



Unhealthy Developing World Food Markets

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Problem Statement and Key Messages

Low income populations (i.e., those living on \$2-13 USD/day) in developing countries are disproportionately vulnerable to what is affordable, accessible and aspirational, and are increasingly incorporating available “unhealthy foods” (high in fat, sugar, salt, and calories with little nutritional value) into their diets. While changing food markets may bring potential benefits including improved food safety, security, and product diversity, overconsumption of these unhealthy foods leads to a burden of health and financial impacts, including obesity, hypertension, diabetes, loss of productivity and absenteeism for these low income individuals, their families and the broader societies in which they live.

Key Messages

1. Developing countries are increasingly consuming higher proportions of unhealthy foods, resulting in diets that are high in fat, sugar, salt, and calories with little nutritional value. This is a global phenomenon that affects over 1 billion low income individuals (earning \$2-13/day) who are disproportionately vulnerable to foods that are cheap, convenient, and readily accessible.
2. Unhealthy food markets contribute to negative health outcomes that can also impact the financial wellbeing of low income individuals, their households and the developing countries in which they live. This problem disproportionately affects low income people given their vulnerability to what is affordable and convenient, but rural-urban migrants and urban populations may suffer disproportionate impacts due to lifestyle choices, and limited access to nutritious fruits and vegetables.
3. Most funding in this space is directed toward funding agricultural production or nutrition, specifically micronutrient deficiency. The largest funder in the space is the Gates Foundation, which only directs 3.1% of total grants towards “food markets”, suggesting a white space where other donors could enter.
4. Governments in developing countries have limited awareness of the challenges food markets present, consequently there are very few policy or educational programs in place. Many governments, NGOs and health organizations are still predominantly focused on under-nutrition, with limited partnerships working to address cross sector issues of agriculture and nutrition. There are few models designed to address food markets explicitly.
5. Trends, including urbanization, expansion of supermarkets and activities of large food and beverage companies, indicate that this problem will grow in urgency in the coming decades. Areas of dynamism include the emergence of over and under nutrition, and the resulting non-communicable disease burden, as a health and economic concern for developing nations.
6. There is the potential to build partnerships between governments, health service providers, and the private sector to address unhealthy food markets. While there may be intervention strategies around behavior change and harnessing the power of the private sector, supportive policies are needed to lay the foundation for transformational change in this sector. Overall, efforts on addressing unhealthy developing world food markets cannot focus on removing unhealthy food without building the capacity of local producers to provide healthy, affordable food options to improve the health of low income people and their families.

Definition of “Food Market” and “Unhealthy Foods”

For the purposes of this Search, a food market is defined as the economic activity around the purchase and sale of food. This is one part of the larger food system which includes agricultural inputs through processing to consumption. The value chain below depicts these activities.



Definition of “Unhealthy Foods”

The problem includes all foods and beverages that are high in fat, sugar, salt and calories with little nutritional value. These “unhealthy foods” are purchased and consumed through a broad range of channels, including formal supermarkets, street stalls and fast food restaurants. However, most of the data available is on unhealthy processed foods and soft drinks, therefore, the quantitative analysis in this Search is based primarily on those foods. Qualitative insights suggest undocumented consumption of unhealthy foods, including street foods and unhealthy foods in the home, is part of the problem, but scale cannot be quantified.

- Unhealthy foods, those high in sugar, fat and salt with little nutritional value, are rapidly becoming more available, affordable, and acceptable for consumers in developing countries. The shift to new patterns of unhealthy eating is contributing to a growing incidence of non-communicable diseases (e.g., diabetes, cardiovascular diseases) historically seen in high-income countries. The spread of unhealthy foods and attendant diet-related risk factors to low-income populations will accelerate in the next decades to affect more than one billion poor people. Lack of access to affordable, healthy food choices, and the new challenges to health and livelihoods from unhealthy foods will compound the existing challenges from under-nutrition and communicable disease that continue to face the developing world.
- Food markets, the economic activity around the purchase and sale of food, continue to evolve globally. However, the growth and depth of the unhealthy food markets problem will be more pronounced in low- and middle-income countries. Livelihood impacts will be reflected in wage and productivity loss, rising healthcare cost burden at the individual level, and an aggregate increase in healthcare expenditures at the national level.
- A target population of 1.4 billion low-income people (i.e., those living on \$2-\$13 per day) in the developing world are particularly vulnerable to the impacts of unhealthy food markets. Rural-to-urban migrants and individuals rising from extreme poverty are disproportionately vulnerable to ill health effects and the resulting livelihood costs of unhealthy food markets.
- The root causes of unhealthy food markets include urbanization and consumer preference for convenience foods, underdeveloped local farm-to-market supply chain infrastructure, the spread of supermarkets and modern retail, and misaligned incentives between government policies and profit-maximizing businesses. Prevailing perspectives, driven mostly by academics and leading development organizations, generally hold that governments must play a stronger role in regulating food markets and correcting misaligned incentives of the private sector. Through there is intensifying discussion on this topic within the nutrition and development communities, there is no alignment around the best ways to address the problem. There is little funding dedicated to unhealthy food markets, as most funders and implementing organizations remain dedicated to hunger and under-nutrition and few national governments have intervened to address food markets in systemic ways.
- Evolving food markets can provide benefits to developing countries, including increased food safety and enhanced nutrition from shelf-stable foods made available to populations historically vulnerable to seasonal hunger and under-nutrition. However, the potential health benefits may be overshadowed by the displacement of healthy foods, which become comparatively even less affordable. As food markets have developed to make more food available to more people at a cheaper cost, failures and inefficiencies in the “farm to fork” value chain have resulted in fewer options for low-income consumers to select affordable healthy foods, including locally produced fruits and vegetables.
- Findings from the Search suggest high-level outcomes, including development of foundational policies, enabled local producers, engagement of the private sector and empowered consumers. Interventions could be targeted toward *high volume* countries, where consumption of unhealthy foods is already widespread or *high growth countries* where consumption of unhealthy foods and soft drinks is relatively low—but growing at a fast pace.

What is the scale and scope of the problem?

Why is the problem pressing?

Scale: Why It Is Important



Consumption patterns of low income populations in lower to middle income countries are increasingly incorporating “junk food” diets (high in fat, sugar, salt, and calories with little nutritional value).

- Food markets are being changed by “unhealthy commodities.” Though harmless when consumed in small amounts, “intense palatability, omnipresence, and sophisticated marketing all make modest consumption of ultra-processed products unlikely.”
- The growth of packaged foods is 5x higher in Lower to Middle Income Countries (LMIC) compared to developed countries.
- The amount of money spent on soft drinks, ready to eat meals, snacks and ice cream dramatically increased in Brazil (75%), Colombia (50%), Thailand (42%), and South Africa (15%) from 2007 – 2012.

Over one billion low income people in the developing world are vulnerable to challenges presented by changing food markets.

- While conclusive data is unavailable, experts interviewed agree that poor people with some disposable income are the key population group impacted by unhealthy food markets.
- This population, earning \$2-\$13 per day, was 1.3 billion in 2011 and is projected to reach 1.4 billion people by 2017.

Low income individuals are disproportionately vulnerable to what is affordable, accessible, and aspirational.

- Low income households, which already spend a high portion of income on food, are steered toward lower priced unhealthy foods. Long shelf-life, ease of storage & transport, and lower cost of inputs make unhealthy foods lower priced.
- Large Food and Beverage companies are increasingly targeting the marketing of unhealthy aspirational products toward low income consumers.

Scope: Global Relevance



The problem is growing fastest in countries that historically have had low levels of unhealthy food and soft drink consumption.

- The growth of unhealthy food consumption (110%) and soft drinks (70%) between 2007 and 2012 was highest in India.
- According to a study in the American Journal of Public Health, the projected rise in soft drink consumption over the next 5 years (15.7% in low- and middle- income countries, and 9.5% worldwide) would lead to an additional 2.3 billion adults who are overweight, 1.1 billion who are obese, and 192 million new cases of diabetes. 60% of the burden would fall on low-/middle- income countries.

In developing countries, consumers purchase unhealthy food and soft drinks mainly from small retailers.

- Urban low income people rely on local small informal shops due to convenience (proximity), need to shop multiple times a week (mostly due to lack of refrigeration and storage space), and affordability.
- In a South African study, informal vendors’ competitive pricing for unhealthy foods (chips, pastry) relative to commercial outlets made the food more accessible and affordable to those on lower incomes.
- Street stalls comprise 39% of food service in Vietnam and studies in South Africa and India showed that poor people switch to more expensive franchised fast food retailers only once their income rises.

Negative impacts of unhealthy developing world food markets impact populations in both rural and urban areas.

- Time poverty and affordability hasten overconsumption of unhealthy food in cities. For example, in India, 76% of packaged foods are consumed by the urban population (representing 30% of total population).
- As supermarkets expand in urban areas, they drive down prices, and increase availability and diversity of unhealthy food products to low income populations.

Consumption of unhealthy food is a global problem that is worsening in developing countries. Low income households are disproportionately vulnerable to the effects of unhealthy food markets, and the problem is growing fastest in lower income countries.

What is the impact on the lives of poor or vulnerable people? What are the gender dimensions?

Impact on the Lives of the Poor or Vulnerable



Unhealthy food markets result in a dearth of healthy, affordable food options, placing disproportionate health and financial burden on poor or vulnerable populations.

- A report by the World Economic Forum and Harvard School of Public Health on non-communicable diseases (NCDs) cited “processed foods high in refined starch, sugar, salt and unhealthy fats cheaply and readily available and enticing to consumers” as one of several drivers of \$30 trillion in global NCD costs over the next 20 years. The collective burden of NCDs is swiftly shifting from high-income to less wealthy countries.
- NCDs are more likely to go undetected in poor populations resulting in even greater morbidity, diminished quality of life and lost productivity. This has the potential to “diminish a country’s economic output and hinder its pace of economic growth.”

Individuals who have risen from extreme poverty to having some disposable income are particularly vulnerable to unhealthy food markets due to nutrition deficits early in their life resulting in a disease-poverty trap.

- Some evidence shows that people who have been undernourished in the first 2 years of life put on weight rapidly later in childhood / adolescence and are at increased risk of chronic diseases related to nutrition. While the 850 million extremely poor (under \$2 per day) suffer from under-nutrition at present, as their incomes increase, they are particularly susceptible to the health and financial affects from overconsumption of “junk food” later in life.

Rural-urban migrants are likely to be disproportionately affected by unhealthy food markets in the years ahead.

- Based on an FAO study, dietary changes associated with rural-urban migration are explained by the increased reliance on external forces for sustenance and the shift to the purchase of highly-processed foods. It’s been observed that these groups adopt a “western” dietary profile, which is reported to be associated with diabetes, heart disease, excessive caloric intake, and obesity.
- An analysis of the dietary intake of rural-urban migrants in India showed that migrants are particularly vulnerable, as they cannot afford to purchase nutritious food, and tend to increase their consumption of more energy dense foods—which predisposes them to obesity and diabetes.

Marketing and lifestyle choices contribute to increasing the vulnerability of women and children to unhealthy food markets.

- Women are likely to suffer in some places in the developing world as they are the last to eat and provided the least nutritious food. Also, time poverty contributes to whether women choose easily prepared and pervasively available foods (e.g., junk foods) for themselves and their families.
- Children are particularly influenced by advertising messages, and are frequently targeted with aspirational marketing. A South African study found 16% of the advertisements during child TV programming were for food products, and 55% of those were for “junk foods.”

Lack of affordable healthy food options contributes to an increased burden of non-communicable diseases in vulnerable low income populations.

What are the root causes at play? What systems failures are causing or exacerbating the problem?

Deep-rooted changes affecting consumers and the food industry are combining with several systemic failures to adversely impact nutrition, health and livelihoods.

System Failures: Underlying constraints that exacerbate the vulnerability of low-income populations

Market Distortions

Heavy subsidies, commodity incentives and relatively high margins on processed foods have driven the private sector to focus on the production of unhealthy foods, and to place little monetary value of consumer health.

Political System

Policy has historically focused on the enduring issue of hunger, and few tools have developed to address dietary quality. Governments have not promoted healthy food markets, creating a barrier to comprehensive strategy.

Health Services

The health systems of developing countries, built to primarily address infectious diseases, is straining to tackle the growing and expensive burden of non-communicable diseases.

Nutrition Programs

Little funding to research and measure the multidimensional drivers and implications of the food transition and to identify cost-effective interventions that are feasible in different settings.

Root Causes: Main drivers that directly contribute to the overconsumption of unhealthy foods

Supply Chain Infrastructure

Under-developed infrastructure of local supply chain actors limits availability and quality of healthy products. Packaged food supply chains tend to be first to formal markets, only later followed by more complex fresh food chains.

Economies of Scale in Food Production

Technology- and volume-driven efficiencies in the supply chain reduce marginal cost, and ultimately prices, of highly-processed food products (v. healthier options).

Globalization and Market Growth

The opening of markets in the developing world, along with the saturation of existing markets, is driving food and beverage companies to accelerate the influx and accessibility of highly-processed foods.

The Revolution In Food Retailing

Supermarkets and modern retail are speeding the commoditization and spread of unhealthy packaged foods. (However, as incomes rise, they may be a platform for the commoditization of healthier fresh foods.)

Misaligned Commercial Incentives

Profit-maximizing businesses are incentivized to drive demand and lower the cost of their products. Government policies and agribusiness influence the crops farmers grow, resulting in the high cost of unhealthful foods.

Consumer Preferences

Deep-seated tastes from human evolutionary programming, as well as increasing time poverty and status associations, drive consumers towards highly-processed foods.

What are the prevailing perspectives on this problem?

Development actors have identified several approaches to addressing the problem. Most experts agree that some combination of policy, market-based approaches, and behavior change is required, and in the absence of a targeted, coordinated solution space, systemic change will not happen easily.

