in 1985. However, for unprocessed agricultural commodities, the increase over this period was only 1.5 times. (Rae & Josling 2001)

Table 5. Processed foods export growth rates (% per year)

Source: GTAP Version 4 database in Rae & Josling 2001

Processed food	Global		Developed Regions		Developing Regions*	
	1975-85	1985-95	1975-85	1985-95	1975-85	1985-95
Meat	6.7	10.0	6.1	10.0	9.4	10.1
Vegetable oils & fats	7.4	4.7	5.7	4.0	9.1	5.2
Dairy products	6.4	9.5	6.5	9.2	3.1	19.5
Processed rice	1.9	7.5	2.4	2.3	1.6	10.3
Sugar	9.4	9.1	-4.1	13.6	-11.1	6.1
Beverages & tobacco	8.3	11.2	8.7	10.2	5.1	19.3
Other processed foods	8.4	9.7	7.8	9.0	9.7	11.0
Total processed foods	5.3	9.4	6.6	9.2	2.8	9.9

Table 6. Product shares of processed food exports (%): 1995

Source: GTAP Version 4 database in Rae & Josling 2001

	Developed Countries	Developing Countries
Meat	20.6	12.0
Vegetable oils & fats	4.1	13.2
Dairy products	13.9	1.7
Processed rice	0.8	5.1
Sugar	3.5	8.0
Beverages & tobacco	18.7	7.2
“Other processed foods”	38.8	52.8

B. Dietary Preferences & Nutrition Transition

The nutrition transition is marked by a shift away from monotonous diets of varying nutritional quality (based on indigenous grains or starchy roots, locally grown legumes, other vegetables and fruits, and limited foods of animal origin) to toward more varied diets that include preprocessed food, more foods of animal origin, more added sugar and fat, and often, more alcohol (Popkin, Horton & Kim 2001). These factors are worsened by physical inactivity and leisure leading to rapid increase in overweight and obese people.

With the increase in income comes the shift in food consumption patterns with heavy intake of fats, meat and processed food. Ministers from the Pacific islands countries have expressed concern over the growing acceptance of fatty and processed food with poor nutritional value and its threat to public health. They see the increasing popularity of processed foods as a main threat to domestic food security. The ministers voiced out during a meeting in Vanuatu in July 2001 that they have to ensure access of their people at all times to enough safe and nutritious food. In fact, processed food trade has already affected their traditional food economy. Dietary preferences have turned in favor of imported processed food. As prices of these commodities go down with the reduction of tariffs brought about by trade liberalization, the lack of adequate food safety standards and regulations has opened the door to low-quality processed food that may result in serious health risks. With a growing number of people in the Pacific island countries consuming fatty processed food, they are now more prone to diseases linked to obesity.

High-income countries have shifted from diets dominated by complex carbohydrates to diets with more fats, added sugar, and protein (Popkin, Horton & Kim 2001).

As people move into cities, their food supplies change, and therefore, so do their diets and body composition. The urban diet, even in very low-income countries and the poorest areas of cities,

contains much more energy from fats and sugar than the rural diet. Urban food is more likely to be processed and often contains more highly refined cereals and sugars and fewer unrefined, staple foods than rural diets. In urban areas, even poor people are able to afford processed foods that are relatively high in fat and also in refined starches and sugar (Popkin, Horton & Kim 2001).

In a study by Lyons and Languille (2000), they supposed that **“people maintain lifestyles which they know are unhealthy because they meet certain immediate needs”**. This concept was reinforced in a study by Evans, Sinclair, et. al., (2001) using the Pacific Island Tonga as example. They revealed that while consumers are aware of the various nutritional values of the food they eat, it was clear that simple preference was not the motivating force behind the frequent consumption of imported fatty food and simple carbohydrates. Instead, these foods are more easily and readily available for purchase than their indigenous fish and chicken. Not only are the health consequences of these imported foods detrimental, but the availability of these cheap imports is also constraining the development of domestic markets.

4. Lifestyle

A. Tobacco Use & Alcoholism

The most readily modifiable risk factors are behavioral and include excessive food intake, smoking and alcoholism. Multilateral as well as regional trade agreements played significant roles in increasing the consumption of tobacco and alcohol through tariff reduction. Without an offsetting consumption tax on these commodities, trade liberalization can indeed increase tobacco and alcohol intake.

The role of alcohol is complex because of the possible cardioprotective effect of regular low levels of consumption and the serious adverse effects of excessive drinking (Men, Ageing and Health 1999).

For the part of smoking, WHO estimates that one third of the adult population worldwide (1.1 billion people) are smokers. Women account for one-fifth (over 200 million) of the total smoking population. More women smoke in developed countries than in developing ones (NMH Reader 2002). While lung cancer remains a significant male killer disease, breast and cervical cancers are threatening women who smoke.

Projections by the World Bank Group indicate that the number of people worldwide who die from tobacco-related diseases will rise from 3 million in 1996 to 10 million by 2025. Seven million are seen to come from developing countries. Of the 1.1 billion smokers as of 1990, 800 million or almost 75 percent live in developing countries (World Bank Press Release 1996).

Lung cancer, which is a frequent cause of death from cancer among men, is also the most preventable. In men, cigarette smoking causes 90 percent of all lung cancer cases. The average onset for lung cancer in men was 62.3 years in 1990. Of the total number of men suffering from lung cancer almost two-thirds were more than 60 years old. In 2020, 1.8 million lung cancer related deaths are projected (Men, Ageing and Health 1999).

Rising incomes of populations also bring with it nicotine addiction. According to Peto (1994), 30 percent of adult deaths under 70 years of age in developed countries can be attributed to smoking. (Peto 1994 in Powles 2001). The Men's Health Report in Vienna reveals that alcoholism seems to be male-specific public health problem. One-quarter of the male population of Vienna consumes alcohol daily, whereas, only about 7 percent of women drink alcohol on a daily basis (Men, Ageing and Health 1999).

B. Physical Inactivity & Sedentary Work Environment

Reduced physical activity and habitual inactivity accompany the nutrition transition in persons of all ages. Modernization and industrialization lead to reduced physical activity, at work and at home, for men and women. As occupations shift from agriculture and manual labor, to manufacturing and to the service sector, the levels of energy expended by humans naturally drop (Popkin, Horton & Kim 2001). In addition, with the upsurge of knowledge-based industries accompanying the expansion of information and communication technology, workers may be confined interacting with computers, telephones, machinery and equipment.

More than 60 percent of American adults are not regularly active and an additional 25 percent are sedentary. In spite of ample evidence that regular physical exercise is inversely related to coronary heart disease, hypertension, obesity, diabetes and certain cancers, less than 20 percent of adults engage in regular, vigorous physical activity (Bond & Hyner 2000).

Highly mechanized companies have employed robotics in replacement of human workers both in production and in moving around. People are now confined with routine and activities requiring less physical exertion. According to Powles (2001), physical activity levels have declined substantially, especially since the mid-20th Century. Physical inactivity has direct effect of health and is associated as probable causes of the rising prevalence of obesity and other noncommunicable diseases like hypertension and cardiovascular diseases.

C. Urbanization & Social Integration

One of the most remarkable changes in the Asia Pacific region is the explosion of new information sources and mechanisms that reach households even in the most isolated villages and town. The expansion of mass media, such as television, has major influences on consumer knowledge and attitudes, as well as on diets and physical activity (Popkin, Horton & Kim 2001).

D. Stress

Earlier studies have revealed that chronic exposure to stressors that tax individual coping resources may contribute to the onset of a disease, and or affect the course, severity, and prognosis of an existing pathogenic condition. Stress was identified as a potential risk factor in the development of several illnesses such as cardiovascular disease, immune disorders, gastrointestinal conditions, anxiety, eating disorders and depression (Bond & Hyner 2000).

In addition to age-old prevalent problems such as traumatic injury, respiratory disease, occupational dermatitis and musculoskeletal injury, workers now also suffer new stresses, such as new asthmatic disorders, psychological stress, and the ergonomic and visual effects of using video display units. Work is increasingly characterized by a high level of demand, with little control over the nature and of the work, leading to digestive disorders, sleep difficulties, and musculoskeletal problems (Loewenson 2001).

IV. Opportunities & Threats

1. Introduction

Economic globalization being an inexorable force brings asymmetrical opportunities & threats. What may be advantageous to a sector or country may deem to be detrimental to another considering an uneven economic and social situation. Contained in this section are the drivers of globalization and its two edged effect on income, prices, food, nutrition, health and noncommunicable diseases. Table 7 summarizes this section.

Table 7. Opportunities and Threats of Globalization

Drivers of Globalization	Opportunities	Threats
I. Trade Liberalization	(1) Encourages a shift from import competing industries to expanding, newly competitive export industries (2) Plays a central role on global and local food security (3) Provides expanded opportunities to consume (4) Lower prices and production cost	(1) Causes displacement of labor, unemployment; lower income to other sectors (2) Impacts on domestic food producers (3) Brings uneven access to food (4) Allows entry of cheap processed and unhealthy food / cigarettes and alcohol
II. Integration of Financial Markets	(1) Provides access to funds	(1) Makes local economies vulnerable to financial global market price fluctuations (2) May cause heavier foreign debt
III. Increasing Trade of Services	(1) Allows entry of foreign service providers that can improve the quality of medical services	(1) Brings expensive health services (2) May cause diversion of government health subsidy from public health service providers
IV. Globalization of Knowledge & Ideas through Information & Communication Technology	(1) Makes information on prevention, treatment, and cure for noncommunicable diseases available	(1) May cause over or wrong diagnosis as a result of self-medication
V. Globalization of Culture	(1) Harmonizes standards and promotes culture of efficiency in production (2) Provides an avenue for a consumption culture based on healthy lifestyle	(1) Competitive global culture may create a very stressful work environment. (2) Promotes over or under nutrition and invites alcohol and tobacco intake

2. Trade Liberalization

a. Opportunities

- i. **Trade liberalization encourages a shift from import competing industries to expanding, newly competitive export industries.** The movement of production where the country has comparative advantage can expand its employment opportunities, income and foreign exchange earnings. In turn, these positive developments can enhance access to food and health services. While the phenomenon may create transitional unemployment to the displaced sector, it is temporary and expected to be offset by job creation in new sectors. (Pinstrup-Andersen & Babinard 2000)
- ii. **Trade liberalization plays an important role on global and local food security and nutrition.** Trade liberalization can ensure stability in food supplies and consumption on two fronts. With tariff reduction and the dismantling of trade barriers, imported food supplies can easily enter the country to meet any upsurge in consumption needs due to domestic production shortfall. A liberalized trading regime can also expand the export sector that can generate foreign exchange to

finance food imports (Pinstrup-Andersen & Babinard 2000). Although, food security concern is directly addressed by trade liberalization, its impact on nutrition and subsequently on noncommunicable diseases will depend on the quality of food intake resulting from such liberalized regime.

- iii. **Trade liberalization allows expanded opportunities to consume.** There has been a notable increase in the global trade of high value added products. It is estimated that in 2000 close to 75 % of agricultural trade consists of products with high value added, a rise from 50% recorded in 1985. This shift from unprocessed foods towards high value added food-products resulted from the increase in income and product differentiation (Josling 1999). Food demand in developed countries is also becoming more diversified and quality-oriented due to globalization, rise in income and urbanization (Fresco, 2000). The variety of food available to consumers worldwide has expanded through global commerce; and this enhanced selection is an obvious benefit for consumers (Ruppel, Malanoski & Neff 1996). The changes in income and food consumption resulting from globalization can, in turn, create improved nutrition, on one hand, and new nutritional problems and diseases, on the other hand (Pinstrup-Andersen & Babinard 2000).
- iv. **Trade liberalization brings down prices and production cost.** Competition towards efficient production brought about by trade liberalization has reinforced the technological improvements in agriculture that resulted in lower prices of food grains. World coarse grain prices remained under downward pressure during the first half of 1999/2000 seasons. International rice prices followed the downtrend. Cocoa bean prices declined during 1999 to the lowest levels of the past five years owing to abundant world supplies and weaker than anticipated demand. World coffee prices fell throughout most of the 1999 calendar year. The impact of lower food prices on health and noncommunicable diseases will depend on how lower food prices can be translated into food security and enhanced nutrition.

b. **Threats**

- i. **Trade liberalization causes displacement of labor, unemployment and lower income to other sectors** Trade liberalization has indeed created employment and income opportunities particularly in the export sector. It can, however, create adjustments costs that may be serious particularly in developing countries due to the rigidities in the adjustment process. For example, industries that are concentrated in few sectors and geographic areas can make labor and other resources difficult to shift towards emerging sectors (Pinstrup-Andersen, 2000). These difficulties in adjustments extend the burden of the liberalization process beyond what is considered transitional. The reduced income of displaced workers can mean limited access to food, nutrition and health services.
- ii. **Trade liberalization impact on domestic food producers.** Trade liberalization allows local food industries to compete with global suppliers. However, entry of cheap imported food grains threatens domestic food producers especially in countries with less sophisticated food production systems. Because cheap food surplus coming from other countries with more efficient production systems can potentially displace local food producers, countries have implemented various measures to protect domestic producers. One of the reasons why the price of rice is three times more expensive in the Philippines as compared to Thailand is the protection given by the government to this highly sensitive industry at the expense of the consumers. The influx of cheap imported processed food, meanwhile, has shifted the food consumption habits of citizens away from traditional diet that are based on domestically produced food products. (Popkin, Horton and Kim, 2001)
- iii. **Trade liberalization causes uneven access to food.** Income is the main determinant of access to food. Although food production has increased over time, per capita supply expanded and the proportion of hungry people reduced, the absolute number of undernourished people worldwide, however, is still quite significant. Given the unevenness of the impact of trade liberalization on various countries, it is estimated that the number of undernourished in developing countries

is 23 times higher than in developed countries. (Fresco 2000) The unbalanced availability of food is mirrored by the uneven application of improved production technologies and inequalities in effective demand. The problem is not the shortage of food but rather poverty, poor distribution and mismanagement that caused starvation and malnutrition (Kaosa-ard & Rerkasem 2000)

- iv. **Trade liberalization allows entry of cheap processed and unhealthy food / cigarettes and alcohol.** As a country progressively liberalizes its trade in goods, it may reduce tariffs on alcohol as part of its WTO commitments. Excluding the effect of brand switching or shifting to domestically produced alcohol, significant tariff reduction may increase the overall alcohol consumption and may have significant health implications particularly on risk factors associated with noncommunicable diseases (Gould & Schacter 2002). Although global nicotine addiction has been accompanied by the growth in income, tariff reduction can also play a significant role in enhancing consumption (Peto, et al, 1994). To counter the consumption effect of a tariff reduction, a consumption tax on cigarette has been levied in Thailand. The entry of cheap imported processed food has also been cited as a major factor in the nutrition transition and change in diet in many developing countries has been (Popkin, Horton, Kim, 2001).

3. Integration of Financial Markets

a. Opportunity

- i. **Integration of financial markets allows access to funds.** The integration of the global financial market makes it accessible for countries to avail of funds to finance development projects of the government as well as the plant expansion of the business sector. Even for the health services sector, these funds can be made available to augment the deficient local resources needed to improve and arrest the deterioration of health services system in many developing countries.

b. Threats

- i. **Integration of financial markets makes economies vulnerable to fluctuations of the global financial market.** The risks and volatility of fluctuations in exchange rates under an integrated financial market were observed during the Asian financial crisis in 1997. A combination of rapid inflation and high unemployment rates reduced consumer spending leading to nutritional deficiencies as experienced by Indonesia. (Pinstrup-Andersen, 2000). Moreover, health services sector that relies on external funding will have to adjust in terms of charging very high cost of medical services whenever exchange rates fluctuate.
- ii. **Integration of financial markets may cause further foreign indebtedness.** When a domestic currency depreciates, the value of the country's foreign debt swell measured in domestic currency. As a consequence, public services, including health, that have been financed by foreign funds have to charge an additional exchange rate adjustment fee to the price of the service whenever the exchange changes.

4. Increasing Trade of Services

a. Opportunity

- i. **Increasing trade of services allows entry of foreign service providers that can improve the quality of medical services.** Once a country makes commitment to open its health services sector under the GATS, foreign health professionals, including medical service providers, should be granted market access and be given national treatment. The entry of foreign health providers has the potential of improving the quality of health services in the country given their training, experience and technology utilized.

b. Threats

- i. **Increasing trade in services bring expensive health services.** Although market access, non-discrimination and national treatment are required to facilitate entry of foreign service providers under the GATS rule, foreign medical and health service

providers will only enter a country if the consumers are willing to pay the price appropriate to their training, experience and technology being used.

ii. **Diversion of government health subsidy from public health service providers.**

Although globalization has created opportunities for the expansion of employment and income, it has widened the gap between the rich and the poor. At least 20% of the world population still lives in absolute poverty. It is estimated that the likelihood of infant mortality is 5 times higher in families under absolute poverty compared with higher income groups. Access to health services by the poor has been exacerbated with the deterioration of health systems in many developing countries. The GATS allows for the non-discrimination in the granting of subsidy for public goods including education and public health. In such an environment and given the limited funds of the government, it may alter or divert the limited public funds for health services.

Giving subsidy to foreign service providers would in effect divert public funds and may shift government focus from either infectious or noncommunicable diseases.

5. **Globalization of Knowledge and Ideas Through Information Technology**

a. **Opportunity**

i. **Globalization of knowledge makes information on prevention, treatment and cure of noncommunicable diseases available.** Significant opportunities in advancing health care have focused on those provided by various telecommunications networks including telemedicine and Internet (Lee and Collin, 2001). In addition, the globalization of knowledge regarding the determinants of diseases has demonstrated success of risk modification strategies, and the availability of cost-effective intervention for prevention and therapy. (Reddy, 2001)

b. **Threat**

i. **Globalization of knowledge can lead to over or wrong diagnosis resulting from self-medication.** Readily available medical, health and nutrition information in advancing health care in various telecommunication networks can lead to self-medication. Given the conflicting conclusions of tentative studies on the impact of risks factors associated with noncommunicable diseases, applying this information may be harmful to unsuspecting individuals. Information on risk factors should be interpreted with the guidance of health and medical professionals.

6. **Globalization of Culture**

a. **Opportunities**

i. **Globalization of culture harmonizes standards and promotes culture of efficiency in production.** New information technology, and chemical, biotechnological and pharmaceutical production processes have widened industry options for low-waste, low-energy and recycling strategies that generated new types of work organization. (Loewenson, 2001). The quest for efficiency and lower production cost is not only intended to remain globally competitive but also to provide quality service and products. Such culture of efficiency can contribute in the improvement of health services in developing countries.

ii. **Globalization of culture provides an avenue for an alternative consumption culture based on healthy lifestyle.** Various media forms have been promoting global consumer taste by projecting health conscious, physically active, salad-savoring and smoke-free images (Reddy, 1999). The globalization of travel could catalyze desirable health promoting developments. Health conscious travelers may seek smoke-free airports and low fat food as he tires to sustain his newly acquired healthy lifestyle in foreign lands.

b. **Threats**

i. **Globalization of culture may create a very stressful work environment.** A liberalized trade regime has been accompanied with a transfer to developing countries of obsolete and hazardous technologies, chemical processes and waste that are no longer used in developed countries. It has also been associated with assembly line, low quality of jobs, with minimal options for advancement, and a

growth of insecure, casual employment in the small-scale informal sector. Firms in the export sector are always on the watch to remain globally competitive. Such situation and business objective has created a work environment that takes its toll on workers' health. Meeting very high production targets, productivity incentives, and unregulated overtime have led to accidents, stress, and intense exposure to common hazards. These factors create additional pressure to stressful work resulting in cardiovascular and psychological disorders (Loewenson, 2001)

- ii. **Globalization of culture promotes over and under nutrition; and invites alcohol and tobacco consumption.** With rapid urbanization and changing lifestyles, people are now too busy to prepare traditional home cooked meals. The convenience and availability of fast food have removed the dinner tables from the busy lifestyles of people. Instant, fatty and processed food has become staple food for the modern population due to its convenience and affordability. A diet rich in fats, salt and sugar are risk factors some noncommunicable diseases. Global consumption culture on alcohol and tobacco intake has been promoted by multinational corporations using their huge advertising budgets.

IV. Policy Guidelines

(1) **Promote a healthy lifestyle, nutrition consciousness, and awareness on common risk factors associated with noncommunicable diseases.**

- a. The advancements in *information and communications technology* can be maximized for the benefit of people in developing, middle to low-income countries that do not have access to the latest health information. Health developments, noncommunicable diseases and its risk factors in particular, should be made available on line in order to uplift health research, prevention and treatment.
- b. The various forms of *mass media* can be used as channels for promoting healthy lifestyles and nutrition information. Television has proven to be a powerful tool in educating and influencing people worldwide. Print publications like newspapers should aid in educating people about noncommunicable diseases and its common risk factors like sedentary lifestyles, routine work environment, stress, poor nutrition through processed, instant foods and fast foods.
- c. As early as school age, children should be educated on health and nutrition. As a matter of education policy, health education should be integrated with the academic curriculum in order to promote a healthy lifestyle.
- d. Consumer advocacy should be raised through community actions in order to continually educate consumers on the health risks associated with urbanization and globalization.
- e. Incentives to individuals (presumably living healthy lifestyles) who have not used their medical insurance for a sustained period.

(2) **Encourage the consumption of food with high nutritional value.**

- a. Food grains, fruits and vegetables should be made available to consumers at affordable prices. This is possible by removing all tariffs and trade barriers to imported food. To further reduce prices, a consumption incentive may be devised such as tax rebate or exemption from the value added tax. Such consumption subsidy will not create discrimination between foreign and domestic food producers.
- b. Disclosure of nutritional content on product labels most specially imported goods should be essential. Products should comply with local and international standards for safe consumption.

- (3) Discourage vices (alcohol and cigarettes) and the consumption of instant / processed / and fast foods by:**
 - a. Imposing heavy taxation on imported and locally manufactured commodities.
 - b. Imposing consumption taxes on alcohol and tobacco, at country level, whether imported or locally produced in order to counter the increase in consumption brought about by liberalization measures, specifically reduction of trade barriers on tobacco and alcohol.

- (4) Analyze further the economic costs of noncommunicable diseases**
 - a. Costs of prevention should be equated with how much it costs economies to treat noncommunicable diseases. Epidemic and diet-related chronic diseases, entail important human and economic costs. The human costs have been quantified in terms of disability and death. To date, however, there are almost no estimates of the economic costs in developing countries, although a study is in process in the Pacific islands. (Popkin, Horton & Kim 2001)
 - b. Evaluate the cost of treatment of noncommunicable diseases on the overall health costs and its impact on treatment of communicable diseases. While it is true that communicable diseases (like AIDS, hepatitis etc.) is a worldwide concern, and malnutrition is an age old problem, the rising incidences of noncommunicable diseases in almost all economic classes in countries worldwide merit an extensive evaluation for the cost of treatment in order to justify important policies to enact.

- (5) The impact of economic globalization on noncommunicable diseases should be included as a major agenda in international discussions and negotiations.**
 - a. Aside from identifying the impact of economic globalization on noncommunicable disease, there is a need to quantify and qualify the health costs brought about by the rise of noncommunicable diseases shouldered by economies worldwide.
 - b. There is a need to form an international accord on global standards on health and nutrition. Although such standards may be difficult to attain, countries may see this accord as a means of discouraging consumption of unhealthy commodities seen as determinants of NCD risk factors, whether imported or produced domestically. In addition, any international accord should take into account the different purposes domestic regulations serve in national markets.
 - c. There is a need to identify which international forum will be the appropriate body for the discussion on the impact of globalization on noncommunicable diseases.

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Can Functional Foods Make a Difference to Disease Prevention and Control?

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1. What Are Functional Foods?

While the link between food and health is not new, the concept of Functional Food did not gain widespread recognition until the 1980s, with the launch of the so-called world's first Functional Food; a Japanese soft drink containing dietary fibre "Fibe Mini" in 1988. Seeing the developments in Japan, the new trend of Functional Foods was promoted actively in Europe and the US during the 1990s. As food companies and policy makers struggle to enable health claims to be made for Functional Foods, the actual words and definitions used to describe these new food and health developments are extensively debated. However, in most countries currently there is no legal definition for Functional Food, but in general, a Functional Food will have at least one or more of its biological effects on humans characterized and will be intended for use on a regular basis, by the general public. Many traditional products, such as apples, soy, tomatoes and oats, are marketed with emphasis on their health-promoting properties. In the US, the focus has been on dietary fibre, vitamins and other nutritious substances. In Europe, Functional Foods often centre on lactic acid bacteria while Asia focuses on natural plant extracts.

Various definitions and terms of Functional Foods have been advanced with probably the most agreed being "Functional Foods are foods positioned in the market place for particular and identified physiological and health reasons". They may be traditional foods with newly defined significance or altogether newly formulated foods whose ingredients or formulation may be novel; and, therefore, the term "*novel food*" is used interchangeably with the term "*functional food*" in this respect. "*Nutraceuticals*" are defined as "naturally derived bioactive compounds that are found in foods, dietary supplements and herbal products, and have health promoting, disease preventing, or medicinal properties". Thus, nutraceutical products, being compounds rather than food or food ingredients, may compete with pharmaceutical products, only to be distinguished by source of active component and in what form they are ingested, recognized and/or sold as food or medicine. Although "functional food" and "nutraceuticals" are often used interchangeably, "functional food" presents items ingested as snacks, with meals, or as drinks, they are the province of food industry, while "nutraceuticals" are presented as medicinal, another province of pharmaceutical industry. However, the boundaries between these are increasingly blurred.

Food-health relationships can be categorized in various ways for the purposes of food product development (Wahlqvist, 2000), as listed in Table 1.

Table 1. Food-health relationships, which may inform the development and place of Functional Foods

Health/Condition Category	Food Characteristics
1. Disease related to environmental degradation and methods of food production	Eco-sensitive foods (e.g. produced in sustainable ways; biodegradable or edible packaging; identifiable biosecurity for animal-derived foods; nature of genetic material)
2. Food shortage and PEM (protein energy malnutrition)	Technologies which minimize post-harvest loss, increase shelf life and maintain palatability
3. Disease related to protein quality, fat quality and micronutrient status	Nutrient dense foods; fish or its plant or microbial food surrogates
4. Physical inactivity and health (especially over fatness; also loss of lean mass, particularly muscle)	Foods of low energy density and high nutrient density
5. Phytochemical deficiency disorders including menopause, macular degeneration, osteopenia	Greater emphases on plant-derived foods and their variety
6. Diseases of changing demography <ul style="list-style-type: none"> • Ageing • Rapid loss of traditional food culture and acquisition of new food cultures 	<ul style="list-style-type: none"> • Anti-ageing food, especially ones to delay body compositional change (bone, muscle and fat); loss of sensory function; decline in immune function; proneness to neoplastic disease; decline in cardio-respiratory function; and decline in cognitive function; and anti inflammatory foods • Maintenance of traditional foods in convenient, affordable and recognisable form
7. New psycho social stressors and mood change	Foods which favourably affects mood
8. Food borne illness and the microbiological safety of foods	<ul style="list-style-type: none"> • Pre- and pro-biotic foods • Immune system enhancing foods
9. Illness related to the chemical safety of foods (e.g. pesticide residues)	Regional origin and certification of foods

2. When and for Whom is a Functional Food Successful?

Thousands of products with supposed health benefits, ranging from the nutritionally beneficial to the fraudulent, are already available in the world market, and the number of products is soaring. Thus it is no longer possible for health or regulatory authorities to side-step this phenomenon. Science and technology, agriculture, food manufacture and markets are driven by the belief and actuality that food characteristics are relevant to health. For all sectors, the advent and currency of Functional Food can be seen from both individual and community or population points of view. For example, certain consumers may purchase phytoestrogen-containing food (such as soy and linseed) to reduce the impact of the menopause or the risk of prostate cancer, while the public health sector will be interested in the broader health impact and the attendant risk-benefit ratios. The long-term success of a Functional Food for health and well-being depends on perspective and the alignment of a number of interests and stakeholders. Both the health sector and food industry will be interested in costs, the one in relation to health outcomes (say, compared with the use of pharmaceuticals), the other in profitability. Technologists will be interested in product feasibility and consumer acceptance. Scientists and regulators will be concerned about the credibility of claims. Environmentalists will be interested in sustainability. And there will be other stakeholders.

2.1 Product and Market Development

Functional Foods present major challenges for much of the food industry; they appear to be a new and unfamiliar territory for product developers, for marketing and for business strategies. One of the obstacles to significant innovation in the food industry is that it is historically a low-technology business and true differentiation is very difficult to achieve. Barriers to entry are low, innovations are difficult to patent-protect, and product features are relatively easily and quickly copied by competitors. Since there are medical and public health considerations in product and market developments, it makes sense to develop Functional Foods that address the actual medical or nutritional needs of a defined population segment in a measurable way. Using concerns and worries of consumers about their health and possible future disease risk as a basis for product development and marketing of foods on a wide scale is fundamentally different from how traditional foodstuffs are normally marketed and sold.

One of the major considerations for the technical development and marketing of Functional Foods is the benefit the product will deliver, which will usually require the delivery of an outcome which is clinically measurable. Products that claim to favourably affect an intermediate point in the pathway to disease, like blood pressure or blood lipids, can be evaluated for their effectiveness by taking a recordable or blood measurement. However, for some products, such as calcium supplements for the prevention of osteoporosis and related fracture, the benefits might be short-term changes in indices of bone turnover, but, of greater interest, are the measurements of bone mineral density, in the medium term, or fracture rate in the longer term. What this means is that the costs of product development with Functional Foods must also include health outcome evaluation at some level.

2.2 Consumer Acceptance

Many consumers still have concerns as to whether they really need or want such food products, how much and for how long. While epidemiological findings indicate that dietary and other lifestyle changes should reduce the occurrence of much chronic disease, it remains to be seen whether such a cause-and-effect linkage will be in evidence in public health statistics, when long-term dietary changes are facilitated with Functional Foods. For consumers, convenient and easy access to food products that fit in with active and busy lifestyles is a consideration. Packaging provides extrinsic appearance, and it should also help meet the consumers' information demands at the point of sale. This applies to a wide range of food packages in various ways. Thus, food packaging companies are likely to be advocates for Functional Foods, and may do so without undue bias between different Functional Foods (Schannon, 2001). Consumers are not price sensitive about foods if they confer health values, for which they are often prepared to pay a premium. Thus, consumers and food industry can converge in their support for the development of Functional Foods.

Food policy could allow food producers to tell consumers, in strong and unambiguous fashion, the nature of the health benefit they may derive from consuming a particular food product. Such communication will add to the market success of Functional Food products. In this vein, health claims should enable consumers to differentiate between products that confer scientifically validated health benefits and make legally evaluated claims, against unproven and misleading ones. But the tenure of this approach may be limited as other means of providing consumers with information about foods, the regular education systems, education campaigns targeted at consumers and health professionals, nutrition informatics through communication media and internet, and broader aspects of government policy nature (Kouris-Blazos, 2002). Such health claims also provide a measure of confidence about the food-health relationships, which may not be fully justified. It however denies the value of understanding uncertainty and risk (Wahlqvist & Briggs, 1991).

