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# Tipping the Scales: The Public Health Crisis in Mexico

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**TIPPING THE SCALES: THE PUBLIC HEALTH CRISIS IN MEXICO**

**THESIS**

by

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**SUBMITTED TO SCRIPPS COLLEGE IN PARTIAL FULFILLMENT OF THE  
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Mexico is in the midst of a public health crisis. A country formerly plagued by malnutrition and malaria is now host to obesity, diabetes, and other nutrition-related issues. Mexico has one of the highest obesity rates in the world as a result of the dual burden: “a tendency to be malnourished at an early age, which leads to a higher propensity for obesity in adulthood.”<sup>1</sup> Studies have shown that Mexicans, especially of indigenous descent, display a genetic predisposition for obesity. In the years between 1988 and 2006, the prevalence of obesity among Mexican adults steadily rose 2% each year.<sup>2</sup> In 2004, non-communicable diseases caused 75% of deaths.<sup>3</sup> This crisis is believed to be a result of epidemiological and nutritional change; changes since 1988 include an increased consumption of sugar and refined carbs most commonly found in processed foods. Soda consumption has also increased exponentially over the last two decades. Rates of overweightness and obesity parallel mortality rates, but this correlation is not just the result of individual choices rather a public health issue; “Access to inexpensive but high energy-dense food is rising and physical activity is decreasing, since large numbers of people now live in urban areas and are engaged in less physical activity.”<sup>4</sup> Increasing mortality rates are a result of many risk factors; risk factors of death from heart attack, diabetes, and high blood include obesity, inadequate dietary intakes (ex. high-calorie, fat, cholesterol, and carbohydrates), and physical inactivity.<sup>5</sup> Treatment infrastructure is practically nonexistent because most doctors are unfamiliar with non-communicable disease treatment. Public awareness of diabetes and

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<sup>1</sup> “The Aztec Superfood Fighting Mexican Obesity.” *Al Jazeera America*. Accessed December 2, 2015. <http://projects.aljazeera.com/2015/08/mexico-obesity/amaranth.html>.

<sup>2</sup> Barquera, Simon, Ismael Campos-Nonato, Carlos Aguilar-Salinas, Ruy Lopez-Ridaura, Armando Arredondo, and Juan Rivera-Dommarco. “Diabetes in Mexico: Cost and Management of Diabetes and Its Complications and Challenges for Health Policy.” *Globalization and Health* 9, no. 1 (February 2, 2013): 1–9.

<sup>3</sup> Barquera, “Diabetes in Mexico,” 2.

<sup>4</sup> Rivera, Juan A, Simón Barquera, Fabricio Campirano, Ismael Campos, Margarita Safdie, and Víctor Tovar. “Epidemiological and Nutritional Transition in Mexico: Rapid Increase of Non-Communicable Chronic Diseases and Obesity.” *Public Health Nutrition* 5, no. 1a (February 2002): 113–22.

<sup>5</sup> Rivera, “Epidemiological and Nutritional Transition in Mexico,” 119.

obesity is also low and therefore, lifestyle changes that could altogether prevent the disease are not being made.<sup>6</sup> Diabetes is one of the largest issues facing the Mexican public and healthcare system. At present, 14.4% of the Mexican population suffers from diabetes mellitus as a result of excessive body weight. Diabetes is the number one cause of death among Mexican citizens.<sup>7</sup>

Obesity prevalence and ever rising rates of non-communicable diseases can be reversed and prevented, yet little has been done to curb this rise. In 2008 public health care costs to treat non-communicable diseases cost a total of \$US 3.2 million, or 33.2% of total Mexican public health care expenditure. This cost marks a 61% increase in public health care expenditure since 2000.<sup>8</sup> A small decrease in body mass index would minimize the burden of disease. 73.5% of the public health care expenditure currently focuses on treatment while prevention totals only a small fraction of the expenditure at 2.7%.<sup>9</sup> In order to address rising rates of non-communicable diseases and their costs, the Mexican government has implemented new legislation in hopes of combatting these issues.

Legislation implemented in recent years by the Mexican government includes the Nutritional Agreement on Food and Health, better known by the acronym ANSA. The program, established in January 2010 in Mexico by the Ministry of Health, aims to reduce the percentage of overweight and obese citizens in Mexico.<sup>10</sup> Through ANSA, the General Guidelines for the Sale or Distribution of Food and Drinks in School Consumption Facilities in Basic Education Schools (I will refer to as the Guidelines) was also established. The Guidelines aimed to establish

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<sup>6</sup> Barquera, "Diabetes in Mexico," 7.

<sup>7</sup> Barquera, "Diabetes in Mexico," 3.

<sup>8</sup> Rtveladze, Ketevan, Tim Marsh, Simon Barquera, Luz Maria Sanchez Romero, David Levy, Guillermo Melendez, Laura Webber, Fanny Kilpi, Klim McPherson, and Martin Brown. "Obesity Prevalence in Mexico: Impact on Health and Economic Burden." *Public Health Nutrition* 17, no. 01 (January 2014): 233–39.

<sup>9</sup> Rtveladze, "Obesity Prevalence in Mexico," 238.