Policy-Based Approach

“Governments play a critical role in the management of food market forces through regulation.”

This approach has traditionally focused on agriculture and production components of the food value chain through subsidies. The approach argues that developing country governments need to adopt and enforce regulations and other measures such as food labeling or taxation to counter the strong forces driving the expansion of unhealthy foods. Government policies could also support accessibility and affordability of healthy foods, in addition to limiting unhealthy foods.

Market-Based Approach

“Engage with the private sector to leverage their expertise, correct misaligned incentives, and promote common goals.”

This approach looks for new ways of reshaping local food markets and structuring incentives to drive alignment between government stakeholders, retailers, and food and beverage producers. This approach focuses on understanding how market incentives and skill sets of commercial actors across the food value chain including product innovation, distribution, marketing, quality standards, technical expertise could contribute to an enabling environment of price, availability, quality, and demand of nutritious foods. One example of this approach includes programmatic interventions by multilaterals like GAIN, the Global Alliance for Improved Nutrition.

Behavior Change Approach

“The poor are not beneficiaries but consumers with the power to influence.”

The behavior change approach assumes that individual choices are a key driver and if consumers can be educated to make positive food choices, then the market system will adapt in ways that support healthier food choices. Experts indicate that developing country consumer groups are not currently active around the issue of unhealthy food markets though they believe education is an important intervention strategy. Limitations of this approach include the lack of recognition of collective social vulnerability to marketing campaigns, taste of products, the rigidity of the food system itself, as well as the fact that many low income people have limited resources to make healthy choices.

What has and has not worked?

What Has Not Worked

Partner Approach

- **Initiatives focused on agriculture or nutrition alone.** Initiatives focused on interventions in a single sector have not been successful in addressing unhealthy food markets. In addition, partnerships focused on capabilities of organizations tend to take longer and ultimately fail as they rarely incorporate the core capabilities, incentives, roles and needs of the varied stakeholders in the complex arena of unhealthy food markets.

Behavior Change

- **Education Initiatives** that seek to inform consumers with information that could enable better decisions (e.g., health promotion campaigns, food labeling regulation) have seen limited impact. Education initiatives are widespread, often led by NGOs or government and targeted to local community, school or point of sale settings. Resourcing issues and poor monitoring and evaluation of results tends to limit these programs as well as cultural complexities that limit feasibility of scale.

Business-Led Solutions

- **Self-regulation of private sector companies.** For example, Unilever and Nestle both sell ice cream and own weight loss businesses, serving both ends of unhealthy food issues. Self-Regulation to prevent the harmful effects of processed food and beverages has, similar to experience with alcohol and tobacco, not proven effective nor safe according to a study published in The Lancet. For example despite warnings by the WHO that food and beverage advertising contributes to childhood obesity and the introduction of self-regulatory bodies limiting advertising, children remain a main target of food advertising.

What Has Worked

- **Cross-Sector Partnerships that foster true collaboration** have recently shown signs of success in leveraging assets and skills. Examples include Scaling Up Nutrition, which has made strides to put nutrition and its inputs on the mainstream political agenda, and USAID together with Partners in Food Solutions (General Mills-Cargill-DSM), who are bringing expertise & resources to improve African food processors.

- **Nutrition strategy borne from behavioral economics**, such as systematically making healthful foods convenient within a retail space have shown promise for improving food choices, for example in some US schools. Policy can also support positive behaviors. For example a highly visual “traffic lights” system for food labeling has been evaluated as being able to positively influence which foods consumers purchase.

- **Shared Value** initiatives that provide social and economic value to companies and the communities in which they operate are gaining momentum. Food and Beverage companies have profit and reputation incentives to experiment with models to improve local supply chains and to make healthier more affordable products available to low income consumers (e.g., Unilever’s Kissan fortified creamy spreads launched to low income Indians in 2011).

Intervention efforts that incorporate situational local contexts and stakeholder incentives are more successful than singular “one size fits all” interventions.

2) Dynamism Assessment

Purpose

The Dynamism Assessment aims to identify the primary opportunities that could be catalyzed to address the problem. It also aims to identify emerging issues and future trends that could influence these opportunities, and the potential risks or uncertainties that could inhibit transformative change.

Key Findings

- This problem will increase in urgency in the coming years related to several large-scale trends in changing food markets including: urban demand for convenience food, expansion of private sector activities, and increased presence and dominance of supermarkets as primary retail outlets.
- The development sector has typically focused on the upstream impacts of the food value chain (e.g., agricultural development) and downstream impacts (e.g., health) separately. However, there is increasing momentum towards assessing the problem through a “system-wide lens.”
- Areas of dynamism include the emergence of over- and under-nutrition as a health concern for developing countries, and increasing criticism of the activities of large food and beverage companies in the developing world. Additionally, there are a few promising positive tipping points including increased government attention on rising healthcare costs and increasing consciousness and consumer demand for more healthy food options.
- While areas of movement (both positive and negative) exist, the strong palatability of unhealthy foods over fruits and vegetables, and the limited capacity of local food supply chains to provide affordable healthy food options are examples of risks and uncertainties that could limit the impact of any future initiative the Foundation might pursue.

What forces are creating windows of opportunity?

Forces Contributing to Dynamism

- **Academic Institutions and Public Health Researchers** have begun paying more attention to non-communicable diseases rather than long-standing diseases like AIDS and malaria. This is part of a general shift in health research toward nutrition, rather than food in general, and a shift to an emphasis on prevention over cures. Greater attention on the impacts of NCDs on the poor in developed countries, like the US and UK, has led researchers to begin thinking about preventing these issues in developing countries. New science on the biological and physiological relationship between unhealthy foods, nutrient-poor diet, obesity, diabetes and heart disease continues to emerge and shape further research on the related livelihood outcomes.
- **Private Sector Food companies**, having faced increased scrutiny around their activities and products in the developed world, are increasingly focused on the best ways to expand their businesses in developing markets. In response to consumer demand, food and beverage companies have begun to develop healthier packaged food alternatives. A recent report, “Behind the Brands” part of Oxfam’s GROW campaign, rates food companies’ behaviors and identifies various partnerships between food companies and development organizations aimed at responsibly participating in the food system of developing countries. Additionally, supermarkets are beginning to enter more emerging markets. These major retail outlets can impact which foods are available to consumers, at which price, having large influence over changing food markets and consumption habits.
- **Consumers**, particularly in the developing world, are benefiting from rising income levels and increasing amounts of disposable income. These changes are driving demands for different kinds of foods, particularly those associated with wealth and status. Increased disposable income has also lead consumers to demand more choices and alternatives; growing awareness about nutrition and health has prompted a demand for healthier food options. For example, at McDonald’s 2013 annual shareholders’ meeting the CEO was challenged by, shareholders and consumers, with questions related to the company’s role in the global obesity epidemic.

Areas of Dynamism

- Assertive stances towards large food and beverage producers’ activities in the developing world
- The Private Sector’s Efforts to Achieve Shared Value
- Public-Private Partnerships to Develop Healthier Foods
- Increasing “Food Consciousness” in Developing Countries
- Growing emphasis on the health and economic burdens of NCDs in the developing world
- Emergence of the double-burden as an area of interest for intervention

How do we know these opportunities are gaining traction?

There is increased awareness, by multiple sectors, of poor health and nutrition related to unhealthy food. However an effective, comprehensive intervention model has yet to appear or gain traction.

Areas of Dynamism	Evidence of Traction
Assertive stances towards large food and beverage producers' activities in the developing world	<ul style="list-style-type: none"> • Growth of initiatives highlighting the health and societal harms caused by the products and business practices of the world's largest food and beverage producers (e.g., Access to Nutrition Index [ATNI], Oxfam's GROW campaign). In the case of ATNI, evidence that over-nutrition can attract a global partnership of funders and multilateral organizations. • Academics and health advocates are adopting the tone that energy-dense/nutrient-poor packaged food products and soft drinks should be regulated as "unhealthy commodities" (i.e., like tobacco and alcohol).
Emergence of the double-burden as an area of interest for intervention	<ul style="list-style-type: none"> • Some in the nutrition community who have historically been focused on the issues of hunger and micronutrient-deficiency are evolving their scope to encompass the "double-burden" of under-nutrition and over-weight in developing countries. A holistic approach to nutrition, viewing under-and over-nutrition as both stemming from diets driven by poverty, is beginning to emerge in the academic community and within international organizations.
Increasing "Food Consciousness" in Developing Countries	<ul style="list-style-type: none"> • Amongst middle- and upper-income Indonesians and urban residents, a trend toward healthier diets is underway, partly driven by increasing media coverage of health issues. Manufacturers are also investing in new healthy brands. • More consumers in Malaysia are now opting for healthy packaged food products, following rising levels of coronary disease, diabetes, etc., and government education campaigns on healthy foods. Manufacturers are concentrating on healthier packaged food products to satisfy consumer demand. • Nigerian survey found that while price is still crucial to Nigerians, health considerations are increasingly important.
Public-Private Partnerships to Develop Healthier Foods	<ul style="list-style-type: none"> • National governments, multilateral organizations, and implementing organizations have begun to engage with the private sector to improve access to healthy foods. Many partnerships focus on fortification and addressing issues of micronutrient deficiency (e.g., Kenya's mandatory fortification program), but some have engaged manufacturers of mass-produced packaged food and soft drinks (e.g., South African sodium reduction efforts [esp. in bread]).
The Private Sector's Efforts to Achieve Shared Value	<ul style="list-style-type: none"> • Food and Beverage trade groups and individual food producers are more loudly publicizing initiatives to achieve "shared value." Examples include Unilever's drive to remove trans-fats from 100% of its products, and Nestlé's tying CEO pay to performance against corporate nutritional objectives. These actions signal industry's recognition of other stakeholders—regardless whether they are sincere shared value efforts, or simply industry's "cost of doing business" in these regions.
Growing emphasis on the health and economic burdens of NCDs in the developing world	<ul style="list-style-type: none"> • In Dec. 2012, the Global Burden of Disease Study showed that non-communicable diseases had supplanted communicable diseases as the dominant causes of death and disability throughout much of the developing world. • In May 2010 WHO published its "Set of Recommendations on the Marketing of Foods and Non-Alcoholic Beverages to Children," calling on governments to reduce marketing to children. They were adopted by the 2011 UN NCD Summit.

What are the primary opportunities that could address this problem?

There are multiple intervention points for various actors that relate to the Areas of Dynamism.

Curb Unhealthy Foods

Mostly government interventions, backed by evidence-based research, to set and enforce policies that protect people's health from unhealthy nutrient-poor foods.

- **Research:** Create an evidence base about the health and economic effects of unhealthy food markets to guide efficient public interventions (Researchers, Donors).
- **Food Supply Chain Regulation:** Introduce regulations that limit the activities of private sector actors. Potential levers to pull include sodium and trans-fats reduction, as well as banning marketing to children (Government).
- **Broad policy regulation:** Revise rules in areas that affect the mass production /distribution of unhealthy foods or create a structural shortage of healthy foods (Government).
- **Regulate Access to Unhealthy Food Products:** especially in government-facilitated settings (e.g., in schools).
- **Monitoring and Reporting:** Assess progress and results in order to correct failures and scale-up successes (Donors and Researchers).

Promote the Creation of a Market for Affordable Healthy Foods

Public, private and joint interventions throughout the food supply chain to explore and scale solutions that promote access to affordable healthy foods.

Research: Explore/promote innovative models that promote the availability, access, and affordability of healthy products (private sector, researchers, and donors).

Piloting: Test solutions in actual value chains and evaluate economic feasibility (PPPs, Donors).

Standards: Invest in innovations to improve sourcing and processing standards when purchasing and formulating products (Private Sector).

Aggregation, technology and technical capacity: Organize farmers into producer groups that can meet market standards and local demand for healthy fresh foods (IFIs, Agribusiness, Retailers).

Value Chain Financing: Develop finance products that leverage relationships in the value chain, as collateral (Banks, Donors/IFIs, Impact Investors).

Monitoring and Reporting: Assess results, and scale successful approaches (Donors, Private sector).

Influence Demand Towards Healthy Food Options

Government, private sector and community-driven awareness efforts to instill healthier eating habits and choices among consumers, with an emphasis on low income populations.

Research Best Strategies to Influence Consumer Behavior and organize awareness campaigns and behavior-shifting events involving consumers, i.e., behavioral economics (Researchers, Advocacy groups).

Subsidies for Healthy Foods: Evidence from developed countries is positive. Research is needed to identify programs that can be best leveraged and scaled (Government).

National campaigns: Set a national awareness campaign, and leverage government facilitated environment to develop and spread new healthy diet habits (Government).

Private sector outreach to consumers: Several large multinationals initiated ethical consumer initiatives that promote a healthy lifestyle, i.e., shared value (Private sector).

What potential tipping points are emerging?