While the social, food, nutrition and biomedical sciences underpin the development of Functional Foods, they allow for increasingly rational product development to fit consumers' health needs. At the same time, they also encourage the application of risk health science with due consideration of

safety, although risk can be expected to be negligible in the public health domain. The distinctions from that in the pharmaceutical domain where side effects are weighed against benefit on a regular patient-by-patient basis, with each usage (Table 2), may be poorly understood by those who enter the Functional Food area, and are unfamiliar with toxicology of drug development. Appropriate monitoring and surveillance have to be in place as a requisite of any community which is exposed to new products developed for purported physiological or health reasons.

2.3 Science and Public Health Nutrition Issues

The recognition of the relationships between food intakes and major so-called “chronic noncommunicable diseases (CNCDs), such as obesity, diabetes, cardiovascular disease, certain cancers, osteoporosis and arthritis, stimulated the development of dietary guidelines for the public. With time, there has been an emergence of a more comprehensive approach based on the knowledge of genetic predisposition, the nutritional modulation of gene expression and lifestyle factors (themselves often connected to food patterns), including physical activity, abuse of substances such as tobacco and alcohol. However, while nutritional science flourishes at present, scientific evidence of the randomized controlled trial kind may not necessarily substantiate prevailing beliefs or reasonable deduction about the health benefits of particular foods, or their nutritional components, beyond the correction of deficiencies.

Clinical nutrition trials can test biological and/or pharmacological effects of food constituents or food formulations in randomized, controlled fashion (randomized controlled trials, RCTs). However, much crucial information about foods, food patterns, food culture and health outcomes is not adducible in this way. Instead, the testing of hypotheses about desirable and measurable models of the human diet, in prospective studies of well-characterized populations, is required (Wahlqvist et al., 1999 & 2001; Benson & Hatz, 2000).

Intervention trials, especially with nutritive substances such as micronutrients and phytochemicals, have raised the prospect of major benefits for a large fraction of the population (Dalais et al, 1998; Hodgson et al, 1999; Howes et al, 2000). In order to obtain useful information on manageable sample sizes, reduction in risk factors as intermediate endpoints (such as improved blood lipid profile or blood pressure reduction) is often used in trials; in some cases high-risk groups (such as the aged) are also used. Relatively few intervention trials have studied overall health outcomes, such as fracture rates, diabetes and CVD together, or cause-specific or all-cause mortality rates as endpoints (ATBC Cancer Prevention Study Group, 1994; Cumming & Nevitt, 1997; de Lorgeril et al, 1999).

Moreover, it is easy to underestimate synergies between food consumption, as part of a general lifestyle, and other behaviours or activities. For example, reduction of blood pressure is likely to be more effective with a plant-based diet in its entirety than is one plant food alone (Beilin, 1994). Similarly, the combination of weight loss and fish consumption tends to be more impressive than either alone in lowering blood pressure (Bao et al, 1998).

One of the major limitations with Functional Food development is that a nutritive factor alone or in combination with other such factors is unlikely to provide all of the available biological advantage from a food or food pattern (Trichopoulou et al, 1995). Thus the retention of a background diet with a range of basic food commodities, against which Functional Foods may be positioned for added health advantage, is likely to be required for optimal health. When food culture is measured and its prediction of survival advantage in excess of individual foods or nutrients assessed (Trichopoulou et al, 1995), or when intact food commodities, like whole grains, are studied in conference of survival (Jacobs et al, 1999; Liu et al, 1999; Slavin et al, 1999), advantage is recognized. The extent to which background diet is replaced with Functional Foods will be a critical public health issue.

2.4 Regulatory Issues

Food and health policy experts question the relevance of Functional Foods, and the Health Claims regime thought necessary to regulate them (Heasman & Mellentin, 2001). The Codex Alimentarius Commission, the international food standards agency, defines health claims as “*any representation that states, suggests or implies that a relationship exists between a food or a nutrient or other substances contained in a food and a disease or health-related condition*”. Health claims for products and ingredients are developed to represent both efficacy and safety. The substantiation of health claims must be scientific; it requires compilation and critique of the existing literature, including clinical trials in humans, epidemiological evidence, animal studies and other evidence of biological activity. The strength of the evidence comes from the consistency of evidence across all types of quantifiable data, and it will allow greater or lesser latitude in the nature of health claims. The totality (balance and range), quality and relevance of the evidence to the claims need to be considered together. Considerations should be made to all relevant research relating to the claimed benefit, not just to that supports the effect. Where there are inconsistencies in the evidence, it is important to examine whether there is plausible explanation for those inconsistencies. Studies on biomarkers, plausible mechanisms and outcomes, and definitive health end points, can be considered, but the claim should be limited to the outcome assessed and not extrapolated further. The Consensus Document on Scientific Concepts of Functional Foods in Europe produced from the European Commission Concerted Action on Functional Food Science in Europe (FUFOSE) suggested the outline of a scheme to link claims for Functional Foods to solid scientific evidence (Diplock et al, 1999). The European Union PASSCLAIM project (Process for the Assessment of Scientific Support for Claims on Foods) is introduced in 2001 to provide industry, academics, consumer groups, and regulators with means to evaluate the scientific basis for health claims.

For European countries (the European Union), Australia and New Zealand, the first consideration with the introduction of Novel Foods is that of safety. But, although Novel Foods may be introduced for convenience, extended shelf-life, better appearance, palatability, as analogues for more expensive or less available traditional or established products, in the current climate, potential nutritional or health benefits are more likely to be the motivation behind their manufacture. Likewise, for Functional Foods, which may or may not be novel, recognition will be sought for their presumed nutritionally related health benefits. Health claims are the current strategy which regulators are using to handle this situation – the process begun as *Foods for Specific Health Uses* (FOSHU) in Japan in 1991.

There is little evidence so far that health claims are, as statements, making an impact on healthful food choices and health outcomes (ANZFA, 2000). They can however, skew food consumption in the direction of the food product so-labelled – as with the non-mandatory “Pick the Tick Program” of the National Heart Foundation of Australia (Schrapnel, 1993) and the Folate and Neural Tube Defects Claim in Australia (ANZFA, 2000); here it is arguable whether there is real food choice benefit, since not all equivalent products are identified. For example, choosing one phytosterol containing food over another, or fortified breakfast cereals for folic acid rather than liver.

A problem for consumers and health claims about Functional Foods is that the vehicle or delivery system and the background eating patterns and nutritional status may matter and not be well characterized. For health claims to provide an effective informational environment for Functional Foods is probably over-optimistic. However, a broader information framework, as part of the overall public health environment – and linked to health based non-governmental organizations (NGOs), may well prove useful (Wahlqvist, 2001; Kouris-Blazos et al, 2001). The World Wide Web is likely to be a powerful ally to the safe and effective introduction of Functional Foods, provided it itself operates with checks and balances. At present there are no agreed protocols for evaluation of the information on the internet. For the average consumer, sorting through information for credible sites can be daunting and the potential for harm from misleading and inaccurate health information

is of concern. It is suggested that a series of questions, such as whether the information contains traceable references to support the evidence, or whether the information balanced, should be asked in order to evaluate the credibility of website in question (Kouris-Blazos et al, 2001). We generally under-estimate and under-value the utility and empowerment of individuals, when some debate and appreciation of the limits of evidence prevails (Wahlqvist & Briggs, 1991). With time and increased validation of the place of a Functional Food in the general food supply, for health advantage, the information will become part of formal education, subject to revision as new evidence comes along.

Risk analysis is crucial with the rapid development and use of Functional Foods. This is because their very "raison d'être" is based on the risk that a significant proportion of the population targeted are at risk of developing the health problem and may have their health and well-being prospect enhanced. In this public health arena, rather than that of one-to-one counselling or medical care, the risk of relevant or unintended outcomes must be negligible. This is unlike pharmaceuticals, used only for sufferers, where some risk is allowable, depending on benefit. Having said this, it is noteworthy that a number of nutrient fortification programmes (as such with iron, vitamin A and even folate) have been implemented with recognized and measurable risk at the population level, because the aggregate benefit to a widely deficient community was reckoned to be sufficiently substantial.

The example of food fortification with folate, with consumption community-wide, in an effort to reduce the risk of neural tube defects (NTDs) in newborn infants, was much debated in the United States of America and Australia, when a more targeted and restricted approach using folate supplementation only for women whose offspring were at risk, could have been used. Australian research shows that while folate supplements reduce the risk of birth defects by up to 70%, they also increase the chance of having twins by 40% (Lumley et al, 2001). Is this an acceptable outcome? There is concern about long-term risks of elevated maternal folate on the fetus related to disease susceptibility later in life (Stover & Garza, 2002). Maternal folate status may influence fetal DNA methylation patterns and DNA mutation rates at the same time as embryonic and fetal survival is maximized. Critical risk analysis and ongoing monitoring and surveillance of this kind ought to be required for Functional Foods in general, but will resources and commitment allow and enable this to take place?

3. Functional Foods – Some Success Stories

The definition of Functional Foods is not limited to commercial food products, it applies to those which have been used to overcome micronutrient deficiency problems globally, often by NGOs and governmental or international agencies. Food fortification is considered to be one of the most successful examples of Functional Foods, in terms of product development and goal achievement (Asian Development Bank, 2000). It is a major and integral food-based strategy to eliminate iodine deficiency disorders (IDD), vitamin A deficiency (VAD) and iron-deficiency anemia (IDA) in developing countries with commitment from many of their leaders at the World Summit for Children in 1990.

3.1 Food Fortification and Biofortification

Over the past decade, salt iodization has contributed substantially towards the virtual elimination of IDD in several developing countries. Programmes of sugar fortification with retinol have taken place in many Central American countries. However, progress in reaching wider populations in Asia with iron and vitamin A has been more modest. While the fortification of wheat and corn flour with iron salts has been successful in many countries, the technology and capacity for fortification of flour with iron is still being developed in Fiji, India, Indonesia and the Philippines.

Overall, food fortification has provided economic benefits by reducing morbidity, improving work capacity and cognition (Popkin, 1998). While salt is used as a food vehicle for iodine, its consumption in some developed countries has fallen, as the result of public awareness of blood

pressure control. This could lead to the re-emergence of IDD in Australia (Gunton et al, 1999; Li et al, 2001), and probably in other industrially-developed communities despite a good deal of food trade and food cultural pluralism which ought to minimize the risk of IDD through the availability of iodine replete foods.

Recently, biofortification has been proposed to combat micronutrient malnutrition. “Golden Rice” is an example of biofortification through gene manipulation to improve nutritional value, vitamin A in particular, of rice. Genes from the daffodil and a bacterium were introduced to the rice line to complete the biosynthetic pathway to β -carotene, a provitamin A carotene (Ye et al, 2000). The insertion of these genes into rice to express β -carotene was necessary because parts of the pathway had been lost, although the downstream parts of the pathway were still expressed. The resultant transgenic rice line synthesizes enough β -carotene in the endosperm to meet part of the vitamin A requirements of people dependent on rice as a primary food staple in Asia, Africa and Latin America. At the same time, the re-discovery of hundreds of natural “yellow” rice cultivars which may have the missing genes has encouraged the study and propagation of rice varieties that can be used as natural food sources of provitamin A carotenoids (Graham & Rosser, 2000). An added value of such grains is likely to be their provision of a wider array of carotenoids with wider health benefits than the prevention of vitamin A deficiency (Cooper et al, 1999). As grains richer in other micronutrients, like iron and zinc, are identified in seed banks and libraries and in traditional communities, the prospects of safe and effective biofortification in the food supply increase (Bouis, 2002).

It is clear that food fortification and biofortification can provide Functional Foods, which address and mitigate major public health nutrition dilemmas. Efforts are being made to create an environment for public-private sector collaboration, amongst food regulators, the health sector, food industry, scientists and consumers, to overcome the barriers to rational use of such Functional Foods. Barriers include lack of public awareness of micronutrient deficiency, no research consensus on the need for fortified products, and the ambiguity and uncertain impact of health claims. Food-based solutions to micronutrient deficiency may be achieved through the organized production, marketing, and distribution of foods by both private and public food organizations. Sometimes public resources will need to be shifted toward public-private sector partnerships to promote the fortification and biofortification of foodstuffs. A multi-sectoral group could define feasible and affordable strategies designed for the target population, identify opportunities for the involvement of the food industry, and assist in promotional and educational efforts to reach the target population. Finally, the ultimate goal of diversification of the food supply, with less dependence on staples, for both a more comprehensive and adequate intake of nutritive substances and the maintenance of biodiversity, with its own health advantages, must be kept alive (Wahlqvist & Specht, 1998). For food fortification to be an effective means to prevent and mitigate public health problems of micronutrient deficiencies, it needs to be based on sound principles and supported by clear policies and regulations (Darnton-Hill et al, 2002).

3.2 Probiotics

An example of successful Functional Foods, at least in terms of marketing, is Probiotics, products with live microorganisms. As early as 1935, long before the concept of Functional Foods was introduced, the fermented milk drink Yakult®, was launched in Japan. This product contained a lactic acid bacterium, *Lactobacillus casei Shirota* strain, which could resist gastric juice and bile, enabling it to establish itself in the bowel. It has been claimed that the consequential shift in spectrum of intestinal microflora has health advantage (Mitsuoka, 1996). These health advantages may include resistance to pathogenic microorganisms, gut and systemic immunity, as well as colonocyte nutrition from the lumen. Probiotic products present an opportunity for dairy companies to present their products as part of a healthy diet, not by removing fat but by adding health-promoting ingredients – live microorganisms (probiotics), or substrates for them like oligosaccharides (prebiotics).

However, there is still divided opinion about the general effectiveness of lactic acid bacteria in promoting human health. This could be due to a lack of coordinated efforts between clinicians and microbiologists. Differences in strains, dose, model systems, and stringency of data interpretation have led to some of the inconsistencies in conclusions. In the meantime, although research support is lacking for many claims about live bacterial culture-induced promotion of intestinal and human health, products containing such cultures are marketed successfully worldwide. Also the place of traditional fermented foods, fruits, vegetables, grains, fish – like sauerkraut and kimchi, is relatively neglected (Leitzmann, 1994).

3.3 Phytochemical-Rich Foods: What Stage are They at Now?

In recent decades, a considerable number of epidemiological studies suggest that the high consumption of “fruit and vegetables” as a collective term, or in some studies, of specific vegetables, is associated with low morbidity and mortality from CVD and certain cancers (Kant et al, 1995; Kushi et al, 1985; World Cancer Research Fund/ American Institute for Cancer Research, 1997). Compounds found in fruit and vegetables, such as polyphenols in fruit, isoflavones in the legume soy and β -carotene in vegetables, have been considered to be the responsible active compounds (Table 3). However, several intervention studies have shown that ingestion of some of these isolated compounds, in tablet or capsule form, cannot confer similar health benefits to those observed with the intact food from which they come (MacLennan et al, 1995, Omenn et al, 1996; Stevinson et al, 2000). Studies of intact foods on health outcomes, like those with whole grains on CVD and diabetes support these findings (Jacobs et al, 1998; Salmeron et al, 1997a & 1997b). This understanding should stimulate a more food ingredient and recipe approach than the isolated phytonutrient approach to Functional Foods (Table 2). It is likely to discourage chemical fortification with phytochemicals (in the way that has happened with micronutrients) in favour of biofortification with phytonutrients – a trend that will encourage plant breeding and related horticultural research.

The dichotomy between ingredient-based phytochemical-enriched foods and the administration of isolated phytochemicals is illustrated by the field of phytoestrogens and the menopause. In the late 1980s, Wahlqvist and colleagues demonstrated that certain foodstuffs (soy flour, linseed as seeds, and red clover as sprouts) could significantly improve vaginal health (an estrogenic effect) and decrease pituitary follicle stimulating hormone (FSH) production in post-menopausal women (also estrogenic effects) – the first demonstration that foods could exhibit estrogenic effects in humans (Wilcox et al, 1990). Thereafter, there have been those who have favoured food ingredient-based studies and applications, especially bone health and breast cancer protection, to women’s health (Wahlqvist & Dalais, 1997; Murkies et al, 2000; Worsley et al, 2002), and those who have pursued a more nutraceutical (pharmaceutical) approach (Hodgson et al, 1999; Howes et al, 2000). The risk-benefit ratio in each case is quite different, with more checks and balances on intake in the food ingredient (e.g. soy-linseed bread) approaches than with over-the-counter (OTC) encapsulated phytochemicals.

Table 3. Phytochemicals and their possible roles in health (Wahlqvist et al, 1998)

Phytochemicals	Some important food sources	Possible roles in health
Carotenoids	Orange pigmented and green leafy vegetables, e.g. carrots, tomatoes, spinach	Antioxidant Antimutagen Anticarcinogen Immuno-enhancement
Flavonoids, isoflavonoids and saponins	Green and yellow leafy vegetables, e.g. parsley, celery, soy bean and soy products	Antioxidant Anticarcinogen Estrogenic Immuno-modulating
Polyphenols	Cranberries, raspberries, blackberries Rosemary, oregano, thyme	Antioxidant
Catechins	Green & black tea	Antioxidant Anticarcinogen Anticariogen Protective against cardiovascular disease
Isothicyanates and indoles	Cruciferous vegetables, e.g. broccoli, cabbage	Antimutagen
Allyl thiosulfinates	Garlic, onions, leeks	Anticarcinogen Antibacterial
Limonene	Citrus fruits, caraway seeds	Anticarcinogenic against mammary tumours
Phytoosterols	Pumpkin seeds	Reduce symptoms of prostate enlargement
Curcumin	Turmeric	Anti-inflammatory
Salicylates	Grapes, dates, cherries, oranges, apricots, gherkins, mushrooms, capsicums, zucchini	Protective against macrovascular disease
Non-digestible carbohydrates	Artichoke, chicory root, maize, garlic, oats	Stimulate growth of microbial flora

It is interesting, therefore, that attempts are still being made to develop novel (and implicitly functional) foods on the basis of isolated compounds like phytosterols (plant sterols) which represent a spectrum of molecules sometimes from unfamiliar plant products (like pine bark) into food products themselves with still limited human experience (Lichtenstein, 2002), like polyunsaturated margarine available only for about 30 years, and where we are still learning about unintended consequences – for example, their *trans*-fatty acid content and atherogenesis (Anonymous, 1995). The reduction of serum low-density lipoprotein cholesterol with phytosterols in margarine will not necessarily translate into reduced coronary events, let alone reduced all-cause mortality. Another potentially problematic development with Functional Foods is the fortification of food with nutritive substances where they are not ordinarily expected to be – like calcium in fruit juice. This is happening at a time when evidence mounts that people with traditional intakes of calcium in a dominantly plant-based diet at about 400-500 mg daily (Aspray et al, 1996; Dibba et al, 2000) are not advantaged in bone health or fracture rate by more dietary calcium – it is those who have high intakes of calcium that seem to need more. This out-of-culture, out-of-context approach to Functional Foods needs much more scrutiny. This indicates the importance of the WHO/FAO Food Based Dietary Guidelines (FBDGs) approach to food and nutrition policy, including Functional Foods.

3.4 The Functional Significance of Traditional Foods

A rather more attractive example of an emerging Functional Food, from a public health point of view, is that of the various traditional *teas*, which are based on the leaves of *Camellia sinensis* – black tea, Chinese oolong tea and Japanese green tea. Increasing evidence points to their ability to protect against macrovascular disease (Zhao & Chen, 2001; Hodgson et al, 2002) and its sequelae (Mukamal et al, 2002), certain cancers (Yang et al, 2002) and osteoporosis with fracture (Hegarty et al, 2000). These teas are the second most commonly consumed beverage, after water, worldwide. They are generally consumed hot, with the attendant microbiological safety, they have an important social (and, with it, health) role, and evidence also points to their theanine content as calming for many (Juneja et al, 1999), countering some concerns about the caffeine content, whose bioavailability is generally reduced compared with coffee. The adverse effects of tea on iron bioavailability can be managed with appropriate use away from plant sources of iron, or, together with heme iron. Here, then, is a major part of the traditional human diet for most people in Europe, the Middle East, the Far East, South Asia, and South East Asia, which can be positioned as functional.

A rather different situation has emerged with breakfast cereals. At their nutritional best, it could be argued they can provide a convenient way of having relatively intact or wholegrain cereals at a particular time of the day, namely breakfast. What is happening, for many such products, is that, at once, their nutrient density is decreased through a greater content of refined carbohydrate (usually sugar), and, this is remedied by micronutrient fortification. More than that, claims to nutritional superiority over other foods may be made when they are fortified. They are increasingly positioned to supply something like a third of the day's recommended dietary intakes of essential nutrients, with the presumption that this is all one needs for breakfast (perhaps with some added milk or fruit). In this manner, to take an example, wheat, starting out as a wholegrain, becomes a vehicle for a sweet low nutritional value food item, and acts as the vehicle for de facto micronutrient "supplementation".

This is an altogether different concept to the re-discovery of tea drinking as healthful, as low consumption is found to predispose to chronic disease – this is like recognition that, in part, "chronic disease" may be a food or beverage deficiency problem. By contrast, we do not have a "breakfast cereal deficiency problem", but many do have a "wholegrain deficiency problem". Only a few breakfast cereals have managed to maintain their principal role as providers of relatively intact grains in a mixed and varied human diet.

4 Evidence-Based Nutrition

Functional Foods are attractive to those concerned with evidence-based nutrition. Their evaluation is amenable to Randomised Controlled Trials (Trichopoulos, 2000; Wahlqvist et al, 1999 & 2001). This allows their ascendancy in evidence over traditional diets whose value only can usually be studied by observational methodology in longitudinal studies. For this reason, there is a pressing need for the scope of evidence-based nutrition to be enlarged and inclusive of "modelling science", where models of the human diet can be evaluated for health outcomes and survival. When the odds-ratios for a food or nutrient intake in relation to health outcome are large, causality is likely, and therefore the need for intervention (as with possible Functional Foods) is less. Of great importance is the need to examine the health predictive power, not only of food components or of food, but also of food patterns and whole cuisines. An integral of cuisines is likely to be more predictive of health outcomes, notably survival, than are any foods or food components. Examples are the IUNS Longitudinal studies of Food Habits in Later Life (Trichopoulou et al, 1995) and the Lyon Heart Studies (de Lorgeril et al, 1999). These broader approaches of evidence-based nutrition may actually be encouraged by molecular nutrition, which identifies genetic polymorphisms and different susceptibilities to food factors (Simopoulos, 2002; Stover & Garza, 2002). Thus, advances or otherwise in evidence-based nutrition will, to some extent, influence the quest for Functional Foods.

5. How to Manage the Future of Functional Foods

In the future, plant and animal breeding, with or without genetic modification, should be able to create nutritive factor-enhanced foods with equivalence to and superior over traditional foods from various communities. As the more detailed chemistry of food unfolds, nutritionists, industrial food technologists and regulatory authorities will face new challenges, with exciting opportunities for the use of biologically active components from animals (zoochemicals), such as heme iron from muscle or caseopeptides from milk, or components from fungi (mycochemicals). These challenges include:

- (i) Recognition of favourable health outcomes, which may be attributable to composite and/or cumulative effects of phyto-, zoo- and mycochemicals.
- (ii) Risk analysis of these food components in traditional food patterns, new cuisines, new Functional Foods – the “nutritional safety” domain of food safety.
- (iii) The cost-effectiveness of food choice, which is based on a greater food component emphasis.
- (iv) The ecological impact of shifting the food supply in new directions.

In reality, these challenges are shared by many cognate disciplines, and require the participation of those who can cross the disciplinary boundaries. They present new imperatives for training and career development, for health care systems, for economic development and for sustainable food production.

5.1 Health Outcomes

The extent to which individual food components, combinations of them, foods containing them, or whole cuisines may influence human health is much greater than we had previously thought. Functional Foods may be regarded as the third generation of health foods following the interest in dietary fibre in the 1970s, and the development of “low” and “light” foods in the 1980s. Up to now, most Functional Foods have been developed with the aim of securing beneficial effects for cardiovascular disease and bowel disorders.

The conjunction of several major new technologies will inescapably bring with them new food-health relationships – biotechnology (including genetic modification, such as biofortification), information technology (including nutrition and health informatics), and nanotechnology (machinery at the molecular level and related materials science). In addition, the social role of food, the effects of food on society, the effect behaviour has on nutritional status, and the effects of food on behaviour are likely to unravel with increasing speed. There will be profound changes in the socio-behavioural sciences, as society and culture become more international, individual behaviours are fragile and disordered amidst the changes. This is an environment which could support a Functional Food market, unless there are unforeseen consequences.

5.2 Nutritional Safety

In general, food is considered to be nutritionally safe if it delivers essential nutrients (and food components) which are expected of it, in the bioavailable form. Appealing to traditional food cultures and their health relationships, documented epidemiologically as a reference point, is invaluable in identifying potential nutritional advantage and safety considerations of Functional Foods. In particular, it takes account, to some extent, of unanticipated long-term consequence of food behaviour (Wahlqvist, 1992). It may be generations before effects are seen, given the present understanding of molecular nutrition, to say nothing of environmental-population interactions. Traditional food patterns are quickening in their intrinsic tendency to change as new information about food and health comes to hand, as food cultures intersect with migration and travel, as lifestyles change in other respects, and convenience is sought. This produces not only new risks to food microbiological safety, but also nutritional safety. At the same time, as new cuisines and Novel Foods are entering the market place, there is an increasing need for a more sophisticated

knowledge of food science in the community and amongst relevant food, health, legal and educational professionals. Competent analysts of risk and benefit and good risk communicators are also required.

5.3 Cost-Effectiveness of Choice about Food Components

One of the great dilemmas about the development of Novel and Functional Foods on the basis of the new understanding of food chemistry and health, is that the cost of food generally increases. While Functional Food science is motivated, to some extent, by its potential for public health benefits, the prevalence of diet-related disease and illness, together with other health-related problems, is skewed towards people in lower socio-economic groups. Yet the benefits of Functional Food science are generally geared to those willing and able to pay for premium-price products. This, of course, must be weighed up against benefit. As Functional Foods are rolled out into the market place, manufacturers and retailers will get economic benefits from the product more than consumers. Food industry must expect an increasingly lively debate about cost-effectiveness and safety. Efforts should be made to ensure that the community benefits from it, both in public health and economic terms.

5.4 Ecological Impact of Shifting the Food Supply in New Directions

The most pressing issue in the world food supply is sustainability. As the newer appreciation of food-health relationships grows, the pressure on certain food stocks becomes untenable – this is the case especially for fish and soy. Plant food equivalents (with shorter chain n-3 fatty acids like α -linolenic acid from linseed) may have to suffice; or genetic modification of microorganisms to produce n-3 long chain polyunsaturated fatty acids (EPA and DHA) may be required. Efforts to increase soy production by genetic modification to make it tolerant to the herbicide glyphosate, have been successful, but produced major consumer resistance (Wahlqvist, 1999a).

Food trade can increase the variety of foods available to people. Sustainability through biodiversity can be encouraged by the use of the dietary guideline of food variety (Wahlqvist & Specht, 1998). There are few new directions in food science and health, which will not have ecological implications. Well-managed, high yielding clones of food species (plant, animal and microbiological) have the potential to decrease environmental pressure and enhance human health. But ethical and philosophical issues will temper these developments.

The health, safety and sustainability hierarchies of nutritive substances, food and food culture are shown in Figure 1.

6. How to Manage the Risks from Functional Foods

It is expected that the development of new Functional Foods will always bring an element of risk with it, but in the public health domain, this risk is expected to be negligible, unlike that from pharmaceuticals, where some risks are accepted for benefit on a regular patient-by-patient basis, with each usage. This distinction seems poorly understood by entrants into the Functional Foods area, who are often unfamiliar with the toxicology of drug development. Risk analysis, management and communication are therefore required, at least at a greater level of sophistication, as environments for food production and food trade increases, new food technologies emerge, and food cultures evolve.

At a taskforce meeting in 2001 on Novel Foods in Nutrition, Health and Development held by the FAO Network of Excellence at Monash University, in collaboration with WHO, an approach with the following requirements has been recommended for the development of new Functional Foods to minimize risk (Wahlqvist, 2002).

1. Consider the health outcome in question.

2. Select a plant food or foods, which confer these characteristics, preferably with an established food cultural base.
3. Formulate a food for trial.
4. Carry out a risk evaluation.
5. Conduct a food trial using biomarkers and/or health outcomes.
6. Develop an appropriate monitoring and surveillance strategy.
7. Seek regulatory approach as Novel Food for safety.
8. Formulate a food-based educational and informational framework, (consistent with WHO/FAO Food-Based Dietary Guidelines recommendations), with or without health claims (depending on regulatory regime) (World Health Organization, 1998; Wahlqvist, 1999b).
9. In all cases, consider affordability and encourage sustainability.

With new food ingredients, bioequivalence in their formulation and application should be considered. For example, one question is whether synthetic nutritive substances confer the same physiological effects as do the ones from a natural source. A lesson was learned from the Australian Polyp Prevention Project (APPP) in which β -carotene was supplemented to prevent the recurrence of colonic polyps. But increased recurrence and, therefore, increased risk for large bowel cancer, were observed with the β -carotene capsules in comparison with placebo in the course of the trial so that this intervention had to be prematurely ceased (MacLennan et al, 1995). Similarly, the Carotene and Retinol Efficacy Lung Cancer Chemoprevention Trial (CARET) was prematurely ended due to the unexpected findings that the combination of β -carotene and retinyl palmitate had a 46% increased lung cancer mortality and a 26% increased cardiovascular mortality compared with placebo (Omenn et al, 1996). It turned out while naturally occurring β -carotene was in the isomeric mixture of *cis*- and *trans*- forms, that in the capsules was only in the *trans*-form (Gaziano et al, 1995). We still do not know whether this was biologically significant; however, whether food components from newly discovered sources are actually the same as those from conventional food sources requires evaluation. For example, before using seaweeds as a source of n-3 long chain fatty acids, it should be asked whether the carbon-configuration (*cis*-, *trans*-) of the fatty acid double bonds is the same as for fish and land plant sources, such as linseed. This is a dynamic area and the prospect of better and better analytic technologies will help us identify and differentiate one isomer from another with greater precision. Likewise, monitoring and surveillance, as the science unfolds, will be a requisite of any community exposed to novel food products introduced for purported physiological or health reasons.

7. Conclusion

New understandings of food-health relationships are defining new opportunities for the development of Functional Foods for the purposes of disease prevention and control. For the ultimate successful progress of this field of Functional Foods, there must be engagement of the community through education, and commitment of government and international agencies to appropriate regulation. Governance of the present and future dramatic global shifts in food intake, at a time when health patterns are also rapidly changing, will be a great challenge.

8. Summary

- a) The world food supply is undergoing major and rapid change. Part of this phenomenon is the increased appreciation of the health benefits of an adequate, nutritious and sustainable food supply and part the commercial opportunities provided by these considerations. International agencies and governments, the civil society and the corporate sector have an interest and responsibility to ensure that the food supply, health outcomes, and economic development progress together.
- b) Functional Foods are foods produced in the market place for particular and identified physiological and health reasons and, as such, can serve health and economic goals in a measurable way, provided that their development is science-based, culturally-relevant and risk-cost-benefit effective.