<sup>10</sup> Bonilla-Chacín, María Eugenia. *Promoting Healthy Living in Latin America and the Caribbean: Governance of Multisectoral Activities to Prevent Risk Factors for Noncommunicable Diseases*. World Bank Publications, 2013.

a governance of the distribution of food and beverage sales in schools.<sup>11</sup> Another effort made through partnership included the Alliance for a Healthy Border (AHB) working to combat rising obesity rates in the border region between the United States and Mexico. This program included educational and fitness programs to educate the underserved population about health and wellness. On January 1<sup>st</sup> of 2014, to further the notion of health and wellness in Mexico, a national soda tax was implemented. The soda tax implemented a 10% charge or approximately a one Peso per liter charge on all soda and other sugary drinks. The tax also put into effect an 8% charge on high-calorie snacks.<sup>12</sup> Another example of government efforts to combat obesity include the installation of exercise machines in Mexico City. In exchange for a certain number of squats, machines offer free tickets to customers. The Ministry of Health has also tried to promote physical activity by implementing “urban gyms” or active centers throughout the city for a round of push-ups or weight lifting.<sup>13</sup> These efforts aim to better individual lifestyle choices in Mexico, further promoting healthy choices and lifestyles.

Despite these recent responses by the Mexican government, rates of obesity and non-communicable diseases steadily rise. The persistence of the crisis is the result of legislation that does not properly address the crisis. The efforts made by the Mexican government only address the education of consumers and consumer protection. While these are important, the reality is that policies are limited by corporate power and corporate influence throughout Mexico. While lack of exercise and over consumption of processed and artificially sweetened foods lend to an unhealthy lifestyle, the public health crisis is a result of underlying political economy issues.

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<sup>11</sup> Bonilla-Chacín, 166.

<sup>12</sup> “Mexico’s Soda Tax Is Starting to Change Some Habits, Say Health Advocates.” *Public Radio International*. Accessed December 2, 2015.

<sup>13</sup> Masse, Fátima. “Fat City: The Obesity Crisis That Threatens to Overwhelm Mexico’s Capital.” *The Guardian*, November 13, 2015, sec. Cities. <http://www.theguardian.com/cities/2015/nov/13/fat-city-obesity-crisis-mexico-capital-sugar-tax>.

These issues include poverty, unemployment, migration, and in particular, the loss of farmers' jobs in Mexico. Public policy functions to treat the symptoms of the public health crisis not fully acknowledging the root causes of the crisis. This thesis will attempt to assess the effectiveness of public policy as it exists in Mexico and address the ways in which the policies fail to challenge the foundational issues that are a result of neoliberal trade policy and corporate power.

To begin to understand the limited nature of public policy in Mexico, it is important to address the roles of each policy. The policies were designed to meet and reduce the ever rising rates of obesity, diabetes, and non-communicable disease in Mexico. Such rates are considered results of harmful defaults, or conditions that affect an individual's daily behavior and health, in the food environment. As a result of the food defaults in Mexico, diets have shifted from traditional food staples to more "energy-dense, processed foods and animal source foods."<sup>14</sup> Processed foods are less nutritious as they are further processed; "processing typically degrades the original nutrient complements of the food, it also involves the addition of sugar, fat, salt, or various chemicals."<sup>15</sup> This added fat content has been demonstrated by the 28.9% rise in fat intake by Mexican citizens between the years of 1988 and 1999.<sup>16</sup> The influx of processed foods has substantially influenced the Mexican diet; the presence of "vitamin T (tacos, tortas, and tamales) and convenience stores stocked with *comida chatarra* (junk food) are seemingly infinite and omnipresent."<sup>17</sup>

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<sup>14</sup> Sarah E Clark, Corinna Hawkes. "Exporting Obesity: US Farm and Trade Policy and the Transformation of the Mexican Consumer Food Environment." *International Journal of Occupational and Environmental Health* 18, no. 1 (2012): 53–65.

<sup>15</sup> Albritton, Robert, ed. "THE FOOD REGIME AND CONSUMERS' HEALTH." In *Let Them Eat Junk*, 80–123. How Capitalism Creates Hunger and Obesity. Pluto Press, 2009. <http://www.jstor.org/stable/j.ctt183pbv8.7>.

<sup>16</sup> Clark, "Exporting Obesity."

<sup>17</sup> "The Aztec Superfood Fighting Mexican Obesity."

The influx of unhealthy foods to Mexico is represented in the soda consumption by Mexican consumers. Mexico is the greatest consumer of soda in the world with an average of 46 gallons per person per year—86% more than the average American.<sup>18</sup> The portion size in Mexico for soda between 1977 and 2006 increased from 6.5 ounces to 20 ounces.<sup>19</sup> The proliferation of soda consumption is a great contributor to the public health crisis in Mexico. Sugary drinks are directly linked to non-communicable diseases such as obesity, diabetes, and diabetic retinopathy, or blindness.<sup>20</sup> This relation is especially associated with obesity in children. A study revealed that baseline consumption as well as a change in sugar-sweetened drink consumption is directly correlated to body mass index (BMI). It was found that the rate of obesity among children increased 1.6 times with each additional sugar-sweetened beverage per day.<sup>21</sup> In Mexico, 39% of all children measure as obese. Mexico is the leading country of childhood obesity in the world.<sup>22</sup>

To combat the rising rates of soda consumption and its resulting obesity, believed to be a root cause in the public health epidemic, the Ministry of Health implemented in January 2014 a nationwide soda tax. Because of the poor quality of drinking water throughout the country, companies like Coca Cola, Co. market soda to consumers.<sup>23</sup> This marketing strongly influences consumer demands and consumption. And so, the legislation was passed in an effort to challenge this dominant consumption trend. The taxation has proven mildly effective. Soda purchases throughout Mexico in 2014 decreased by 10% while bottled water purchases rose by 13%. The

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<sup>18</sup> "Child Obesity in Mexico." *Al Jazeera America*. Accessed December 1, 2015. <http://projects.aljazeera.com/2015/08/mexico-obesity/>.