	Description	What would have to happen to reach this tipping point?
Positive Potential Tipping Points (Actions & events that could catalyze large-scale positive change)	<ul style="list-style-type: none"> • National governments begin to respond to rising healthcare costs resulting from unhealthy food. Developing country governments are beginning to address the issue with preventative interventions, e.g., Ghana 2006-2010 Regenerative Nutrition Campaign, and employers following behind, e.g., Royal Dutch Shell “Be Well” Program. 	<ul style="list-style-type: none"> • Problem of unhealthy food markets is reframed for policy-makers as one of productivity and national competitiveness, in addition to one of nutrition (as it is now understood).
	<ul style="list-style-type: none"> • Consumer demand for healthier products aligns incentives between the private sector and public health stakeholders. The profile of the health-conscious consumer moves farther down the income scale, requiring food producers and suppliers to serve a growing segment of health-conscious consumers in the developing world and not only those with high incomes. 	<ul style="list-style-type: none"> • <i>There may be no tipping points in relation to consumer demand. Witness growth of food-consciousness and fitness in high-income countries.</i>
Negative Potential Tipping Points (Thresholds beyond which there is no going back)	<ul style="list-style-type: none"> • The fast pace of changing consumption patterns displaces traditional food systems of developing countries and entrenches unhealthy diets so that the opportunity to “leapfrog” negative experiences in developed countries such as the US will be lost. A review by PLoS Medicine suggests “traditional long-established food systems and dietary patterns are being displaced in Brazil and in other countries in the Global South by ultra-processed products made by transnational food corporations.” 	<ul style="list-style-type: none"> • Food system infrastructure is built to replicate existing advanced food systems, food options high in fat, sugar, and/or salt become the dominant option at available retail outlets.
Too Early to Tell	<p><i>These could potentially be tipping points (positive or negative) but will require further monitoring to define and size:</i></p>	
	<ul style="list-style-type: none"> • Limitations on the marketing of unhealthy food, especially to children. Marketing bans have been in place in certain developed countries for some time, but both the impacts of these bans and whether developing countries follow suit remain in question. • Increased efforts to subsidize healthy foods. Evidence from wealthy countries (e.g., WIC program in the US) is positive. What level of subsidy would be required to effect large-scale health impacts in a developing country with widespread malnutrition is not known. • Increasing regulation of access to unhealthy food products in government-facilitated settings, especially schools is a well-supported policy tool. Whether governments (and parents) facilitate widespread adoption remains to be seen. • Efforts to apply approaches adopted toward other “unhealthy commodities:” liability and taxation. Some suggest imposing legal liability on producers of unhealthy foods, following the approach taken towards tobacco companies. Also, “sin taxes” on unhealthy foods are discussed—but if poor people rely on inexpensive unhealthy food, these taxes may be regressive and unethical. 	

What are emerging issues and future trends that could influence these opportunities?

Rising Incomes

- As countries transition from low- to middle-income status, malnutrition challenges for populations shift from hunger, food insecurity, and micronutrient-deficiency towards over-weight and obesity. Both are symptoms of “poverty diets” that seek maximum energy at lowest price.
- The nutrition transition begins to occur within a nation’s lowest socioeconomic groups once GDP per capita reaches ~\$2,500 (approximately the level of the Philippines). The evidence base of this transition is global and historical—and despite growing food-consciousness in high-income nations, there is little evidence of reversal.

Food Price Inflation

- For the poorest populations, food price increases without rise in income will mean heavier dependence on cereals, while rising incomes will lead to increasing demand for non-agricultural food products (including unhealthy packaged food).
- To the extent large producers and suppliers of unhealthy food are able to make their products less expensive in relation to healthier options, the share of these products in food budgets of the poor will grow, and the threshold of the nutrition transition may fall lower.

Penetration of Modern Retail

- In developing countries, the correlation of penetration of modern retail (esp. supermarkets) to growth in imported processed food is over two times the correlation to GDP growth.
- After controlling for GDP, annual growth in package food consumption is higher in all food sub-categories where modern retail penetration is fastest—especially snack bar consumption (~3x other food sub-categories).
- Between 1999-2009 both countries with a high penetration of modern retail, and those without experienced no growth in the sale of fresh foods. This indicates that consumers are not purchasing fresh foods despite the retail outlets available.

The Developing World as Growth Market

- Owing to the saturation of markets in high-income countries, multinational food and beverage companies are looking to emerging markets for growth and profits. Almost all future growth in profits from the sale of ultra-processed foods and drinks will be in the low and middle income countries.
- Annual growth of packaged food consumption is 15%-40% throughout most of Southeast Asia, while growth is flat to negative in the wealthiest EU countries, Japan, and South Korea. For per capita sales of total packaged foods, the growth rate in low and middle income countries is quadruple the rate of high income countries.

National Nutrition Strategy

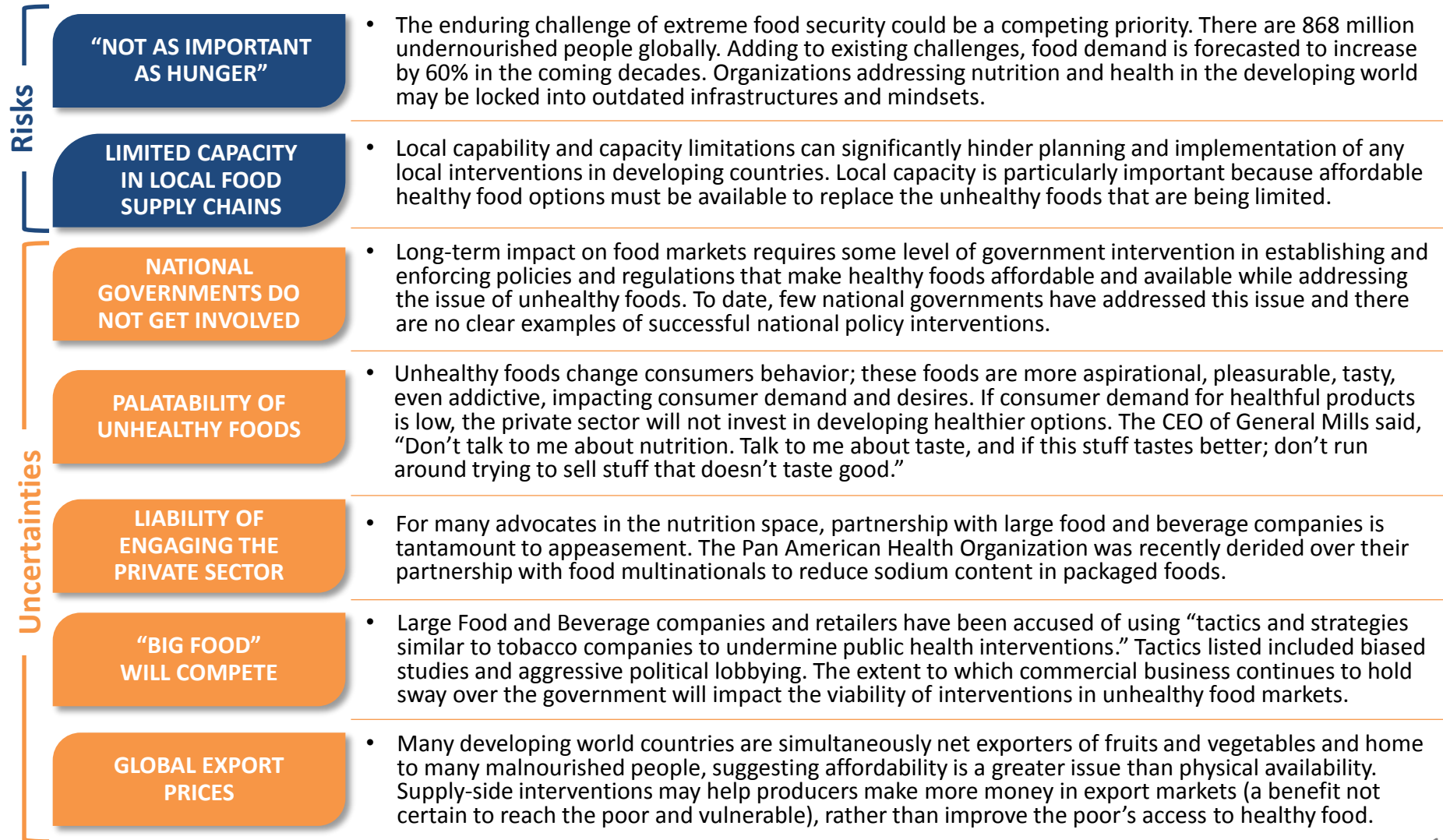
- Many agree that national governments will have to play the leading role in setting the rules-of-play for private sector participants in food markets. In developing countries, most efforts to intervene in food markets on behalf of public health have been focused on fortification (e.g., iodine, iron, etc.).
- To the extent that national governments of developing countries have intervened to limit the impacts of unhealthy food products, Latin American countries (e.g., Brazil, Mexico, Chile) have taken a lead, and may provide models. In the regions of interest, Thailand is active in developing regulations governing nutritional content labeling and health claims.

Funding for Under- vs. Over-nutrition

- The activities and priorities of funding organizations and national governments in the developing world do not yet reflect the shift of the global burden of disease from communicable disease and under-nutrition to non-communicable diseases and over-nutrition. The perspective that NCDs and over-nutrition are predominantly the issues of high-income groups is likely stalling activity in this area.
- Health systems and health financing in the developing world have been developed to deal with the burdens of hunger and infectious disease. These systems are now rapidly facing the health challenges of much wealthier countries, without the capacity to address them.

What are potential risks or uncertainties?

Interventions in this space are subject to a range of factors that could derail or diminish impact.



3) Landscape Assessment

Purpose

The Landscape Assessment aims to identify the key players and opinion leaders in the field, what organizations are doing innovative work, who provides funding, and the gaps in funding.

Key Findings

- Very few organizations work specifically in the field of unhealthy food markets – though work by organizations active in under-nutrition and agriculture occasionally overlaps with the issue of unhealthy food markets. Where programmatic work is being done to address unhealthy food markets, it is often in addition to existing work on under-nutrition and agriculture.
- However, interviews with experts confirm that there is little funding targeted specifically at drivers of unhealthy food market and that furthermore investments are “not large”. The gap between reported funding and the scale and scope of the unhealthy food markets problem implies that significant whitespace exists.
- Funders seem reluctant to enter the space because the challenges of hunger and micro-nutrient deficiency still loom large in developing countries. Traditional views hold that under-nutrition remains the largest problem for the poor, whereas over-consumption and non-communicable diseases are a problem of the rising middle class.
- Large commercial players dominate food markets. A shift in policies and practices from the large commercial players would reverberate across the value chain due to their strong influence.
- Although commercial actors continue to exert disproportionate influence over consumers’ food choices, development organizations, governments, and academics are beginning to examine food market challenges. Some innovative interventions examples exist; however most are limited in scale. Efforts are predominately focused on the newly transitioning food market geographies of Africa and South East Asia.

Who are the key players and opinion leaders in the field?

Commercial players exert disproportionate influence over food markets. Development organizations, governments, and academia are beginning to critically examine food market issues.

Development Agencies

- Donor agencies (CIDA, DFID, Irish Aid, Gov. of Netherlands) historically focus on issues of malnutrition and food aid, with limited attention paid to broader food market issues. Multilaterals however are beginning to broker discussion on food market challenges (World Bank, WHO) and other donors such as USAID and Gates Foundation are rethinking how to combine Agriculture and Nutrition solutions together.

Partnerships

- Multi-stakeholder partnerships such as GAIN's partnerships with the National Fortification Alliance seek harmonization and scale that could otherwise not be achieved alone.

Local Governments

- Ecuador, Nepal, and Mali have all adopted food sovereignty as national policy goals but local governments have been slow to address unhealthy food market dynamics. However, some ministries are demonstrating the potential to coordinate meaningful action such as in refining feeding programs to limit contribution to the double burden (Mexico), product labeling and food fortification (Nigeria), building local production capacity (Tanzania), and linking agriculture and nutrition (Thailand).

Commercial Sector

- The private sector is increasingly focused on health and wellness, either as a long term investment strategy or as an effort to slow pressure for new regulation. Still, the 10 largest companies control more than 15% of all food sales – 75% which is processed foods such as burgers, cookies, and fizzy drinks. Demand for unhealthful foods continues to drive profits.
- Supermarkets are transforming price, access and choice for consumers as well as placing price and quality pressure on their suppliers.
- The informal retailing sector provides a range of often unhealthful, affordable food choices that remain a main source of calories for low-income groups in many Asian and African countries.

Academic Thought Leaders

- Researchers are leading the way by formalizing the link between food security, nutrition, and collective impacts (Harvard University, Cornell University, Michigan State University). FAO and IFPRI are increasing focus on policy development related to food market issues.

Local Civil Society/NGOs

- Local civil society is not active in food market issues in developing countries (with the exception of the Consumer Unity and Trust Society (CUTS) in India.) However, experts agree that these groups are an important consideration for any local interventions.

What organizations are doing innovative and/or high-impact work?

While we looked at many organizations working in the nutrition, food and agriculture space more broadly, examples of innovative, high-impact work are few. The models below indicate increasing momentum to address unhealthy food markets from a “systems lens” of changing local supply chains, to culturally relevant behavior change and nationwide policy reform.



Why relevant: A multi-stakeholder engagement and funding platform to address local food market failures linking nutrition and agriculture i.e., “system lens.”

Marketplace For Nutritious Food (MNF): MNF is a locally established knowledge, networking, and financing platform focused on increasing nutrition-related investments in the food value chain. MNF brings together local entrepreneurs, small businesses, NGOs, donors, and investors to bring nutritious foods into the market. In addition to its value as a platform, it allows innovative ideas to be tested, adapted, and supported, and offers a mechanism where market failures and policy constraints to improving nutrition can be addressed. Currently, projects have been launched in Kenya and Mozambique with plans to launch in additional countries.



Why relevant: Coordination between agriculture and nutrition sectors

Feed the Future: This is a US government initiative linking investments in agriculture and nutrition to make farmers in 20 developing countries self-sufficient and reduce poverty and improve nutrition. By 2011, over 6 million households had directly benefited through investments in post-harvest infrastructure, diet diversity and quality and high quality agriculture inputs among others.



Why relevant: A community based culturally relevant business model for long-term behavior change.

KeBAL: This is an innovative way to reach young children in Indonesia with affordable healthier meals through a social enterprise model leveraging the popularity of street food. The unique social enterprise also provides new employment opportunities in urban, low-income areas. It has grown to include two central cooking centers, 10 franchise vendors and 20 vendors and has a 5-year goal to reach scale at hundreds of thousands children in Indonesia.