- c) The evaluation of Functional Food success or detriment needs to be comprehensive, taking into account all relevant science and technology, with consumer engagement and effective regulatory capacity, and consideration of individual and public health issues, as well as profitability.
- d) There are already success stories and problematic outcomes following the introduction of certain Functional Foods. Most of the health success has come with food-based approaches using traditional food commodities, which have been repositioned for newly understood health reasons, or have been subject to fortification or biofortification. The alleviation of micronutrient deficiencies and the increased consumption of protective foods and ingredients are examples. Some traditional food technologies, like fermentation, have found a new niche in the Functional Foods arena. Much activity can be expected in the area of phytonutrient enrichment of foodstuffs that will demand a more sophisticated approach to the nutritional safety of foods, to nutritional epidemiology, and to food toxicology in general.
- e) Risk minimization strategies for Functional Foods will depend on greater investment in food-health risk analysis and communication.

Food-health relationships provide the basis for disease prevention and control using Functional Foods.

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Figure 1 Health, safety and sustainability hierarchies of nutritive substances, food and food cultures

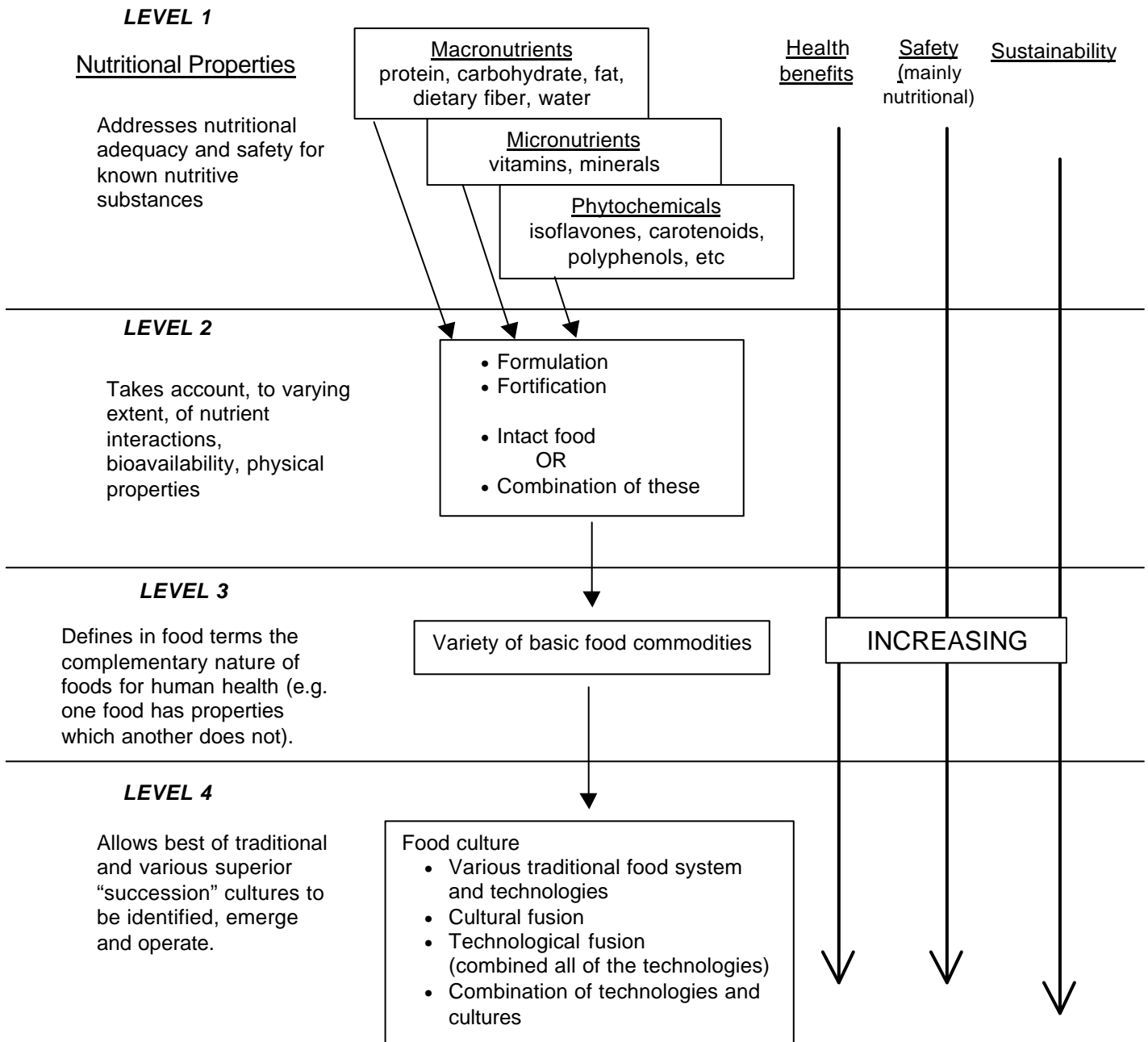


Table 2 SWOT analysis of Functional Foods

	Food		Medicinal	
	Traditional ingredients	Nutritive factor-enhanced ingredients *		Nutritive factor-enhanced recipe
STRENGTHS	<ul style="list-style-type: none"> Increasing knowledge of biological effects 	<ul style="list-style-type: none"> Consumer acceptability likely to be high Constraints of background diet still apply to a significant extent 	<ul style="list-style-type: none"> Food and culturally-based strategy 	<ul style="list-style-type: none"> High specific activity (active component per unit mass) Targets a particular health end point
WEAKNESSES	<ul style="list-style-type: none"> Discovery of chemical complexity is in the early stages Limited number of physiological effects and health outcomes of food ingredients has been identified 	<ul style="list-style-type: none"> Potential overuse 	<ul style="list-style-type: none"> Biological potential obscured by presentation 	<ul style="list-style-type: none"> Less modulation of effects by other compounds in the same chemical family Different bioavailability profile to food ingredients
OPPORTUNITIES	<ul style="list-style-type: none"> Well-established safety of traditional ingredients within established food culture 	<ul style="list-style-type: none"> Supposed enhanced biological effects 	<ul style="list-style-type: none"> Increased likelihood of use 	<ul style="list-style-type: none"> May benefit certain individuals where increased dose is needed to overcome a metabolic defect or genetic disposition (as with certain genetic polymorphisms)
THREATS	<ul style="list-style-type: none"> Distortion of the traditional ingredient mix through overemphasis of the functional ingredients 	<ul style="list-style-type: none"> Distortion of the traditional ingredient mix through overemphasis of the functional ingredients 	<ul style="list-style-type: none"> Misuse of food labelling which is not commensurate with the level of sophistication required Demand for nutrition knowledge is increased while that for food skills is diminished 	<ul style="list-style-type: none"> Unknown dose-response relationships and toxicity levels

* Includes elite cultivars (biofortified) and fortified ingredient

Marketing Activities of Global Soft Drink and Fast Food Companies in Emerging Markets: a Review

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Executive summary

- The incidence of diet-related diseases is rising around the world. At the same time, the consumption of fast foods and soft drinks is increasing. Although the exact relationship between these two trends is unclear, there are indications that they are in some way linked. Moreover, since much of the growth of soft drink and fast food consumption has been driven by global brands, notably Coca-Cola, Pepsi, McDonald's and Yum! Brands (KFC and Pizza Hut), attention has turned to the role played by these companies. Coca-Cola is the world's number one soft drink and Pepsi the number two. McDonald's is the number one global fast food chain in terms of sales, Yum! in terms of number of outlets.
- Global fast food and soft drinks companies have pursued aggressive international expansion strategies over the past few decades. Though Coca-Cola and Pepsi began expanding in the first three decades of the 20th C, and McDonald's and Yum! in the 1960s and 70s, expansion became particularly aggressive in the early 1980s. Today Coca-Cola is produced in over 200 countries, Pepsi 190, McDonald's 121 and Yum! over 100. 70, 42, 51 and 35 percent of Coca-Cola's, Pepsi's, McDonald's and Yum!'s sales come from outside the U.S. respectively. Coca-Cola and Pepsi's largest outside North America and Europe is Latin America, although they are increasing targeting Asia. McDonald's and Yum! have targeted the Asia Pacific, alongside countries such as Mexico, Brazil, Saudi Arabia and Poland.
- Worldwide, the marketing activities adopted by the companies are aggressive, comprehensive, and aim to create demand by changing traditional drinking and eating habits. Given the extent of the variability of the different markets, and the similarity of the product, the companies pursue global growth by tailoring their marketing to local communities. This is termed a "glocal" marketing strategy.
- Underlying their local marketing are several global principles. First, the companies use the entire "marketing mix" to target all possible consumption occasions. Altogether the companies have "5Ps" of marketing: Place (expanding availability), Price and package (tailoring prices and packages to maximize sales), Product expansion (adapting products to local markets), Promotional activities (such as advertising and sales promotions) and Public relations (such as sports sponsorship and philanthropy). Second, the companies compete with all other forms of liquid refreshment or foods in order to take "stomach share" away from other foods and drinks, so boosting category as well as brand consumption. Third, the companies leverage their global brand to market their products. Fourth, they implement different activities in different market types, so that activities differ between "new" and more "developed" markets. Fifth, the companies have a philosophy of endeavoring to understand the target market, carried out via extensive market research. This research is used to define a target market, which is usually teens and children.
- To make their product available to as many people as possible, Coca-Cola has developed an extensive distribution infrastructure. Distributing refrigeration equipment (coolers) free to retailers is a central plank of this strategy. Coca-Cola also targets "non-traditional" outlets, such as schools, fast food outlets and travel and leisure facilities.
- McDonald's and Yum! Brands have used their resources to set up outlets in prime locations that generate a high level of patronage. They also target any place the country's consumer culture suggests consumers will buy, such as gas stations and department stores. Yum! Brands also have developed home delivery to expand availability.

- International soft drink and fast food products are often priced out of the reach of the mass market. To expand their consumer base, the soft drinks companies have developed a price / package marketing strategy of selling smaller and cheaper drinks in newer/poorer/rural markets. To expand volume, they size up portions and packages in more affluent urban areas, with the aim of increasing home consumption. Fast food outlets also offer specific menu items affordable to most groups, and strategically set prices to broaden their consumer base.
- McDonald's and Yum! have adapted their menu's to provide products preferred by local people. This tends to involve adding more vegetarian items, rice, pork or desserts. Both companies have also developed menu items specifically to appeal to children, teens, and, in Asian markets, those concerned with the nutritional value of fast food.
- In what can be termed "market entry marketing," the companies start marketing campaigns as soon as their products enter a country or town. Fast food outlet opening days are marked by festivities, as is the entry of Coca-Cola or Pepsi into a country.
- To advertise their products, the companies utilize signage and media advertising. Coca-Cola has a strategy of posting billboards and similar as extensively as possible. McDonald's, KFC and Pizza Hut utilize the promotional mascots of Ronald McDonald's, Colonel Saunders, Chicky and Pizza Pooch respectively. The companies are amongst the top 100 spenders on media advertising world wide, spending billions of dollars annually. Coca-Cola spends the most overall, followed by McDonald's. Outside the U.S. and Europe, most spending is in the Asia Pacific region.
- Television commercials put out by the companies are designed to encourage consumers to emotionally bond with the product, via association with a special or magical moment, strong family values, fun and excitement or local traditions. Commercials purvey glamour, and often feature young children, good-looking teens and young adults, celebrities and animation.
- All the companies utilize premium, prize and discount sales promotions to market their products. Premium promotions offer a free or discounted gift with the product. Notable examples include free or discounted toys with meals, and gifts available to collectors of soft drink bottle tops or can pulls. Prize promotions include sweepstakes, lotteries, instant-wins, free draws and competitions, and offer prizes designed to attract youth. In some countries the companies have set up Kid's Clubs enabling children access to more sales promotions.
- Websites are used by companies to promote a positive image and provide information about promotional campaigns. The most sophisticated sites—most commonly part of Coca-Cola's network—feature interactive promotions, games and downloadable goods. Fast food sites also feature promotions, but are more information focused.
- Public relations marketing by the companies includes service-related marketing, TV and movie tie-ins, sports sponsorship, music, event and product sponsorship, educational competitions, and philanthropy.
- Service-related marketing by fast food companies includes the provision of services to attract children (such as play areas and birthday parties) and teens (such as Internet access and computer games). The companies also aim to provide high quality service as a means of attracting custom.
- Sports sponsorship is a major promotional vehicle for the companies, most notably Coca-Cola and McDonald's. Sports sponsorship ranges from the global scale—such as the World Cup

and Olympic games—to the grassroots level, such as community sports training programmes. The sports sponsored are those most popular in specific countries and those popular with youth.

- The companies all sponsor TV programmes in a variety of markets, usually children's and teen shows. The companies also have promotional tie-ins with children's and family movies via alliances with large movie companies, such as Disney (McDonald's) and Warner Brothers (Yum! and Coca-Cola).
- The companies sponsor a wide range of music, events and products as a means of attracting teens, expanding product availability and signage, and identifying the brand with local culture. They also run a range of educational competitions, including environmental awareness campaigns and youth achievement awards.
- McDonald's and Coca-Cola both consider themselves leaders of corporate citizenship around the globe. Philanthropy extends marketing by identifying the brand with good deeds and local concerns. The companies operate on a large scale via foundations and links with international organizations, as well as at a local level. McDonald's focus on children's causes and Coca-Cola on education, technology and health.
- Many of the countries in which the companies have operations experience periodic financial or political crises. Coca-Cola and McDonald's have well-developed strategies designed to market themselves out of crisis including, during financial crises, lowering prices, stepping up promotions, and altering packages, and, during political crises, branding themselves as local companies.
- The intended effects of these "5Ps" of marketing are to increase consumption by encouraging more types of people to consume the product (broadening the customer base); more frequent consumption amongst people already familiar with the product; and more volume to be consumed at one time. Company data indicates that marketing has had these intended effects on consumption in different markets. There are two types of effects: The clear-cut effects of place, price and product, and the more subliminal effects of promotional activities and public relations.
- Given the myriad of factors that influence food choice, it is difficult to understand precisely which marketing techniques are more influential over the development of an entrenched soft drink and fast food culture. Still, the fact that companies have numerous techniques to target children and teens suggests that they are aiming to change soft drink and fast food consumption over the long term. It is therefore recommended that a dialogue begin about whether regulating or setting standards for the marketing of fatty, sugary and salty processed foods would be appropriate, and, if so, at what scale. This dialogue should include the food industry, and take risk prevention as a starting point. It is also recommended that an econometric analysis be carried out to gain greater understanding of the effects of *global* brands of processed foods on consumption patterns (as opposed to local or regional brands), and of the effects of marketing these products relative to other factors that influence food choice.

I. Introduction

From many corners of the world, we are hearing of an obesity epidemic. No longer restricted to the rich western nations, the incidence of obesity is increasing rapidly in many less developed countries (LDCs).^{1 2} Nor is the problem restricted to adults.³ Levels of obesity and overweight amongst children in a number of LDCs are as high as in the U.S.⁴

Obesity is considered a problem owing to its relationship with high blood cholesterol, type 2 diabetes, cardiovascular disease, hypertension and cancer. These so-called noncommunicable diseases (NCDs) are also rising amongst populations who are within recommended weight levels. The mechanisms of change are not completely clear, but it is known that diet and exercise are key risk factors.^{5 6} One suggested factor is the “Westernization” of diets in the developing world. Sometimes termed the “nutrition transition,” Westernization occurs when populations consume more fats and sugars and fewer wholegrains.⁷ Although the findings remain controversial, a wide range of studies from all over the world has linked dietary fats and sugars with obesity and/or disease in populations both rich and poor.^{8 9 10 11}

The association between diets high in fats and sugars, with obesity and NCDs, has led to the identification of fatty, sugary and salty western-style foods as risk factors.¹² In particular, concern has been raised about the carbonated soft drinks and fast foods purveyed by U.S.-based global corporations.^{iii 13 14 15} These products are becoming more prevalent in the global diet, in large part due to the global expansion of multinationals into the “emerging markets” of low- and middle-income countries. The attraction for these companies is clear: the majority of the world’s population, rising incomes and changing lifestyles.^{iii 16} In other words, they are markets that represent significant untapped sources of volume.

Soft drink consumption has risen in recent years in every world region (Figure 1). Driving this increase have been the world’s largest two soft drink companies, Coca-Cola and PepsiCo.¹⁷ From 28 countries in 1930, Coca-Cola’s 230 brands are now sold in over 200 nations.^{iv 18 19} Global expansion in the 1980s and 1990s was particularly aggressive.²⁰ The company aimed to double non-U.S. sales in the 1990s, taking advantage of the end of the Cold War and the liberalization of trade policies.^{21 22} Today, 70 percent of Coca-Cola’s worldwide volume sales are outside North America, Latin America being the major non-U.S. market, and on average a person now consumes 70 Coca-Cola drinks each year (Figures 2 and 3). Per capita consumption varies widely between countries, being notably high in Mexico and the Pacific and Caribbean Islands (Figure 2; Annex II).^v PepsiCo is also a major international force. 58 percent of sales come from 190 countries outside North America, the highest proportion from Latin America (Figure 3).^{vi}

ⁱ Salty and sugary snack foods are also in this category, but for the sake of brevity, are not included in this report

ⁱⁱ Throughout this report, soft drinks refer to carbonated soft drinks. Fast food includes that sold by chained outlets and independently owned outlets. It does not include street kiosks.

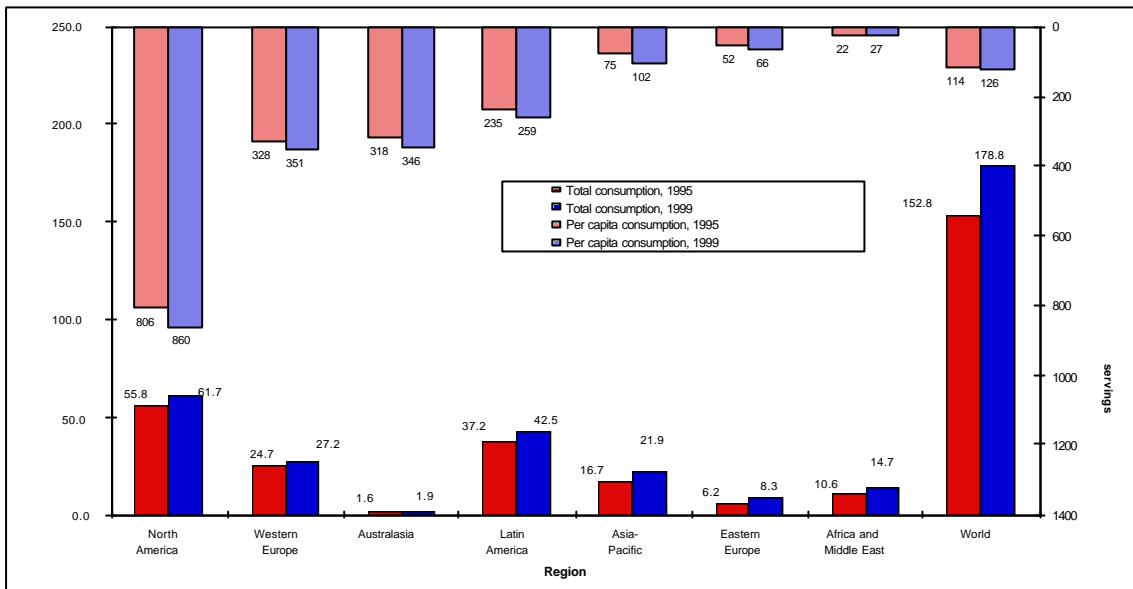
ⁱⁱⁱ An regional overview of Coca Cola, PepsiCo, Yum’s Brands and McDonald’s can be found in Annex I

^{iv} Coca-Cola brands include carbonated soft drinks such as Coke and Fanta, non-carbonated drinks such as Minute Maid and bottled water, and drinks with “local” appeal. The company is based in Atlanta, Georgia.

^v All serving sizes are the industry standard of 8oz, or 0.237 liters.

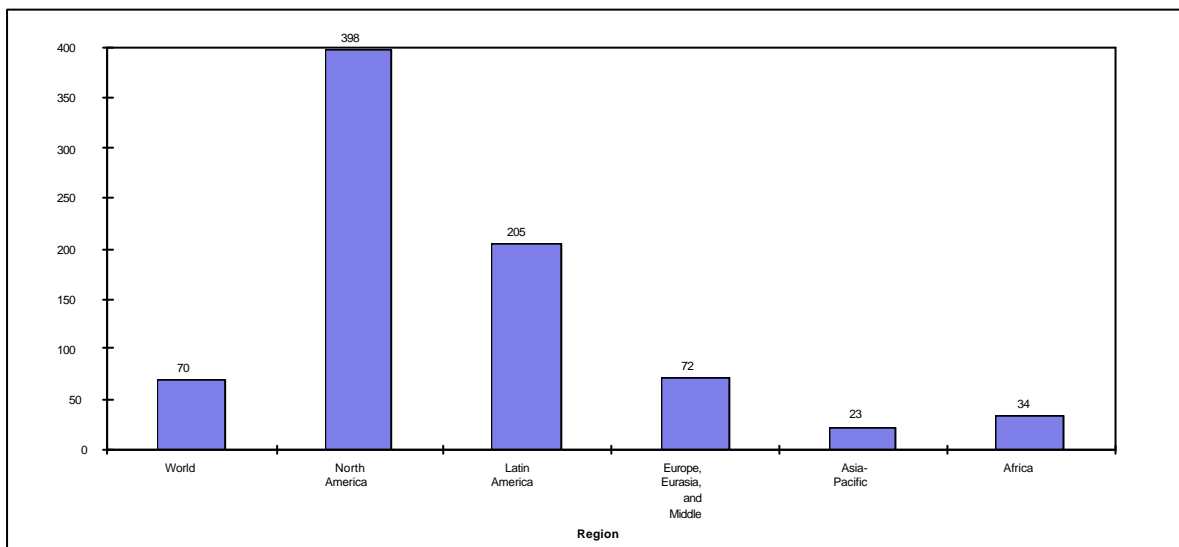
^{vi} Along with Pepsi, PepsiCo sells non-carbonated soft drinks such as Tropicana, and also owns food brands, such as the potato chip maker Frito-Lay. The company recently merged with Quaker Oats, and is based in Purchase, New York.

Figure 1: Total and per capita consumption of carbonated soft drinks by region, 1995 and 1999



Source: Euromonitor, cited in: *A worldwide venture. Beverage Industry (March 2001): 30-32*

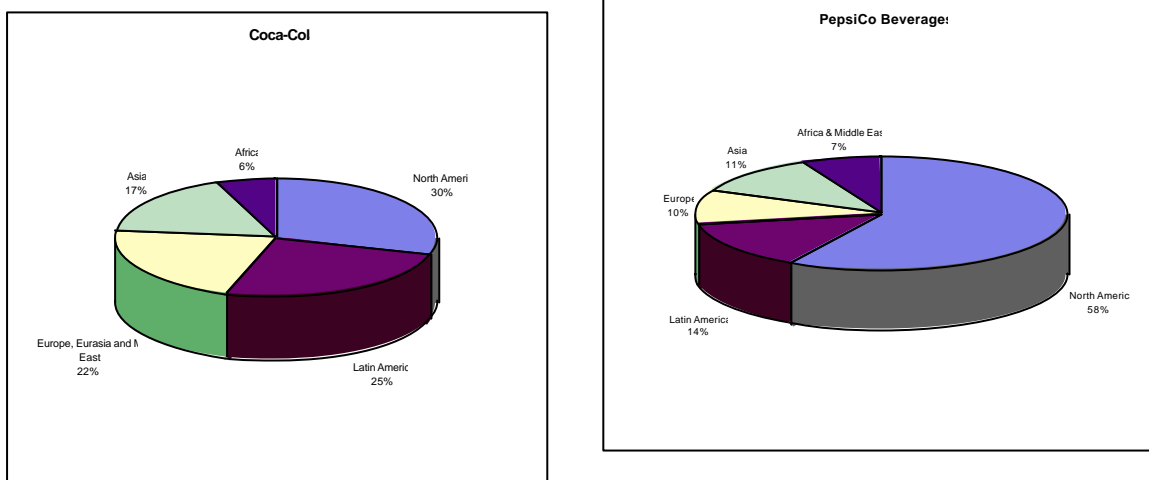
Figure 2: Annual per capita consumption of Coca-Cola Company drinks by region, 2001



Source: *Coca-Cola Annual Report 2001*

Figure 3: Coca-Cola and PepsiCo Beverages percentage worldwide volume sales by region

Source: Coca-Cola Company Annual Report 2001, PepsiCo Annual Report 2001



Consumption of fast foods is also increasing on a global scale (Figure 4).²³ Much of this growth is driven by multinational chains, most notably the top two global companies: the McDonald's Corporation (number one by sales) and Yum! Brands (owners of Kentucky Fried Chicken [KFC] and Pizza Hut, number one by units).^{vii viii ix} Growth of global fast food companies was particularly rapid in the 1990s when the companies adopted policies of aggressive international expansion.^{24 25} Between 1991 and 2001, McDonald's more than doubled the number of countries of operation (from 59 to 121), more than quadrupled its number of non-U.S. units (from 3,665 to 15,919), thus increasing its proportion of non-U.S. outlets from 30 to 55 percent (Figure 5).²⁶ Increases were notably large in the Asia Pacific, but proportionally most rapid in the Middle East and Africa. 51 percent of McDonald's sales now come from outside the U.S. KFC and Pizza Hut have also expanded significantly over the past decade: 10,688 outlets now operate in over 100 countries, more than double the 5520 units in 1992, an increase from 30% to 45% non-U.S. outlets. (Figure 6). Yum! opened a record number of outlets (1041) in 2001, with China, southeast Asian countries and Mexico being the focus markets.²⁷ 35 percent of Yums! sales now come from outside the U.S.

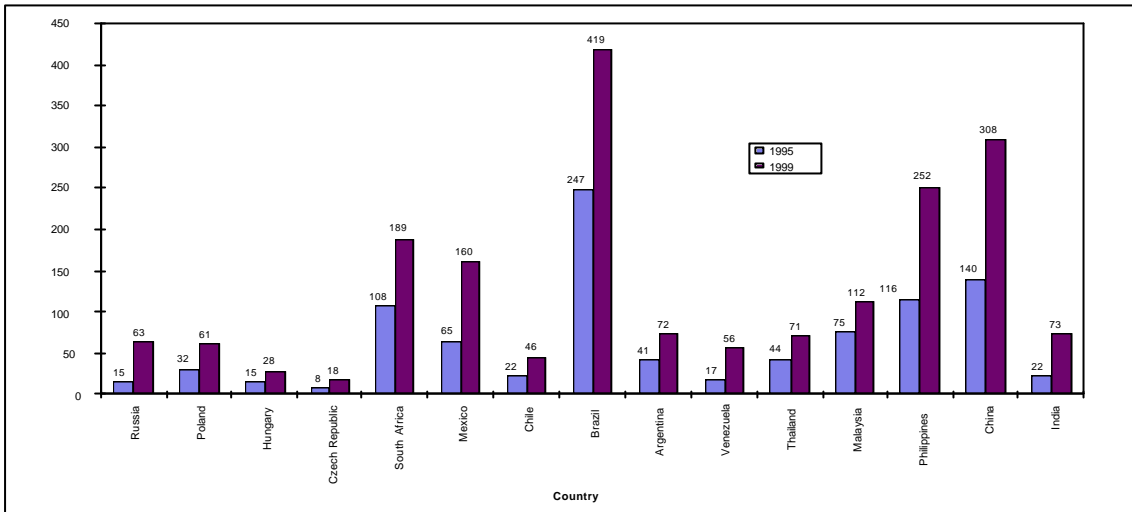
Given these statistics, it is unsurprising that the growth of global soft drinks and fast food companies has attracted such attention. Their rapid proliferation even has its own terminology, named for the most prominent companies: *McDonaldization* and *Coca-Colonization*. The observation that such companies are influencing dietary change appears

^{vii} McDonald's is based in Oak Brook, Illinois

^{viii} Throughout this report, Yum! refers to just the KFC and Pizza Hut brands, though the company also owns Taco Bell, and purchased Long John Silvers and A&W Restaurants in May 2002. Up until the purchase, the company was named Tricon. Prior to 1997, the three brands were owned by PepsiCo. The company is based in Louisville, Kentucky.

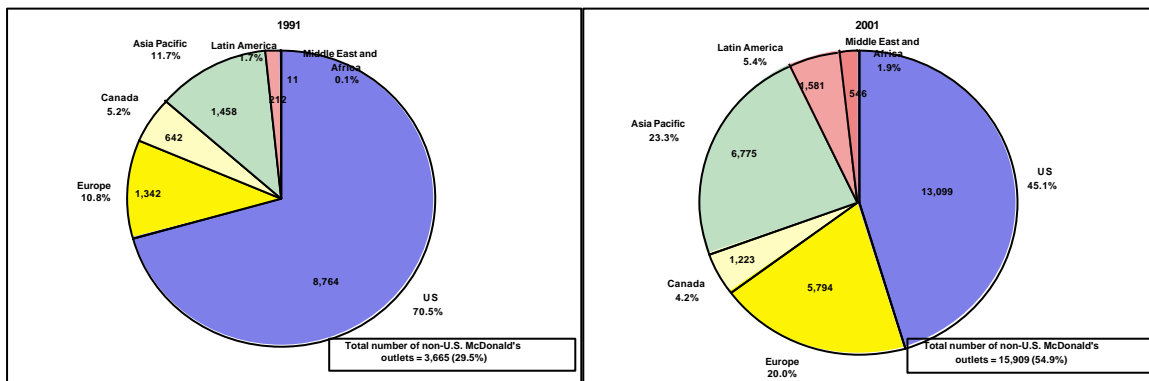
^{ix} Other major chains (all U.S.-based) include Burger King (60 countries), Wendy's (27 countries), Dominos (59 countries) and Subway (67 countries)

Figure 4: Number of transactions at chained burger and chicken outlets in selected countries, 1995 and 1999



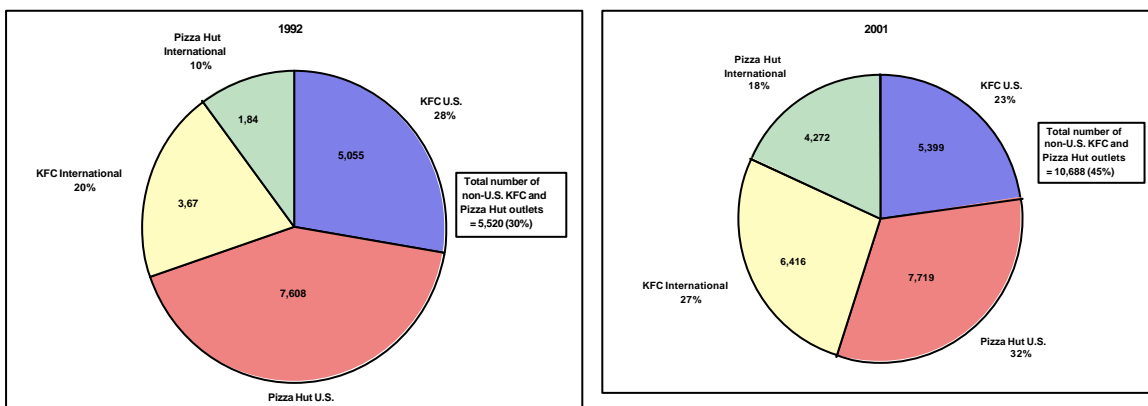
Source: Euromonitor²⁸

Figure 5: Number of McDonald's units by region, 1991 and 2001



Source: McDonald's Annual Reports

Figure 6: Number of U.S. and non-U.S. KFC and Pizza Hut units, 1992 and 2001



Source: Yum! Brands (Tricon) Annual Reports.

straightforward. Yet the question remains: What is the nature of the relationship between the presence of global fast food and soft drinks companies and the type of dietary shifts implicated in the increase of NCDs? To some experts, the role of global fast food and soft drink brands in driving

dietary change has been somewhat overstated.²⁹ More significant are other less observable supply-side factors, such as the increased availability of cheap vegetable oils and local processed-food brands, plus demand-side factors, most notably rising incomes and urbanization. It is true that the precise impact of Western fast foods and soft drinks relative to other drivers of the “nutrition transition” is not well-understood. Nevertheless, it is also true that global companies have specific attributes that make their role in the nutrition transition worthy of greater examination. Among these attributes is a process that the Director-General of the World Health Organization (WHO) and the *World Health Report 2002* have recently labeled a cause for concern: Marketing.