<sup>19</sup> Novak, Nicole L., and Kelly D. Brownell. "Role of Policy and Government in the Obesity Epidemic." *Circulation* 126, no. 19 (November 6, 2012): 2345–52.

<sup>20</sup> "Mexico Soda Tax." *Al Jazeera America*. Accessed December 1, 2015.

<sup>21</sup> Ludwig, D. S., K. E. Peterson, and S. L. Gortmaker. "Relation between Consumption of Sugar-Sweetened Drinks and Childhood Obesity: A Prospective, Observational Analysis." *Lancet (London, England)* 357, no. 9255 (February 17, 2001): 505–8.

<sup>22</sup> "Child Obesity in Mexico."

<sup>23</sup> "Mexico Soda Tax."

tax revenue is also designated to health education as well as the construction of water fountains in public schools.<sup>24</sup>

Although the tax addresses consumer protection, it does not challenge the corporate model. The public policy attempts to push back against the corporate control of Mexican consumers by companies like Coca Cola, Co., but is met with little resistance by these companies. Such legislation, although meaningful, is not stark enough to combat the real issues of the corporate power structure. The infiltration of the food industry in the Mexican government is a great challenge to the public health of Mexican citizens. Vicente Fox, who served as Mexican president from 2000 to 2006 was previously the president of Coca Cola Mexico.<sup>25</sup> This example offers a clear impression of the “revolving door” concept; the “revolving door” is a metaphor for the occupation of positions in government by private sector industry representatives. These representatives are participants in the very industries most often affected by government regulation. Vicente Fox’s connection to Coca Cola Mexico is a great example of this principle; the ramifications of this connection are demonstrated by the few regulations in the Mexican food “emerging market”. Coca Cola controls 45% of the Mexican beverage market earning \$2 billion in revenue in 2014.<sup>26</sup> Mexico is the largest consumer per person of Coca Cola Co. products in the world.<sup>27</sup> With little consumer protection and industry domination, there is only room in Mexico for profits. Because profit margins are so great in Mexico, Coca Cola, Co. has made plans to invest \$8.2 billion in Mexico by 2020 to increase production capacity with

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<sup>24</sup> “Mexico’s Soda Tax Is Starting to Change Some Habits, Say Health Advocates.”

<sup>25</sup> “Mexico Soda Tax.”

<sup>26</sup> “Mexico Soda Tax.”

<sup>27</sup> Guthrie, Amy. “Mexico Cracks Down on Junk Food in Schools.” *Wall Street Journal*, May 14, 2015, sec. Business. <http://www.wsj.com/articles/mexico-cracks-down-on-junk-food-in-schools-1431595804>.



“special focus on promoting physical activity and well-being.”<sup>28</sup> The troubling relationship between governments and their food industries does not end in Mexico, rather it plays out on the world stage

The World Health Organization (WHO) is a specialized United Nations (UN) agency designed as an impartial advocate for the 194 member nations of the UN. The impartial nature of the WHO is unclear as industry funding has begun to infiltrate the organization. In 2012, the following donations were made by various companies: \$50,000 from Coca Cola, Co., \$150,000 from Nestle, and \$150,000 from Unilever, a food conglomerate. (Special Report: Food) These donations go against the impartial mission of the WHO. Although the World Health Organization is not a body of law, the standards set by the WHO are accepted internationally. The organization is host to a nutrition committee that consists of government officials from each nation. The committee goal is to establish standards of food labeling and trade. In the case of Mexico, no government officials served on the committee, instead Mexico’s interests were represented by officials from Coca-Cola, Co. and Kellogg. These representatives advocate for very little outside of their own compensation. The strict regulation and taxation of such companies is required to address the public health crisis facing Mexico. This requirement will not be easily met if the advocates for change are the very disruptors of the food environment. It has been proven that defaults in the food environment determine health and lifestyles of citizens, and so, it is clear that government intervention and advocacy are key to the prevention and eradication of non-communicable diseases. Government legislation at present does not hold companies accountable for the harmful environments that they promote and establish.

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<sup>28</sup> “Coca-Cola to Invest \$8.2 Billion in Mexico by 2020.” *The Coca-Cola Company*. Accessed December 2, 2015. <http://www.coca-colacompany.com/coca-cola-unbottled/coca-cola-to-invest-82-billion-in-mexico-by-2020>.

Rhetoric like that of Coca Cola Co. representatives does not acknowledge the role of companies in the establishment of default food environments. It is damaging as it places all responsibility on individuals for their own health choices despite disadvantages of access and education. The reality that 30% of all school-aged children and 70% of all adults are obese is not simply a result of individual choices.<sup>29</sup> Food industry representatives and governments rely on rhetoric that assumes individual will is the issue in navigating the dangers of the food environment and food defaults. The ideology states that individual inactivity is to blame for obesity when it has been found that “food intake is a more important contributor to obesity than sedentary behavior.”<sup>30</sup> The government and food industry offer little protection to consumers. The Mexican government honors a capitalistic agenda over that health of its citizens as the government becomes deeper entrenched in and with the food industry powers.