Why relevant: Nation wide health policy interventions incorporating multi-stakeholder models and agriculture for large scale impact

Government of Thailand: Thailand has a long history of implementing large scale nationwide health programs through comprehensive policy interventions and multi-stakeholder models integrating communities and primary health care. These cover a broad set of areas: reducing micronutrient deficiencies such as anemia; providing financial support; revising marketing codes; promoting improved diets (e.g., in schools, workplaces and for elderly); and promoting better agricultural practices (e.g., good manufacturing and hygiene practices) as a comprehensive intervention strategy.

Who is providing funding in this space?

Unhealthy Food Market Funding: Key Findings

- Donors typically classify potentially related work in sectors such as Agriculture or Nutrition. “Food Markets” is not pulled out as a sub-category within either of these and as such, investments into food market issues cannot be conclusively ascertained from data.
 - Nutrition funding by bilateral and multilateral donors was \$782M in 2009 with the EU and Canada as the top two donors (ACF International, 2012).
 - Also in 2009, total funding for Agriculture by bilateral and multilateral was \$8.879 billion, with the US and IDA/World Bank the top donors.¹
- A detailed review of prominent private foundations and their key grantees estimated funding in Unhealthy Food Markets at \$117M in 2011 (see below).

Foundation	Unhealthy Food Market Areas	Grants Examples	Region of Focus	Estimated “Food Market” Grants U\$ M (2011)
Bill & Melinda Gates Foundation (US)	<ul style="list-style-type: none"> <u>Agricultural Development</u> <ul style="list-style-type: none"> Research and Development Access and Market Systems Strategic Partnerships and Advocacy <u>Nutrition</u> <ul style="list-style-type: none"> Addressing Micronutrient Deficiencies Advocating for Better Nutrition Funding and Policies 	<ul style="list-style-type: none"> GAIN Harvest Plus Universities and research institutes Scaling Up Nutrition 	<ul style="list-style-type: none"> Global 	<ul style="list-style-type: none"> <u>Agricultural Development</u>: \$95M^a <u>Nutrition</u>: \$4.5M^a 3.1% of total grants for “Food Market”
The Wellcome Trust (UK)	<ul style="list-style-type: none"> Connecting environment, nutrition and health through supporting research efforts such as Access to Nutrition Index (ATNI) 	<ul style="list-style-type: none"> GAIN / ATNI^b Universities and research institutes 	<ul style="list-style-type: none"> Global 	<ul style="list-style-type: none"> Increased interest in “Food Market” but apart from ATNI no reported grants
Rabobank Foundation (The Netherlands)	<ul style="list-style-type: none"> <u>Agricultural Development</u> <ul style="list-style-type: none"> Access to Finance (e.g., microfinance) Access to Market (e.g., cooperatives) Access to Knowledge (e.g., technology) 	<ul style="list-style-type: none"> KeBAL East West Seed Philippines CIDERURAL, Peru 	<ul style="list-style-type: none"> Asia Africa Latin America 	<ul style="list-style-type: none"> <u>Agricultural Development</u>: \$18.2M^{c,d} 100% of total funding for “Food Market”

The gap between the scale of the problem (impacting 1.4 billion low income people) and reported funding implies that significant whitespace exists. The largest foundation funding “food market” interventions commits a small percentage of its total grantmaking.

Notes: “key players” among foundations included the 50 largest US Foundations² (incl. the top 25 US foundations working in international development³), the 25 most effective Philanthropists in the World⁴, and the 25 wealthiest foundations in the World

a) ADP Team estimates; b) ATNI – Access to Nutrition Index, c) Due lack of information it is not possible to estimate how much of the investment is in scope; d) Considering exchange rate of 1€ - 1,30 USD.

While funders' perspectives are still emerging in this space, early signals suggest growing interest in system-wide approaches to food market problems. Available funding remains limited.

Limited Investments in Food Market issues

Interviews with experts confirm that there is little funding in "Food Markets" and that furthermore investments are "not large" and "most of the people doing it are not very good". A recent study financed by Bill & Melinda Gates Foundation showed that European Foundations have limited consideration for poor nutrition and its causes as a priority in investment, mainly due lack of understanding of the problem and effective "magic bullet solutions."

Movement Towards "System Focus" that Merges Nutrition and Agriculture

There is an increasing interest in catalyzing linkages among agriculture, health, nutrition and food security. While some funding organizations are making this move (e.g., USAID's Feed the Future), other have been slow to follow.

Explore Engaging with Private Sector for Common Goals

Organizations like GAIN have been increasingly looking to the private sector (e.g., Food and Beverage companies) to fund common objectives in Research and Design and product development. While the intentions of Food and Beverage companies can be pretext, collaboration benefits are seen as valuable.

Significant Regional Variations

While there are similarities across regions such as drivers for unhealthy foods (i.e., economic development, affordability, convenience, and taste), there are significant regional variations requiring customization of programs that understand local context. As a consequence this limits proliferation of successful models across regions to reach scale. One example is the largest channel for unhealthy foods can be street foods in one country while fast food in another.

The majority of funders remain focused on under-nutrition. Anecdotal evidence shows resistance and division within funding organizations about whether to fund over-nutrition due to perceptions that it is a problem of the middle class. A holistic view of unhealthy food markets that sees both under- and over-nutrition as symptomatic of underlying poverty has not emerged.

Coverage Drivers

- Multinational companies entering developing markets drove coverage around their activities – including criticism of their actions and calls for greater government regulation.
- New data, research and statistics on the health consequences of obesity and malnutrition catalyzed the call for more solutions to the vexing problems of obesity and malnutrition.
- Major conferences, such as those led by the World Health Organization, drove coverage with the release of new data and provided opportunities for governments to gather and pledge to meet new health goals.

Gap Analysis

- There is a lack of consensus of how governments should regulate the operations of multinational food companies in developing markets that are facing two simultaneous challenges: unhealthy diets and malnutrition.
- Women are primary caregivers and smallholder farmers (particularly in Africa) but have little impact on food policy decisions and lawmaking.
- As the quest to find more efficient ways to feed growing populations intensifies, a widening gap is emerging between advocates who point to scientific data and emotional sentiment from critics opposed to GMOs.

Volume, Geography and Tone

- There was significant media coverage in China, India and Indonesia over the past decade, and increasing coverage from Sub-Saharan Africa over the past two years.
- Media coverage of the past 24 months has significantly increased, mirroring rising concerns from governments and health organizations on the impact of unhealthy diets in emerging-market populations.
- Social conversation is growing and led by journalists, health and science writers and development experts.
- Tone is neutral, with increasing calls for governments to step in and better regulate the food industry.

Highlights from Coverage

- **The rise in non-communicable chronic diseases** is fueling media coverage in the developing world. A growing number of reports point to the role that unhealthy diets and decreased physical activity play in fueling the obesity epidemic. The coverage also shows how rising obesity rates are, in turn, fostering the rise of non-communicable chronic diseases (NCDs). These include premature heart disease, high blood pressure, type 2 diabetes, stroke and cancer. A growing number of articles showed that developing countries now fight two battles simultaneously against obesity and malnutrition. The coverage also helped drive the debate about the role that global food companies play in the obesity epidemic and raised the questions of how much – and what type – of government regulation is needed.
- **Nutrient deficiencies plague many developing countries, a fact that is reflected by increasing media coverage of this public health problem.** Media coverage focused on a lack of vitamin A, iodine and iron, which cause blindness, mental retardation and other irreversible health problems. These deficiencies take a huge toll on millions of women and children, and create challenges in developing countries. This fact is underscored in the growing amount of media coverage on the issue.
- **GMO debate continues:** Genetically modified foods and nutrient fortification can help address food insecurity and nutrient deficiencies, but as the media coverage showed, their use is often based on political views rather than scientific evidence.

White Space Recommendation

While media coverage has focused on changing diets as countries move up the development ladder, there is little discussion on what governments, the food industry and healthcare groups should be advocating for or doing to mitigate unhealthy developing food markets, nor of the long-term economic and social cost of increasing non-communicable diseases such as diabetes, cancer and heart disease in these populations.

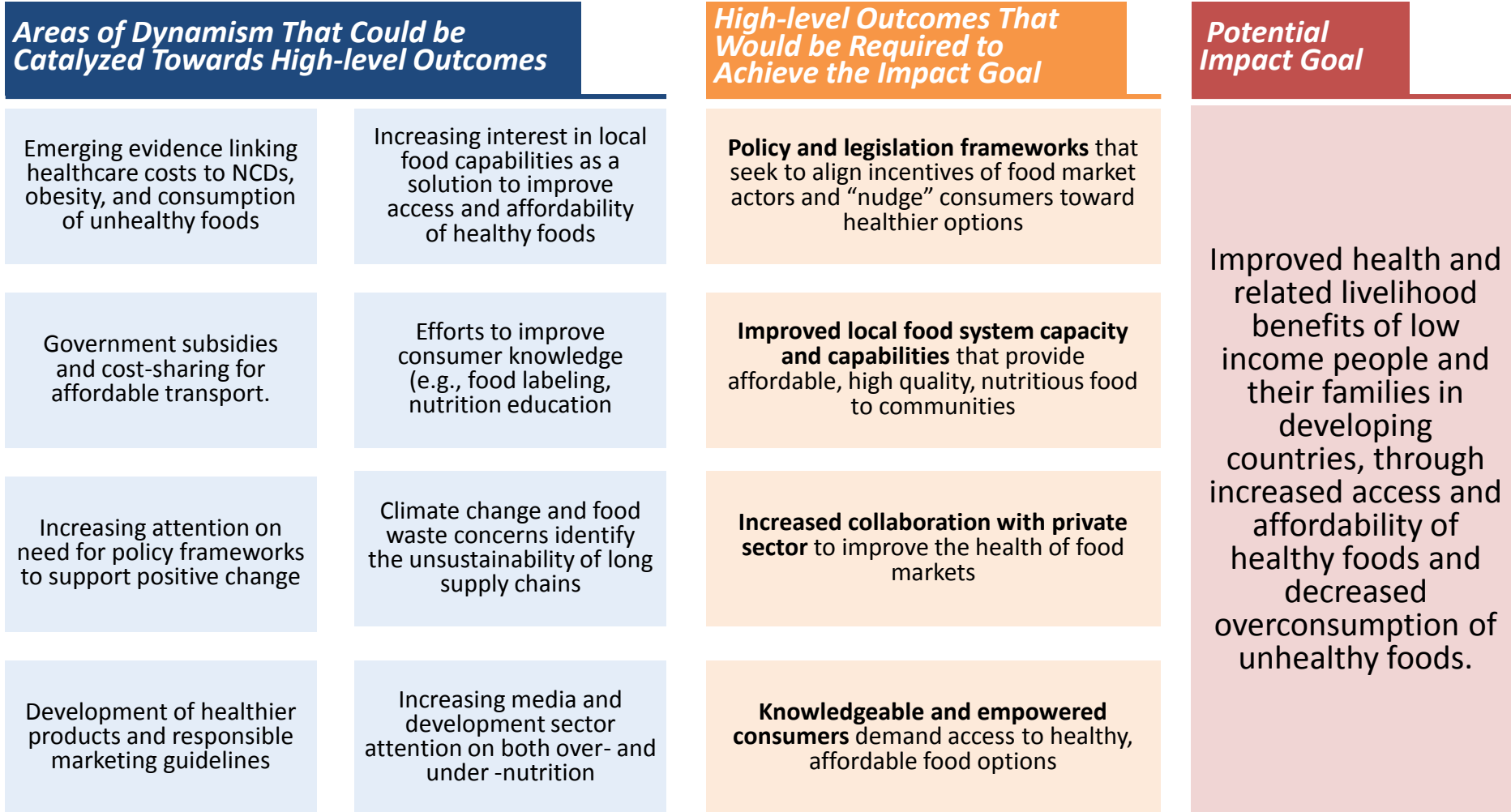
Purpose

The Impact Assessment presents an early view of the impact potential in this space, outlining how we think change could happen based on the dynamism assessment and using scenarios to illustrate different impact ranges.

Key Findings

- Strong policies must be in place to support broader outcomes including improved local food system capacity, engagement with the private sector, and increased consumer knowledge.
- An analysis of consumption patterns across regions surfaced two potential options for bounding target geographies:
 - 1) Preventative: “High growth in consumption” countries where consumption of unhealthful foods and soft drinks is relatively low, but is growing at a fast pace, and the rate of urbanization and expansion of retail supermarkets tend to be in infancy. These countries include India, Vietnam, Bolivia, and Nigeria.
 - 2) Corrective: “High current consumption” markets where consumption of unhealthful foods and soft drinks is already high, and processes of urbanization, expansion of retail supermarkets and, government attention to this issue tend to be more advanced. These countries include Indonesia, China, Thailand, Guatemala, and South Africa.
- Estimates of the scale of the target low income population suggests that reaching even a small percentage of the population could yield a significant impact. Approximately 170,000 to 15 million people could be impacted by a potential initiative, depending on the particular intervention strategies pursued.

How We Think Change Could Happen



Supportive policies are the foundational piece needed to enable the success of other interventions and outcomes aimed at repairing unhealthy developing world food markets.

These scenarios present selected choices around which a potential development strategy could be designed.

Scenario 1: Preventative

High growth in per capita consumption of unhealthy processed foods and soft drinks is observed in countries like India, Vietnam, Bolivia, and Nigeria. The food markets in these countries are still developing, but at a fast pace. While they consumer fewer unhealthy foods, they have the fastest rates of growth.

These countries have less extensive, but rapidly growing rates of urbanization, retail penetration, and government attention to the problem. As the problem is less advanced in these countries, strategies would focus on preventing the growth of unhealthy food markets from spreading.

What was measured: Percentage change in unhealthy food and soft drink consumption between 2007 and 2011, GDP per capita; GDP per capita growth (2006-2011).

Scenario 2: Corrective

High per capita consumption of unhealthy processed foods and soft drinks is observed in countries like China, Thailand, Guatemala, and South Africa. These countries are in an advanced stage of food market development, which includes a higher supermarket penetration and higher presence of Western fast foods.