Concern that marketing practices by food companies encourage excessive consumption of unhealthy foods is not new.^{30 31 32 33 34} Global, capital-intensive corporations have the ability to invest heavily in marketing. And as Dr Brundtland said, well-known brand-name promotions by global companies are designed to take advantage of the subconscious, and to influence behavior through emotional appeal.³⁵ But the controversy—and confusion—surrounding the role of marketing remains. Much of the controversy is based on whether food companies are simply trying to *fulfill demand*, or whether they are trying to *create demand*. Much of the confusion pertains to the role of food *brands* relative to food *categories*. In more developed markets, competition between brands means that products that have been in the market place a long time tend to be promoted to draw consumers away from one brand—such as McDonald’s or Coca-Cola—to another. Because the other brand may well be in the same category (i.e. fast foods/soft drinks), marketing may have little influence on overall consumption within the category. But in less developed markets, as shown by Figures 1 and 4, consumption of fast foods and soft drinks as categories is rising, and, as already noted, this is driven by the increasing presence of global brands (brands of non-local origins tend to be viewed as more desirable by many consumers in LDCs).³⁶ Thus although the nature of the competition varies between and within countries, global companies are stimulating new demand and competition, and therefore further growth of the soft drink and fast food sectors as a whole.³⁷

Marketing is important in this process because it is carried out with the explicit aim of creating demand. As explained by the Coca-Cola Company: “*Marketing creates consumer demand.*”³⁸ Global brands have the ability to drive greater consumption of Western-style food products, which means, accordingly, that they play a specific role within the myriad of processes that make up the “nutrition transition.” This is a role very different to the other, much more amorphous processes that stimulate demand for western food products, such as “urbanization” and “rising incomes.” The role of these companies is much more definable, that of: *designing strategies and implementing activities that have the specific intention of influencing consumption habits.*

This report is an overview of the general strategies and specific activities used by four global soft drinks and fast food companies to create demand for their products. The companies were chosen because they are the largest in their categories: Coca-Cola, PepsiCo, McDonald’s, KFC and Pizza Hut (Yum! Brands) (from now on known as “the companies”). It focuses exclusively on countries that are perceived by the companies as “emerging markets” for their products. North America, Western Europe, Australasia and Japan are therefore excluded.

The sources of this report are company news releases and reports, industry journals, newspaper articles and, to a lesser extent, academic literature. Sources were obtained through a

comprehensive search of publicly available English language databases, library materials and websites.^x The organizational structure of the report was not preconceived, but built up gradually using the information available. Since the information revealed strong strategic and categorical similarities between the marketing activities in different countries and companies, the report is organized by strategy rather than by region or company. Where necessary, sections are divided up into soft drinks and fast foods. In its entirety, the report is supported with representative examples from countries around the world; in cases where differences between regions or companies stand out in significant ways, or where an activity is particularly prevalent or noteworthy, examples are given in boxes.

The report starts by describing analyzing the basic strategies of global marketing, followed by a detailed description of specific marketing activities that stem from these general strategies. This is followed a summary of effects of marketing on consumption behavior, the specific techniques used to target youth, and some guidance on future action.

II. “Glocal” marketing strategies of global fast food and soft drinks companies

Glocalization

Global marketing involves a company selling the same or similar products to multiple and diverse environments around the world. Strategically, therefore, it is a challenge, and one that differs significantly from domestic marketing. Articulating such a strategy requires an understanding of the economic, technical, political and socio-cultural spheres of influence that define the multitude of marketing environments.³⁹ Moreover, global businesses have to deal with two apparently opposing forces: the push towards globalization, and a simultaneous pull towards localization.⁴⁰ As Coke CEO puts it “the forces that are making the world more connected and homogeneous are simultaneously triggering a powerful desire for local autonomy and preservation of unique cultural identity.”⁴¹

To cope with this complexity, Coca-Cola, McDonald’s, Yum! and PepsiCo have adopted a strategy that can be termed *glocalization*.^{42 43} “Glocal marketing is no longer a choice but an inevitability,” say Yum!⁴⁴ McDonald’s describe it as “think global, act local” and Coca-Cola as “think local, act local.”^{45 46 47} In other words, the companies think global growth by implementing global standards and leveraging global brands, while manufacturing, managing and marketing locally.^{48 49 50} Thus all four companies, have, to varying degrees, decentralized management, and each country or region has its own team to develop and implement marketing activities tailored to local communities.^{xi 51 52}
53 54 55 56 57

^x The extent of information available varied between countries, companies and marketing type Coca-Cola releases the most extensive amount of information, Pepsi the least. A lot of information was available from Asian countries, relatively little from the Caribbean and Pacific Islands and North Africa.

^{xi} The Coca Cola System is made up of 872 bottlers all over the world which tend to be part Company owned, part locally owned; McDonald’s have company-owned local operations, but also have many locally-owned franchises; Yum! Brands have a policy of franchising to local operators.

Five principles of glocal marketing

Although it follows that marketing varies between local markets, it is evident from company literature that there are strong strategic similarities between the marketing activities implemented in every local area worldwide. These similarities are here identified as principles that underlie global marketing, by guiding local marketing. The principles are as follows:

- 1) **Create demand with the “marketing mix.”** Marketing is not just advertising. It is, in fact, to use Coca-Cola’s definition, “anything we do to create consumer demand for our brands.”⁵⁸ Marketing aims to develop in consumers the habit of drinking or eating the product regularly.⁵⁹ The process, as explained by the director of Coca-Cola India, is about “making sure people are made to want to drink more of our drinks.”⁶⁰ Increasing the opportunities for people to choose the product is fundamental, as is maximizing the volume the buyer chooses to consume.⁶¹ Marketing is thus built into every stage of getting the product sold, from the nature of the Product to the Place where it is sold, from the Price of the product to the activities used to Promote it. This strategy is known in the marketing literature as the “4Ps” and the “marketing mix.”^{62 63} It is a strategy utilized by Coca-Cola, McDonald’s, Yum! and Pepsi to maximize the opportunities to target all possible consumption occasions over time and space.^{64 65 66} In this report, the marketing activities by Coca-Cola, Pepsi, McDonald’s and Yum! Brands are classified into “5Ps”:
 - **Place:** the availability of the product (distribution) and location of sales points
 - **Price / package:** the price of the product and its relationship with package
 - **Product expansion:** creating and diversifying products
 - **Promotional activities:** market entry marketing, advertising, sales promotions, websites
 - **Public relations:** promoting the brand with good service; associating the brand with TV programmes, movies, sports, music and events, competitions and philanthropy
- 2) **Compete with all other forms of liquid refreshment or foods:** Taking “throat share” or “share of stomach” away from other foods and drinks—or any other non-essential consumer items—is one of the major aims of global marketing.^{67 68 69} “Our aspiration is very clear,” said a Coca-Cola VP in 1994. “To compete in what we refer to as ‘tap to tap’—between tap water on one side and tap beer on the other. Non-alcoholic, non-dairy beverages are all fair game for us.”⁷⁰ In all emerging markets, company strategy is focused on increasing overall *category* consumption, as well as brand share. “We are not looking into soft-drink share, we are looking into stomach share,” said a Coca-Cola Mexico spokesman, echoing similar statements made about other markets.^{71 72 73 74} Fast food chains are the same. As put by the McDonald’s Singapore CEO: “Two to three percent of all meals eaten outside the home is taken at McDonald’s. So the market is far from being saturated. There’s still enormous potential for us; we want to dominate the marketplace, and we will do it one burger at a time, one customer at a time, one smile at a time.”⁷⁵
- 3) **Leverage the global brand:** With such huge global recognition, marketing by Coca-Cola, Pepsi, KFC and McDonald’s always involves leveraging their brand power.^{xii 76 77 78 79} As McDonald’s put it: “Leveraging [brand] strength is key to our success in the future—our brand supports our strategies, and our strategies support our brand.”⁸⁰

^{xii} Coca-Cola was recently named the leading global brand (Pepsi was placed third), and McDonald’s has in the past been named as the world’s number one brand.

- 4) **Implement different activities in different market types:** Global marketing means recognizing the differences between different consumption markets. In a general sense, all are emerging markets, but these can be divided into “new” markets, experiencing the product for the first time; “subsistence” markets, with extremely low consumption, “emerging” markets with long-term potential represented by a large and growing population, and “developing” markets, with higher consumption. Mature or developed markets are pretty much saturated.⁸¹ Marketing activities differ accordingly. In new markets, activities focus on creating basic consumer awareness of the brands via introductory advertising; in emerging markets on expanding consumer perception of appropriate consumption occasions; and in developing markets on linking brands with positive, prestigious aspects of local culture with a greater emphasis on public relations.^{82 83}
- 5) **Understand the target market:** Understanding the target market is fundamental to global marketing because it maximizes its effectiveness.⁸⁴ Market research is essential in this regard, because it enables the companies to understand consumer habits, moods and aspirations, likes and dislikes, preferences and prejudices at the local level.⁸⁵ Anything, in fact that will help the companies “find ways to convert non-users into consumers.”⁸⁶ All the companies invest significant resources in market research, and use the information to evolve marketing activities in line with consumer trends.^{87 88 89 90 91 92} This information can also be used to define a target market, which, as will be seen through the following review of specific marketing activities, is usually teens and children.

III. Specific marketing activities of global fast food and soft drinks companies: place, price, packaging, product, promotions and public relations

A. PLACE

SOFT DRINKS

Generating availability—expanding the number of places where the product can be purchased and consumed—is fundamental to good marketing. As the CEO of Coca-Cola India puts it: “Availability at home and in retail outlets is the key thing. You make sure that you make your drink is available to more people...Availability will drive consumption.”⁹³ The aim: to ensure that Coke is always within “arms reach of desire,” to “make our beverages preferred by more people in more places,” increase “product availability wherever people gather” and “stimulate impulse purchase behavior.”⁹⁴
95 96 97

To make Coke as widely available as possible, from urban centers to remote hard-to reach-rural areas, the company invests heavily in production facilities, transportation and relationships with retailers.^{98 99 100 101 102} In China, heavy investment in distribution has meant that Coca-Cola brands now reach about 80 percent of the population (in Tibet, the drinks are transported by camel).¹⁰³ Investment is carefully targeted. In South Africa, for example, the company noted the low consumption in squatter camps and so developed incentives for people to set up informal outlets in the camps.¹⁰⁴ From a marketing perspective, two activities are particularly noteworthy: distributing sales equipment to retailers, and targeting “non-traditional” outlets.^{105 106 107 108 109 110 111 112 113}

- **Distributing equipment to small retailers:** In many LDCs, Coke is distributed to hard-to-reach areas via small retailers—the “spazas” and “mom-and-pop” stores.¹¹⁴ In many—mainly

rural markets—these retailers sell more drinks than any other channel.^{xiii 115 116 117} Millions of these retailers stock Coca-Cola drinks because of the free incentives the bottlers provide, such as trolleys, lighting boards, point-of-sale display materials and coolers (refrigeration equipment). In new markets, this is typically the first phase of marketing. “Putting cold bottles on the shelves is the best marketing we can do,” said the company when they first entered eastern Europe in the early 1990s.¹¹⁸ And in areas with little or no exposure to advertising or promotions, it is one of the only forms of marketing they can do.^{119 120}

Placement of coolers is a central to this strategy.¹²¹ As a Coca-Cola executive explained in the African context: “Probably no single element of merchandising is as important in Africa as making the product available cold... There is a world of difference between an ice-cold Coca-Cola and a warm one. So expanding cold drink availability is a top priority for us.”¹²² According to bottlers: “A bottle cold is a bottle sold.”¹²³ Driving the strategy is also evidence that coolers increase consumption because a person buying a cold drink is more likely to drink it straight away and then buy another.¹²⁴ Moreover, cooler placement comes with the extra benefit of creating “barriers to entry” because they are used exclusively for company products (Box 1).¹²⁵ Thus the Coca-Cola system has significantly invested in refrigeration.¹²⁶ Latin America bottlers, for example, have consistently placed thousands of new coolers year on year to increase coverage.^{127 128} In 1997, Coca-Cola installed one million pieces of cold drink equipment around the world, including 50,000 coolers in Africa, often in places that only recently got electricity.^{129 130} In some cases the company has installed an electricity supply to enable the placement of equipment (Box 2), and provided iceboxes to retailers without.¹³¹

This strategy has boosted consumption. Take the Philippines, the largest Asian market for Coca-Cola. In 1997, the addition of 2,500 exclusive retail accounts increased sales by 18 percent.^{132 133} In India, where Coke consumption has been slow to grow, the opening of 50,000 new outlets in part explains (along with packaging) a 34 percent sales growth in 2002.¹³⁴ When Coca-Cola entered eastern Europe, they placed over 100,000 pieces of cold drink equipment in three years. The result: an increase of sales by 3 billion servings (12 more per person). Though in part a reflection of taking brand share, it also resulted in an overall increase of soft drink purchase frequency.¹³⁵

- **Targeting non-traditional outlets:** Another aspect of distribution is getting Coke to “non-traditional” outlets, wherever, in other words, people “live, work and play” (see Box 1)¹³⁶ The aim is to encourage impulse purchases.¹³⁷ Coca-Cola bottlers have specific programmes to target these outlets, often involving exclusive sales rights.^{138 139} The “100 meters programme” by the Latin American bottler, Panamco, is a particularly comprehensive example (Box 1).¹⁴⁰ ¹⁴¹ The focus on public markets in Nigeria is another (Box 2). Other targeted programmes have included taxis in Columbia (“hugely successful” at driving sales),¹⁴² condominium complexes in Mexico,¹⁴³ movie halls and educational centers in India,^{144 145} nightclubs and cafes or “any of the cool places where teenagers are going to be” in Thailand,¹⁴⁶ cafes in Morocco,¹⁴⁷ and railroads in Pakistan.¹⁴⁸ On a global scale, the companies have exclusive contracts with fast food outlets—Yum! with Pepsi, McDonald’s with Coke.¹⁴⁹ Coca-Cola also provides drinks exclusively to the airline group SkyTeam, which includes Aeromexico, CSA

^{xiii} Latin American bottler Contal distributes around 70 percent of its drinks via small cornerstores (1.2 percent via supermarkets); Latin American bottler Coca-Cola Femsa distributes 72 percent via small retailers in the Valley of Mexico (7.2 percent via supermarkets) compared with 39.2 percent in Buenos Aires (28.4 percent via supermarkets); In Nigeria, 65 percent of outlets selling Coke are small retailers

Czech Airlines, Delta and Korean Air. Together, the airlines fly 220 million passengers a year.¹⁵⁰

One target of particular note is schools. This is a policy in several Asian markets (Box 11), but it is Latin America that stands out.¹⁵¹ In the region as a whole, programmes target the “closed market” of schools to “create brand preference and increase per capita consumption.” Providing points of purchase is combined with targeted packaging. In Costa Rica, for example, the School Programme involves “creating new points of sale in strategic areas of each institution, installing the appropriate cold product equipment, and providing the appropriate products and packaging for the channel.” In Colombia, “appropriate” presentations and students combo packages increase purchases in schools. In Mexico, Panamco work to bring their products “closer to young consumers” by providing products in schools in “attractive combo packages.”¹⁵² Bottlers say that targeting schools has increased sales to schoolchildren, by 50 percent in Costa Rica, for example.¹⁵³ Typical of the bottlers, Contal reported in 2000 that less than 1 percent of their drinks were sold in schools—but this amounts to nearly 52.5 million servings, or 12.4 million liters.^{154 155}

Box 1: Coca-Cola everywhere: Panamco’s strategy in Latin America

Panamco CEO, cited from the *Panamco Annual Report, 1998*¹⁵⁶

“Opportunities for the consumption of our products are everywhere at all times of the day, and we intend to take full advantage of this. With an aim to have our products available and refrigerated within 100 meters of every potential consumer, in 1998 we rolled out to all of our franchise territories the “100 Meters Program.” The objective of this programme is simple: in any urban center, no one should have to walk more than 100 meters to buy our products. This has led to the development of new, nontraditional channels, such as schools, beauty salons, factories, office buildings, housing complexes, drugstores, newsstands, etc., as well as an effort to better cover and service more traditional outlets, including supermarkets, convenience stores, restaurants, “Mom and Pop” stores and fast-food outlets. We have followed this up with strong and consistent merchandising to attract consumers to our products and maximize sales.

Of course, we can’t stop at 100 meters. The opportunity to sell Coke exists everywhere people are present - waiting lines outside of banks, sports stadiums, theaters, parks, traffic lights, etc. In fact, the opportunities are unlimited. With this in mind, we initiated a number of innovative programmes to get products to people and stimulate impulse consumption. In Colombia, we installed small coolers in taxis. In all of our territories, we now sell Coke through hot-dog, fruit and snack stands, and have vendors selling cold drinks at traffic lights. In Venezuela, we sponsored a major event in an open-air stadium and installed kiosks everywhere filled with cold drinks. These are only a few of the myriad ways to get products to consumers and we are continually exploring new alternatives. By providing our consumers with a wide array of cold beverage choices everywhere they go, we are developing a formidable competitive advantage in our markets and creating significant barriers to entry for other beverage manufacturers.”

Box 2: Marketing Coke in public markets in Nigeria

*From a Coca-Cola Company Press Release, September 01, 2001*¹⁵⁷

“Public markets in Nigeria are high density trading zones with relatively high levels of disposable income and are typically owned and managed by local governments. As such they present a significant volume opportunity which, until recently, was an untapped source of volume. In late 2000, the Nigeria business system embarked on an innovative marketing initiative to establish a model public market that we could replicate around the country. We selected Tejuosho Market, as it is one of the most prominent and well established in Lagos. Our objectives were simple, yet effective:

* **Increase cold availability:** Electricity supply in Nigeria is inefficient, resulting in the average consumer enjoying as little as four hours supply per day. In recognition of this, we installed a 45KVA generator to power a 1 tonne flake ice plant and 15 coolers within the market. In support, we also placed 176 iceboxes.

* **Significantly improve presence:** Drop banners, billboards and branded signs were erected throughout Tejuosho Market to compliment and provide continuous branding.

* **Stimulate impulse purchase behavior:** We adopted a 50 meter availability programme by deploying hawkers with branded aprons, as well as appointing mini table operators to ensure that ice cold refreshment was within arm's reach.

* **Bond with our customers:** We provided our customers with services that includes personalized signage. All outlets were provided with table cloths to compliment their signage. The food court was also painted out in Coca-Cola's corporate colors.

* **Showcase Coca-Cola as a moderate corporate citizen:** The Surulere local government, in whose municipality Tejuosho Market falls, was highly supportive of this initiative from the outset. They told us that poverty alleviation is one of their major objectives. Not only did we create employment within the market, but we also placed 112 kiosks within their municipality. The official hand over ceremony of Tejuosho Market to the Surulere government and its community event was a huge public relations success. It was extensively covered by no less than two TV stations, four radio stations and seven newspapers."

FAST FOOD

Place is also important in influencing fast food consumption. That the number of McDonald's and Yum! outlets has expanded dramatically in many countries around the world is important here (Figure 5; Annex IV). But having numerous restaurants is not the only key to promoting availability; where they are matters too. McDonald's have a location strategy aimed at making "selecting McDonald's to satisfy hunger an easy decision for customers."¹⁵⁸ And as one KFC China executive emphasized: "Location, location, location!"¹⁵⁹ The key is to locate in places most likely to generate the maximum number of transactions, places that are highly visible and easily accessible.¹⁶⁰ These locations are often prime urban sites (e.g. Pushkin Square in Moscow, Tiananmen Square in Beijing) and places where the country's consumer culture suggests people will buy, such as shopping and leisure areas, gas stations, highways, street kiosks, even hospitals.^{161 162 163} In Thailand, for example, "KFC Express" outlets opened at gas stations after market research showed that customers would be responsive to eating in their cars during their long commutes.^{164 165} "McDrives" are common throughout eastern Europe, and in India, McDonald's set up on highways specifically to compete with roadside dhabas.¹⁶⁶ Pizza Hut, and to a lesser extent the other chains, also have a policy of driving demand with mobile delivery. This has driven sales for Pizza Hut in the Philippines, and, in Thailand, boosted customers by 40 percent after the promotion of a new telephone delivery number.^{167 168 169 170} Another case of expanding availability is KFC's "Meals on Wheels" programme in Malaysia. It is a "unique marketing tool designed and packaged by the Malaysian operations for the sole objective of reaching KFC's customers living in inaccessible areas, also wherever carnivals are being organized, big sporting meets, and even during festivals."¹⁷¹

B. Price and package

Price is an important marketing strategy: affordable prices are a way of encouraging unexposed populations to try the product, broadening the customer base, stimulating more frequent purchases, and encouraging the consumption of more product at one sitting. That said, the companies must take into account their costs, a factor that often raises prices out the range of the

mass market.^{xiv 172} Given that the companies want to attract more people, more often, this potentially creates a conflict. To minimize this conflict, the companies attempt to cut costs as much as possible.^{xv} They also take a local approach to price setting, taking account of the characteristics of different geographic areas and socioeconomic groups, the newness of the market, the level of demand and the competitive environment.^{173 174 175} In practice, this approach means pricing different items (drink packages / menu items) to target different markets, and lowering or raising prices at different times and in different places.¹⁷⁶

SOFT DRINKS

Coca-Cola tries to price their products within reach of the mass market. Affordability, though, is particularly critical in new markets and those with low per capita consumption.¹⁷⁷ In these markets, package sizes tend to be cheap and small (250ml/330ml), and prices kept down as a “loss leading” strategy to encourage consumption.^{178 179 180} Price has a real effect on sales. When Coca-Cola HBC reduced prices in Nigeria, sales volumes increased by over 36%.¹⁸¹ To introduce rural India to Coca-Cola, the company invested Rs 196 crore (about US\$ 40 million) in a small 200ml glass bottle with a Rs5-7 price tag, significantly lower than the Rs 10 for the traditional 300ml bottle. The result: the product was accepted in the market.^{182 183} A similar strategy was used in Russia to target low-income consumers.¹⁸⁴ Low prices are also implemented as a short-term sales promotion technique, most notably during periods of recession: a 6.5oz bottle released during recession in Colombia led to a significant increase in sales.¹⁸⁵

As people start buying the drink and the market grows, Coca-Cola bottlers inflate the package (portion) size as a means of increasing consumption. One bottler explained the strategy thus: “As the market develops... the pack size increases, with immediate consumption bottles up to 600 ml, and the package range to cans, multipacks and refillable and non-refillable PET.”¹⁸⁶ Sizing up the package is a means of encouraging people to drink more when away from home. It is also a global strategy implemented to target home consumption (take-home volume in LDCs tends to be smaller than mature markets).^{187 188 189} Evidence from the companies suggests that larger package sizes play a significant role in increasing consumption. Take Mexico. After the relaxation of packaging restrictions in Mexico in the early 1990s, Coca-Cola introduced a range of larger size bottles. According to the company this “stimulated volume growth and accelerated per capita consumption” to the extent that “we surpassed the mark of 300 per capita consumption for the first time in history, exceeding per capita consumption in the United States.”^{190 191} Again in 2001, Coca-Cola introduced range of new bottle sizes, including a 2.5 liter bottle, aimed at home consumption. The introduction of this new size contributed to the sale of nearly 1.5 billion additional cases.¹⁹² The high per capita consumption in Chile is also attributed to “packaging activity.”¹⁹³ And the same shift occurred in Poland. As described by Coca-Cola: “Through aggressive package introduction and focusing on larger sizes, we have moved volume in Poland from 5 million unit cases in 1990 to 37 million in 1993... The per capita consumption in Poland grew from 3 in 1989 to 23 in 1993. Due to aggressive investment, what took 29 years to achieve in the United States took four years in Poland.”¹⁹⁴ The introduction of “non-returns” is another aspect of packaging. In Brazil, for

^{xiv} For example, in Pakistan, a cleaner at McDonald’s would have to work over 14 hours to be able to afford a Big Mac; in India over eight hours; and in Sri Lanka nearly six hours.

^{xv} An important way that the companies keep their costs down is to source products locally. Further details are given in Annex V.

example, sales grew after the introduction of non-returnable packages because of their “rapid acceptance by the young population.”¹⁹⁵

FAST FOOD

McDonald's focus their pricing on broadening customer base.^{196 197 198} In what they term their “value strategy,” McDonald's tend to offer a range of products at different price points. This ensures that there is something affordable to most groups. “Value,” say the company, “is a primary driver of customer satisfaction around the world.”¹⁹⁹ Thus in the markets where a McDonald's meal is out of reach of most people, a low-priced item will be introduced, such as a cheap ice-cream cone. Elsewhere, items will be bundled together (the “Extra Value Meal”) to create the impression of good value.^{200 201} Pizza Hut has the same strategy. In Korea, for example, their most successful market outside the U.S., a cheaper pizza was introduced in 1998 to target the “lower-priced segment.”²⁰² And again like the soft drinks companies, fast food outlets run sales promotions for specific “value” items, whereas other prices will rise or stay the same.²⁰³

Pricing also changes over the longer-term. It is difficult to identify trends since decisions vary so much with local conditions. But if prices are high when the company enters the market—which they often are—they may come down after the product becomes established.^{204 205 206} Latin America serves as a good illustration. In Mexico, McDonald's prices in 1994 were 30 percent lower than 1985 (the year of market entry), a shift intended to attract lower income consumers.²⁰⁷ Lowering prices can an effective strategy to increase sales. In Brazil, McDonald's initially pitched itself to an upmarket clientele, but in response to stiff competition and economic slowdown, shifted to middle and lower segments, lowering prices with a “value” campaign.²⁰⁸ “Our value strategy has paid off,” said the company. “In the past three years we've increased our customer base by more than 70%. Through economies of scale and other efficiencies we've kept our prices at half the rate of inflation.”²⁰⁹ KFC experienced a “sluggish” initial year in Hungary in 1992, but then lowered prices and flourished.²¹⁰ In Poland, McDonald's policy of maintaining low prices in the 1990s is credited with boosting sales and widening the consumer base.²¹¹

C. Product expansion

As a business building strategy, Coca-Cola and PepsiCo have expanded their product range to scores of drink brands, some of which are specifically designed to meet the tastes of local markets. It is the fast food companies, however, which have used the strategy to market a single brand.

For McDonald's and Yum!, expanding the product line is a means of driving sales by broadening consumer appeal and maintaining interest in the brand. As McDonald's have said, “appealing to local food tastes is good for business.”²¹² So, as part of its “glocal” strategy, the companies have, in varying ways, adapted their menus to meet the taste profile of local people.^{213 214 215} They have also developed products specifically for children.

ADAPTING MENUS TO SUIT LOCAL TASTES

There are several ways in which the companies have adapted their menus, listed as follows:

- In order to be acceptable to a market, the fast food chains tend to adapt to *local food laws*. In Arab countries, McDonald's meat is Halal; in Israel it is Kosher. In India, neither beef nor pork is sold. KFC also sell Halal chicken in countries with high populations of Muslims.²¹⁶
- All the companies engage in extensive market research and introduce specific menu items that have *popular local appeal*. Examples from McDonald's are listed in Table 1.
- More significantly, is a shift in the *entire menu emphasis*. Menus in Asia have been adapted by all the chains to include more chicken, pork and fish. When McDonald's incorporated a greater number of chicken products into their menu in China, sales grew in the double-digits.²¹⁷ To compete with street vendors, McDonald's has also started to sell rice.^{218 219 220 221}
^{222 223}There is more pork on menus in Eastern Europe, and, in Latin America, more desserts.^{224 225 226} As described in Box 3, India provides the most extreme example of a shifting menu.
- *Products popular with teens and young adults* are released such as the "Cheesy Crust Pizza" and "Twister" by Pizza Hut and KFC in Malaysia. "Exciting" "hip" new products are consistently added to their menu, and heavily promoted accordingly.^{227 228 229 230 231 232 233 234 235} KFC credits these products with broadening their customer base and increasing customer's 'comeback' frequency.²³⁶
- The companies release *short-term promotional items*—during the World Cup for example—replete with promotional packaging and advertising.^{237 238 239 240}
- In some markets, notably in Asia, McDonald's and Yum! have positioned menu items as *healthy and nutritious*. Take KFC's Wholesome Meal Campaign in Malaysia and Singapore. The chain claims that the meal comprises all the nutrients needed by the body, and has promoted it with RM1.5 million (US\$400,000) advertising campaign and sales promotions. In Thailand, McDonald's website advertises the nutrition information of their products with the tagline: Eat Healthy, Feel Healthy, Stay Healthy." It continues: "A balanced diet is essential to maintaining good health. Enjoying a meal at McDonald's means enjoying a variety of items from the four food groups: fruit, vegetable, and meat and alternatives." In Singapore, the Salmon Burger was introduced in 2001 "in line with McDonald's maxim to "eat healthy, feel healthy and stay healthy."^{241 242 243 244 245 246 247}

Table 1: Examples of country or regional-specific products sold by McDonald's

Country	Product
Argentina	McSwing: Ice cream with caramel or chocolate sauce and a crunchy topping
Mexico	McMuffin a la Mexicana: Chilli omelet served with bacon on a muffin
Uruguay	McHueva: Beef burger with a poached egg
China	Spicy Chicken Fillet Burger
Philippines	McSpaghetti: Pasta in a sauce with frankfurter bits
Hong Kong	Spicy McWings, Curry Potato Pie
Thailand	Samurai Pork Burger: Pork burgers marinated with teriyaki sauce
Singapore	Kampung Burger: Chicken sausage, a chicken slice, a pineapple slice, on a muffin
South Korea	Bulgogi burger: Pork patty with bulgogi sauce
Hungary	McFu: Pork burger with a mango-chilli sauce and fresh onions
Turkey	KöfteBurger: Meat patty with a yogurt sauce and a spiced tomato sauce

Box 3: Spicy and vegetarian menus: McDonald's, Pizza Hut and KFC in India

“Out of respect for the local culture” India is the only country in the world where McDonald's serves no beef. And with millions of Muslims, no pork products are sold either. McDonald's signature burger was the Maharaja Mac, made with mutton patties with egg-free mayonnaise. McVeggie burgers were also on the menu. But sales volumes were low. From market surveys McDonald's learnt that consumers wanted more Indian-style food: spicier with more vegetarian options. In 1998 the McAloo Tikki Burger (spicy potatoes) and the McChicken burger were introduced, and in 2000 the Chicken McGrill (with chutney) and Pizza McPuff (a “glorified samosa”). In 2002, the Maharaja Mac was discontinued and “repositioned” as the Chicken Maharaja Mac since sales of mutton products were proving much lower than chicken products. And when the chain opened in Gujarat, a state with a high proportion of vegetarians, dietary traditions led McDonald's to create two kitchens, one for vegetarians and one for meat eaters.