The entrenchment of industry power in the Mexican government’s efforts to address the public health crisis are not limited to legislation consuming soda rather reflected in each legislation effort. The dominant role of corporate power is illuminated in the negotiation process of the Nutritional Agreement on Food and Health, better known by the acronym ANSA as well as the Guidelines. The goals of ANSA focus on efforts to promote healthy consumer lifestyles. The legislation focuses on the encouragement of physical activity, increased intake of healthy foods, and an overall reduction in unhealthy foods like fat, sodium, and sugar to combat the rising complications of the public health crisis.<sup>31</sup>

In 2008, one such complication included that direct and indirect costs of obesity treatment reached \$3 billion for the Mexican public medical system with an estimated cost of

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<sup>29</sup> “Mexico’s Soda Tax Is Starting to Change Some Habits, Say Health Advocates.”

<sup>30</sup> Novak, “Role of Policy and Government in the Obesity Epidemic,” 2348.

<sup>31</sup> Bonilla-Chacín, 168.

\$13 billion in 2017. In an effort to reduce these costs, the Ministry of Health and Ministry of Economics in Mexico drafted the Guidelines—an initiative in all primary schools to better food environments and nutritional literacy. The Guidelines included advising from representatives from the food and beverage industry, NGOs, and health professionals.<sup>32</sup> The argument against the initiative included that decreased product consumption i.e. soda, skim milk instead of whole milk, would cause job loss and overall loss of economic productivity for industry members. Reaching a consensus on the Guidelines proved difficult as food industry representatives found their economic control to be threatened. These representatives brought forth many arguments, but most prominently relied on the rhetoric of “individual choice”; arguments included “that individuals should take personal responsibility for their nutritional health, making obesity a matter of personal responsibility” inciting that childhood obesity was a result of poor parenting more than faulty environmental defaults.<sup>33</sup> After much deliberation, a weakened set of the Guidelines along with ANSA were brought to action. Overall, industry voices remained effective in diluting government solutions to Mexico’s obesity crisis. The efforts of food industry marketers and representatives to maintain the status quo are extreme and demonstrate that they will not engage with public health efforts on their own accord.

The role of the Guidelines is important in the public health conversation between industry representatives, the government, and citizens. The Guidelines established along with ANSA banned sugary drinks in primary schools instead requiring schools to serve fresh produce and water. The government has threatened schools with fines and closures if the Guidelines are not met. If interventions fail, it is believed that one in every three Mexicans will face Type 2

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<sup>32</sup> Charvel, Sofia, Fernanda Cobo, and Mauricio Hernández-Ávila. “A Process to Establish Nutritional Guidelines to Address Obesity: Lessons from Mexico.” *Journal of Public Health Policy* 36, no. 4 (November 2015): 426–39.

<sup>33</sup> Charvel, 431.

diabetes—a preventable disease. While the principle of the Guidelines is admirable, reports say that monitoring efforts have failed Mexico’s 248,000 primary schools.<sup>34</sup> The resources simply do not exist to enforce food distribution rules or water fountain installations. Despite issues of accountability, a greater issue faces the legislation; most Mexican students do not eat lunch at school because the school day only lasts around 4 hours. They may enjoy a mid-day snack, but most meals are had at home. The Mexican government has plans to extend the school day and has already lengthened the school day in some areas, but the legislation without extended school days is futile. School leaders who have taken the Guidelines in stride argue that life-long habits are built at school. It is not just reading and writing that children learn, but also how to make healthy choices. The legislation has caused upset in the food industry as Cofemer, a Mexican trade group representing companies like PepsiCo and Kellogg’s argued that bans on their food products is discriminatory. The Guidelines have started a discussion about the food environment surrounding children in Mexico. Corporate power, ever present in the weakening of federal legislation, is also made clear in the establishment of the food environment in which the Guidelines are attempting to challenge.

Default food environments are constructed by industry executives in many ways but particularly affect children through television and web-based advertising. A study in Mexico revealed that food-related content made up 28.5% of commercials for television programs aimed at children as opposed to only 15.4% during general programming. The content of the advertisements consists primarily of high-calorie, sugary, fattening foods.<sup>35</sup> Advertising to children is especially dubious because children make up three subsets of marketing: “children are

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<sup>34</sup> Guthrie, “Mexico Cracks Down on Junk Food in Schools.”

<sup>35</sup> “Food-Related Advertising Targeting Children: A Proposal to Reduce Obesity in Mexico.” *The Journal of Global Health*. Accessed December 8, 2015. <http://www.ghjournal.org/food-related-advertising-targeting-children-proposal-to-reduce-obesity-in-mexico/>.

a ‘primary market’ as they spend some money themselves; they are an ‘influence market’ because they can shape purchases by their parents; and they are a ‘future market’ because they will become adult consumers.”<sup>36</sup> A correlation has been found between exposure to advertisements by children and their consumption of fast food and sugary drinks. A study found that “for every 100 commercials viewed over a three-year period, there was a 9.4% rise in consumption of sugar-sweetened beverages.”<sup>37</sup> This influence is incredible, especially as it links to the habits formed by children through their developmental stages. A child addicted to sugar-sweetened beverages grows to follow the same habits as an adult. It has also been found that soda and sugary beverage consumption are positively correlated with time spent before a screen—including both television and computer screens. A study found that students who spent more than seven hours per week in front of a screen are 20% more likely to be obese or overweight compared to students with less than seven hours of screen time per week. The numbers are even grimmer as students spend more time before screens; for children reporting 21 hours or more of screen time per week their chances of obesity are 30% higher.<sup>38</sup> The dangers of television and web-based advertising are undeniably clear. Children are faced with more than 5,500 food ads per year; 95% of all ads viewed are promoting fast food, sugar-sweetened beverages and cereals.<sup>39</sup> As a result of increased exposure, children develop brand loyalty and a desire for harmful, unhealthy food products. Proximity to unhealthy foods and a detrimental food environment are the driving force of weight and overall health. Individuals and communities alike are vulnerable to their environments: “It is estimated that people make more than 200 food-

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<sup>36</sup> “Why Mexico’s Ban on Advertising Food to Kids Might Not Work.” *The Huffington Post*. Accessed December 8, 2015. [http://www.huffingtonpost.ca/bill-bogart/mexico-bans-food-advertising-kids\\_b\\_5824020.html](http://www.huffingtonpost.ca/bill-bogart/mexico-bans-food-advertising-kids_b_5824020.html).