These countries have more extensive urbanization, expanded retail penetration, and some government attention to nutrition. As the problem and drivers are already rather advanced in these countries, intervention strategies would be focused on correcting the problem.

What was measured: Consumption of unhealthy foods(kg per capita) and soft drinks (liter per capita), GDP per capita^b; GDP per capita growth (2006-2011).

Further work is needed to clarify criteria for prioritizing geographies and population demographics.

Illustrative Scenarios for Impact Vision of Scale

Affected Populations

Low Income People in High Consumption Growth Countries

Example: India*

- 852 million low-income people.
- ~68 million people low-income people with diabetes highly vulnerable to coastal hazards.

Low Income Populations in High Consumption Volume Countries

Example: Indonesia*

- 171 million low-income people.
- 8.4 million people with diabetes.
- ~5.8 million low-income people with diabetes.

Possible Solution Spaces

Policy regulating sugar inputs in packaged foods and introduction of a food labeling scheme

Cold chain improvements increasing availability and affordability of fruits, vegetables, dairy

Policy removing sugary drinks and foods from government programs (e.g., schools, care facilities)

Product innovations reducing sodium in packaged food

Vision of Scale

Example drawn on India.

Direct Impact: reduced sugar consumption for an estimated 1-2 million low-income people.

Indirect Impact: aid in the prevention of diabetes for 170,000-500,000 low-income people.

Direct Impact: increased storage capacity and availability of fruits, vegetables and dairy for an estimated 2-6 million low-income people in India.

Indirect Impact: increased consumption of healthier food and decreased prevalence of obesity & overweight in vulnerable populations, potentially impacting 14.9 million^{1,2} people.

Example drawn on Indonesia.

Direct Impact: decreased sugar consumption for an estimated 600,000^{3,4} low-income people with type-II diabetes.

Indirect Impact: improved eating habits for extended households and benefits to the 8.4 million people with diabetes in Indonesia, of which 70% are in the low-income target group.

Direct Impact: reduced sodium intake to aid in preventing hypertension for 1.3 million^{1,5} low-income people.

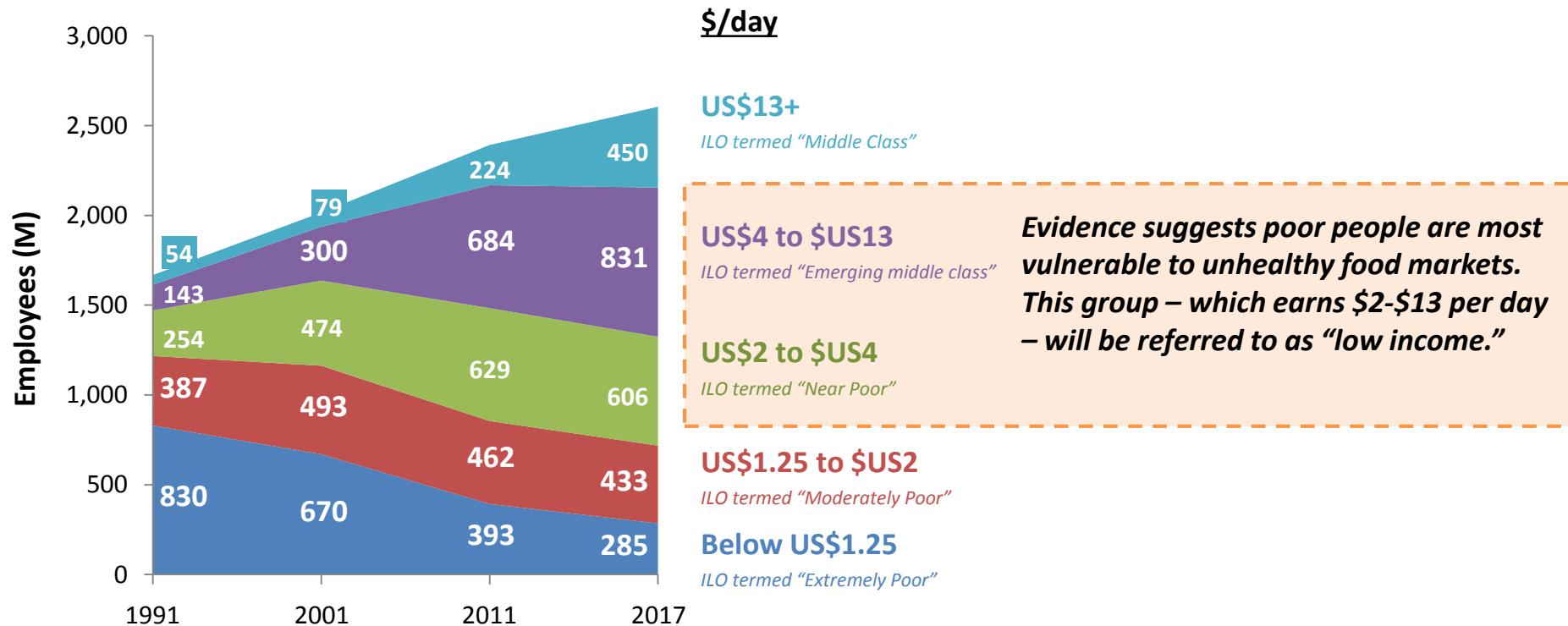
Indirect Impact: changes in preferences and demand for other product innovations including reduced sugar and fat.

Notes: * Estimates from impact modeling. Assumptions: 1) Impact reach of 2.5% of low income people; 2) Baseline overweight /obesity prevalence between 30% (South Korea) and 70% (Mexico); 3) Impact reach of 10% of 8.4M people with diabetes; 4) 70% (estimated proportion of population that is low income) of people with diabetes are low income; 5) Baseline hypertension prevalence is 30%..

Appendix

Content in the Appendix	Summary of Content
Impacted Populations	<ul style="list-style-type: none"> Chart showing current and prospective income levels of populations in developing countries.
Potential Impact	<ul style="list-style-type: none"> Shows methodology and calculations for high growth vs. high volume countries. Outlines assumptions that go into the calculations for potential impact within each of these scenarios
Potential Impact Goal Calculations	<ul style="list-style-type: none"> Shows calculations of potential impact goals based on examples in India and Indonesia
Country Level Consumption	<ul style="list-style-type: none"> Graphs plotting the consumption of packaged foods and soft drinks by country
Channel data	<ul style="list-style-type: none"> Chart showing the dominant retail outlets unhealthy foods
Growth in Spend	<ul style="list-style-type: none"> Chart showing increases in retail expenditure on unhealthy foods by country
Country Case Studies	<ul style="list-style-type: none"> Case studies on example countries showing health data, demographics and national-level trends related to food markets
Evidence on links between diet and NCDs	<ul style="list-style-type: none"> Presents recent evidence and reports linking diet and food choice to non-communicable disease
Food System Evolution	<ul style="list-style-type: none"> Chart showing historical evolution of food systems by geography
Examples of Related Initiatives	<ul style="list-style-type: none"> Table providing information on related initiatives in the space, their potential goals and budgets where known.

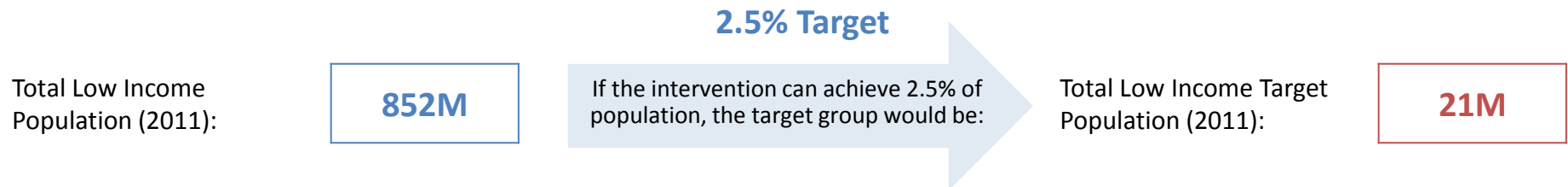
Workforce in Developing World (Based on ILO Data) – 1991 to 2017¹



We believe, based on research and expert interviews, that the 1.4 billion low income employees in the \$2-13 segment are most vulnerable to Unhealthy Food Markets. This group will represent 22% of the total developing world population by 2017.

Example: India

Applying the methodology for impacts to target population India in 2011 we have:



The target population (21M) is vulnerable to suffer from health issues related to unhealthy food markets. The table below shows high and low scenarios of potential impacted populations (millions).

Diabetes-2		Total Impacted Low Income Population
11%		2.3
8%		1.7

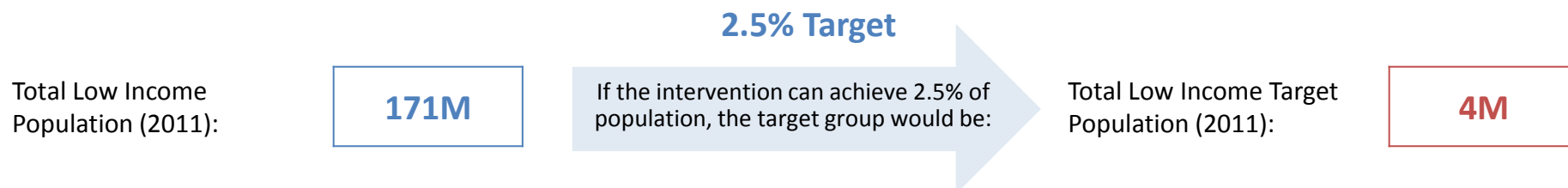
Overweight And Obesity		Total Impacted Low Income Population
70%		14.9
30%		6.4

Anaemia		Total Impacted Low Income Population
21%		4.5
14%		3.0

Hypertension		Total Impacted Low Income Population
30%		6.4
28%		6.0

Example: Indonesia

Applying the methodology for impacts to target population Indonesia in 2011 we have:



The target population (4M) is vulnerable to suffer from health issues related to unhealthy food markets. The table below shows high and low scenarios of potential impacted populations (millions).

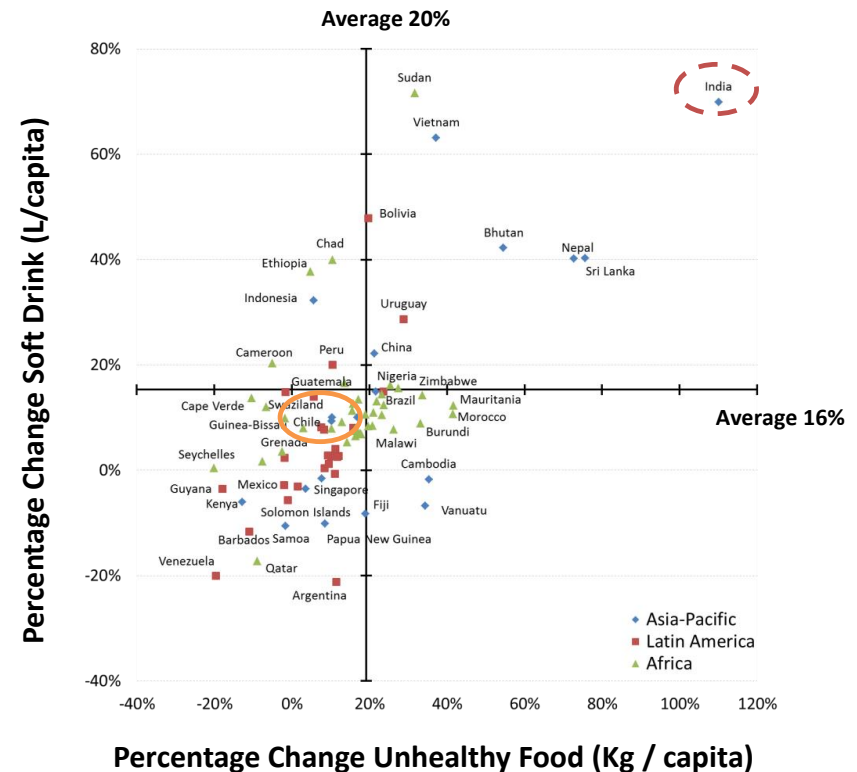
Diabetes-2		Total Impacted Low Income Population
11%		0.5
8%		0.3

Overweight And Obesity		Total Impacted Low Income Population
70%		3.0
30%		1.3

Anaemia		Total Impacted Low Income Population
21%		0.9
14%		0.6

Hypertension		Total Impacted Low Income Population
30%		1.3
28%		1.2

Countries with High Consumption (Retail) of Unhealthy Foods and Soft Drinks Per Capita (2012)

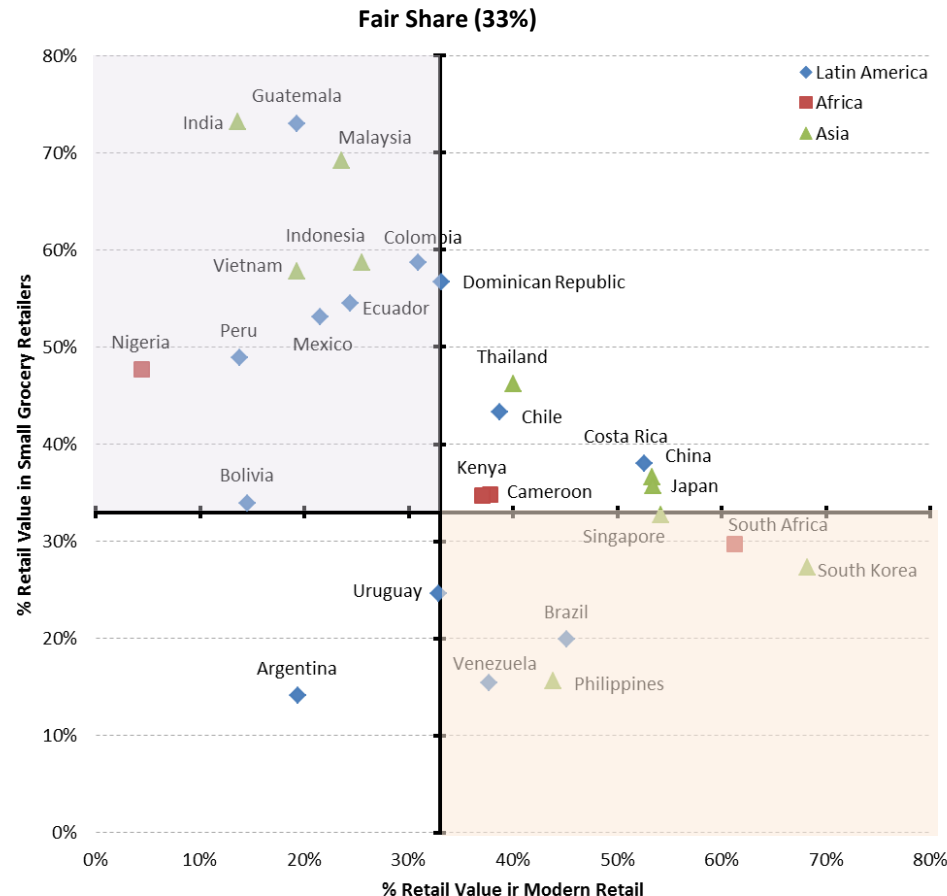


33

Channel Data – Unhealthy Foods

Aligned with soft drink consumption, small retail is the most important channel for unhealthy food. However, consumers in more economically advanced countries tend to shop in supermarkets.