Yum! have also adapted their menus in India. Pizza Hut has two entirely vegetarian restaurants in Ahmedabad, the only two in the world. And compared with just one in most countries, Pizza Hut serves 7-8 vegetarian pizzas, and no beef. KFC attribute its failure in the country to a lack of vegetarian options. Now planning to reopen, the chain promises it will work on the “vegetarian positioning” of its menu and offer “attractive vegetarian options.”

The adaptation of the fast food menus appears to be going down well. Consumer feedback in the country has apparently shown that menu innovations have been key to success. “This is great,” said one Pizza Hut customer interviewed in the *Financial Times (London)*. “This is American food influenced by India rather than Indians getting influenced by American food.”

Sources:^{248 249 250 251 252 253}

MENU ITEMS FOR CHILDREN

Selling meals for kids, such as the McDonald's “Happy Meal” is a marketing activity implemented globally.^{254 255 256} The intention is to attract children. KFC say that they offer “Chicky Meals” because: “We want to maintain our children customers to have good loyalty to our restaurants for the next 20-30 years. And at that time, they will become adults and having children with loyalty to a KFC brandname.”²⁵⁷ Crucially, too, these meals are sold with a free or discounted toy (see “sales promotions”). Some franchises have also developed menu items for children (Box 8).

D. Promotional activities

MARKET ENTRY MARKETING

Coca-Cola, Pepsi, McDonald's and Yum! take out advertising and attempt to attract media coverage prior to—and during—market entry. The aim: to establish brand name and bring attention to the product.²⁵⁸ Companies know that many consumers are already aware of their brand, and thus use opening day events to leverage that advantage. “The true significance of Brand McDonald's goes beyond customer recognition to immediate acceptance... [It is a] passport for global expansion,” say McDonald's.²⁵⁹

McDonald's is particularly renowned for its opening day extravaganzas, featuring children's parades led by Ronald McDonald, fireworks, bands, laser shows, dances or “human chains.”^{260 261}
²⁶² From Saudi Arabia to Bolivia, China to Lithuania, opening days in new countries have attracted thousands.^{263 264 265 266 267 268 269 270 271} When the first McDonald's outlet opened in Russia in 1990, a crowd of 5,000 customers gathered in front of the restaurant before it opened. More than 30,000

customers were served that day, and, perceived as a symbol of democratic change, the event attracted the attention of the media worldwide.^{272 273 274 275}

Coca-Cola and Pepsi also take the opportunity for market entry marketing when they can. In Vietnam in 1994, just a few hours after the U.S. trade embargo ended, Pepsi placed a giant Pepsi can in Ho Chi Minh City square and aired a TV commercial. Coke flew in a huge inflatable Coke bottle for a celebration at the city's concert hall and within hours had launched an entire marketing campaign, producing billboards, banners, shop signs and TV commercials based around the phrase: "Good to see you again, Vietnam."^{276 277}

ADVERTISING

Advertising is often the most visible form of marketing by global fast food and soft drinks companies. While advertising cannot expand availability or make a product affordable, it is crucial because it nurtures brand image and "creates value" by attempting to convince consumers that they are getting far more than just a drink or some food.^{278 279} Rather, they are getting a lifestyle. As the Coke CEO put it: "Yes, it's refreshing on a hot day, but we're not selling just that: we're selling an idea, and that is done through the imagery, the 100 years of advertising, the communication, the local community attitude and the supportive education. We've made it much more than just a product."²⁸⁰

The balance of different forms of advertising—signage, TV, print, radio—varies between different markets. As explained by McDonald's: "Television commercials are used as soon and as frequently as possible. However, in those markets where access to commercial television is limited, we rely on other media, like the cinema, the radio, billboards, newspapers, magazines and direct mail."²⁸¹ China serves as a good example. When McDonald's first arrived, newspapers and magazines were used more than TV commercials, which were considered ineffective.²⁸² Coca-Cola's advertising in China is still largely signage, with relatively little TV advertising. But typically, TV commercials are the dominant form of advertising, in India, for example, and southeast Asian countries.²⁸³

Signage and promotional figures

"Signage"—billboard advertising—is a strategy used most notably by Coca-Cola with "the objective of building on the Coca-Cola brand identity."²⁸⁴ The Coca-Cola logo plus the current ad slogan ("Life Tastes Good") is ubiquitous in numerous countries—many African nations and China, for example.^{285 286} Large billboards dot highways, traffic intersections and urban centers. Signs are prominently displayed on thousand of small retail storefronts, umbrellas and trolleys, and inside at "point-of sale" because "there's nothing like a colourful coke sign to attract more customers to that ice-cold product within your store" (signage is provided free for retailers).²⁸⁷ In some cases signage is "spectacular:" a 60 meter sign sits atop a sky-scraper near Shanghai's People Square, China, and a 40 meter Coke bottle is displayed for drivers on the Kuala Lumpur Federal Highway, Malaysia.²⁸⁸ To increase exposure, signs are also displayed at places and events where people gather (Box 2). Take a Coca-Cola sponsored a road safety campaign in Malaysia. Motorists who passed through toll-gates were given road safety leaflets and Coca-Cola to drink. "Coca-Cola's exposure was further enhanced," ran the press release, "through strategically sited bunting and banners, carrying the road safety message."²⁸⁹

Fast food logos also appear on billboards. McDonald's frequently posts their "Golden Arches" on highways to indicate the locations of their restaurants. Signs are equally prominent on or outside restaurants, along with the promotional figures designed to attract children (Box 4). In a case of spectacular signage, Yum! embellished a Pizza Hut logo onto a Russian spacecraft, hoping that 500 million viewers would view the launch on TV.²⁹⁰

Box 4: Promotional mascots: Ronald, Colonel, Chicky and Pizza Pooch

Ronald McDonald, Colonel Saunders and Chicky and Pizza Pooch are icons for McDonald's, KFC and Pizza Hut. Plastic statues are found outside stores around the world, and are featured in advertising, promotions, restaurant openings and in children's marketing (e.g. birthdays). Strategically, they are positioned as the restaurant's point of differentiation in each market (Ronald McDonald celebrates both Chinese New Year and Christmas in Poland). The figures are particularly aimed at children. "Ronald McDonald occupies a special place in the hearts of the world's children," say McDonald's. "They know when this loving and trusted friend is around—fun, laughter and games can't be far behind!"²⁹¹ In Asian markets, KFC introduced "Chicky to set a more "playful" tone after children said they identified Colonel Saunders as a grandfather figure. A white-feathered chicken in sneakers, pants, vest, and a baseball cap, Chicky was specifically designed to appeal to children.

Sources:^{292 293 294 295 296}

TV commercials

Conforming to the "think global, act local" strategy, TV advertising is often part of a global campaign, but, to varying degrees, adapted to local markets.^{297 298} Media advertising by the fast food and soft drink companies is typical of many companies in that it can be broadly divided into two types: "promotional" and "reputational." Promotional ads focus on the product and price, while reputational ads use an "emotional bonding" technique of associating the brand with consumer desires and values. By encouraging people to believe that consuming the product is part of pursuing their desires and holding to their values, the companies aim to make the product more acceptable to more people, and to instill a sense of loyalty to the brand. Typical desires and values portrayed include:

- **Strong family values:** Purveying McDonald's as a special place for families is a theme running through their advertising worldwide. One illustration is a 2000 ad in India, aimed at "creating warmth and beckoning the target to experience the warm and friendly experience of McDonald's." It depicted a five-year old child too scared to perform his role in a school function. But when his parents take him to McDonald's, he is able to perform. The implication: McDonald's is a friendly, relaxing consumption environment^{299 300 301 302}
- **Enjoying friendship and good times:** A theme often used by Coca-Cola. The 2000 "Coca-Cola Enjoy" campaign broadcast in 40 languages was "designed to appeal to people all over the world by persuading them that Coke adds a touch of magic to the special moments in their lives."³⁰³ The 1998 "Always Coca-Cola" campaign, rolled out in several Islamic countries during Ramadam, used childhood friendship to emphasize love, charity and forgiveness.³⁰⁴
- **Importance of local traditions:** To take into account the widespread acceptance of local traditions in certain markets, while at the same time depicting Western consumption habits, TV commercials merge local traditions with Western customs.³⁰⁵ Thus soft drinks ads feature celebrities with local appeal who are also "suitable for the image of youth and modernity."³⁰⁶ Pepsi's first ever commercial in Vietnam is a good example. The ad featured Miss Vietnam (a

favorite role model) in traditional dress playing classical music in an opera house. These scene then switches to a Western-style bar where she is drinking Pepsi.³⁰⁷

- **Rebellion and romance for teens:** Celebrities are also used to portray rebellion, romance and individuality in markets where this is part of teen culture. Celebrities chosen are used because their success “relates to the aspirations of teenagers.”³⁰⁸ In Malaysia, for example, Coca-Cola signed on “trendy, multi-ethnic hip-hop band” Poetic Ammo.³⁰⁹ Commercials in India (Box 7) and Thailand (Box 12) also exemplify this theme.
- **Fun and excitement for children:** Cartoons are a common way to appeal to young children. In 2000, Pizza Hut rolled out an animated ad for its international markets, including Mexico, Korea and the Philippines. The ad, aimed at kids aged 8 to 12, featured children sitting in a Pizza Hut with their parents, with an animated Pizza Pooch playing in the background. “We’re aiming for the early adoption stage,” said the VP-marketing. “We want to create loyalty to the characters.”³¹⁰³¹¹ The 1998/99 KFC “animated Colonel” campaign in the Asia Pacific and Far East aimed at branding KFC as “youthful and vibrant” and “giving KFC a greater reach and broader appeal to the masses.”³¹²

Notable about these examples is that they typically feature young children, animation, celebrities popular with children and teens, and glamorous, good-looking youth and young adults. Also depicted are times and places not traditionally connected with soft drink and fast food consumption, such as after school, after the opera, at a concert, at the Ramadam break fast, or in the cooler seasons (Box 5). In another example from Argentina, Coca-Cola responded to research that showed that Coca-Cola was rarely drunk at family mealtimes. In 1998 they placed advertising that explicitly connected Coca-Cola with family occasions, thus “encouraging families to make Coca-Cola part of their mealtimes.”³¹³

Box 5: Cola ads in India: celebrities reaching out to the rebellion and romance of youth

Cola ads in India are celebrity rich, highly competitive, and frequently feature romantic story lines. Celebrities popular with young people are used—Pepsi and Coke have signed up practically every major cricket star, Hollywood stars and beauty queens. Marketing executives are explicit in their intention to use celebrities to reach the youth market, saying that they “want to bond with the young through their fashion and their lives.”

Rebellion is a theme popular with Pepsi. In a 2001 Pepsi ad, cricket star Amitabh Bachchan dropped in unannounced to a family home. The youngest child is “diffident” to the star’s presence. He is “portrayed as having a mind of his own, is cool, and doesn’t get overawed, which is “the embodiment of the brand.” But one of Pepsi’s most recent ads features children making paper boats—a less “anti-establishment” tone than usual. According to a marketing analyst the shift is because the consumption of cola is so small in India that the company is targeting a broader group of consumers in order to increase overall consumption.

Romantic story lines are used because “for Indian youth, romance is possibly one of the biggest dreams.” One 2000 Coke ad, depicting love blossoming in the rain, combined romance with an attempt to change consumption behavior. “In pure strategy terms, the ad is an attempt to arrest the natural drop in sales that follows the onset of the monsoons,” explained the ad agency. “Coca-Cola India’s objective is to create more seasons and more reasons for enjoying a Coke.”

The advertisements are a fierce competitive battleground between Coke and Pepsi. In ads aired in 2002, celebrity Aamir Khan is featured saying “Cold drink means... Coca-Cola,” while a Pepsi ad features a famous actor retorting “Cold business means... Coca-Cola.” This fierce competition may have helped to stimulate the soft drinks market. “Consumers enjoy this war and we are just trying to derive maximum mileage out of it,” said Pepsi’s advertising agency.

Sources: ³¹⁴ ³¹⁵ ³¹⁶ ³¹⁷ ³¹⁸ ³¹⁹ ³²⁰ ³²¹ ³²² ³²³ ³²⁴ ³²⁵

Advertising expenditure

The companies are consistently amongst the top100 international spenders on media advertising.^{xvi 326} Between them, they spend billions of dollars every year advertising their brands both in and outside the U.S. In 2000, non-U.S. ad spending was US\$ 2.21 billion (Table 2). Coca-Cola is by far the largest spender, and is the only company to spend a majority of its money outside the U.S. Outside the U.S. and Europe, the companies spent most advertising in Asia Pacific, followed by Latin America (Figure 7). On a country scale, the companies—mainly Coca-Cola—are often amongst the top 10 ad spenders, although expenditure varies widely between countries (Table 3, Annex VI). The multinationals tend to spend significantly more than their local competitors. In South Africa, for example, KFC and McDonald's spend more than four times than Nando's (R6m-R7m in 2001).³²⁷ Expenditure tends to be higher in more competitive markets. In India, expenditure on advertising carbonated soft drinks reigns over other product categories. In 2001, Coke was the number one advertised brand by spending (approx.US\$ 33 million) and number two by airtime. Pepsi was second (Rs 150) and Thums Up, a Coca-Cola India brand, fourth.^{328 329}

Table 2: U.S. and non-U.S. media ad spending 1994-2000, in US\$ millions

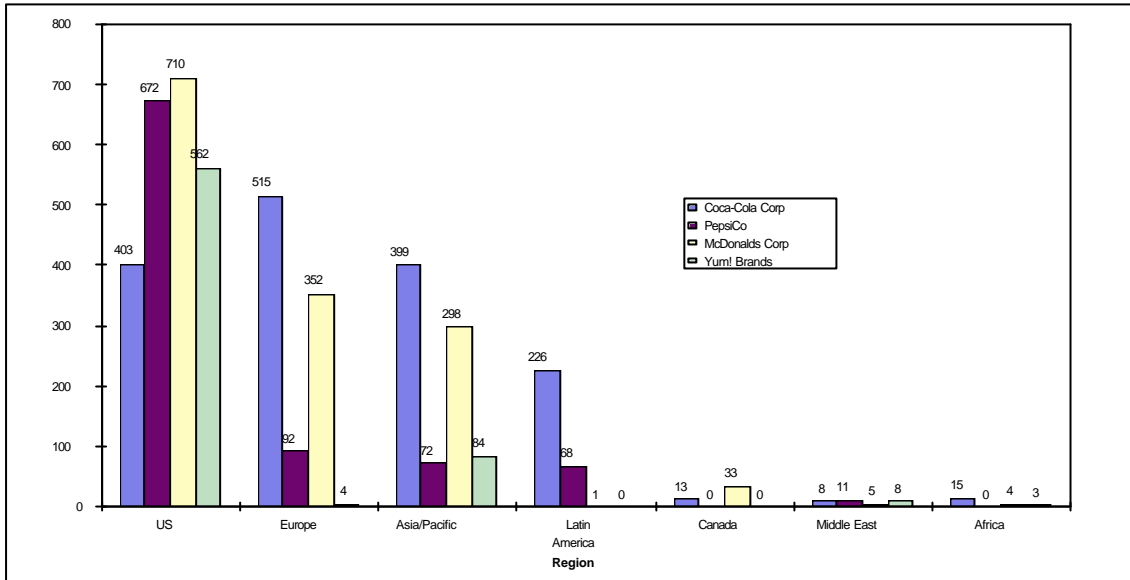
		1994	1995	1996	1997	1998	1999	2000
Coca-Cola Corp	US	491	433	612	711	316	355	403
	Non-US	500	713	832	1,026	1,012	1,178	1,176
	Total	991	1,146	144	1,737	1,328	1,533	1,579
PepsiCo	US	1,098	1,197	428	1245	340	354	672
	Non-US	302	379	321	322	366	343	243
	Total	1,400	1,576	749	1,567	706	697	915
McDonald's Corp	US	764	880	1,075	1015	572	633	710
	Non-US	370	473	536	604	592	649	694
	Total	1,134	1,353	1,611	1,646	1,164	1,282	1,404
Yum! Brands	US				851	503	558	562
	Non-US				152	134	189	98
	Total				1,003	637	747	660
Total U.S.		2,353	2,510	2,115	3,822	1,731	1,900	2,347
Total Non-U.S.		1,172	1,565	1,689	2,104	2,104	2,359	2,211
Total		3,525	4,075	3,804	5,926	3,835	4,259	4,558

Source: *Ad Age Global*³³⁰

Note: A proportion of PepsiCo's ad spending is on its fruit juice, snack and packaged food brands. Ad spending by Yum! starts in 1997, the year it was spun off from PepsiCo, and relates to when it was "Tricon" owning Pizza Hut, KFC and Taco Bell.

^{xvi} Total marketing expenditures add up for far more than the costs of media advertising, but the latter is the only form of collated spending that is publicly available.

Figure 7: Regional ad expenditure by Coca-Cola, PepsiCo, McDonald's and Yum!, 2000



Source: Ad Age Global³³¹

Table 3: Countries in which the companies are or have been amongst the top ten media ad spenders, 1997-2000 (amount spent 1998, US\$ million)

Coca-Cola		PepsiCo	McDonald's	Yum!
Chile (\$54.5)	South Africa (\$21.0)	India (\$23.3)	Hong Kong (\$18.0)	Singapore (\$4.0)
Colombia (\$41.2)	Uganda (\$0.3)	Vietnam (\$1.4)	Singapore (\$6.9)	
Mexico (\$68.8)	Azerbaijan ((\$0.8)	Bahrain (\$0.7)	Taiwan (\$25.3)	
Venezuela (\$16.4)	Bulgaria (\$0.3)	Jordan (\$0.6)	Jordan (\$0.3)	
Peru (\$12.6)	Croatia (\$2.9)	Poland (\$19.8)	Qatar (\$0.7)	
India (\$22.7)	Hungary (\$11.7)	Russia (\$13.2)		
China (\$15.3)	Kazakstan (\$2.7)			
Indonesia (\$1.9)	Macedonia (\$0.5)			
Vietnam (\$1.7)	Romania (\$5.1)			
Jordan (\$0.6)	Russia (\$13.5)			
Lebanon (\$1.0)	Serbia (\$1.4)			
Turkey (\$27.2)	Slovakia (\$4.1)			
Kenya (\$0.9)	Ukraine (\$3.8)			

Source: Ad Age Global³³²

SALES PROMOTIONS

Sales promotions are utilized by soft drinks and fast food companies to stimulate consumer demand, increase purchase frequency, instill loyalty in customers and encourage consumers to try specific drinks or meals. According to Coca-Cola, they are “interactive mediums of communication that help us get a reaction from our target audience.”³³³ They reward consumers with gifts (premiums), prizes and discounts, such as toys, computers, music and sports equipment, cars and trips abroad, in return for loyal brand purchasing habits. Extra rewards are provided for loyalty via membership cards and Kids Clubs (Box 11). Often held to mark special festivities, such as Chinese New Year, restaurant openings and sports events, they tend to be targeted at teens and children.

Sales promotions can be divided into three categories: premium, prize and discount, which in turn can be divided into subcategories. Although different sub-categories are often incorporated into one sales promotion, this typology is important because of the different effects of different categories and sub-categories on purchasing behavior (Table 4).

Table 4: Sales promotions utilized by McDonald’s, Yum!, Coca-Cola and Pepsi

		Coca-Cola	Pepsi	McDonald’s	KFC	Pizza Hut
Premiums	Free with-purchase premiums	0	0	0	0	0
	Reduced price with-purchase premium			0	0	
	Free extra-product premiums	0	0	0	0	0
	Multi-purchase premiums					0
	Collector premiums	0	0	0		
Prizes	Sweepstakes	0	0			
	Lottery	0		0	0	
	Instant wins	0				0
	Free draws	0	0	0		0
	Competitions	0		0		0
Discounts	Discount vouchers	0		0		0

Sources: ^{334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379}

- **Premiums:** For fast food companies, *free or reduced-price with-purchase premiums* are a globally standard practice. To attract children, toys, such as TV and movie characters, lego and puzzles, are given free with children’s meals.³⁸⁰ With the intention of encouraging habitual meal purchases, a new toy is released regularly. McDonald’s also runs campaigns

offering reduced-price toys with the purchase of certain meals. This technique is notable in Asian markets, where promotions involving toys such as Hello Kitty and Pooh Bear have seen hundreds of people lining up outside the restaurants on release day, in some cases erupting into riotous behavior (Box 6).^{381 382 383 384 385 386 387 388 389} A range of toys is released, thus encouraging repeat meal purchases. In a 2000 promotion in Malaysia, for example, a new Sesame Street character was released every day for 24 days.³⁹⁰ Because the toys become collectible, this is also a form of *collector premium*. Likewise if a certain number of meals have to be bought (“collected”) to become eligible for the promotion (Box 6).³⁹¹ Fast food companies also offer *extra-product* and *multi-purchase premiums* in the form of free desserts, sides and extra pizzas to promote the purchase of specific foods and increase volume.^{392 393}

^{394 395 396 397}

For soft drinks companies, *collector premiums* are a standard method of encouraging repeat buying over a specific period of time.³⁹⁸ As exemplified in Box 7, bottle labels, caps, ring pulls or cards can be collected, and then redeemed for gifts. This can create buying frenzies akin to McDonald’s toy promotions. Take Coca-Cola’s Hielocos (alien-type creatures) promotion in several Latin American markets in 1997-99. Targeted at 5-12 year olds, the Hielocos campaign became a national phenomenon in Mexico, with thousands of children collecting bottle caps and exchanging them for Hielocos figurines.³⁹⁹ Such promotions have also proved popular in the Gulf and North Africa (Box 7). In many cases, too, Coca-Cola produce limited-edition cans, which are collected and traded worldwide.^{400 401 402 403} The companies also use *free with-purchase* and *extra-product premiums*, in which a gift or an extra drink product comes free with a purchase. The aim: to encourage consumers to try new (often larger) products.^{404 405 406 407}

Box 6: Snoopy sales promotions at McDonald’s in Asia

In 1998, Snoopy was offered in several countries with the purchase of an Extra Value Meal. Dressed in a different “cultural costume” each day for 28 days, the response was phenomenal. In Thailand, 2.5 million toys were sold, boosting revenues by over 80 million baht. In Hong Kong, an advertisement for the promotion stated: “Try to collect them all, because missing even one makes a very big difference.” Long queues formed daily outside McDonald’s outlets, the police were called in to settle disputes, and sales rose by 80 percent. But not everyone was happy. If children eat an “extra value meal” every day for a month that they will gain nearly a kilogram, warned one pediatrician. Legislators also urged consumers to boycott the campaign warning parents that succumb to the campaign “to take a reading of their child’s body weight now and after the 28 days.” Several consumers wrote to the *South China Morning Post* stating that the promotion posed a health risk to children.

Three years later, Snoopy went to China. Customers had to buy six meals before they could purchase a toy. On in the first day of the promotion in Guangzhou, dozens of customers staged a three-hour sit-in when they the toys ran out. Lines formed as early as 3am. Over 200,000 Snoopies were sold and sales revenues boosted by over ¥2.3 million, though many kids threw the burgers away. The promotion brought complaints. The Guangzhou Consumers Committee claimed the promotion was a “tie-in” (when purchase of an item is only allowed after the purchase of another item), thus exceeding McDonald’s “legal business range;” consumers who had bought the six meals but then were unable to receive the toy had been “cheated.” A local newspaper opined that “this type of illegal promotion activity created stampede buying, seriously influencing the physical and psychological health of teenagers and young children.” A city legislator claimed that McDonald’s “were inciting kids who can’t even earn money yet the buy these things.” Later that year, Guangzhou’s industry and commercial bureau concluded that the promotion was illegal, and ordered the company to stop selling toys. McDonald’s was only licensed to sell food and drinks, they said, not toys.

Sources:^{408 409 410 411 412 413 414 415 416 417 418 419 420}

Box 7: Coca-Cola collector promotions in the Gulf and North Africa

Collector promotions have been very successful in the Gulf and North Africa. The “Come On Join the Beat Promotion” was the region’s first ever “loyalty” promotion. It aimed to provide a “reason for our consumers to drink us more often and for consumers of competitive brands to switch to our brands.” In 2000, thousands of gifts were given away in the “Win a Mountain Bike” promotion. In Algeria, a total of 5,000 bikes were offered, the biggest give-away ever launched by a private company. Families apparently complained that the promotion led to their children becoming addicted to buying soda in the hope of winning a prize. In Morocco that same year, consumers could win cell phones if they collected caps that reconstructed the word “Istamith”—“Enjoy” in Arabic. 2001’s “Fuel Your Passion” promotion was so popular in the Gulf that the gifts ran out, provoking ire amongst the children who had spent months collecting the bottle tops and ring pulls.

Sources: ^{421 422 423 424 425}

- **Prizes:** All prize promotions are designed to encourage repeat purchases. Banned in several countries, *sweepstakes* are probably the most controversial type. Used by soft drinks companies, sweepstakes often take the form of a collector promotion, when decorated bottle caps etc. must be collected to match up with words (Box 7) or some type of sequence.⁴²⁶ Unlike collector premiums, which require a specific number of purchases, the role of chance in prize sweepstakes means that the reasons to buy are endless. Take, for example, one of the many sweepstakes promotions run during the 2002 World Cup.^{427 428} Run in North and West Africa, the promotion involved collecting Coca-Cola bottle caps embellished with the name of the countries competing in the World Cup and a number (1, 2, or 3). To win, people had to collect caps with the names of the top three World Cup finishers matched with the number that reflected their order of finish. “Even when the outcome is known,” said Coca-Cola, “there will still be cap collectors scrambling for missing links in their order of finish.”⁴²⁹ *Lotteries, instant-win* and *free draws* also offer prizes by chance, and, along with frequent purchasing, are used to encourage the consumption of specific products. KFC Singapore, for example, ran a lottery-style promotion in 2002 whereby a Double Chance Card is obtained with every purchase of a Wholesome Meal. If the customer scratches away the combination of Starter, Main Course and Dessert, the next meal comes free.^{430 431} *Instant-wins* are obtained with guaranteed-win lottery tickets given with meals, or if a bottle cap depicts a prize.^{432 433 434} In *free draws*, coupons and cards are collected with products and then entered to win.^{435 436 437 438} *Competitions* often involve collecting, and aim to strengthen the brand. Examples include slogan writing and creating commercials.^{439 440 441}
- **Discounts:** Discount coupons are used less frequently, but are used by both fast food and soft drinks companies on occasion.^{442 443 444 445 446} Take a 2001 discount promotion in Singapore. Reflecting the increasing trend towards technologically oriented promotions, it involved customers SMS-ing their data from a cell phone to a promotional number. In return receive, they received an e-coupon redeemable for a free or discounted pizza.⁴⁴⁷

WEBSITES

Websites are used by the companies to promote a positive image, magnify the impact of promotions and connect with the typical user of the Internet—teens.^{448 449} Alongside corporate sites, many local Coca-Cola, McDonald’s, KFC and Pizza Hut operations have websites (listed in Annex VIII). Website content varies between company and country. Coca-Cola sites have sophisticated interactive promotions. McDonald’s sites have kids pages and include information on

birthday parties and promotions. (Asian sites also tend to list product nutritional information.) KFC webpages often includes children's pages, promotions, interactive games, TV commercials and nutritional information. Pizza Hut sites typically feature promotions and children's pages.

Box 8: The KFC Kids Marketing Campaign: Targeting kids in Malaysia

KFC Malaysia have Kids Marketing Campaign, which includes:

- *Menu items for kids:* Along with Kids Fun Meals, KFC Malaysia sell "Alpha Nuggets," alphabet shaped chicken pieces served in a box. According to the company: "The nuggets are nutritious and delicious tasting, suitable for small children to eat because there are no bones, and children can use their fingers. Because they come in alphabet shapes, it will also help to inculcate in them an early interest in learning new letters and words." The nuggets were promoted with more than RM1 million on TV commercials in English, Malay and Chinese.
- *Cartoon TV 'The KFC Hour:'* Targeted at a "sophisticated urban audience," the KFC Hour is one of the top ten children's programmes in Malaysia. The programme features hosts introducing popular cartoon shows such as Scooby Doo and Ninja Boy, and holds prize-winning contests for children. The franchise has invested millions of RM to build up the show. "We intend to be part of Malaysia's growing up years in entertainment," say the company.
- *Partnership with Warner Bros Looney Tunes:* The partnership allows the franchise to use Looney Tunes characters for promotions, catering and in-store displays.
- *Birthday parties:* Held regularly at KFC outlets in Malaysia.
- *Kids Fun Club and Website:* KFC Malaysia was the first franchise worldwide to establish a Kids Fun Club, described as "the most elaborate marketing programme in the KFC system." Started with an investment of over RM3 million in 1994 for kids aged 3- 12, there are now over 400,000 members. The club provides its members with discounts on KFC meal promotions, premiums, a club magazine, and prize-winning competitions. They also have a website where children can "Meet Chicky!" and find out about promotions.
- *Children's philanthropy:* KFC Malaysia has two community projects, whereby a percentage of the revenues from Chicky Meals is donated to children's homes. Donations via collection boxes at checkouts are also encouraged. The scheme has donated computers to orphanages and built playgrounds at public hospitals. The company also sponsors International Children's Day as a means of developing "better ties between the brand and the children." The day involves an event at the national stadium, with Chicky and Looney Tunes characters, prizes, games and contests. KFC products are given away as prizes.

Sources: ^{450 451 452 453 454 455 456 457 458 459 460 461}

E. Public relations

SERVICE-RELATED MARKETING

Quality Service

Both McDonald's and Yum! pride themselves on the friendliness and speed of their service, promoting it as a means of attracting customers.^{462 463 464 465 466} Yum! has an international programme CHAMPS "Customer Mania—the smile on our face, the cheer in our voice, the attitude and willingness to do whatever it takes to make our customers happy," which is "the key to sales and profitability."^{467 468} McDonald's promise: "Quality, Service, Cleanliness and Value." Service is deemed especially important in new markets, where "the most important thing is not advertising but good food and quality service."⁴⁶⁹

Servicing children

As a method of appealing to youth, more and more fast food outlets worldwide are now equipped with Internet access, recreation spaces with computer games, play areas, and offer extra services such as hostesses and birthday parties. Play areas, in particular, are crucial in attracting young children, and birthday parties have proved extremely popular the world over.^{470 471 472} Chains in China and Malaysia illustrate how service-related strategies are used to attract very young children (Box 8 and Box 9). Access to the Internet and computer games remains limited but is a growing trend to attract youth. From Brazil to India, Israel to Costa Rica, outlets are installed with state of the art facilities.^{473 474 475 476 477} In some cases, free access to the computers is obtained as part of a sales promotion.