<sup>37</sup> “Food-Related Advertising Targeting Children: A Proposal to Reduce Obesity in Mexico.”

<sup>38</sup> “Food-Related Advertising Targeting Children: A Proposal to Reduce Obesity in Mexico.”

<sup>39</sup> Novak, “Role of Policy and Government in the Obesity Epidemic,” 2347.

related decisions each day but recall making less than 10% of those decisions.”<sup>40</sup> If adults remain unaware of the many food decisions they make each day, then children certainly can not be held accountable for the messages flooding their computer screens and televisions. Restrictions are ineffectively monitored and many loopholes exist for marketers through web-based advertisements and social media sites.<sup>41</sup> Marketing to children under 12 has been challenged by the courts, but regulation remains much too vague.

The impact of targeted advertisements on children by industry were made especially clear by a strict ban implemented in Quebec in 1980. The ban stopped all junk food advertisements to children via television networks based in Quebec. The outcomes of the legislation have shown that Francophone children eat much less junk food than their Anglophone peers. The difference is believed to be a result of television programming; Francophone children watch programs only from Quebec networks while Anglophone children watch television from other regions in Canada and the United States. The ban on advertisements to children exists only on the Quebec networks, therefore concluding that the ban is effective.<sup>42</sup> By the numbers, spending on fast food in Quebec was 13% lower than spending in neighboring Canadian provinces like Ontario. This percentage accounts for decreased spending of \$88 million per year.<sup>43</sup> Therefore, advertisement bans and regulations could prove especially effective in Mexico as an effort to challenge industry, resulting in the minimization and prevention of childhood and resulting adulthood obesity.

Regulatory efforts of advertising work to prevent the issues of overweightness and obesity while others aim to treat these diseases. Alliance for a Healthy Border (AHB) was a

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<sup>40</sup> Novak, “Role of Policy and Government in the Obesity Epidemic,” 2346.

<sup>41</sup> Novak, “Role of Policy and Government in the Obesity Epidemic,” 2349.

<sup>42</sup> “Why Mexico’s Ban on Advertising Food to Kids Might Not Work.”

<sup>43</sup> “Food-Related Advertising Targeting Children: A Proposal to Reduce Obesity in Mexico.”

“public-private partnership that aimed to address obesity and its related complications among the largely Hispanic populations of the U.S.-Mexico border.”<sup>44</sup> The border region between the United States and Mexico is characterized by high poverty and low education rates. Many of the citizens on either side of the border suffer from obesity, diabetes, and heart disease. The AHB program aimed to decrease the health disparities in the region by expanding access to health care for the underserved. Through implementation of educational programs as well as supporting behavioral changes, such as diet and physical activity of the participants, the program improved the health of participants as concluded by anthropometric measures (BMI, Cholesterol, Blood Pressure).<sup>45</sup> AHB had 4,000 participants who worked with health specialists for a period ranging between five weeks and six months. After the program’s duration, the specialists followed up with participants and found lifestyle interventions to be highly effective.<sup>46</sup> Although the model proved to be effective in bettering the health of citizens, it did nothing to challenge the underlying corporate causes of the public health crisis.; AHB served to treat health issues rather than address their root causes.

As stated previously, the legislation put forth in Mexico, like the soda tax and Alliance for a Healthy Border, have worked to address some of the concerns of the public health crisis. Stricter regulations regarding advertisements to children could prove effective in addressing childhood obesity, but ultimately fail to address the political economy issues at hand. The crisis is not simply a result of poor choices and consumer miseducation. The issues lie in the inequity that plagues Mexico as a result of strong corporate powers and neoliberal policies.

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<sup>44</sup> Brennan, Virginia M., Shiriki K. Kumanyika, and Ruth Enid Zambrana. *Obesity Interventions in Underserved Communities: Evidence and Directions*. Baltimore: The Johns Hopkins University Press, 2014.

<sup>45</sup> Brennan, “Evidence and Directions,” 244.

<sup>46</sup> Brennan, “Evidence and Directions,” 249.

To effectively stem the public health crisis, it is important to address issues of poverty, unemployment, mass migration, and the loss of farmers' jobs throughout rural Mexico. In the context of corporate power, these issues are left unchallenged by public policy. The issues listed above are primarily a result of neoliberalism, especially as strengthened in Mexico by the North American Free Trade Agreement. The North American Free Trade Agreement, implemented on January 1<sup>st</sup>, 1994, created one of the world's largest free trade zones between the United States, Canada, and Mexico. Although NAFTA was "slated for prosperity", structural problems in Mexico—exacerbated by the agreement—have increased inequality among Mexican citizens.<sup>47</sup> The ramifications of the agreement have been exacerbated by the fact that very little infrastructure exists to protect the welfare of Mexican citizens; "...absence of free elections, of an emancipated labor movement and of the rule of law has helped keep the fruits of any economic expansion in the hands of a minority."<sup>48</sup>

NAFTA has altered the economic, political, and social climate throughout Mexico adversely affecting the food environment. Imports of processed food products to Mexico from the United States prior to NAFTA were increasing 6.4% per year compared to a post NAFTA average of 20%.<sup>49</sup> Increase in exports to the United States from Mexico "paled in comparison with new imports of grain, oilseeds, and meat from the United States." This increase has made Mexico dependent on the United States for much of its food supply.<sup>50</sup> This dependency has been especially privy to the establishment of hazardous food environments throughout Mexico.