Unhealthy Food Consumption per Channel (Retail Value – 2012)



Prevalence of both modern and small retail

Fair Share (33%)

Countries where modern retail is the main channel

- Supermarkets
- Hypermarkets
- Discounters

Countries where small retail is the main channel

- Forecourt Retailers
- Convenience Stores
- Independent Small Grocers
- Forecourt Retailers

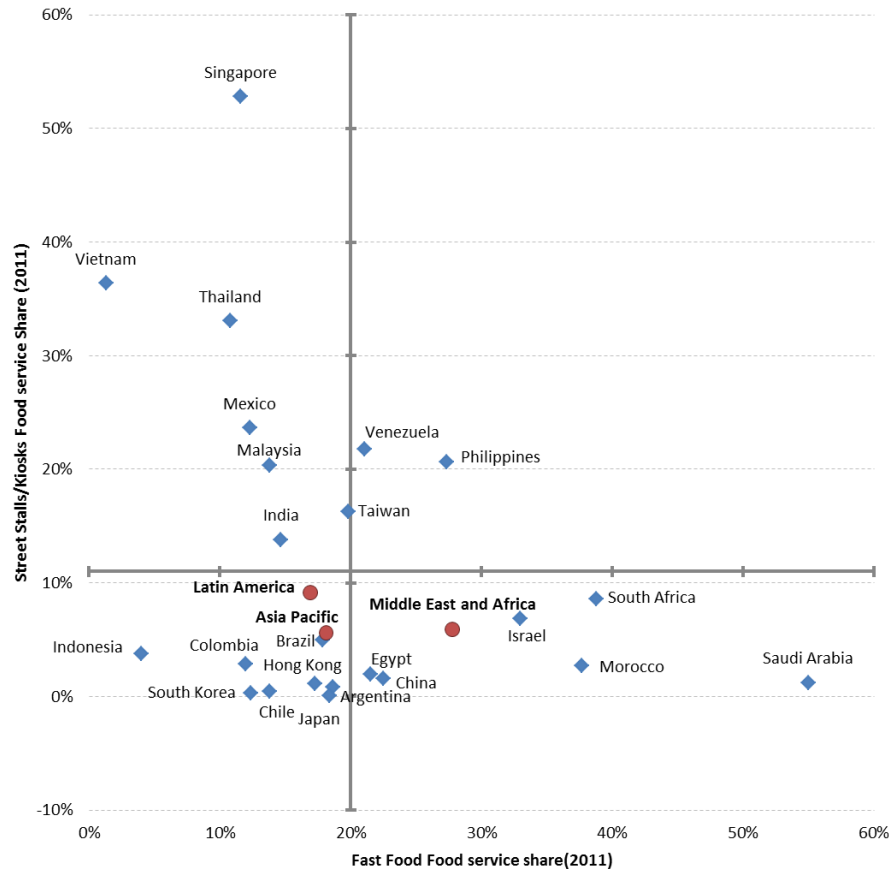
Countries where other channels are more relevant

- Health and Beauty Retailers
- Vending
- Confectionery specialists
- Etc.

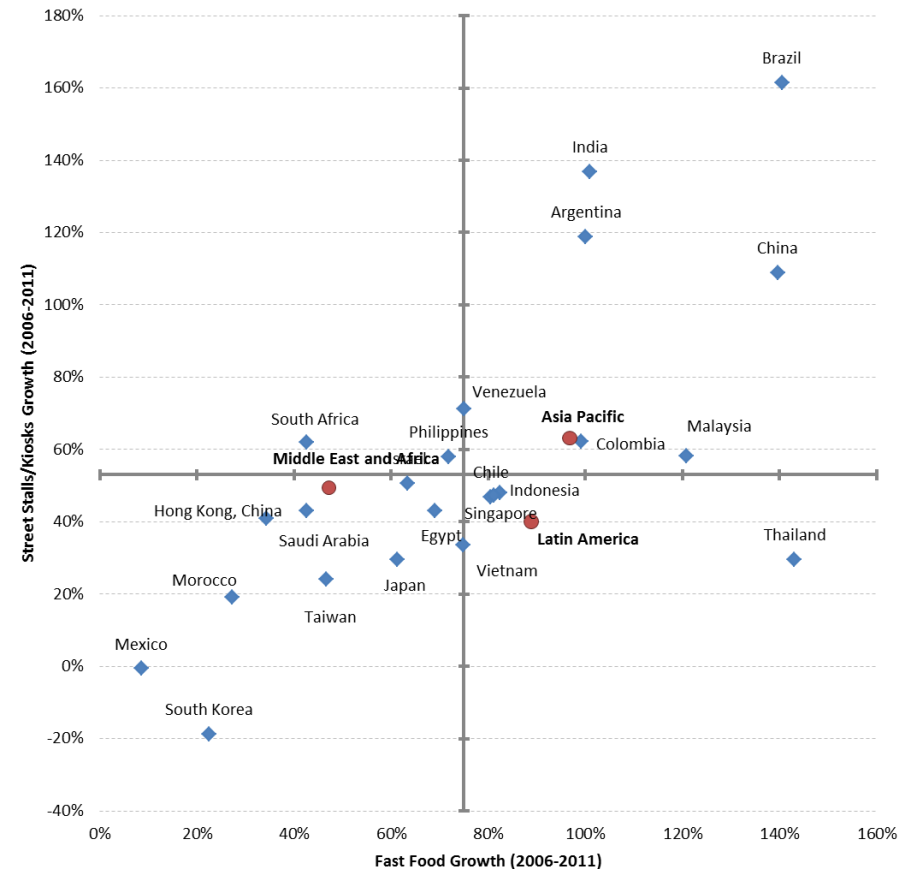
Channel Data – Fast Food and Street Food

While popularity of fast food restaurants and street food stalls is still relatively low (avg. 20% and 11% respectively), their popularity is growing fast (avg. 75% and 53% respectively).

Percentage of Fast Food and Street Food/Kiosks Out of Total Food Service (Retail Value, 2011)



Growth of Fast Food and Street Food/Kiosks (Retail Value, 2006-2011)



Channel Data – Unhealthy Foods

Aligned with soft drink consumption, small retail is the most important channel for unhealthy food. However consumers in more economically advanced countries tend to shop in supermarkets.

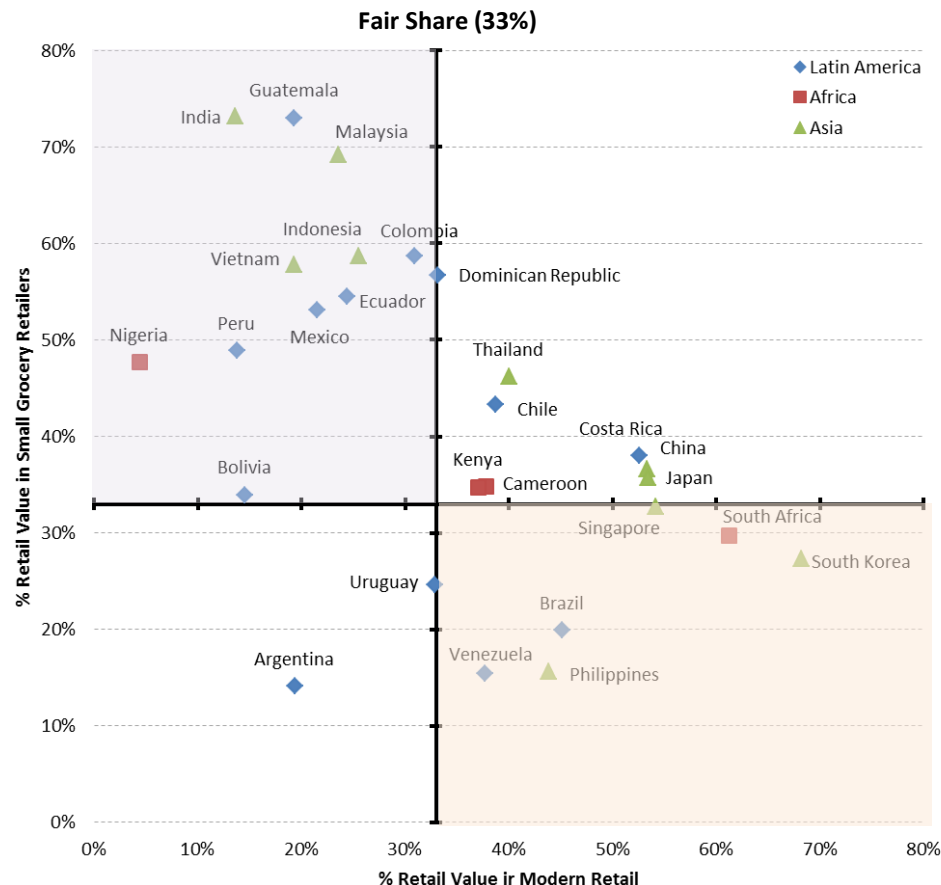
Unhealthy Food Consumption per Channel (Retail Value – 2012)

Countries where **small retail** is the main channel

- Forecourt Retailers
- Convenience Stores
- Independent Small Grocers
- Forecourt Retailers

Countries where **other channels** are more relevant

- Health and Beauty Retailers
- Vending
- Confectionery specialists
- Etc.



Prevalence of both modern and small retail

Countries where **modern retail** is the main channel

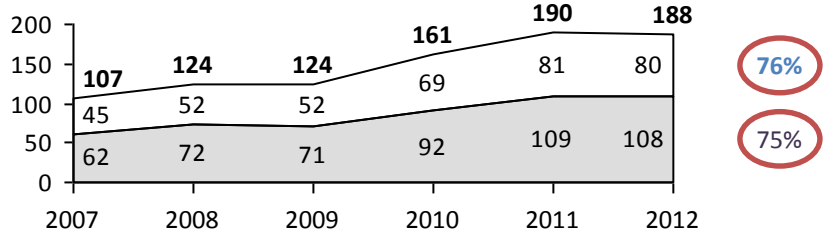
- Supermarkets
- Hypermarkets
- Discounters

Growth Retail Spend (2007 to 2012)

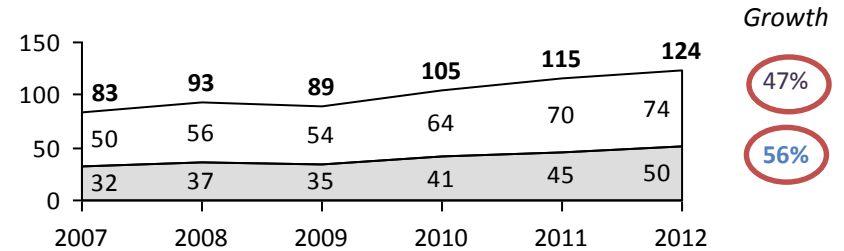
Soft Drink Spend (U\$ / cap.)

Unhealthy Foods Spend (U\$ / cap.)