Box 9: Servicing the “Little Emperors and Empresses” of China

The rapid growth of the fast food industry in China can in part be attributed to the popularity of the chains with children—the so-called “Little Emperors” or “Little Empresses.” In particular, the service and cleanliness of the outlets attracts children, along with their parents/grandparents. Services provided include:

- **Hostesses:** Each KFC in China has a hostess, dressed in red and white shirt and black pants. She acts as a receptionist and gives out gifts. Each McDonald’s has an “Aunt” or “Uncle McDonald” who answer questions and establish friendships with children.
- **Birthday parties:** Both KFC and McDonald’s hold birthday parties in specially designated areas. Hosted by Ronald or Aunt McDonald or Chicky, they are celebrated with decoration, invitation cards, games, free gifts and party food.
- **Play areas and children’s furniture:** KFC and McDonald’s outlets have a child’s play area. Furniture is also built with children in mind, such as low sinks and chairs.
- **An educational service:** Given the tremendous emphasis that parents place on their children’s education in China, McDonald’s market their restaurants as an educational place for children. Paper and pens are provided so children can draw pictures; essay contests are held for primary and secondary school students; and children’s programmes, with parents acting as the audience, are hosted in some restaurants.

Sources:^{478 479 480}

SPORTS SPONSORSHIP

Glocal sponsorships: The World Cup and the Olympic Games

Coca-Cola and McDonald’s sponsor the world’s two largest sporting events: the FIFA World Cup and the Olympic Games. Coca-Cola has partnered with FIFA since 1974, sponsoring the World Cup, the FIFA/Coca-Cola World Ranking and the FIFA World Youth Championship. An agreement signed in 1998 gives Coca-Cola the global rights to FIFA’s trademarks, the exclusive rights to provide nonalcoholic beverages (the “Official Soft Drink”), and the go-ahead to run promotional programmes.⁴⁸¹ A similarly comprehensive partnership with the Olympic Games has been going since 1928.⁴⁸² McDonald’s has been an Olympic sponsor 1976, and has exclusive global marketing rights in the food service category.⁴⁸³ They also sponsor the World Cup, holding the title of “Official Restaurant.”⁴⁸⁴

One intention of these sponsorship deals is to encourage consumers to connect Coca-Cola and McDonald’s with these popular events, thus boosting brand strength and reinforcing “consumer ties with the brand,” a strategy that is said to be successful at boosting sales.^{485 486 487} Sponsorship, as

McDonald's put it "makes a leadership statement about the global strength of our brand and enables us to more closely connect with customers around the world."⁴⁸⁸ Global sports marketing has the double advantage of providing opportunities for global brand exposure *and* local promotions. As explained by McDonald's: "The company not only gains world-wide visibility, but we're also able to leverage our investment by promoting the event locally in every country where our restaurants are established."⁴⁸⁹

At its most basic, global exposure occurs when millions of TV viewers around the world see Coca-Cola and McDonald's logos on the side of sports stadiums. More sophisticated exposure is obtained by sponsoring multi-national events, such as the Coca-Cola Olympic Day Run or the Coca-Cola World Cup Trophy Tour.^{490 491} In many cases these events take the form of global competitions. At the 2000 Sydney Games, McDonald's worked with National Olympic Committees to select young men and women to participate in the Olympic Youth Camp.⁴⁹² Under the McDonald's FIFA World Cup Player Escort Program, a total of 1,400 children aged 6-10 were selected from around the world via a variety of sales promotions.^{493 494} The Olympics and the World Cup have the added effect of creating availability for global athletes and visitors. Since McDonald's was the exclusive food service partner at the Salt Lake City 2002 Olympic Games, for example, they had "outstanding" sales to well over 100,000 people.⁴⁹⁵

At the local level, meanwhile, management and bottlers use the events as an opportunity to create instore-signage and packaging, TV advertising and sales promotions. Olympic or World Cup-themed merchandising abounds during the events. Sales promotions typically involve collector items (special edition cans, cards featuring sports celebrities, themed bottle labels), "collect and win" promotions and competitions to win themed-merchandising and tickets to the events, and the release of special edition burgers and toys.^{496 497 498 499 500 501 502 503 504 505 506 507 508 509}

Regional and national sponsorships

Alongside global events, Coca-Cola, McDonald's, Yum! and Pepsi sponsor regional and national sports. Favored are the sports popular with youth.^{510 511} As explained by a Coca-Cola official in the Thai context: "Attractive sports marketing campaigns help to forge a link between Coca-Cola and Thai teens who are interested in sports. In Thailand, we sponsor football, since it is the top passion for teens and young people, while in non-football loving markets we might sponsor other sports like cricket or basketball."⁵¹² (In Thailand, sports sponsorship tends to result in sharply increased sales by increasing brand share and the market base overall.⁵¹³)

Football, a sport popular in many countries, is widely supported by Coca-Cola. They sponsor 35 national teams from Algeria to Palestine, Mexico to Russia, along with the Asian Football Confederation (AFC), the Confederación Sudamericana de Fútbol (CONMEBOL), the Africa Cup of Nations (CAF), the Copa Coca-Cola for kids in Latin America, and, at the national level, numerous youth cups and sports events (Box 12).^{514 515 516 517 518} In certain markets Coca-Cola compete with Pepsi to sponsor what are considered the more lucrative deals, such as the sponsorship of the Chinese Football Association (Pepsi won, investing ¥50 million annually and renaming the league the Pepsi-Cola Premier Soccer league).^{519 520}

To attract fans of other popular sports, Coca-Cola sponsors cricket (India) and athletics (Fiji, Jamaica) and regional multi-sports events (the SEA Games).^{521 522 523} The fast food chains also choose sports with strong local popularity. In Poland, for example, KFC sponsor basketball because it is a “dynamically developing sport with many fans, especially among young people.” In Malaysia they sponsor the Badminton Association because “KFC and Pizza Hut brands possess attributes of youth and energy, which are the very essence of sports, while the exclusive use of BAM’s properties will provide further impetus for the brand and other promotional activities.”^{524 525}

Grassroots sponsorships

To foster consumer connections with the brand, Coca-Cola also provides support at the grassroots level. The company, in fact, credits itself as a “builder” of sports, via sponsorship of community-oriented youth sports and training events.^{526 527 528} A good illustration is Coke-Go-For-Goal, a programme that funds youth football training in Hong Kong, China, Malaysia, the Philippines, Indonesia and Thailand.⁵²⁹ In the Philippines, over 120,000 children have participated in the programme to date, in China, more than one million.⁵³⁰ In another example, the company sponsors Coke Soccer Stars in Bangkok, an under-16 community-oriented football tournament implemented as part of the Thai government’s anti-drugs campaign.⁵³¹

MOVIES, TV, MUSIC, EVENTS, PRODUCTS AND COMPETITIONS

The companies sponsor an array of movies, TV shows, music, events, products, places and competitions as a means of associating their brands with attributes viewed as positive by local consumers, as well as to attract youth and expand availability. Here are some examples:

- ***Movie tie-ins:*** Both soft drink and fast food companies have exclusive deals with movie companies—mainly for children’s and family movies—which allow them to use movie characters for merchandising, signage, advertising, meal themes and sales promotions. McDonald’s and Walt Disney, for example, have a global alliance allowing McDonald’s exclusive restaurant industry marketing rights to Disney products.⁵³² Heavy investment has been placed in movies such as *101 Dalmations* (one of McDonald’s largest ever worldwide promotions), *Atlantis* (McDonald’s largest-ever promotion in Brazil) and *Mulan* (a major investment in Thailand).^{533 534 535 536 537} Yum! is linked with *Star Wars*, and, in a deal with Warner Brothers, uses “Looney Tunes” characters for marketing in the Middle East, Africa and the Asia-Pacific (Box 8).^{538 539} Coca-Cola has numerous product placement deals in movies. It also recently acquired exclusive marketing rights to *Harry Potter*, a series of movies with international appeal for children (Box 10).

Box 10: Coca-Cola, Harry Potter, supermarkets and schools in Asia

*Quoted from a Coca-Cola Company Press Release, December 2001*⁵⁴⁰

“Thailand: Harry Potter has been a hit here, breaking revenue records since opening on Nov. 30. The movie's popularity has fueled excitement for programmes sponsored by the Coca-Cola system in Thailand. Displays with Harry Potter imagery were set up in supermarkets and stores, promoting the chance to win a Hogwarts Castle Adventure and movie tickets. An estimated 140,000 tickets will be given away from the on-pack promotions, where purchasers collect images of two owls from the multi-pack shrink-wrap to redeem a movie ticket. On Nov. 29, the company opened a weeklong event, "Coca-Cola Live the Magic," at The Mall Department Stores, one of the biggest malls in Thailand. Geared for ages 10 and up, the event featured a dozen games, activities and behind-the-scenes movie exhibits to create excitement for reading. More than 15,000 people participated in the event.”

“Korea: Capitalizing on the high Internet usage here, we incorporated online programmes into our Harry Potter activation. For the month of December, consumers can log onto Coca-Cola Korea's Web site and read or download their pick of 20 books geared for kids ages 11-19. The Cyber Library was created as a way to reinforce relationships with online consumers and provide a unique way to experience the joy of reading. Since literacy rates are high among Korean children, we wanted to try something different with our reading programme—and linking with the Internet was a natural here. We expect more than 100,000 downloads of e-books this month. Children can download educational English and computer books, Shakespeare cartoons and popular novels. Coca-Cola Korea also will give away 2,000 books to children in orphanages and rural areas. Company employees are being trained as volunteer readers to visit the villages where the books are being presented.”

- **TV tie-ins:** McDonald's, KFC and Coca-Cola sponsor teen and children's TV programming in many international markets including Malaysia (Box 8), Thailand (Box 11), India, South Africa and Ecuador.^{541 542 543 544} The rationale behind TV tie-ins is illustrated by Coca-Cola Popstars in South Africa.⁵⁴⁵ A reality television talent search shown by national broadcaster SABC 3 in 2002, the company sponsored the show because: “Popstars was a perfect fit for brand Coca-Cola in South Africa. Popstars embodies and shares common qualities with brand Coca-Cola, qualities such as optimism and positive outlook.”⁵⁴⁶

Box 11: Innovative Teen Marketing by Coca-Cola Thailand

*Adapted from a Coca-Cola Company Press Release, January 19, 2002*⁵⁴⁷

With 43 percent of Thailand's total population under the age of 25, teens rule. Our company in Thailand has been sharpening its focus on teens, a concentration that is paying off: Last year was our company's best year. Coca-Cola sales grew double digits for the second consecutive year, and brand preference showed a 30 percent increase. How is it happening?

An example of successful marketing can be seen in the launch of Coke Music Hurricane, an integrated music campaign, which reached 500,000 Thai teens in Bangkok, where approximately half of all Thais reside. Coke Music Hurricane, housed in trendy vehicles painted Coca-Cola red and fashioned with the Coca-Cola logo, brought local club DJs to schools and communities to host turntable workshops and spin Coke-branded tunes. There were also high-profile concerts in central teen hangouts, featuring international stars.

Coca-Cola also signed Thailand's top teen idol and pop singer, Kathleeya English as the new personality for Coca-Cola Thailand. This month, Kat English appeared in the new Coke "Sweet and Wild" television commercial, featuring two young teens "daring to be different" by dressing up and performing on stage at a Kat English concert.

As part of the 2001 Red Passion campaign, our company brought the three-time Cup-winning Liverpool Football Club, nicknamed "The Reds," from England to Thailand to play the Thai national team. Touted as the Coke Super Cup, the match drew 60,000 fans to Huamark Stadium and more than 9 million more watched on television.

And one new teen TV show is taking on the distinctive flavor of Coca-Cola. "Red Seed"—a new interactive television show aimed at telling Thailand's 27.2 million teens to "Go Taste Life." Sponsored by Coca-Cola and produced by Broadcast Thai, "Red Seed" is a programme created by Thai teens for Thai teens. Two ultra-cool video jocks host the show, but Thai teens create the show's content via an interactive TV format. Seed is the symbol of birth and growth of a new breed of talented teens.

- **Music sponsorship:** By sponsoring music events and artists, Coca-Cola and Pepsi aim to attract teens to their brands and to expand availability. In Thailand, for example, music is the main promotional vehicle alongside sports.⁵⁴⁸ Its attraction, according to Pepsi's marketing director is that: "music appeals to both sexes, unlike sport which mainly appeals to young males."⁵⁴⁹ Pepsi has held an extensive series of concert and discount promotions over the past three years, including a 100 million baht Britney Spears campaign.⁵⁵⁰ Also in Thailand, Coca-Cola sponsors the Coke Music Awards and the Coke Music Hurricane in schools (Box 11).⁵⁵¹ Sponsoring concerts is a way of making drinks available and "connecting" the brand to "sensational events."⁵⁵² In 1998, Panamco Venezuela sponsored "Red Experience," an outdoor concert that attracted nearly 200,000 people. As described by the company: "More than 120 Coca-Cola carts and kiosks were installed inside and outside of the airfield where the event was held, with a view to maximizing the availability and stimulating consumption of Coca-Cola products. The results were excellent—more than 35,000 unit cases of our products were sold in one evening."⁵⁵³
- **Traditional festivals:** Sponsorship of traditional festivals is a means of associating the brand with local culture. It is also a way of incorporating a relatively new product into a much older tradition—thus creating a new consumption tradition. Coca-Cola is the "official soft drink" of many cultural festivals, from the Basant Festival in Pakistan (which marks the beginning of spring) to the Ganadriyah Festival in Saudi Arabia (the region's major cultural and music festival).⁵⁵⁴ Coke wanted to associate with the festival, a spokesman said, because "it strengthens the cultural social role [of Coca-Cola] in the kingdom."⁵⁵⁵ In another case, Coca-Cola Vietnam organized the cooking of a record-breaking Tet Cake as part of the 2002 Tet Lunar New Year Festival. The giant cake was aimed at "strengthening consumer connections by deepening the Coca-Cola link with Vietnamese traditions."⁵⁵⁶
- **Edutainment centers:** Coca-Cola sponsor theme parks and museums—Coca-Cola World in Thailand, for example.^{557 558}
- **Product licensing:** Coca-Cola license their trademark to an array of merchandising in different countries "to stay close to our customers."^{559 560} Products, such as clothes, toys and beach accessories are targeted at youth.
- **Educational and environmental competitions:** Examples include the McDonald's Youth Achievement award in Malaysia, and the Newspaper in Education programme supported by Pizza Hut, also in Malaysia.^{561 562 563 564 565} (In the latter, students were asked to design advertisements using the KFC and Pizza Hut brands.) An environmental example is the 2002 Green-Evergreen Plant contest, an environmental improvement contest sponsored by Coca-Cola in Vietnam.⁵⁶⁶

PHILANTHROPY

Coca-Cola and McDonald's consider themselves leaders of social responsibility and citizenship.^{xvii}
567 568 569 570 Yum! and Pepsi also have philanthropic programmes. From a marketing perspective, philanthropy has a range of functions. First, it strengthens the brand. As explained by a Coca-Cola Mexico spokesman: "We are a good citizen in the country in which we are operating, but it goes beyond that. We want to reach that part of the consumer's mind, where he feels like a good citizen by buying a product from a socially-conscious company."⁵⁷¹ Philanthropy also provides an opportunity for signage—branding funded computer labs, for example, using trademarked trucks to spread health messages, or posting billboards outside funded daycare centers (also see Box 2).⁵⁷²
573 574 575 Third, at a local level, active participation in community affairs enables the company to present themselves as a local entity concerned with community needs.⁵⁷⁶

McDonald's activities focus almost exclusively on children because they "believe it is important to give back to the people around the world who are responsible for our success."⁵⁷⁷ Programmes are both global and local. Globally, McDonald's operates the Ronald McDonald House "home away from home" programme, and has worked with UN agencies on worldwide programmes.⁵⁷⁸ With UNESCO (and Disney), McDonald's sponsored "Millennium Dreamers" in 1999/2000, a worldwide search for 2000 children aged 8-15 who had made notable contributions to their communities.^{579 580}
581 582 With UNICEF, McDonald's raised money for 2002 "World's Children's Day" through a variety of activities and promotions in 121 countries.⁵⁸³ Locally, McDonald's have programmes supporting handicapped youth, children's hospitals, children's homes and specific children's medical services.
584 585 KFC also run local programmes for kids (Box 8). The efforts typically involve: high profile fund raisers; bringing sick or disadvantaged children to McDonald's/KFC for complimentary meals; visits by Ronald McDonald/Chicky to children's hospitals and homes; and providing children opportunities to donate toys and cash for causes related to disadvantaged children.

Coca-Cola has an extensive range of philanthropic programmes. Many are implemented by their foundations, such as the Coca-Cola Institute for Education in Brazil and the Coca-Cola Africa Foundation. Donations typically are for education, science and technology, and also health, the environment, and children's activities. Coca-Cola money has been used to build schools, equip libraries and science labs, fund university scholarships and provide tutoring, illiteracy, teacher training and entrepreneurship and business courses.^{586 587 588 589 590 591 592} Areas of focus vary regionally: In Africa, health programmes are a priority (particularly HIV/AIDS), in the Gulf donations are made to disabled children's causes, and in eastern Europe, children's activities are a focus.⁵⁹³
594 595 596 597 The company works with governments—in some cases attracting the attention of senior politicians and heads of state—and UN agencies.^{598 599 600} A joint programme with UNDP in Asia, for example, aims to help bridge the "digital divide" in the region by installing computer labs.^{601 602} In partnership with UNAIDS, Coca-Cola has utilized their distribution networks to distribute educational materials about AIDS in several African countries.^{603 604} The company has also partnered with UNICEF and the U.S. Fund for UNICEF.^{605 606 607}

^{xvii} There are also many groups who believe that the companies lack corporate *accountability*

F. Marketing during crises

Together, the “5 P’s” described above are used to market products in countries experiencing some form of financial and/or political crisis. Financial crises, such as the 1994 peso devaluation in Mexico and the East Asian crash of 1998/99, threaten the sales growth of soft drink and fast food companies.^{608 609} In some cases, fast food chains have withdrawn during financial crises, as KFC did from Brazil in 1999.⁶¹⁰ But although McDonald’s does have a policy of slowing expansion—Brazil, Thailand, Argentina, Russia and Mexico all being recent cases—it also has a philosophy of continued investment and marketing.^{611 612 613 614 615 616 617} Said the CEO of McDonald’s International about the 1997/98 Asian crisis: “While we are experiencing some short-term negative impact in Asia/Pacific, we are adjusting our business to put ourselves in a position to ride out the storm. We’ve found when we do that—many of our competitors cannot afford the cost and abandon the ship—and we emerge with a stronger market position. As a global business, strong performance in other parts of the world allows us to cushion the overall impact of temporary economic setbacks and provide local financial support for special marketing promotions.”⁶¹⁸ Coca-Cola has the same philosophy, stating that: “in a crisis... you absolutely cannot afford to back off in the marketplace. You’ve got to put the assets out there in the marketplace that you’re going to need later on.”⁶¹⁹ To maintain sales while protecting profits, the companies adopt specific marketing strategies. Coca-Cola tends to: Shift away from non-returnable to the cheaper reusable packaging, thus keeping prices down; cut prices to encourage purchases; advertise (often at reduced rates) Coke as an uplifting drink in hard times and; run cash promotions because what the consumers “really need is more cash.”^{620 621 622 623 624 625 626} During crises, McDonald’s and Yum! tend to: (a) adjust their menus (such as omitting the most costly part of Value Meals—the fries) and; (b) run price promotions (attributed with maintaining McDonald’s growth in Brazil during the 1999 crisis).^{627 628 629}

In terms of political crises, fast food multinationals are frequently the target of protests and boycotts in the developing world owing to their U.S. pedigree. The potential effect: decreasing sales. One response is to increase promotions.⁶³⁰ Another is to show support of local political sympathies. For example in Yugoslavia, McDonald’s restaurants were attacked in the wake of the NATO bombings in 1999. To maintain sales, the company launched a “Serbification” campaign. They produced posters and lapel buttons showing the golden arches topped with the sajkaca, a traditional Serbian cap, launched the “McCountry,” a domestic pork burger, handed out free cheeseburgers at anti-NATO rallies, and for every burger sold donated 5c to the Yugoslav Red Cross to help victims of NATO’s airstrikes.⁶³¹ The Middle East is another example. In Fall 2000, religious clerics in the Gulf called for a boycott on U.S. products in protest of the Israel-Palestine conflict. The following day, McDonald’s Saudi Arabia announced that SR1 from every meal sold would go to Palestinian children’s hospitals.⁶³² “We want to prove to people that even though McDonald’s is an American franchise, it cares about the plight of the Palestinians,” said the franchise. “People are not boycotting American products, they are hurting the Saudi market, especially the Saudi workers.”⁶³³

THE EFFECTS OF MARKETING ON SOFT DRINK AND FAST FOOD CONSUMPTION: SUMMARY, YOUTH MARKETING AND POLICY OUTLINE

As evinced by the content of this report, the marketing activities of global soft drinks and fast food companies are numerous and comprehensive. They include techniques to place, price and promote an expanding product to consumers. They are strategic, tailored to local markets, and aim to increase regular consumption of soft drinks and fast foods. Although the report has focused on four companies, and on McDonald's and Coca-Cola in particular, in strategic terms the activities apply to the majority of global companies selling sugary, fatty and salty processed foods.⁶³⁴

The context for the examination of the marketing of fast foods and soft drinks is the rising incidence of diet-related NCDs in the developing world. It is recognized that more research is needed to understand how consumption of these products is linked with this newly emerging health problem. Still, as set out in the introduction, it is hypothesized here that marketing potentially plays a role by creating demand for the food categories—sugary, salty and fatty foods—that are associated with NCDs. This creation of demand is important because it could lead to the ultimate goal of marketing: the creation of a soft drink and fast food “culture,” in which regular and frequent consumption is completely normalized, especially amongst children and teens.^{635 636}

Given that consumption of fast foods and soft drinks is increasing (Figures 1 and 2), it would appear that the marketing activities are having some effect. The companies do indeed credit their marketing initiatives with driving sales over specific time periods and in different areas.^{637 638 639 640}

⁶⁴¹ According to a marketing director for Southeast Asia: “One hundred percent of Coke’s success is due to marketing.”⁶⁴² And as a top Coke executive once said: “Coca-Cola does a great service because it encourages people to take in more and more liquids.”⁶⁴³ Marketing, though, is not the only factor that can influence consumer choice. Income, changing lifestyles, culture, personal taste and parental influence also play a role. Given this myriad of interconnecting factors, it is difficult to isolate the relative effect of marketing on consumption behavior. It is also difficult to determine whether marketing can explain regional and temporal consumption patterns. As yet, there is little quantitative analysis that could illuminate such an analysis.

Despite this knowledge gap, this report has exemplified how marketing efforts have affected consumption patterns in specific instances. It has also detailed efforts to target children and teens. Within this framework, it becomes possible to provide guidance for potential policy responses.

How specific marketing activities target and affect specific aspects of consumption behavior

Fast food and soft drinks companies use marketing to encourage:

- More types of people to consume the product (broadening the customer base);
- More frequent consumption amongst people already familiar with the product;
- More volume to be consumed at one time.

All of the “5Ps” of marketing influence these aspects of consumption in different ways. Broadly, there are two categories of influence:

- The clear-cut effects of place, price and product, which, as exemplified in the text, are measurable (within limits);
- The more subconscious effects of promotional activities and public relations, activities which “operate under the radar of critical thinking.”⁶⁴⁴ Measuring these more subliminal effects is more difficult^{xviii}

Following is a summary of the effects of the “5P’s” on consumption behavior:

- **Place** is a crucial factor in stimulating more frequent consumption—expanding availability means that the product is available to more people. As evinced by examples in the text, the expansion of cooler equipment and the signing of exclusive accounts have boosted sales. Targeting non-traditional outlets also stimulates “impulse” purchases, in schools, for example. For fast food outlets, their sheer presence has driven sales, and home delivery has also proved a successful strategy.
- **Price** combined with **package** can make a product acceptable to previously unexposed populations. It also encourages more frequent consumption, consumption in the home, and of larger portion sizes. As exemplified in the text, larger package sizes play a significant role in increasing the volume consumed at one time. Lowering prices and introducing smaller, cheaper bottles has been shown to impact the frequency of consumption in a range of markets. Conversely, raising prices can have negative effects on consumption: in India, sales growth fell to single digits when Coca-Cola raised the price on its 300 ml bottles; in Vietnam, sales of local soft drink brands increased sharply when Pepsi and Coca-Cola raised prices.⁶⁴⁵
⁶⁴⁶
- **Product expansion** by fast food companies appears in general to have broadened their consumer base, and increased the frequency of consumption. The introduction of (or lack of) new products has in cases resulted in failure. But in general, tailoring products to the market is a strategy that has driven sales around the world. Product launches have been notably successful in Asia.
- **Promotional activities** aim to encourage consumption in a range of different ways. There is a clear distinction between advertising and sales promotions. At a basic level, *advertising* aims to influence consumption by building brand recognition, at a more sophisticated level by creating an “emotional bond” with customers. Crucial is the creation of a brand identity—whether it be “cool” “rebellious,” “fashionable,” or “family friendly”—that matches the values and desires of the target markets. This makes the product more acceptable, and, moreover, something to aspire to. In so doing, advertising *adds value* to the physical cost of the product—because the perceived value is more than the actual value. Advertising can also encourage more consumption at more times and in more places by depicting occasions not usually associated with fast foods and soft drinks.

^{xviii} Without a cross-country, sub-regional multivariate analysis it is also not possible to speculate on the effects of ad spending. For example, while Coca-Cola and PepsiCo spend a lot on advertising in Mexico, one of their largest markets, they also spend a lot in India, where per capita consumption remains low (Annex II and IV). Many more factors would have to be incorporated to disentangle the role of all the relevant factors.

Sales promotions are utilized by soft drinks and fast food companies to stimulate consumer demand, increase purchase frequency, instill loyalty in customers and encourage consumers to try specific drinks or meals. Such promotions increase purchase frequency by giving consumers an incentive—a gift or a prize—to drink or eat more. Certainly, as exemplified in the text, sales promotions do drive frequent purchasing, particularly amongst children. In the words of one journalist, they can create a mentality akin to “Pavlov’s Dogs”.⁶⁴⁷

- **Public relations** effects on consumption behavior can be divided into two types: service-related and promotion-related. Good *service* keeps people coming back, a strategy that both McDonald’s and Yum! credit with driving sales. And for kids, children-oriented service provides another reason—apart from the food—to go.

Promotional forms of public relations are intended to have an effect similar to that of advertising: boosting brand identity and consumer ties. Sports and movies have the added advantage of being real events, not just images. Public relations also connect with consumers by linking with the more rebellious aspects of teen and kid culture (music) and, in contrast, by linking the brand with traditions (festivals). Philanthropy, finally, can, consciously or subconsciously, make the consumer feel good about buying the product.

Targeting children and teens: changing the soft drinks and fast food culture

As pointed out in the seminal study *Kids as Customers*, children are market makers for global companies. Via “pester power” they have a potentially huge influence over parental buying decisions.⁶⁴⁸ Global fast food and soft drinks companies clearly view children and teens as market makers. As summarized in Box 12, they implement a wide range of activities to target children and teens. Soft drinks brands focus mainly on teens, fast food companies on young children.^{649 650} McDonald’s was in fact one of the first corporations to recognize the potential of the children’s market. According to an anthropologist who has studied McDonald’s “the company started a revolution by making it possible for even the youngest consumers to *choose* their own food.”⁶⁵¹

The importance of this targeting strategy is its potential to create a soft drink and fast food culture in which sugary and fatty products are consumed regularly and frequently. Targeting the younger generation is a way of building up this culture by encouraging habits that stay into adulthood. “The philosophy is, if you get them in grade school, you’ll have them until they’re ninety,” as a Hungarian KFC executive put it.⁶⁵² “We have to build a franchise with kids now, because they take their habits with them into their teen years and adulthood,” said a Pizza Hut India executive.⁶⁵³ The aim is to move patterns of consumption away from the occasional to the everyday. To do so, the companies are explicit in their attempts to, in the words of a Coca-Cola press release “penetrate the teen psyche.”⁶⁵⁴ Pepsi, too have said that they are “focused on working our way into the skin of younger people.”⁶⁵⁵ But, as Coca-Cola also said: “Getting under the skin of this generation is... one of the biggest challenges faced by all.”⁶⁵⁶ The use of market research is therefore crucial. In some cases the companies have asked young people to design advertising that they would be attracted to because “the best way to reach young adults is by asking young adults.”⁶⁵⁷ And it does seem to be effective: there is a tendency in emerging markets for children and teens to be an important consumption segment.^{658 659 660 661 662}

Box 12: How global soft drinks and fast food companies market their products to children and teens

Place

Making drinks available in or near schools and other education centers by increasing the numbers of sales points.

Making drinks available in places where “teenagers are going to be” such as movie halls, cafes and nightclubs.

Price and packaging

Selling drinks in packaging and at prices appealing to youth.

Product expansion

Selling “Kid’s Meals” with a free toy as a means of instilling loyalty in young customers, including those under eight years of age.

Selling menu items specifically aimed at young children.

Introducing and positioning menu items as exciting products for teens and young adults.

Promotions

Planning opening day extravaganza’s with activities suitable for children.

Using “child-friendly” promotional figures to attract children to the restaurants.

Featuring young children, animation, good-looking youth, and celebrities popular with children and teens in TV commercials.

Portraying a family friendly atmosphere in fast food advertisements, to target parents with young children.

Portraying glamour, magic, excitement, rebellion and romance in soft drink ads.

Running sales promotions focused on collecting toys that appeal to young children, and on winning prizes that appeal to teens, such as music equipment and vacations.

Setting up “Kid’s Clubs” that allow children access to promotions and discounts.

Designing websites with games, promotions and prizes popular with teenagers.

Public relations

Providing Internet access—a phenomenon very popular with teenagers—and computer games in fast food outlets.

Building play areas for young children in fast food outlets.

Organizing birthday parties for children in fast food restaurants.

Designing fast food restaurants with young children in mind (furniture etc).

Having hostesses in fast food outlets who talk to children and give them gifts.

Sponsoring TV shows for children or teens.

Tieing-in with movies popular with children and teenagers.

Sponsoring sports that are popular with teens and young adults, and bankrolling youth and children’s community sports events and training.

Sponsoring music and music events popular with teens.

Launching theme parks for children and teens.

Running “educational” competitions for children and youth achievement awards.

Donating money to children’s causes and education.