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<sup>47</sup> Carlsen, Laura. "NAFTA Is Starving Mexico - FPIF." *Foreign Policy In Focus*. Accessed November 2, 2015. [http://fpif.org/nafta\\_is\\_starving\\_mexico/](http://fpif.org/nafta_is_starving_mexico/).

<sup>48</sup> Castañeda, Jorge G. "Can NAFTA Change Mexico?" *Foreign Affairs* 72, no. 4 (1993): 66–80.

<sup>49</sup> Hing, Bill Ong, ed. "The NAFTA Effect." In *Ethical Borders*, 9–28. NAFTA, Globalization, and Mexican Migration. Temple University Press, 2010. <http://www.jstor.org/stable/j.ctt14btd8m.5>.

<sup>50</sup> Hing, "The NAFTA Effect," 13.



Defaults transcend individual environments and affect entire communities and populations through food costs, marketing, and overall availability and access to food.<sup>51</sup> Harmful dietary defaults are a large component of obesity. The infiltration by companies like McDonald's, Coca Cola, Inc. and Wal-Mart in the Mexican food sector has altered the foundations of Mexican food culture and habit; "Public health experts no longer accept that the obesity epidemic can be explained solely as the outcome of poor individual choices. They understand, rather, that the food environments or food 'defaults' surrounding people constrain the actual choices people are likely to make, i.e., the number of fast food restaurants and convenience stores that offer little (if any) fresh food."<sup>52</sup>

Foreign direct investment increased drastically in Mexico as a result of the North American Free Trade Agreement. Foreign direct investment allows companies like McDonald's and Wal-Mart to infiltrate Mexican markets, where, as demonstrated by public policy, government regulation of industry is limited. After the agreement, "...the number of Wal-Mart stores grew from 114 to 561 (265 of the stores contain supermarkets). In 2005, Wal-Mart controlled about 20 percent of the total Mexican food retail sector."<sup>53</sup> With wealth and power, Wal-Mart and other companies have reshaped the Mexican food environment, disrupting the system entirely by marketing unhealthy products and lifestyle choices to the Mexican public. These companies have successfully established an overly-processed, sugar-coated default food environment in Mexico. These companies have increased consumption of harmful products despite negative public health consequences.

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<sup>51</sup> Novak, "Role of Policy and Government in the Obesity Epidemic," 2345.

<sup>52</sup> Clark, "Exporting Obesity."

<sup>53</sup> Clark, "Exporting Obesity."

Consumption of these products is not merely a result of consumer ignorance, rather an issue of income inequity throughout Mexico. As a result of neoliberal policy between 1994 and 2003, Mexican citizens lost 20% of their purchasing power.<sup>54</sup> Purchasing power refers to the number of goods and services that can be purchased by the average consumer. Food poverty or the inability to purchase the basic food basket increased from 18 million to 20 million Mexican citizens between 2008 and 2010.<sup>55</sup> While this time aligns with the global recession of 2008, it is also exacerbated by the cost of the basic basket increasing 34%.<sup>56</sup> This disparity is also evidenced by the fact that the minimum wage in 1994 (about \$4.20 a day) afforded 44.9 pounds of tortillas while in 2003 only 18.6 pounds could be bought.<sup>57</sup> Tortillas are a traditional staple food throughout Mexico and without access to such food, the impoverished and underserved in Mexico are further alienated from their culture and well-being by the corporate food industry. This alienation is further exemplified by the rising costs of the food in Mexico; between the years 1985 and 2000, the price of healthy food increased two times as much as the rate of price increase for products consisting primarily of sugar and fat as well as carbonated beverages.<sup>58</sup> People with higher incomes can opt-out of the processed food system and afford better diets while the poor remain disadvantaged by issues of accessibility. The food environment in Mexico rapidly changed as a result of the North American Free Trade Agreement and directly disempowered locals within the food system.

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<sup>54</sup> Shaffer, Ellen R., Howard Waitzkin, Joseph Brenner, and Rebeca Jasso-Aguilar. "Global Trade and Public Health." *American Journal of Public Health* 95, no. 1 (January 1, 2005): 23–34.

<sup>55</sup> Carlsen, "NAFTA Is Starving Mexico."

<sup>56</sup> Hing, "The NAFTA Effect," 23.

<sup>57</sup> Hing, "The NAFTA Effect," 23.

<sup>58</sup> Novak, "Role of Policy and Government in the Obesity Epidemic," 2347.

The North American Free Trade Agreement disrupted the livelihood and well-being of Mexican farmers. In the drafting process of NAFTA, Mexico agreed to economic restructuring and revisions. One such revision eliminated the protections of peasant farmers; Amendment 27 was removed from the Mexican constitution which “protected the land rights of peasant farmers against foreclosure, sale, and seizure.”<sup>59</sup> By amending this law, transnational companies were granted the power to purchase Mexican land. These purchases empowered corporations to develop powerful agricultural enterprises. Changes to agricultural regulation were seen as necessary in the process of modernizing and democratizing Mexico. The government convinced skeptics to support NAFTA “by offering privileged access to the benefits of market reforms to those private interests considered essential for success.”<sup>60</sup> The Mexican government forfeited many of the policies protecting average Mexican citizens to benefit a select number of individuals and private corporations.