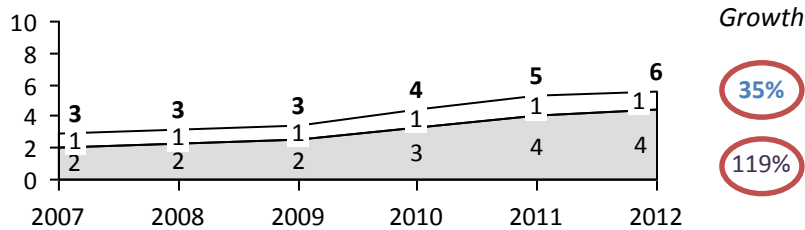
Brazil (75% overall growth)



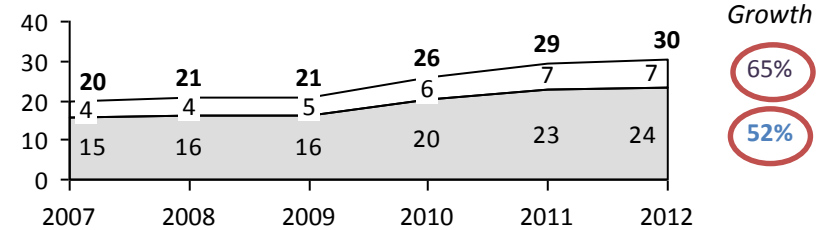
Colombia (50% overall growth)



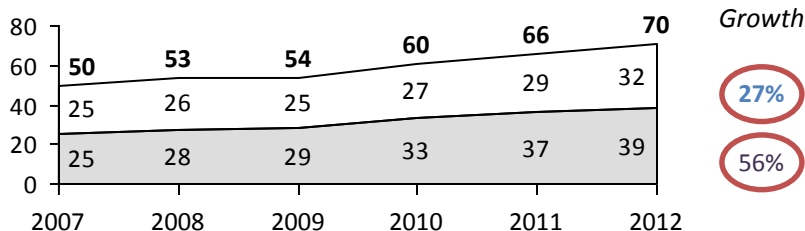
India (93% overall growth)



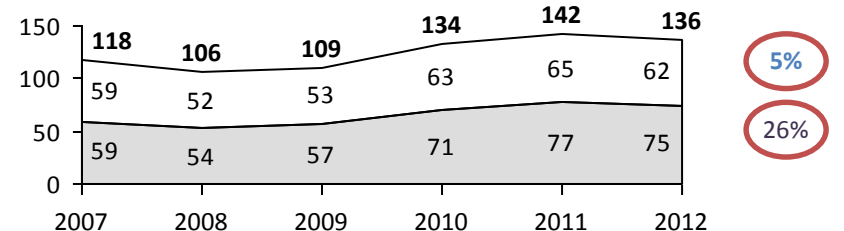
Indonesia (55% overall growth)



Thailand (42% overall growth)



South Africa (15% overall growth)





Country-Level Case Studies – India

Macro Data

- Population: **1.2 billion** (2011)
 - 8.2% growth in 2017
- Urbanization: **31.3%** (2011)
 - 33.8% in 2017
- Estimated # 'Low Income':
290 million (2011)
 - 602 million in 2017 (46% of total)

Policy Highlights

- Changes in Retail Foreign Direct Investment (2012) allowing international retailers such as Wal-Mart to enter local markets as counterpart to 30% local co.
- Delhi city government is preparing directives on the sale of junk food in schools and nearby premises (by July 2013).
- Lack of strong government act in labeling policies and F&B companies regulation.

Health Statistics

- Population (> 15 years) obese:
 - 2006: 1.4%
 - 2011: 2.0% (7% in cities⁵)
- Population (> 15 years) overweight:
 - 2011: 17.7% (22% in cities⁵)
- Type-2 Diabetes: 8%
- Anemia: 52%^b

Changing Food Habits

- Dining In:** Although most families follow the traditional dining culture of freshly prepared meals, the situation is changing (especially in urban areas with working women) toward the **consumption of processed and packaged foods** – mostly due to improvements in cold chains.
 - In the retail environment, **neighborhood street markets** are viewed as fresher and more economical than organized retail – however the organized retail is growing at faster rates.
 - The increased consumption of unhealthy foods is particularly troublesome in the country since Indians have genetic predisposition to diabetes, potentially accelerating the problem in the society.¹
 - *Unhealthy Food Consumption (adjusted by GDP) grew 30% between 2007-2011 while soft drinks grew 9%.^c*
- Dining Out:** Although the majority of Indian consumers continue to prefer to dine at home, dining out has seen explosive growth in recent years – in particular in the number of **Western dining formats**.
 - Vast majority of dining out consists of purchases at **street stalls**, however restaurants have accounted for a rapidly growing share.
 - **Fast food market** is dominated (95%) by **stand-alone and road-side dhabas**, however organized retail is growing at explosive speed with aggressive marketing and pricing strategies.
 - *In 2011 fast food represented 13% of total value spent in food service, with an annual growth of 12.6% per year during 2006-2011.*
- Civil society is mobilizing for tougher rules** to increase the nutritional content of fast food (Centre for Science and Environment – CSE – a leading organization).
- The recent changes in Retail Foreign Direct Investment will allow the entrance of big retailers in the market and provide **investments in supply chain infrastructure**, however there is **criticism**, especially with respect to loss of power of local agriculture (see SICCFM^d one of the leading organization in the debate).



Country-Level Case Studies – Indonesia

Macro Data

- Population: **241 million** (2011)
 - 8.9% growth in 2017
- Urbanization: **51%** (2011)
 - 53.7% in 2015
- Estimated # 'Low Income':
171 million (2011)
 - 182 million in 2017

Policy Highlights

- The government has set new rules to **limit the amount of outlets** that a franchise holder can own to 250 in total (impacting mostly large fast-food companies).¹
- The **import of fruits** are being limited to protect the local farmers and assure more healthy products.²
- In April 2013 a two-day conference was held with WFP to **improve nutrition** across the country (specially focused on the first 1.000 days).³

Health Statistics

- Population (> 15 years) obese:
 - 2010: 3.2%
- Population (> 15 years) overweight:
 - 2011: 16.8%
- Type-2 Diabetes: 3.4%⁴
- Anemia: 33.1%^{5,a}

Changing Food Habits

- Dining In:** The majority of Indonesians, who come from low-income households, continue to **dine in for breakfast and dinner**, as this is the most affordable and cost effective option. However, out of necessity consumers will normally **eat out for lunch** or whenever they are given a break from work. In **rural areas**, the lack of venues available to eat out often makes **eating in the only option available**.
 - Most consumers continue to cook traditional dishes in the home. It is rare for Indonesians to experiment with the type of food that they cook.
 - Women** are still traditionally viewed as home keepers and so will normally do the cooking. This prevents younger populations to learn how to cook, contributing to the growing consumer demand for **pre-cooked ready meals**.
 - With less time to make home-cooked snacks, buying packaged snacks (which are seen as indulgence food by Indonesians) has become extremely popular, particularly Western-style snacks.
 - Modern retail** share of total retail food sales rose from 5 to 11 percent during 1999-2009. Efficiencies in modern chains do not appear to be forcing retail food prices down⁶.
 - Unhealthy Processed Food Consumption (adjusted by GDP) declined 46% between 2007-2011 while soft drinks declined 35%. Unadjusted for GDP consumption grew respectively 6% and 32%.^b*
- Dining Out:** With an increase in consumer spending, alongside economic and cultural developments, there have recently been more incentives for dining out. The expectations for entertainment and living standards for Indonesian citizens are rising, helping to encourage this trend.
 - The greatest concentration of restaurants and take-away style businesses can be found within the larger cities, and their abundance continues to increase as new businesses are set up and chains extended to reach out to new consumers.
 - There appears to be a preference to dine out when having lunch rather than bringing food from home: Dispensaries of fast food, especially street vendors and self-service cafeterias are two notable business models.
 - Street vendors bridge the gap in the market between leisure and necessity. The average worker may not have the time or funds to pay daily visits to restaurants for their lunch break, whereas street vendors are an entirely more economical option with regard to time and finances.
 - In 2011 fast food represented 4% of total value spent in food service, with an annual growth of 10.3% per year during 2006-2011.*



Country-Level Case Studies – Nigeria

Macro Data

- Population: 160 million (2011)
 - 17.7% growth in 2017
- Urbanization: 50.0% (2011)
- Estimated # 'Low Income': **TBD million** (2011)
 - TBD million in 2017 (TBD% of total)

Policy Highlights

- Protection of local production: Minister of Agriculture in Nigeria mandated that bread flour needs to be at least 10% cassava, which offsets wheat imports.
- Government is trying to increase food production since it is heavily dependent in importation.¹

Health Statistics

- Population (> 15 years) obese:
 - 2011: 15.2%²
- Population (> 15 years) overweight:
 - 2011: 27.7%²
- Type 2 Diabetes: 4.9%³
- Anemia: 62%^a

Changing Food Habits

- Dining In:** While families usually cook at home and tend to prepare fresh foods there is an increasing demand for foods that are easily prepared, such as noodles and pasta together with decline in the consumption of traditional ethnic dishes because (more effort and time to prepare), summed to that is the increasing number of women work outside the home.
 - Traditionally, food shopping is the task of women. Most shopping for food is done in traditional open markets where bargaining skills are important – they are the most important retail outlet for food (small, badly laid out stalls and lack of adequate hygiene). For many, informal retail vendors are convenient and price-sensitive Nigerians believe they usually provide the best value for money.
 - While still new supermarkets and shopping malls are now more common in urban areas and they are attracting an increasing number of more affluent consumers. **Consumption of unhealthy foods increased by 28% between 2007-2011 while soft drinks by 16%.^b**
- Dining Out:** The sector's dynamic growth was driven by increased disposable incomes, changing work habits and westernization. Dining out is also often considered a family affair.
 - Low-income Nigerians mainly frequent informal food stalls popularly known as *bukas* and roadside food sellers who sell affordable items like freshly fried or roasted foods like fried yams or roasted plantains. Nigerians also regularly eat at fast food outlets; this became more popular due to the impact of Westernization and the growing number of people working longer hours.
 - Most Nigerian workers prefer to buy their lunch rather than bring it from home. Eating dinner in restaurants in the evening is not too common. Most Nigerians tend to eat home-cooked meals while others prefer takeaways.
 - **Consumer expenditure on catering increased by 114% between 2000 and 2008.**
- The Nigerian retail sector has attracted approximately \$1.3 billion over the past two years. South African retailers such as low cost Shoprite and Massmart (50% owned by Wal-Mart) are fuelled by increasing consumer spend expanding their retail presence in Nigeria. If Nigeria mirrors typical supermarket evolution, availability of low cost processed foods will be abundant further contributing to changes in consumption patterns.

Country-Level Case Studies



Thailand (2006-2010)

Type of Food

- During the period, consumer expenditure on food increased by 9.3% (in real terms).
- Bread and cereal was the leading category with 21.7% food spend, Vegetable with 21.5% and fish and seafood with 14% in 2010.

Retail Structure

- Supermarkets are projected to remain the main distribution channel for groceries as wet markets see further declines in sales. Rising disposable incomes and a general preference for cleaner lifestyles are the drivers.
- Rural villagers typically shop for food in wet markets as they seek out their cheap prices and fresh products.

Dining In

- Food is an important part of Thai culture and social life. Thai cuisine is unique with many local specialties. Rice, vegetables and fish remain staples.

Dining Out

- Dining out is a part of Thai culture as eating is often a communal affair. There are plenty of street stalls and other cheap dining options. Rising disposable incomes is likely to lead consumers away from inexpensive street stalls/kiosks and more towards fast food restaurants and full-service restaurants. Consumer expenditure on fast food and pizza foodservice growth about 50% during the period.

Healthy Food

- Demand for organic products has increased as the awareness of health and environmental issues has grown amongst consumers. The Ministry of Public Health launched a campaign to inform consumers about chemicals and pesticides which made consumers to make special efforts to find "safe" food products.



Nigeria (2000-2008)

- During the period, consumer expenditure on food increased by 87%. Fresh food is generally cheaper than packaged food in Nigeria. However consumption of fresh food declined because of changes in working habits. Also, rising disposable incomes allowed consumers to afford processed food.

- Traditionally, food shopping is the task of women in Nigeria. Most shopping for food is done in traditional open markets - small badly laid out stalls and lack of adequate hygiene. This situation did not change significantly during period.
- Supermarkets and shopping malls are now more common in urban areas.

- While families usually cook at home and tend to prepare fresh foods, during the period had an increased demand for foods that are easily prepared, such as noodles and pasta.

- In general, people prefer home cooking but many find that, due to their work schedules, they have little choice but to eat at food stalls, fast food outlets or restaurants. As a result, many fast food outlets also serve popular dishes along with mainstream fast food items. During the period, there was an increase in the number of people eating outside the home.

- The influence of Western culture, longer working hours and increases in disposable income resulted in a boom in the fast food industry. Traditionally, food stands and small canteens were the primary types of dining places. They served national cuisine and catered to all classes of consumers. Today, the primary type of dining establishment is fast food and consumers have developed a taste for non-traditional food.

Country-Level Case Studies



Colombia (2006-2011)

Type of Food

- Colombians usually eat three main meals per day, breakfast, lunch and dinner. They also often eat smaller mid-morning and mid-afternoon snacks.
- Although patterns are similar all over the country, specific eating habits and preferences vary depending on region.

Retail Structure

- Looking for convenience and time savings, an increasing number of Colombian consumers are buy ready-meals in supermarkets and heating them up at home. This is particularly the case during the week when many people simply do not have time to cook.

Dining In

- Eating habits vary significantly depending on income and economic condition. Low-income consumers prepares meals with more starches, lower quality fats and meat.

Dining Out

- Dining out is reserved for more affluent consumers as it is far more expensive to eat at a restaurant. Many consumers, particularly those in urban areas, enjoy dining in food malls in shopping centers where it is common to find outlets selling typical Colombian dishes at reasonable prices.
- Fast food outlets are popular among younger consumers who enjoy hamburgers and fried chicken.

Healthy Food

- Consumers have become much more aware of the benefits of healthy eating habits. However, the extent to which they can act is based, in large part, on income levels. Organic food and other healthy options are more expensive than many less healthy options. In fact, demand for organic food is low among consumers in all income segments and it is not common to see organic products on the shelves.



South Africa (2006-2011)

- Usually eat three meals a day. While poverty is widespread, malnutrition is not, although it remains a problem – the poorest often cannot afford to eat a substantial meal more than once a day.

- South Africans living in predominantly Black suburbs shopped differently from those South Africans living in the suburbs, close to major shopping malls.
- Supermarkets account for more than 55% of national food retail. SA has a mature formal retail market solely occupied by domestic retailers and highly concentrated.

- The consumption of processed food is lower than most first world countries, but higher than countries in sub-Saharan Africa. The demand for processed food is also increasing.

- While fast food is popular and relatively affordable for most, dining out is viewed as a luxury and is one of the first things to be relinquished when consumers have limited disposable income. Chicken is the most popular fast food (followed by burgers).
- Fast-casual restaurants are proliferating as they grow in popularity with the country's emerging middle class.

- Health foods are usually associated with a price premium that only wealthier consumers can afford. However, the movement towards healthy staples in the form of consumption of larger quantities of fruit and vegetables is the fastest-growing health activity in South Africa across all income groups.