An outline of possible policy responses

It is difficult to understand precisely which marketing techniques are more influential over the development of an entrenched soft drink and fast food culture. Still, the fact that companies have numerous techniques to target children and teens suggests that they are aiming to change soft drink and fast food consumption over the long term. At the same time, very little assessment of potential policy responses has been set out in the international and national arena. Taking this into account, an outline for some policy responses are set out below:

- **Place:** This report has shown that place is the precursor to all other forms of marketing. It follows that limiting availability would therefore be the most effective means of limiting consumption. However, from the perspective of freedom of choice and freedom to trade, coupled with the existent presence of these companies, this is unlikely to be an acceptable solution.^{xix} Rather, it is suggested that a more appropriate policy response would be to consider limiting availability in places that specifically target children, schools being the notable example. In Brazil, laws have recently been passed in three municipalities to ban the sale of certain foods in schools cafeterias, including soft drinks.⁶⁶³ In the UAE, Oman and Saudi Arabia carbonated soft drinks are banned in schools.⁶⁶⁴ This is also a policy that is being implemented in the U.S.⁶⁶⁵ Second, there should be an examination of the nature of exclusive contracts between the soft drinks companies and vendors such as cafes and nightclubs, and of the incentives given to retailers to stock and promote soft drinks. Potentially, these arrangements create issues of anti-competitiveness and anti-trust. Exclusivity agreements are currently the subject of an anti-trust ruling in Mexico. The country's Federal Competition Commission (FCC) has ruled that Coca-Cola tried to hinder rivals in the soft drinks market through its exclusivity pacts, and ordered the company to suspend its practices.^{666 667} The same applies to the nature of the franchise agreements for fast food companies, currently under scrutiny by Brazil's anti-trust agency.^{668 669 670}
- **Price and package:** Price has a very real effect on consumption. Although increasing prices raises issues of equity, the soft drinks companies are clearly attracted to the idea of sizing *down* package size to attract consumption. Increasing the cost of the drink inside the bottle would provide further disincentives to size up packages. Excise duties and taxes could be one possible option. Higher taxes can raise prices, as happened in Thailand⁶⁷¹ Classifying drinks as a luxury product—or perhaps large sized packages—in some cases automatically levies a tax, in Indonesia, for example, and India (where taxes form 55 percent of the maximum retail price per year).^{672 673} Soft drinks companies and associated trade associations do, however, tend to lobby governments against such taxes.^{674 675 676} In some cases—such as South Africa—they have been successful.⁶⁷⁷ In another case in the Philippines, the House proposed a bill in 1999 to tax soft drinks. For the bill to pass, proof was required that the product had “social costs.” The Beverage Industry Association of the Philippines (BIAP) lobbied against the tax, arguing that soft drinks had no “negative externalities.”^{678 679} Packaging regulations are another possible option. In Mexico, for example, there were limits on packaging until 1991. As a result, up to 75 percent of Coke sold

^{xix} In rare cases McDonald's have been banned from expanding. In Bermuda the 1997 “Prohibited Restaurants Bill” banned the entry of McDonald's into the country. In Belarus, authorities in Minsk said in 2002 that they would no longer allocate any plots of land to McDonald's construction. The reason cited was that overseas fast food is unhealthy for children and teenagers.

was in the single serve glass bottle, which had the effect of limiting consumption.⁶⁸⁰ In terms of fast food restaurants, restrictions could be placed on super-sized value meals, as has been suggested by the Australian Health Ministry.⁶⁸¹

- **Product:** Product expansion is a strategy that tailors foods to local markets. As such, it provides an example of how local people can be influential in encouraging the chains to sell more nutritional foods, as has been attempted in some Asian markets. Therefore no regulatory policies are suggested here on expansion as such, but it is suggested that consumer campaigns for foods with a lower fat and sugar content—including those for children—is one possible way to move forward. The future guidelines of healthy eating expected from the WHO could be helpful in this regard. In terms of soft drinks, this could include campaigning for legislation on sugar content. The Health Ministry in Malaysia, for example, attempted to limit the amount of sugar in manufactured soft drinks as part of its anti-obesity/diabetes campaign to reduce sugar intake.⁶⁸² Another aspect of product is content. Nutritional labeling and regulating health claims are possible ways of ensuring that the consumer has sufficient and correct information about the product.
- **Promotional activities:** Promotions are heavily targeted to children (Box 12). Their aim is to turn a frenzy for a sales promotion, or a craze for a TV commercial into long-term loyalty. Surveys suggest that promotional activities have indeed succeeded in building up brand loyalty in some markets.^{683 684 685 686 687 688 689 690 691 692 693 694} It therefore might be appropriate to begin to assess how advertisements and promotions match up against the International Chamber of Commerce (ICC) self-regulatory codes of conduct for advertising and sales promotions. The codes states that: “Advertisements should not exploit the inexperience or credulity of children and young people”(Article 14) and that “Sales promotions addressed to children and young people should not exploit their credulity or inexperience” (Article 8).^{695 696} If there is a clear case that promotions are exploiting credulity, stricter regulations could be considered. There are various pieces of legislation around the world that limit advertising and sales promotions.⁶⁹⁷ In some European countries, sweepstakes are banned.⁶⁹⁸ In others there are limitations on selling a food product heavily promoted using a non-food item (Box 6).⁶⁹⁹ Another possible route would be to encourage media literacy programmes.
- **Public relations:** Public relations activities are also heavily targeted at children. This has the potential to build up brand image in a way not easily comprehensible to young children. Sponsorship deals and tie-ins should consider the effects of signage opportunities and related sales promotions on children, with a potential view to imposing limitations.

In addition to this guidance, this report has two clear recommendations:

1. That a dialogue begin about whether regulating or setting standards for the marketing of fatty, sugary and salty processed foods would be appropriate, and, if so, at what scale: local, national, or international. This dialogue should include the food industry, alongside international, governmental and non-governmental organizations. A starting point for such a dialogue should be a focus on risk prevention, as outlined in the *2002 World Health Report*.
2. That an econometric analysis be carried out to gain greater understanding of the effects of *global* brands of processed foods on consumption patterns (as opposed to local or regional brands), and of the effects of marketing these products relative to other factors that influence food choice.

Annexes

Annex I: Regional presence of McDonald's, Yum!, Coca-Cola and Pepsi

SOUTHEAST ASIA AND CHINA

Soft drinks

Coca-Cola and Pepsi are found throughout Southeast and China. Southeast Asia has a well-established soft drinks market. The Philippines was the first Asian country to import Coca-Cola, in 1900 (the first bottling operation opened in 1927).⁷⁰⁰ Still, consumption varies considerably. Whereas the Philippines is the largest cola market in Asia, and the sixth largest for Coca-Cola worldwide, Indonesia, is still an “emerging” market with relatively low consumption, despite market entry by Coca-Cola in 1927 (Annex III).⁷⁰¹ The relative presence of Coca-Cola and Pepsi also varies throughout the region. Whereas Coca-Cola have around 90 percent market share in the Indonesia, and 60 percent in the Philippines (Pepsi has 17), Pepsi and Coke brands both have around a 30 percent share in Thailand.^{702 703 704 705}

Having entered the country in 1927, China is also a relatively old market for Coca-Cola. But they left in 1949 when the communist government came to power, returning in 1979 in partnership with the Chinese government. They were the first foreign company to distribute products after the country was opened to foreign investment. In all, Coca-Cola has invested over US\$ 1.1 billion in China and has 24 bottling plants.⁷⁰⁶ PepsiCo entered the Chinese market in 1982, investing US\$ 0.5 billion with 14 bottling plants.^{707 708} Coke brand now has a 35 percent share of the carbonated soft drinks market and Pepsi 15 percent.^{709 710 711}

Fast food

Fast food rapidly expanded in East and Southeast Asia in the 1990s, driven by aggressive expansion of McDonald's and Yum! Drawing on the far greater popularity of chicken, Yum! leads several key markets: China, Malaysia and Thailand. McDonald's dominates all remaining countries bar the Philippines, where local brand Jollibee leads. Though Southeast Asia has far greater penetration of multinationals than China, the sheer size of the Chinese market has made it the key growth market.⁷¹²

Asia leads Yum!'s international system sales.⁷¹³ China, Thailand, Malaysia, South Korea and Taiwan are all major markets (figure 8). The company is currently planning expansion in both Thailand and Malaysia.^{714 715 716} South Korea is home of the most successful Pizza Hut business outside the U.S. After entering the country in 1985—the first multinational to do so—the number of outlets now stands at 232, a number the company plans to increase to 400.⁷¹⁷

KFC was the first fast food chain in China, arriving in 1987. Now the company's “shining star,” they now have 715 restaurants in every province except Tibet (Figure 12). Per store sales are the highest in the world, 20 percent higher than the U.S. and the company claims their business will someday be bigger than the U.S.^{718 719 720} McDonald's entered China in 1992, and have since expanded to 430 branches (Annex V). McDonald's dominates the market elsewhere in East Asia, most notably in Hong Kong, where they opened in 1975, and Singapore, where they opened

in 1979. McDonald's entered Taiwan in 1984, the first foreign food enterprise allowed in the country.⁷²¹ The chain met with immediate success: in 1994 they recorded the highest growth rates of any McDonald's in the world.⁷²² The growth of McDonald's in South Korea has been notably slower than other East Asian markets.⁷²³

SOUTH ASIA

Soft drinks

Following the introduction of the Foreign Exchange Regulation regime (FERA)—which prevented repatriation of profits to overseas countries—Pepsi and Coca-Cola left India in 1977. After the repeal of the regulations, Pepsi restarted operations in 1990 and Coca-Cola in 1993.⁷²⁴ Both companies re-entered by buying up local soft drinks brands, Pepsi, Coca-Cola buying Parle brands (including Thums Up), a company that had 60 percent of the market.⁷²⁵ Coca-Cola India later acquired a Cadbury Schweppes in 1999.⁷²⁶ Acquiring the brands gave the companies not only an immediate local presence, but also an already operating distribution network. Between them Pepsi and Coca-Cola have invested US\$ 1,347 million in India.⁷²⁷ At US\$ 840 million, Coca-Cola is one of the countries largest foreign investors.⁷²⁸ Consumption of Coke, however, remains at 7-8 per person per year (Annex III)

Having entered the market earlier, Pepsi had an immediate lead on Coke—when Coca-Cola entered India, Pepsi had a 26 percent share of the soft drinks market.⁷²⁹ Market share has fluctuated, with both Coca-Cola and Pepsi claiming to have different amounts. In 2000 the Pepsi-Cola brand had an estimated 26.5 percent share, compared to 20 percent for Coke and 11.5 percent for Thums Up.⁷³⁰

Both Pepsi and Coca-Cola are available in Sri Lanka and Bangladesh.

Fast food

In the years since India's 1991 economic liberalization programme, KFC and Pizza Hut, McDonald's, PepsiCo and Coca-Cola have all entered India. Intending to expand before the inevitable arrival of McDonald's, Yum! opened KFC outlets in Bangalore and Dehli in 1995, and a Pizza Hut in Bangalore a year later, investing US\$ 40 million in each brand.⁷³¹ There are now 30 Pizza Huts and the company aims to have a total of 100 by the end of 2004.⁷³² KFC, though, facing a series of protests, lack of consumer popularity and high real estate prices, closed all its outlets bar one in 1999.⁷³³ In 2001 the company announced plans to reopen in Dehli and Mumbai.⁷³⁴

McDonald's opened in Dehli in 1996, and now has 34 outlets in Mumbai, Pune, Bangalore, Ahmedabad and Agra (Annex V). Between 1996 and 2000 McDonald's invested Rs 400 Crore in India, and in 2000 announced a massive expansion campaign, investing Rs 350 Crore to increase the number of stores to 80 by 2004.⁷³⁵ ⁷³⁶ In 1998, McDonald's opened branches in Sri Lanka and Pakistan. As yet there are no outlets in Bangladesh.

SUB-SAHARAN AFRICA

Soft drinks

Both Coca-Cola and PepsiCo operate in Africa, but Coca-Cola's presence far outweighs Pepsi. Pepsi sells in 11 countries, the strongest being Uganda (50 percent share), Ethiopia and Nigeria.⁷³⁷ In contrast, Coca-Cola operates in every African country bar two (Sudan and Libya, where American investment is not permitted). Most recently, the company established a bottling plant in Angola. With 150 bottling operations and around 80 percent of the African soft drinks market, Coca-Cola is Africa's leading soft drink producer and is one of the continent's largest investors in consumer products.^{738 739 740} Though it has been operating in sub-Saharan Africa since 1938, Africa was actually a low priority region for Coca-Cola until 1997 when citing rapid population growth and disproportionately low sales, the company developed a new market strategy aiming to double sales in 5 years.⁷⁴¹ Between 1995 and 2000 Coca-Cola invested US\$ 600 million, and announced a further of investment of US\$ 1 billion in 2000.⁷⁴²

South Africa is the most important African market for Coca-Cola, and one of their largest markets in the world.⁷⁴³ Available in the country for over 60 years, Coke never really left during the sanctions and the apartheid era, simply moving its concentrate plant to Swaziland and selling off its bottling interests, but continuing to sell and advertise its products. After apartheid ended, Coca-Cola became a leading investor in the country, and now has around 85 percent of the carbonated soft drinks market.^{744 745} Pepsi left South Africa during sanctions, and again in 1997 after a failed comeback. Products are distributed via a Namibian bottler but are not widely available.⁷⁴⁶

Nigeria is another high priority market for Coca-Cola. In 1999, when a democratically elected government replaced military rule, the company made a commitment to invest US\$ 50 million—the first multinational company to make such a commitment, followed by a further US\$ 100 million in 2002.^{747 748}

Fast food

South Africa is the only sub-Saharan African country with multinational fast food chains. Way before international brands entered the market, South Africa had well-established fast food chains, such Nando's (chicken) and Steers (burgers). Yum! entered the market 1994, buying up Devco, the company that had administered the franchising of the 300 KFC's during sanctions. South Africa has since become one of KFC's largest markets. McDonald's opened its first outlet in 1995 in Johannesburg. Their outlet expansion programme over the following two years was more rapid than any other country. In 26 months, 30 outlets opened; now there are 98 in eight of the nine provinces.⁷⁴⁹ Though Steers remains more popular, the entry of McDonald's stimulated the fast food market to become more competitive as a whole.^{750 751}

THE MIDDLE EAST, TURKEY AND NORTH AFRICA

Soft drinks

For 25 years Coke was boycotted in many Arab countries to protest its operations in Israel. Pepsi was thus sold in these countries without competition, and had 95 percent of the market.⁷⁵² In the late 1980s, however, the boycott crumbled and Coke began to re-invest in many Middle Eastern countries (e.g. Oman 1988, Qatar 1989, Lebanon 1990, Saudi Arabia). Notwithstanding ever changing political situation, such as revolution and trade barriers (Iran) and war (Iraq, Kuwait), it significantly upped its market share—Coca-Cola now claim they are the soft drink leaders.⁷⁵³ The largest market, Saudi Arabia was 80 percent Pepsi in 1994; now, 30 percent is Coca-Cola.⁷⁵⁴ Between 1993 and 2001 Coca-Cola invested SR500m for its Saudi operations, one of Coca-Cola's fastest growing markets.⁷⁵⁵

Reaffirming its commitment to the region, Coca-Cola shifted their Middle East headquarters from Britain to Bahrain in 2000, and announced a further investment of US\$ 200 million.⁷⁵⁶ Distributing Coke does, however, remain a challenge in some countries; in Palestine, for example, conflict has made the ability to distribute Coke from the Ramallah-based bottling plant distinctly difficult.⁷⁵⁷

In North Africa, Coke dominates. Bottling operations came to Egypt and Morocco in 1945, and the areas never adopted the boycott.⁷⁵⁸

Fast food

Between 1991 and 2001, McDonald's outlets in the Middle East and Africa grew from 11 to 546, an increase of 864 percent (Figure 7). Outlets are found throughout the region (Annex V). Turkey is the largest market, followed by Israel, South Africa and Saudi Arabia. Throughout the Middle East and North Africa, McDonald's are locally owned.⁷⁵⁹

The number of Pizza Hut's and KFC's is also gaining ground in the region. By number of outlets, Saudi Arabia is the companies tenth largest emerging country market, and their 19th largest overall. They also have outlets in UAE, Oman, Kuwait, and Egypt.

LATIN AMERICA

Soft drinks

Historically, Latin America was the first region to experience major expansion by Coca-Cola and Pepsi, and it now has the second largest rates of consumption after the U.S. (Figure 2). The region is dominated by Coca-Cola, which has three anchor bottlers in the region. People in Mexico, Chile and Argentina are (respectively) amongst the top Coke consumers in the world (Annex IV). Mexicans drink more than Americans per person, and, by volume, Mexico is the company's second largest market. In 2002 Coca-Cola announced a bid to push Brazil past Mexico. "Brazil has approximately 70 percent more people than Mexico and still consumes a third of what Mexicans consume. There is an enormous space for growth here," said a spokesman.⁷⁶⁰

Coke rivals have at times dominated certain Latin America markets. Pepsi dominated Venezuela until their major bottler switched to Coke in 1996; in a more unusual case, a local soft drink Inca Kola, a greenish bubble gum flavored soda, leads the Peruvian market. The drink was bought out by Coca-Cola in 1999.⁷⁶¹

Fast food

Attracted by low levels of competition, unmet demand, high population, inexpensive labor, and an increasingly open economic environment, fast food multinationals flocked to Latin America in the 1990s.⁷⁶² McDonald's is now the leading pan-regional company, followed by Burger King and Yum!⁷⁶³

Favoring the more economically stable countries, McDonald's originally targeted Brazil and Mexico, opening outlets in Rio de Janeiro in 1979 and Mexico City in 1985. With 573 restaurants in 128 towns in 21 states, Brazil is now McDonald's eight largest market worldwide.⁷⁶⁴ In 2000 the company announced plans to double its number of restaurants by 2003.⁷⁶⁵ The number of restaurants is such that franchisees have accused McDonald's of "cannibalization" and underperforming restaurants have been closed.^{766 767 768 769} In Mexico, McDonald's has 235 restaurants, and in 2001 announced a further investment of US\$ 300 million for 200 more.^{770 771} In 1997 McDonald's announced plans to double the number of restaurants in Latin America (and the Caribbean) to 2000 by Y2K. Although McDonald's re-entered Nicaragua in 1998 after a 12 year absence, and recently built outlets in Suriname and French Guiana, it has not yet reached the target (Annex VII).⁷⁷²

Mexico is Yum!'s largest regional market, and in terms of outlets (405) is the market leader. In 2001, they invested US\$ 65 million and in 2002 US\$ 60 million to open new outlets, aiming to open 1000 in several Mexican cities by 2007.^{773 774 775} "The KFC brand in Mexico is strong, profitable and growing rapidly," said a Yum! executive in 2002. "We're capitalizing on the strong consumer appeal and growth potential for both KFC and Pizza Hut throughout Mexico. We see tremendous opportunity to further penetrate the marketplace by building new restaurants in areas that do not currently have a KFC or Pizza Hut brand."⁷⁷⁶

THE PACIFIC ISLANDS AND THE CARIBBEAN

Soft drinks

Coca-Cola has been present on the Pacific Islands for decades, the first bottler opening in Guam in 1923. At over 300 drinks per person per year, Guam has since become one of the highest consumption territory's in the world.⁷⁷⁷ Coca-Cola also has bottling operations in Fiji, Tahiti and Samoa.

Bottling operations began in the Caribbean in 1923, on Bermuda, and expanded to five islands by 1946. Consumption rates are very high. The island of St Maarten boasts the highest per capita consumption rates of Coca-Cola in the world (around 600 servings per year, 1998 figures). The U.S. Virgin Islands, Aruba and St Kitts also have consumption rates above or close to the U.S.⁷⁷⁸

Fast food

Although McDonald's opened an outlet on the U.S. territories of Guam in 1971, they did not begin expansion elsewhere until 1993 with an outlet in Saipan and on the South Pacific of New Caledonia in 1994. Despite worries that "Big Macs had become the biggest cultural threat since Coca-Cola," outlets opened on the islands of Fiji, Tahiti and Western Samoa in 1996, and in American Samoa in 1999 (Annex IV). To date, there are 18 McDonald's outlets in the islands. Yum! began expanding in the region in 2001 with a KFC in Fiji, and recently announced plans to open an outlet in American Samoa.^{779 780}

McDonald's established restaurants early on in the U.S. territories in the Caribbean, but elsewhere established for the first time in the mid-1990s. In Jamaica, for example, a restaurant opened in 1995, followed by 12 more in the following four years. Despite the closure of two restaurants in 2001, the company plans to open a further seven outlets by 2004.⁷⁸¹ Bermuda, however, has no McDonald's. The outlet on the U.S. Navy Base closed when the base shut down, and a 1997 ruling, the Prohibited Restaurants Bill, banned the company from entering the island. Appeals against the bill were rejected in 1999.^{782 783} Barbados also has no McDonald's; an outlet that opened in 1996 closed after six months.⁷⁸⁴

EASTERN EUROPE, RUSSIA, THE REPUBLICS AND THE BALTIC STATES

Soft drinks

Pepsi-Cola was historically the soft drinks market leader in Eastern Europe —production of Pepsi-Cola began in Romania in 1965, and in 1973 Pepsi-Cola became the first American consumer good licensed for production in the Soviet Union. Prior to 1990 Coca-Cola was virtually absent from the region. At the end of the Cold War, Coca-Cola took the opportunity to expand.⁷⁸⁵ It now has now overtaken Pepsi throughout most of Eastern Europe, leading sales two to one.⁷⁸⁶ The company invested heavily, US\$ 1.5 billion between 1989 and 1995.⁷⁸⁷ Investment in Russia has been particularly high: a total of US\$ 600 million by the end of 1997.^{788 789 790} The company entered the former Soviet Republics in 1994-96.⁷⁹¹ After a series of consolidations and buy-outs, the Greek based Coca-Cola HBC is the region's major bottler, covering Eastern Europe, Russia and the Baltic States.^{792 793}

Fast food

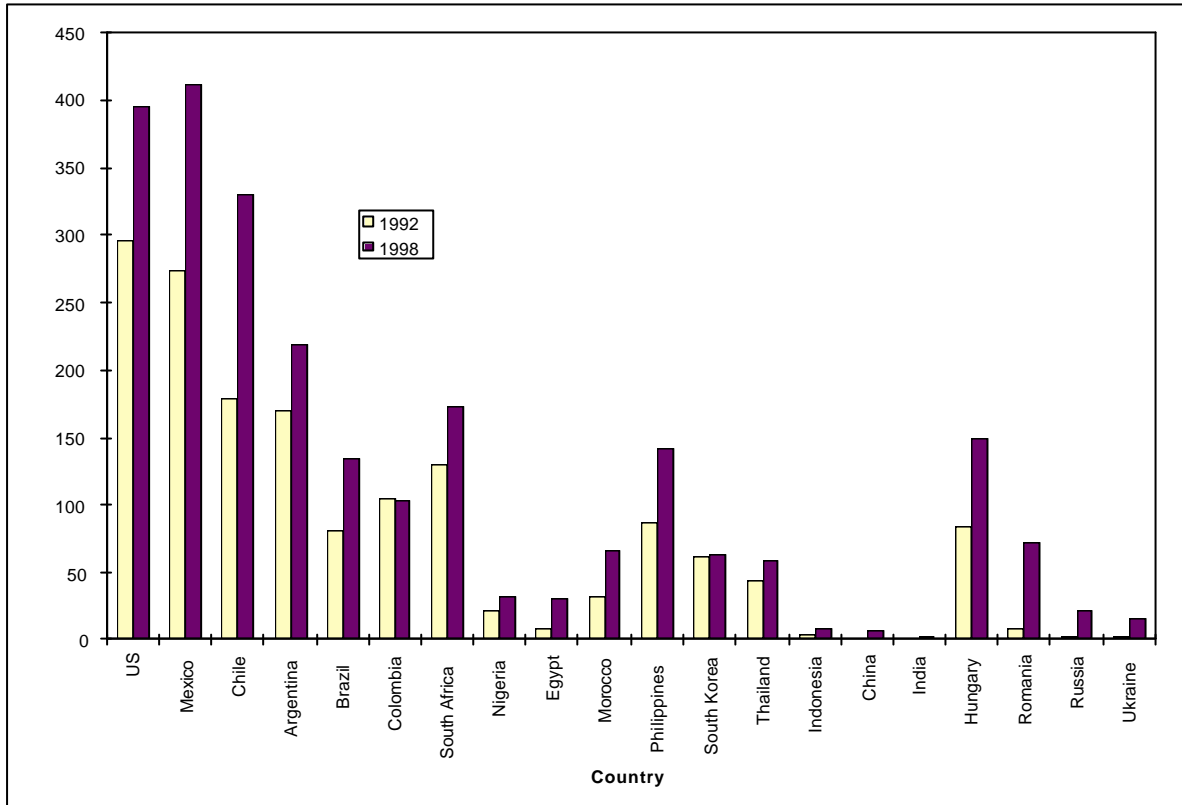
Following the dismantling of the communist bloc, the number of fast food outlets in Eastern Europe expanded rapidly during the 1990s, stimulated by the entry of McDonald's, Burger King, KFC and Pizza Hut. The rate of multinational penetration varies significantly between countries, from 13.9 percent in Russia to 38.9 percent in Hungary.⁷⁹⁴

Drawing on the popularity of red meat, McDonald's is now the leading fast food operator in Eastern Europe. Their latest country of entry was Azerbaijan, in 1999.⁷⁹⁵ Yum!—mainly KFC—is the second ranked player in each eastern European country except for Russia, where it has only a few outlets, and Hungary, where Burger King is second.⁷⁹⁶

The largest regional market for McDonald's is Poland, where they operate 189 restaurants and invested US\$ 125 million between 1992 and 1999.⁷⁹⁷ Poland is also the most important regional market for Yum!^{798 799} KFC, Pizza Hut and Taco Bell operate as "multi-branded" restaurants, and the company is currently expanding.⁸⁰⁰

Russia has been a highly visible market for McDonald's ever since it opened in 1990 as a joint venture between McDonald's Canada and the city of Moscow. It took a US\$ 50 million investment to get the outlet up and running. There are now 73 restaurants, mainly in the Moscow region. Hungary is another major fast food market in the region. McDonald's opened in Budapest in 1988, and soon became the number one McDonald's worldwide for transactions.⁸⁰¹ Having invested over US\$ 100 million, McDonald's is the market leader, with 78 percent market share of fast food sales in 2000.^{802 803 804} Burger King, which opened in 1991, is their major competitor.⁸⁰⁵

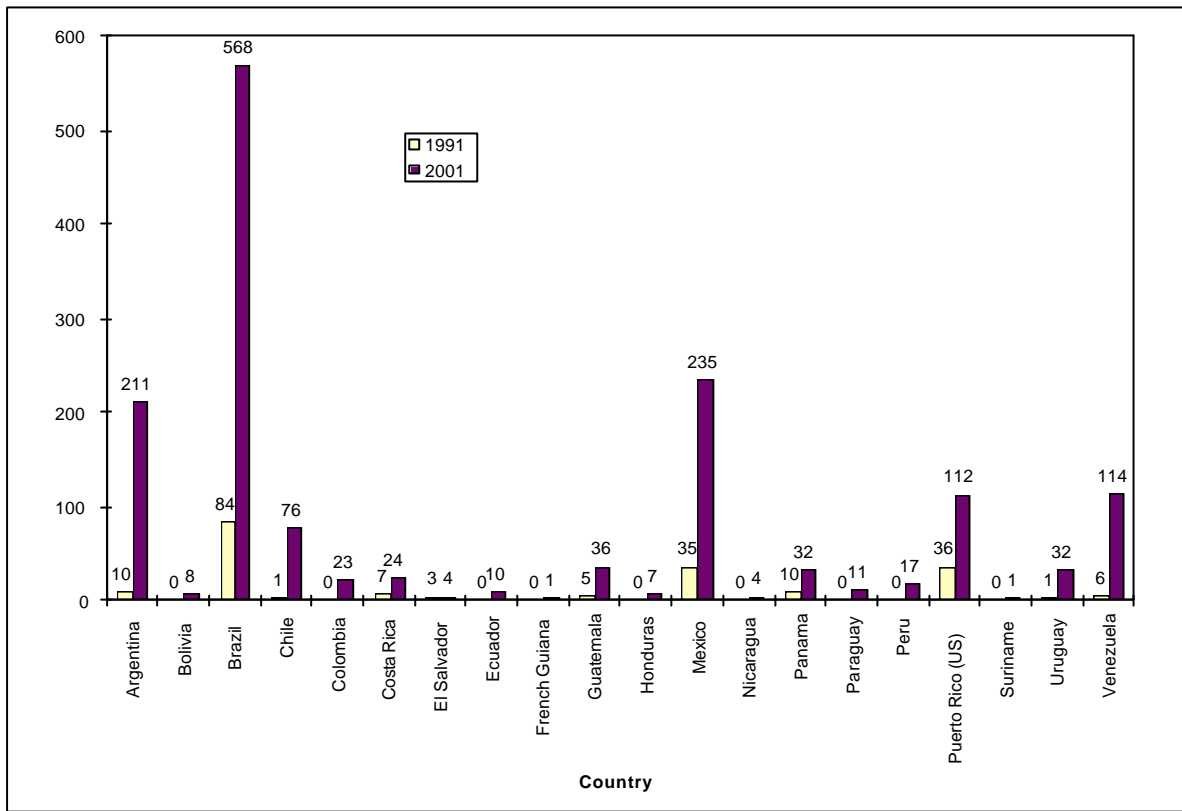
Annex II: Average annual per capita consumption of Coca-Cola beverages in selected countries, 1992 and 1998