Another such example of Mexican government liberalizing the agricultural sector includes an agreement “abolishing laws requiring cattle to be fed grass rather than corn.”<sup>61</sup> The promotion of corn production as commodity, despite production levels often undercutting real farm income, has led to greater crop production and lower prices. The ramifications of these low prices attract livestock and dairy farmers to corn products as feed. While one might think that the proliferation of corn as commodity offered Mexican farmers more outlets to sell their corn, the reduction of tariffs, agricultural supports, and export subsidies “increased imports of low-cost

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<sup>59</sup> HOLTTHAUS, GARY, ed. “The WTO, NAFTA, CAFTA, and the FTAA.” In *From the Farm to the Table*, 205–44. What All Americans Need to Know about Agriculture. University Press of Kentucky, 2006.  
<http://www.jstor.org/stable/j.ctt5vkk2r.17>.

<sup>60</sup> Cameron, Maxwell A., and Carol Wise. “The Political Impact of NAFTA on Mexico: Reflections on the Political Economy of Democratization.” *Canadian Journal of Political Science / Revue Canadienne de Science Politique* 37, no. 2 (2004): 301–23.

<sup>61</sup> Clark, “Exporting Obesity.”

food commodities” rendering “domestic agricultural producers uncompetitive.”<sup>62</sup> Mexico’s agricultural sector was dismantled by NAFTA; “For years, Mexico had provided support to rural areas through systems of price supports for producers and reduced prices of agricultural products to consumers, but Mexico withdrew support after NAFTA.” While NAFTA ended government support for Mexican farmers, American farmers still benefitted from subsidized corn production. American farmers continued to grow crops “in huge quantities at low prices, undercutting Mexico’s corn prices.”<sup>63</sup> These low prices calculated roughly 30% below the real costs of production.<sup>64</sup> For corn farmers in Mexico, NAFTA promised an adjustment period of 15 years for Mexican corn prices to align with the international market prices. During this adjustment period tariffs and an import permit system were to be implemented to ensure security as farmers either expanded their existing farms, attempted to farm new crops, or simply exited the industry all together. The adjustment period only lasted 30 months. Precautionary implements were revoked resulting in a rapid fall of 48% for domestic corn prices. This change marked the convergence with the Mexican agricultural market and international market 12 years earlier than expected.<sup>65</sup> Unable to adjust, many farmers were left without work and without opportunity. To make clearer the disaster of this rapid adjustment, approximately 60% of agricultural land at the time of the agreement was used to farm corn, and corn production employed approximately 40% of all Mexican agricultural workers.”<sup>66</sup> The livelihoods of rural Mexican farmers were destroyed as a result of the neoliberal trade policies ushered in to support the North American Free Trade Agreement.

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<sup>62</sup> Baker, Phillip, Adrian Kay, and Helen Walls. “Trade and Investment Liberalization and Asia’s Noncommunicable Disease Epidemic: A Synthesis of Data and Existing Literature.” *Globalization and Health* 10, no. 1 (2014): 66.

<sup>63</sup> Hing, “The NAFTA Effect,” 13.

<sup>64</sup> Hing, “The NAFTA Effect,” 14.

<sup>65</sup> Holthaus, “The WTO, NAFTA, CAFTA, and the FTAA,” 216.

<sup>66</sup> Holthaus, “The WTO, NAFTA, CAFTA, and the FTAA,” 215.

It is not just the dwindling prices of corn production, but also the concentration of industrialized farming methods that have caused the job loss of millions of people.<sup>67</sup> Without government protection of rural livelihoods, areas already plagued with extreme poverty were left to deteriorate. Before NAFTA, Mexico had 8.1 million agricultural jobs, but by 2006 only 6 million agricultural workers were employed.<sup>68</sup> The rampant unemployment in the agricultural sector has led to the public health crisis. These jobs were critical to the livelihood and well-being of Mexico's rural population. As rural jobs dwindled, citizens began migrating to urban areas of Mexico in pursuit of work and opportunity. The cities offered little in the way of stability for disenfranchised farmers and low-income populations.

In Mexico, migration is common to the search for upward mobility.<sup>69</sup> Peasants move from the countryside in search of economic opportunity, especially in light of agricultural job loss. Peasants in the rural areas outside of Mexico City are essentially forced into migration as a result of limited economic opportunity in the rural areas. At present, 52.3% of the Mexican population are considered to live below the national poverty lines.<sup>70</sup> Despite ever-growing poverty in urban areas, it is believed that urban poverty is less stark than rural poverty; this perception motivates rural Mexicans to migrate.<sup>71</sup> Poor sanitation, illiteracy, and lack of health centers further the notion that impoverished rural lifestyles are worse comparatively.<sup>72</sup> As a result of rapid migration to Mexico City, the urban poor have developed a network of slums

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<sup>67</sup> Carlsen, "NAFTA Is Starving Mexico."

<sup>68</sup> Hing, "The NAFTA Effect," 14.

<sup>69</sup> Fussell, Elizabeth. "Sources of Mexico's Migration Stream: Rural, Urban, and Border Migrants to the United States." *Social Forces* 82, no. 3 (March 1, 2004): 937-67.

<sup>70</sup> "Poverty Headcount Ratio at National Poverty Lines (% of Population)." *Poverty Headcount Ratio at National Poverty Lines (% of Population)*. WorldBank, 2012. Web. 18 Dec. 2015.