Evidence for Link Between Diet and Non-communicable Diseases (NCDs)

- Evidence shows overweight and obesity are linked to diets incorporating too many processed foods high in refined starch, sugar, salt and unhealthy fats. Related NCDs include type 2 diabetes and coronary heart disease.
- A meta-analysis of 11 studies including 310,819 participants showed higher consumption of sugar-sweetened beverages (SSBs), including soft drinks, fruit drinks, iced tea, and energy and vitamin water drinks, is associated with weight gain, development of metabolic syndrome and type 2 diabetes.
- Research shows a clear relationship between salt intake and blood pressure, as well as heart attacks, heart-related diseases. Currently in many countries, the intake of salt (sodium chloride) is estimated to range from 4-17 grams per day. In developed countries, the source is processed and restaurant foods. In developing countries, salt added when cooking (especially in Asian countries).
- Consumption of trans-fats contributes heavily to obesity and heart disease. Even low levels of consumption are damaging: A 2% of daily energy intake (5 g/day) from TFAs was associated with a 23% increase in CHD incidence.
- A recent article highlighted that 1 of 8 adults living in Nairobi's slums battle high blood pressure and only half have been tested or received treatment in the past year. According to a medical doctor and research expert in hypertension and NCDs, the significant increase in heart-related ailments is because people in urban areas can't afford healthy foods (as well as limited exercise).

Additional Factors Contributing to NCDs (Other Than Diet) Include:

Non-Modifiable Risk Factors

- Age, sex, genetic make-up.

e.g., Epidemiologic observations show Indians don't need to be as overweight as people of other ethnicities to develop diabetes due to differences in natural body composition, which has been linked to the nutrition of mothers during pregnancy. Therefore, warning signs for developing diseases like type 2 diabetes are seen at much lower BMIs in Indians.⁸

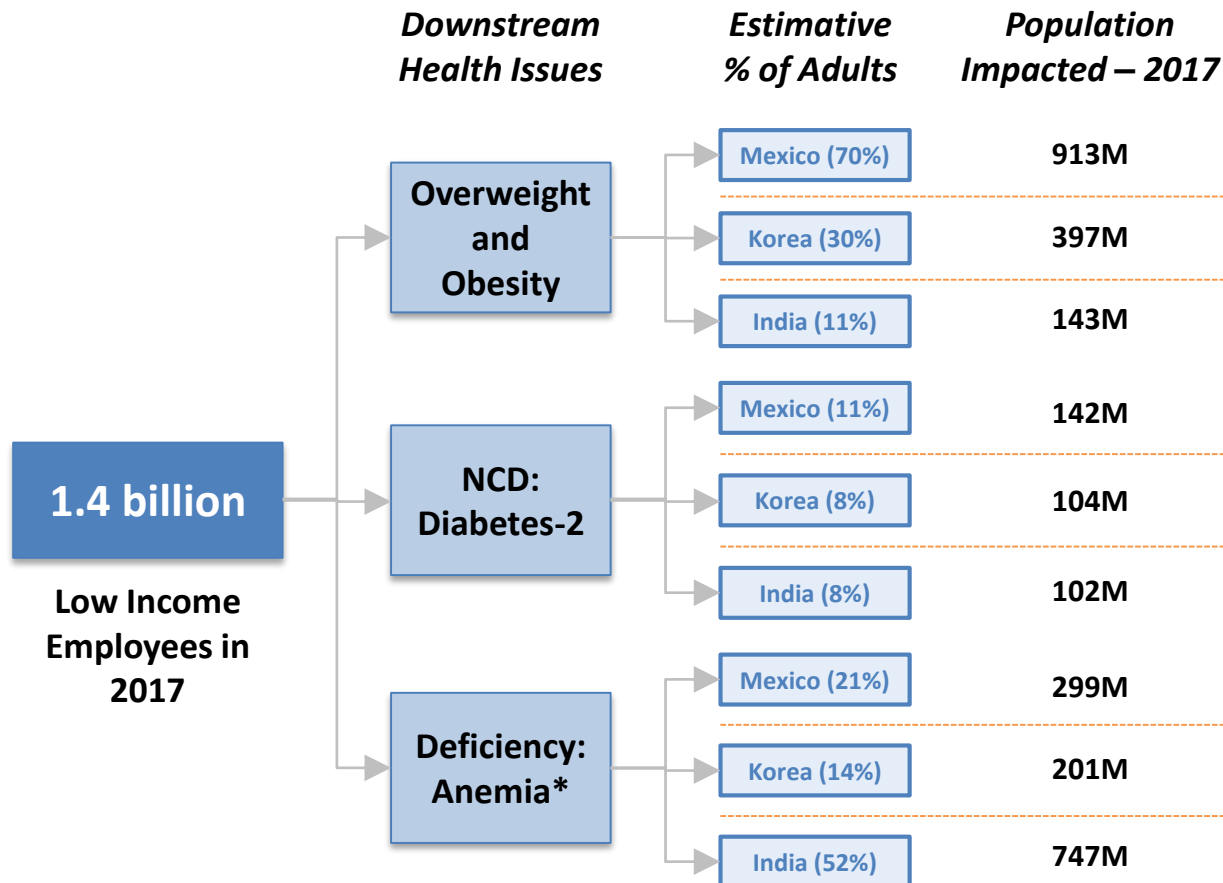
Modifiable Risk Factors

- Physical inactivity, tobacco use, harmful alcohol use.

e.g., A shift toward more sedentary lifestyles has accompanied economic growth, the shift from agricultural economies to service-based economies, and urbanization in the developing world. This spreading of sedentary lifestyle and associated increases in bodyweight contribute to the "globesity" epidemic.¹

Estimated Impacts to Populations

We have modeled the magnitude of problem to the low income populations across three downstream health issues based on three country scenarios (Mexico, Korea and India).



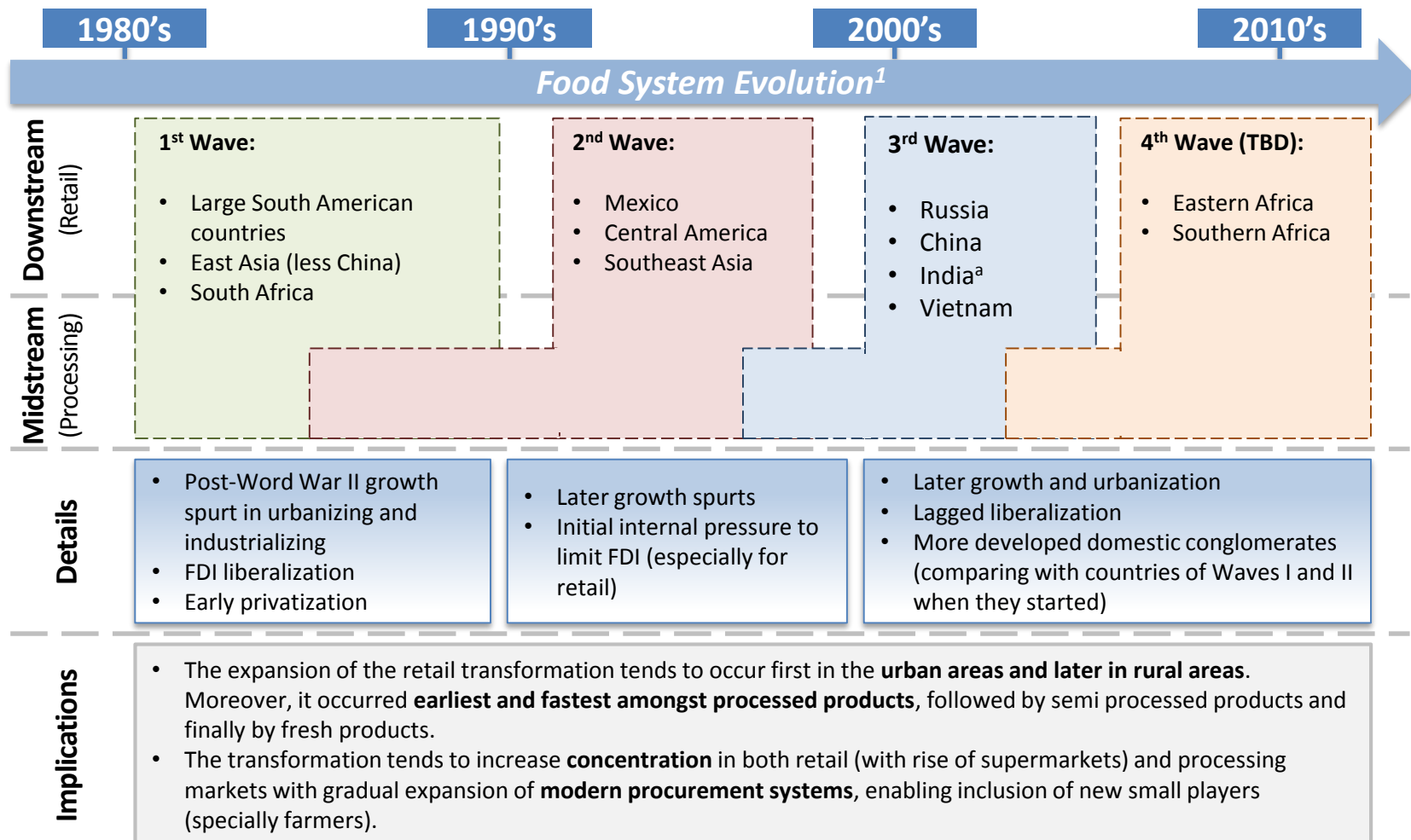
While other factors such as exercise and genetics contribute to overweight and obesity, we can still estimate the magnitude of the problem.

By 2017, an estimated 143M to 913M will suffer from overweight and obesity.

Also, while not exclusive of obesity and overweight, by 2017 an estimated 102M to 142M employees will suffer from diabetes-2, and 201M to 747M from anemia.

4 Waves of the Food System Evolution

The food system structure of a country and its stage in the food system evolution determines the consumption patterns of the population. Countries from different waves have different starting point market dynamics when the wave evolution begins.



Examples of Initiative Goals and Impacts

Initiative/Study	Description	Time	\$	Impact	Notes
Asian Vegetable Research and Development Center (AVRDC)	AVRDC mobilizes resources from the public and private sectors to disseminate improved plant varieties and production methods in developing countries. AVRDC seeks to help farmers to increase vegetable harvests, raise incomes in poor rural and urban households, create jobs, and provide healthier, more nutritious diets for families and communities.	Ongoing operation – founded 1971	\$18MM annual budget (donors incl. USAID, DfID, Asian Dev Bank)	GOAL: WVC goals include “Help smallholder farmers profitably participate in high value vegetable supply chains, and increase consumption of a diversity of vegetables for the nutrition and health of poor consumers.”	Active in addressing post-harvest loss. Currently implementing 4 post-harvest loss programs across Africa, Asia, and Oceania with an aggregate \$2.5MM in funding.
Farm Concern International --- Domestic Horticulture Markets project (DoHoMa)	DoHoMa aims to increase the profitability of horticulture production for smallholder producers by creating efficient marketing mechanisms to serve domestic markets (vs. export markets) in four countries in Sub-Saharan Africa.	2010 - 2015	\$5.6MMM	GOALS vs. ACTUALS: Currently the project works with 107,473 farmers against the target of 70,000 farmers. Nearly 5,000 traders are sourcing commodities from the smallholder farmers participating in the project. Gender dimension is being addressed as 47% of participating farmers are women, against a target of 40%.	Smallholder-based production systems have not been competitive in meeting market requirements on quality assurance, quantities of similar products and varieties, consistency and coordinated supply chain management. DoHoMa is being implemented utilizing FCI’s “Commercial Villages” and “Market Hubs” models, aimed at building efficiency along farm gate –to-market systems.
South Asia Network for Chronic Disease (SANCD)	A research organization set up jointly by the London School of Hygiene and the Public Health Foundation of India, SANCD produces scholarly work on the issue of chronic disease in South Asia, and integrates itself in communities. SANCD is funded by Wellcome Trust.	Launched 2008	£4.5m over 5 years from The Wellcome Trust	Goal: Facilitate dissemination of best evidence to support health care provision in chronic disease, and the setting of priorities and practices for policy makers, practitioners and researchers.	Research at SANCD includes studies in migration, genetic and environmental determinants of obesity and diabetes; systematic reviews and secondary data analysis in chronic disease and studies in nutrition, public health and genetics

Examples of Initiative Goals and Impacts (continued)

<p>GAIN: Kenyan National Fortification Alliance</p>	<p>The Kenyan Ministry of Public Health and Sanitation, jointly with Population Services International (PSI) and the Global Alliance for Improved Nutrition (GAIN) have launched a five-year partnership with industry toward implementation of mandatory guidelines for nutritionally fortified wheat flour, vegetable oil and maize meal.</p>	<p>2012 - 2017</p>		<p>Goal: To reach ~ 27 million Kenyans with nutritionally fortified wheat flour, vegetable oil and maize meal.</p>	<p>GAIN is providing financial support and technical expertise to produce the fortified foods, monitor their quality, create demand and develop technical guidelines for fortification.</p>
<p>South African sodium reduction targets (“Foodstuffs, Cosmetics and Disinfectants Act”)</p>	<p>South African government phasing in mandatory regulations setting out to limit the level of Sodium intake by South African consumers by regulating the total allowable Sodium levels in various categories of food products (e.g. bread, breakfast cereals, read-to-eat savory snacks) A two-stage reduction in total Sodium levels is provided for in the regulations— interim targets 2016, final targets 2019.</p>	<p>2012 - 2019</p>	<p>NA</p>	<p>Goals: --Halve the average daily salt intake of South Africans to meet WHO recommendation of 5g/day. --Savings to the health system of about R300m a year. --Current estimates that cutting daily sodium consumption by 0.85g would prevent 7,400 deaths a year from strokes and heart disease.</p>	<p>PepsiCo is providing technical assistance to help SMEs achieve targets.</p>