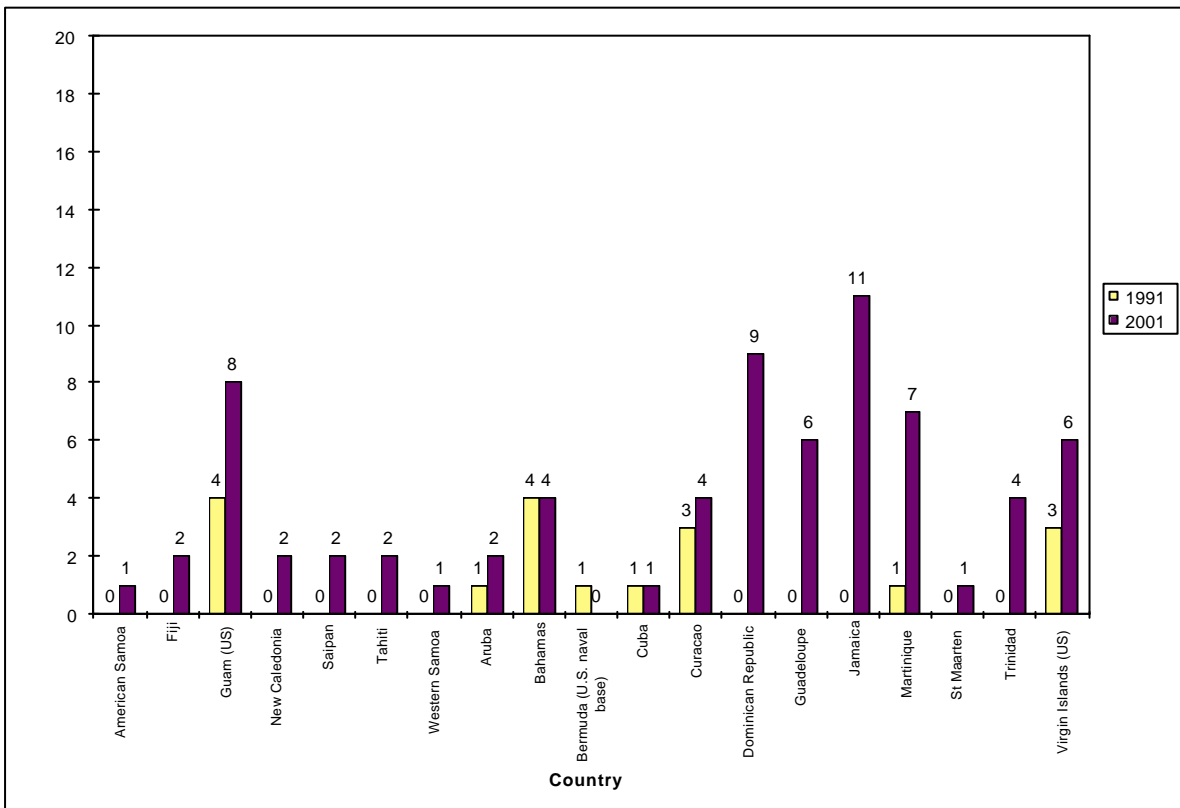
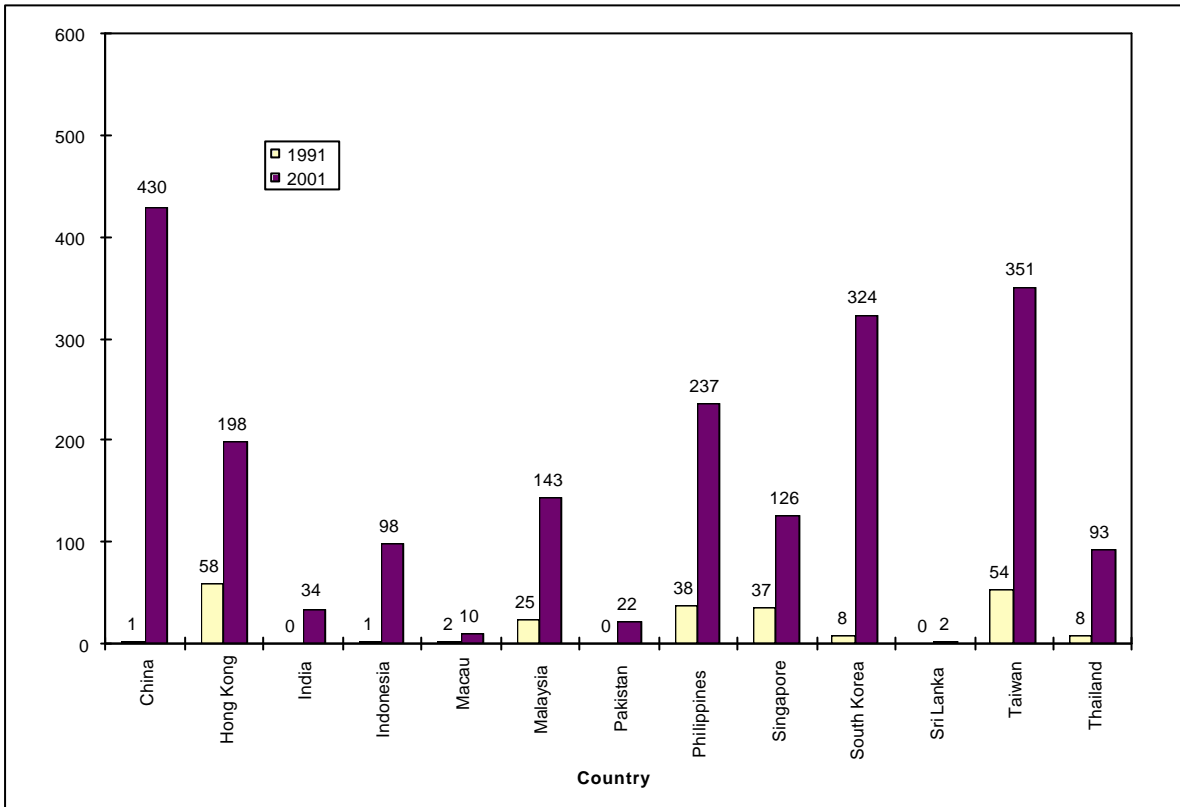
Source: Coca-Cola Annual Reports

Annex III: Number of McDonald's outlets in "emerging market" countries 1991 and 2001

Latin America

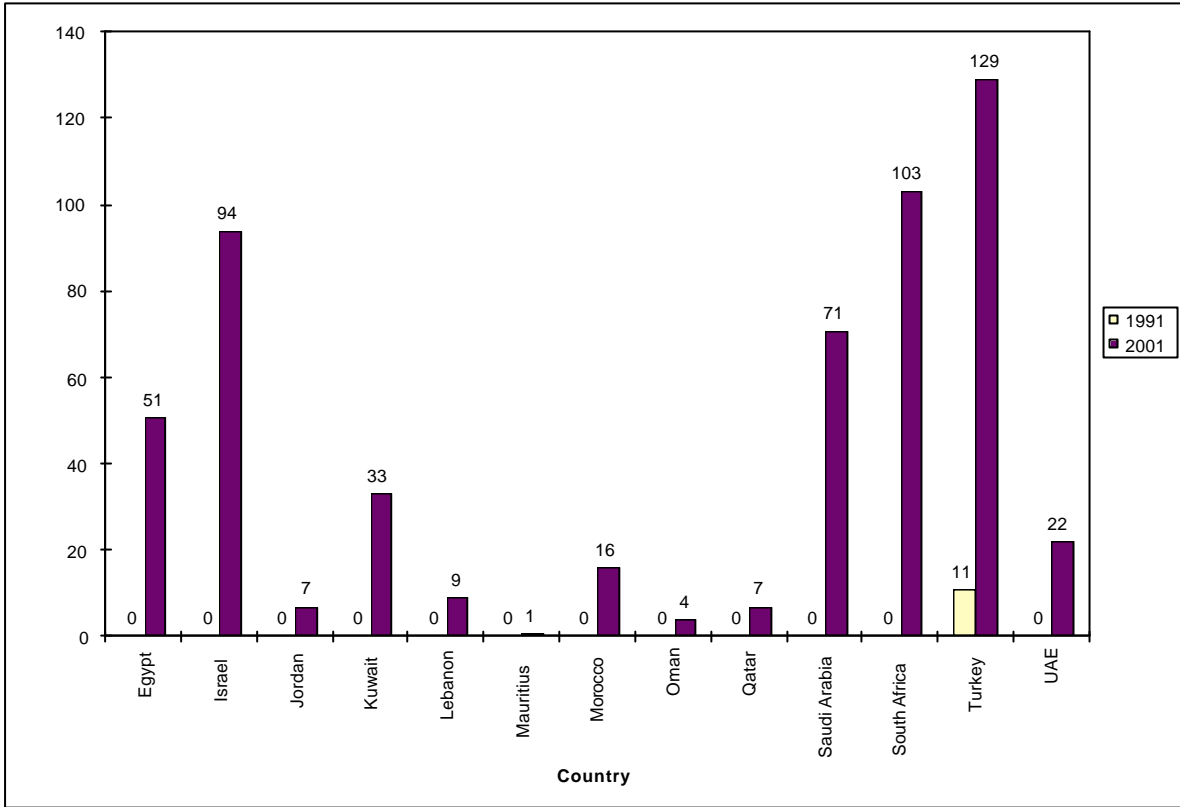


Asia



Pacific Islands and the Caribbean

Africa and the Middle East



Source: McDonald's Annual Reports

Annex IV: McDonald's expansion 1991-2001, by region

Region	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
US	8764	8959	9397	10238	11368	12094	12380	12472	12629	12804	13099
Europe	1342	1534	1801	2159	2595	3283	3886	4421	4943	5460	5794
Asia Pacific	1458	1653	1880	2168	2735	3663	4456	5055	5,655	6,260	6,775
Latin America	212	274	379	505	665	837	1091	1405	1,789	1,510	1,581
Canada	642	658	683	824	897	992	1050	1085	1125	1165	1223
Middle East / Africa	11	15	23	56	120	183	269	362	449	500	546
Total	12418	13078	14140	15894	18260	20869	22863	24438	26141	27199	30093

Source: McDonald's Annual Report

Annex V: Sourcing local products

Global soft drinks and fast food companies buy from suppliers able to supply their products to their set standard most cheaply. Though not in all cases, buying locally is often cheaper: import tariffs still exist on many products, and buying local means local currency.

McDonald's promise to source locally is attractive to governments skeptical of their intent.⁸⁰⁶ Although the company do not always source from the country in which they are operating—and rarely source 100 percent of their products locally—they have established supply infrastructures in many regions and countries (Table i). In Eastern Europe, for example, the company has an infrastructure made up of local producers to supply meat, buns and potatoes.⁸⁰⁷ In countries where suppliers that matches their tight specifications are hard to find, McDonald's have in some cases set up production facilities and convinces farmers to switch to more suitable products. In Taiwan, for example, McDonald's opened a US\$ 40 million production plant to “speed up our supply and save transportation costs.”⁸⁰⁸ Russia is a more spectacular example. McDonald's were initially unable to find local suppliers for their products in Russia. Given the expense of importing food with the low-value ruble, McDonald's Russia invested US\$ 45 million in a processing plant, McComplex. Now operating in a Moscow suburb, the complex encompasses a bakery, dairy, potato-processing line, meat plant, sauce cookers, laboratories and freezers. The size of three football pitches, it produces 15,000 buns, 15,000 kg of hamburgers and 2,900 liters of milk everyday. McDonald's also convinced some Russian farmers to convert to growing Russell Burbank potatoes for the fries, and growing hothouse iceberg lettuce for the hamburgers.^{809 810} In countries where most of the inputs are imported—such as the Baltics and the Pacific and Caribbean Islands—it is not unusual for McDonald's to face local opposition.

Coca-Cola too, has a policy of supplying their drinks from local bottlers as a means of making their products affordable. As explained by a Coca-Cola vice president: “The core of our business is affordability. When you have to transport the product into the country, it makes it much more expensive. Bottling as close as possible to customers is an important part of that strategy.”⁸¹¹ When investing in new markets, the company looks at “creating production capacity to allow us to meet local demand with locally produced products, fundamental to driving future volume growth.”⁸¹² Like McDonald's the company emphasizes local sourcing in its promotional materials. “The value of locally sourced goods and services exceeds LBP 4.5 billion a year,” it says, for example, about Lebanon.⁸¹³

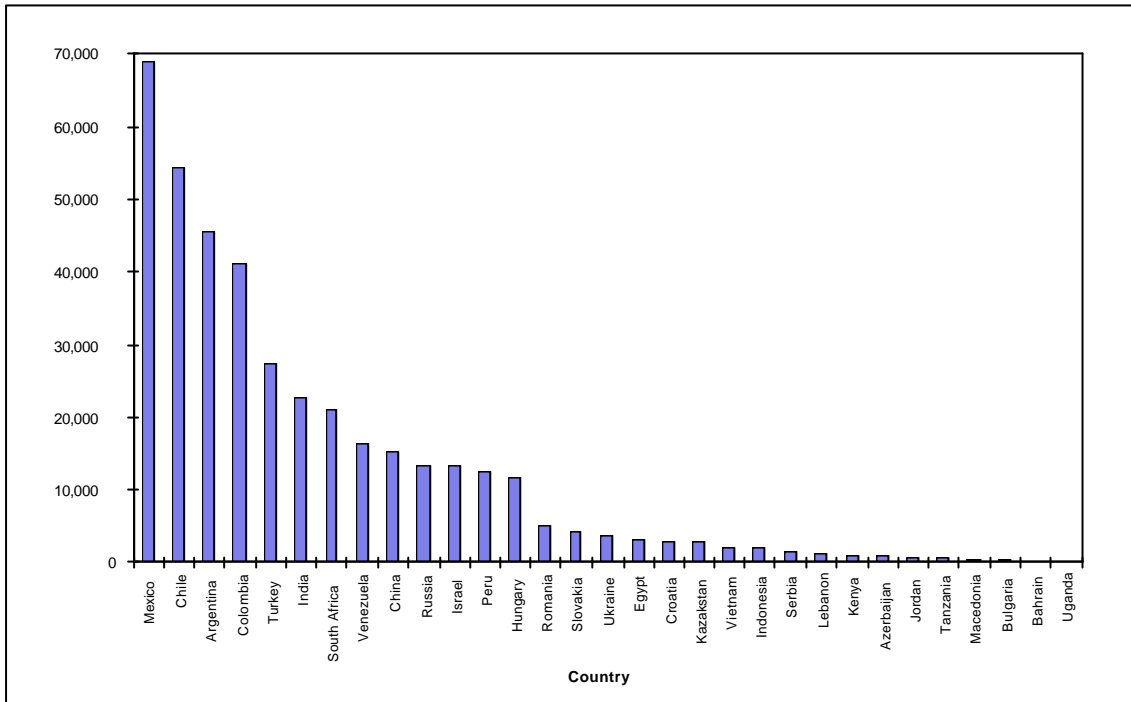
Examples of countries where fast food chains source a majority of their products locally*

Country	McDonald's	KFC	Pizza Hut
China	95% ⁸¹⁴	85% ⁸¹⁵	
Colombia	56% ⁸¹⁶		
Hungary	62% ⁸¹⁷	96-98% of produce; chicken ⁸¹⁸	
India	95% ⁸¹⁹		85% ^{820 xx}
Israel	80% ⁸²¹		
Kuwait	60% ⁸²²		
Mexico	90% ⁸²³		
Russia	>75% raw ingredients ⁸²⁴		
Thailand		85-90% ⁸²⁵	

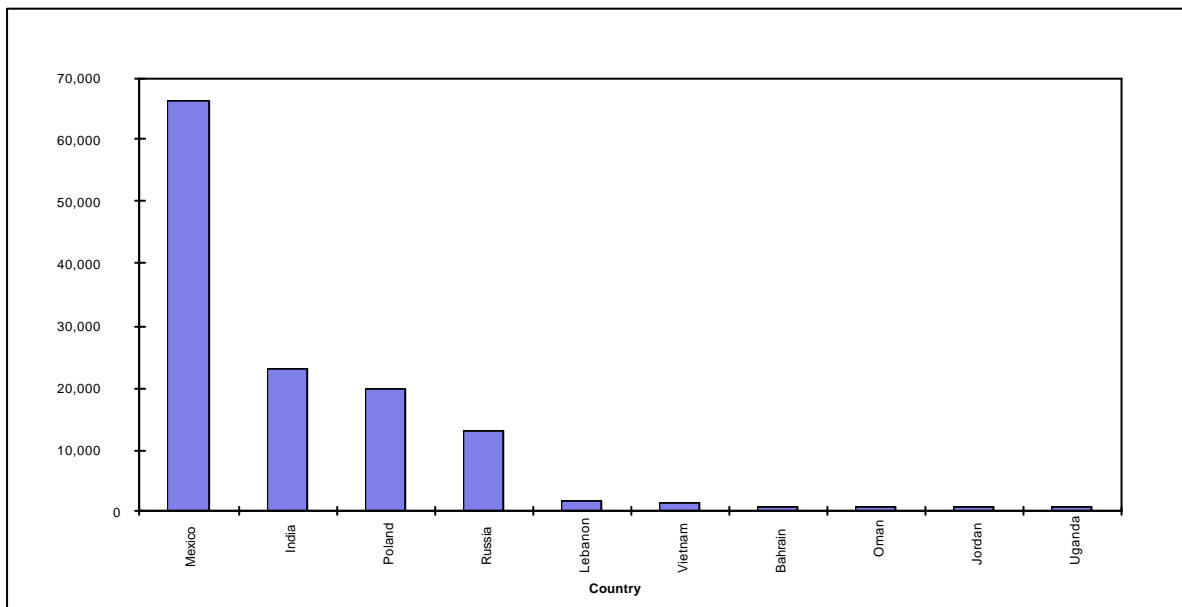
**Most recent figures available*

Annex VI: Media advertising expenditures for selected countries, 1998, US\$ 1000

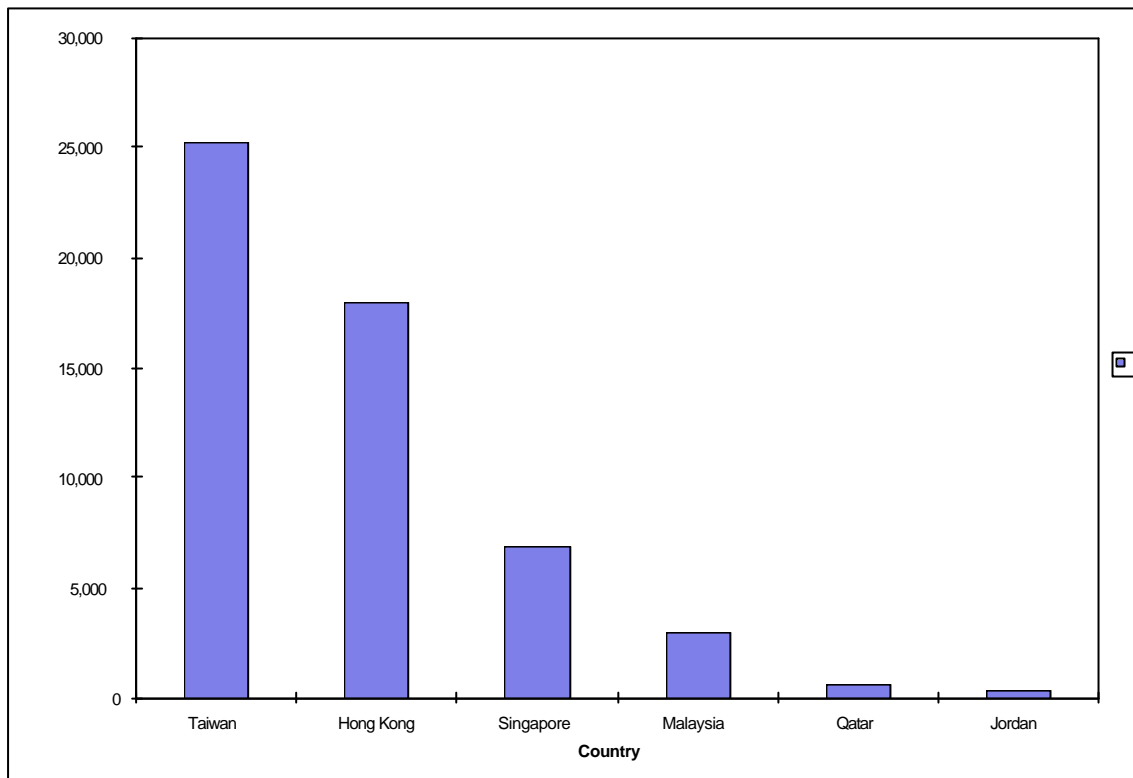
Coca-Cola



PepsiCo



McDonald's



Source: Ad Age Global

Annex VII: Country-based promotional websites

Company / country	Website address	Features*
Coca-Cola		
Coca-Cola Corporate	www2.coca-cola.com	
Coca-Cola Argentina	www.coca-cola.com.ar/body.htm	Our company, our products, frequently asked questions, promotions
Coca-Cola Brazil	www.coca-cola.com.br	Promotions, games, events
Coca-Cola China	www.coca-cola.com.cn	Promotions
Coca-Cola Colombia	www.coca-cola.com.co	What's new, promotions, downloadable games and screensavers, community involvement, news
Coca-Cola Czech Republic	www.cocsa-cola.cz	Promotions
Coca-Cola Hungary	www.coca-cola.hu	Promotions
Coca-Cola India	www.myenjoyzone.com	Membership, promotions, features on Bollywood, music, cricket, games available for members, and downloadable screensavers and other items
Coca-Cola Israel	www.coca-cola.co.il	Promotions
Coca-Cola Korea	www.cocacola.co.kr	About Coca-Cola, promotions, coke sponsored events, what's new
Coca-Cola Malaysia	www.coca-cola.com.my	Promotions, downloadable music, stickers, news pages, message page
Coca-Cola Morocco	www.coca-cola.ma	History, events, sports, music, promotions, games, ability to hear radio jingles and TV commercials, contact information
Coca-Cola Peru	www.coca-cola.com.pe	Promotions, community involvement, employment information, product range, news page, events, promotions, screensavers, games, ability to view TV commercials, downloadables
Coca-Cola Russia	www.cocacola.ru	Promotions
Coca-Cola Singapore	www.coca-cola.com.sg	Promotions, history,
Coca-Cola South Africa	http://www.coca-cola.co.za	Promotions, about Coca-Cola, press room, and investors link to Coca-Cola Company Corporate website

Coca-Cola Taiwan	www.cocacola.com.tw	Promotions
Coca-Cola Turkey	www.coca-cola.com.tr/	
PepsiCo		
PepsiCo corporate	www.pepsico.com	
McDonald's		
McDonald's Corporate	www.mcdonalds.com	
McDonald's Argentina	www.mcdonalds.com.ar	History, kids corner, menu, information about Ronald McDonald House, birthday parties, new products, suppliers, McCafes, restaurant locations,
McDonald's Bolivia	Mcdonalds.com.bo	History, restaurant locations, philosophy, the people of McDonald's, birthday parties, menu, employment, promotions, kids pages
McDonald's Brazil	www.mccdonalds.com.br	History, menu, food quality information, franquia, nossa gente, , community involvement, kids pages, information about internet cafes, company information, press releases, frequently asked questions
McDonald's Chile	www.mcdonalds.cl	History, food quality, franquias, promotions, kids pages, community involvement, Ronald McDonald Houses
McDonald's Colombia	www.mcdonalds.com.co	Franquias, history, request information page,
McDonald's Indonesia	www.mcdonalds.co.id	History, employment, philosophy, information about suppliers, promotions, menu, food quality and nutrition information, information about birthday celebrations; kids club pages, online delivery service, customer comments, press releases
McDonald's Hong Kong	www.mcdonalds.com.hk	Profile, kids pages, contact details
McDonald's India	www.mcdonaldsindia.com	What's new, kids pages, restaurant locations, about us, supply chain, menu, community involvement, employment, press room, contact us
McDonald's Korea	www.mcdonalds.co.kt	
McDonald's Pakistan	www.mcdonalds-pakistan.com	About us, careers, menu, kids section, whats new, community involvement, restaurant locations, information about birthday parties, customer comments, contact information
McDonald's Thailand	www.mcthai.co.th	Promotions, nutritional information
McDonald's Turkey	www.mcdonalds.com/tr	

Yum! Brands		
Yum! Corporate website	www.yum.com	
Pizza Hut El Salvador	www.pizzahut.com.sv	Promotions, kids zone featuring Pizza Pooch and the Huts Mutts, menus, restaurants, employment information, , ciberoferas, history, contact information, Rifa!!, ordering pizza online
Pizza Hut Puerto Rico	www.pizzahutpr.com/index2.html	Dejanos conoerte, printable discount vouchers, coupons, ordering pizza online, contact information
Pizza Hut Brazil (Interior)	www.pizzahut-cps.com.br/index1.htm	Fale Conosco, History, Cardapio, lojas, facu o seu cadastro, promotions
Pizza Hut Brazil (Rio Grande)	www.pizzahut-poa.com.br	Promotions, receita do dia, loja virtual, ordering pizza delivery online, cadastrado, novidades
Pizza Hut Poland	www.pizzahut.com.pl/default.asp	Przjaciele Pizza Hut, restaurant locations, Menu, Konkurs, ciekawostki, kariera w Pizza Hut
Pizza Hut Hungary	www.pizzahut.hu	Promotions,
Pizza Hut Singapore	www.pizzahut.com.sg	Ordering pizza delivery online, about Pizza Hut, , promotions, rewards card, menu, restaurant locations.
Pizza Hut Saudi Arabia	www.pizzahut-jeddah.com	Restaurant locations, menu and prices, kids menu, whats new, special offers, information about telephone delivery service, about us, contact information
Pizza Hut Oman	www.pizzaoman.com/index2.html	Menu, special offers, newsroom, restaurant locations, kids page
Pizza Hut China	www.pizzahut.com.cn	
Pizza Hut Korea	www.pizzahut.co.kr	Promotions
Pizza Hut Taiwan	www.pizzahut.com.tw/default.asp	About Pizza Hut, news, menu, information about pizza delivery, information about membership card, restaurant locations,
Pizza Hut Hong Kong	www.pizzahut.com.hk/c_hot_topics.html	Pizza delivery information, hot topics, about Pizza Hut HK, about pizza, menu, kids corner, pizza membership card newsletter, restaurant locations, employment information, contact information
Pizza Hut Philippines	www.pizzahut.com.ph/main.html	Ordering pizza delivery online, news, menu, customer comments, about Pizza Hut, membership card information

Pizza Hut Malaysia	www.pizzahut.com.my	History, promotions, restaurant locations, delivery information, customer comments, online viewing of TV ads
KFC China	www.chinakfc.com	Interactive games and club membership
KFC Indonesia	www.kfcindonesia.com	News, restaurant locations, , employment information, comments, information about birthday parties, information about philanthropy, promotions
KFC Thailand	www.kfc.co.th	Online KFC delivery, kids page, promotions, information about new products, information about kids TV programmes, employment information,
KFC Malaysia	www.kfc.com.my	History, restaurant locations, news, menu, promotions, new products, online viewing of TV ads
KFC Singapore	www.kfc.com.sg	History, news, KFC and the community, TV commercials, restaurant locations, promotions, nutritional facts, information on home delivery, information on catering services, Kids Corner, customer comments, and mailing list

* Not all the website features are listed owing to incomplete translation

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Annex

The Indaba Declaration on Food, Nutrition, Health and Sustainable Development

We from Africa, Asia, the Middle East, Latin America, Europe and North America, from government, industry, academia, charitable foundations, the health professions, and civil society, met as participants at the Implementation Conference organised by the Stakeholders' Forum for Our Common Future at the Indaba Centre, Sandton, South Africa, on the occasion of the World Summit on Sustainable Development in August 2002, declare and agree as follows.

In the Zulu language 'Indaba' means 'meeting together for a common purpose, to agree on action'. This is what we have done.

THE BASICS

- Good health is a vital input to, and outcome of, sustainable development.
- Good health can be achieved only by addressing the underlying and basic causes of disease.
- The modifiable causes of health and disease are environmental.
- The nature and quality of food systems, and therefore of diet and nutrition, are fundamental determinants of human health and welfare, and that of the whole living and natural world.

THE ISSUES

Levels of environmentally determined diseases now amount to a global emergency, projected to become an irretrievable catastrophe.

The triple burden now borne by almost all middle- and low-income countries of: nutritional deficiencies, infectious diseases including HIV-AIDS, malaria and tuberculosis, and chronic diseases including cancer, heart disease and stroke, and often also of violence, is too heavy for any country to bear. In particular:

- Nutritional deficiencies and infectious diseases persist throughout the world.
- The effect of HIV-AIDS most of all in sub-Saharan Africa is catastrophic.
- Rates of many chronic diseases in middle- and low-income countries are soaring.
- Cancer, heart disease and stroke are now the leading causes of premature death in almost all countries.
- Projections show a vast increase of chronic diseases, including obesity and diabetes in early life
- On a population basis, no country has the resources to treat chronic diseases.
- In general, current political and economic policies are increasing the global burden of disease.

THE CAUSES

A key immediate cause of all types of disease is grossly inadequate or inappropriate food and nutrition, including food insecurity, and for chronic diseases, use of tobacco and physical inactivity.

The underlying and basic causes of disease are social, economic and political. These include inadequate maternal and childcare, poor breast-feeding and weaning practices, insufficient health services; lack of education and information; inadequate sanitation, polluted water; poverty, inequality, injustice; personal, communal and national debt; unemployment, dangerous environments, precipitate urbanisation; unsustainable agriculture, land degradation; poor governance, expropriation, dislocation; the effects of colonialism, unfair terms of trade, subsidy of industry in high-income countries; destruction of indigenous and traditional food systems and culture; commodity speculation, unregulated markets, aggressive promotion of degraded, cheapened and energy-dense food and drink; the use of food aid and trade as an instrument of power; and persecution, terror and war.

THE APPROACHES

On a population basis, the only rational approach to all types of disease is prevention, and most of all the protection and creation of healthy environments, at household, community, municipal, state, national and global levels.

This approach must include the protection, development and creation of food systems that are appropriate, sustainable and dynamic, designed to preserve, strengthen and improve the human and also the living and natural world.

Information and education, including product labelling, are necessary but insufficient in prevention of disease and promotion of health, and by themselves do not work.

Successful and accepted public policies for example concerning transport, energy, firearms, tobacco, alcohol and water, include legal, regulatory and fiscal instruments designed to balance the interests of civil society with those of industry and government. The protection and creation of healthy food systems, integral to healthy environments and to human health, also requires the use of law, regulation, and pricing policy, as well as integrated multi-sectoral and multi-disciplinary actions with all stakeholders as partners

THE ACHIEVEMENTS

We acknowledge Principle One of the Rio Declaration on Environment and Development, which states 'human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature'.

We note that the agenda of the World Summit on Sustainable Development rightly indicates that the control and prevention of all types of disease requires protection or change of environments to keep or make them healthy.

We accept existing frameworks of understanding of causation of health and disease, such as the UNICEF conceptual framework on malnutrition.

We endorse the policy on infant and young child nutrition now adopted by WHO and all relevant UN agencies, which includes the evidence-based agreement that the optimal duration of exclusive breast-feeding is six months.

We support the WHO Global Strategy on Diet, Physical Activity and Health, and the draft WHO/FAO report on which it is based. We endorse the first principles of the strategy, including stakeholder involvement, advocacy designed to make policy action plans succeed, a life-course approach to health, and emphasis on middle- and low-income countries. We support many of the actions recommended in the draft report, in particular those that address the underlying and basic causes of disease.

We applaud the decision of the International Union of Nutritional Sciences to set up a special task force on 'eco-nutrition', meaning that nutrition must be concerned with planetary as well as personal and population health, and the decision of the organisers of the next World Congress on Nutrition to be held in Durban in 2005, to include nutrition and the environment as a key theme.

THE ACTIONS

Many actions can now be taken that will have the effect of controlling and preventing all types of disease.

We, the signatories to this document, have the capacity to act as follows. Inspired by the Indaba process, we pledge:

- To support the basic philosophy of the WHO global strategy and the joint FAO/WHO consultation document on diet, nutrition and the prevention of chronic diseases, and to advocate its implementation at all levels including civil society, national governments, and international bodies.
- To disseminate this Declaration on relevant websites and journals, in meetings with relevant UN executives and national governments, professional bodies and NGOs, and to recommend that its themes and conclusions be given high priority at further international meetings involving the UN system and nation states.
- To use our professional and national networks, and the Stakeholder Forum network, to advocate and disseminate the WHO global food and nutrition strategy.
- To advocate that the strategy be amplified, become holistic, and so include all forms of malnutrition. It therefore should also include nutritional deficiency and infectious diseases as well as chronic diseases, and emphasise the underlying and fundamental causes of health and disease, so as to be fully relevant in middle- and low-income countries, where nutritional deficiency and chronic diseases including obesity co-exist at all levels, even in the same household.