<sup>71</sup> "Rural to Urban Migration: The Case of Mexico City in Comparison to Other Megacities :: Acadia Honours' Theses." Accessed December 18, 2015.

<sup>72</sup> "Rural to Urban Migration: The Case of Mexico City in Comparison to Other Megacities.", 19.

around the periphery of the city. In these slums, quality of life and health is at an absolute low and economic opportunity is no where to be found. The issue of unemployment and migration are only exacerbating one another. Without government interference, the lives of the Mexican urban poor will only further the public health crisis.

The Mexican public health crisis is a result of many underlying causes that have yet to be accurately addressed by government legislation. While the government struggles to confront the industry and regulate the growing corporate power in Mexico, citizens have taken it upon themselves to address the public health crisis. Citizens have worked to reclaim and protect traditional crops like amaranth and corn in an effort to preserve heritage and sovereignty, both food and economic.

One method to combat the challenges of the food sector is reclamation of the processed food market. There is a potential market in Mexico for food sovereignty through the production of traditional food goods. One such example is amaranth—a staple grain of the Aztecs of central Mexico. Amaranth is a superfood rich in Vitamin A and C. The grain is also significant to indigenous Mexican cultural identity. It is a high protein, low-cost crop option for low-income farmers and their communities. Despite the cultural, economic, and health benefits of amaranth little attention has been paid to the crop by the Mexican government. Amaranth is considered an “orphan crop”; the crop is important for Mexico but large companies display no interest in its sales. Unlike other commodities there has been no effort on behalf of the Mexican government to integrate amaranth in the larger, national food market.<sup>73</sup> Amaranth offers an opportunity in Mexico to reclaim processed foods. Snacks such as hot chips and cookies are incredibly popular in Mexico. In some regions, these products are already being produced with amaranth. Despite

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<sup>73</sup> “The Aztec Superfood Fighting Mexican Obesity.”

salt and sugar content, these snacks are more nutritious and beneficial to Mexican communities. If crops like amaranth were integrated into local food systems across Mexico, it would offer both jobs for farmers and healthful, traditional alternatives to the ever growing and ever present American processed foods.

Efforts to reclaim traditional foods include not only amaranth, but corn as well. A lawsuit began in 2013 to ban genetically-modified corn in Mexico. Citizens filed a collective lawsuit “advocating for the human right to biodiversity and a healthy environment.”<sup>74</sup> This legislation has successfully challenged and diminished corrupt government and multinational corporate power. The use of genetically-modified corn defies national farmer interests. The lawsuit was organized by 53 individual citizens and 20 civil organizations; these organizations work with production and consumption of maize particularly advocating for environmental and human health. The lawsuit has been challenged 93 times in 17 federal courts.<sup>75</sup> Benefactors of the monopolization of agribusiness, like Monsanto, Syngenta, DuPont and government representatives aim to dismantle these grassroots efforts, but remain unsuccessful. The momentum exists to challenge these powers who have disrupted and ultimately destroyed the Mexican rural economy. The privatization of seed through patents of genetically-modified organisms has served to monopolize staple crops rather than increase yields. By patenting seeds, companies like Monsanto force farmers into dependency.<sup>76</sup> Farmers are victims of a relationship they can neither afford nor control. This model has proven to be both unsustainable environmentally and for the livelihood farmers worldwide in communities where genetically-

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<sup>74</sup> “Mexico’s GMO Corn Ban and Glyphosate Cancer Findings.” *Truthout*. Accessed December 11, 2015. <http://www.truth-out.org/news/item/32107-mexico-s-gmo-corn-ban-and-glyphosate-cancer-findings>.

<sup>75</sup> “Mexico’s GMO Corn Ban and Glyphosate Cancer Findings.”

<sup>76</sup> “Mexico’s GMO Corn Ban and Glyphosate Cancer Findings.”

modified crops have been adopted. The GMO ban is significant in reclaiming the agricultural industry by restoring jobs to rural farmers and their families. The ban is a step forward in addressing the political economy issues of Mexico—rampant unemployment and the mass migration and urbanization of the rural poor. The allowance of genetically-modified corn in Mexico threatens the overall diversity of corn species. Corn is the second most important crop in the world, second only to rice.<sup>77</sup> The value of corn is especially critical to the livelihoods of rural Mexican farmers—the few who remain.

Despite the Mexican government's many superficial attempts to address the public health crisis plaguing Mexico, the crisis persists. The nation has seen no active decreases in obesity, diabetes, and other non-communicable diseases. The persistence is a result of misaligned public policy—policies that do nothing to address the root causes of public health issues. The present governmental focus on consumer education methods and overall lack of consumer protection efforts in combination with its resistance to challenge corporate power have resulted in the current crisis facing Mexico. In response to the rapid onset of poverty, unemployment, and health risks they face, citizens are working to reclaim their land, their traditions, and their livelihoods. But, these efforts remain unsupported by the government. Such efforts require the regulatory might of government to reign in the corporate powers that control the Mexican political, economic, and social climate. In the context of this climate, public policies have been limited. It is important now that public policy addresses poverty, unemployment, mass migration, and the loss of farmers' jobs throughout Mexico. Once these issues are dealt with, the public

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<sup>77</sup> Cummings, Clare. "Risking Corn, Risking Culture." *World Watch Institute*, no. 6. Accessed December 11, 2015. <http://www.worldwatch.org/node/525>.



health crisis in Mexico can be managed. The public health crisis is not an isolated occurrence, rather the result of the neglect and disempowerment of low and middle-income Mexican citizens.

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