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"FAT TAXES" FIGHTING GLOBESITY IGNORE FOOD DEMAND INELASTICITIES

JOHN ANDREW BRUNNER-BROWN*

The obesity pandemic is not unique to the United States,¹ where obesity has been a major health concern for decades. Whereas in the 1980s only about one in six adult Americans were obese,² recent surveys reveal that approximately one in three adult Americans are obese today.³ Worldwide there is a similar upward trend in obesity, as the global

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1. See generally WORLD HEALTH ORGANIZATION, OBESITY: PREVENTING AND MANAGING THE GLOBAL EPIDEMIC 16 (2000) [hereinafter WHO Obesity Report] ("Evidence is now emerging and suggesting that the prevalence of overweight and obesity is increasing in the world at an alarming rate.")). However, there are a number of critics to the notion of an obesity "epidemic." See, e.g., Colin Hector, *Nudging Towards Nutrition? Soft Paternalism and Obesity-Related Reform*, 67 FOOD & DRUG L.J. 103, 104-05 (2012) (discussing several viewpoints from "skeptics," such as methodological errors in using the Body Mass Index, estimates of fewer obesity related deaths than normally promoted, and the business interest in promoting the notion of an "epidemic").

2. WHO Obesity Report, *supra* note 1, at 21.

3. *Overweight and Obesity Statistics*, WEIGHT CONTROL INFORMATION NETWORK, <http://win.niddk.nih.gov/statistics/> (last updated Apr. 1, 2014).

obesity rate has doubled since 1980.⁴ Because of this trend, the World Health Organization has described the pandemic as “globesity.”⁵

There are extreme costs associated with individual obesity. For many, obesity diminishes quality of life in general because it creates a threat of unhealthy, inefficient lifestyles and reduced earning potential.⁶ For the general public, obesity increases many health care costs, the expense of which is displaced onto others through shared insurance costs and government health programs.⁷ For instance, “[t]he estimated annual medical cost of obesity in the U.S. was \$147 billion in 2008 U.S. dollars; the medical costs for people who are obese were \$1,429 higher than those of normal weight.”⁸ Furthermore, health care costs related to obesity are projected to exceed \$800 billion a year.⁹ Also, because the increase in obese children deprives the military of individuals who can serve, obesity is even a national security issue.¹⁰ Altogether, because widespread obesity affects all citizens in terms of costs, productivity, and security, obesity is not just a question of personal health but a problem governments need to address.

4. Jessica Burns-Grant & Lisa Marriott, *Institutional Perspective on Fighting Obesity Via the GST System: A New Zealand Case Study*, 18 N.Z. J. TAX'N L. & POL'Y 190.

5. See *Controlling the global obesity epidemic*, WORLD HEALTH ORGANIZATION, <http://www.who.int/nutrition/topics/obesity/en/> (last visited Mar. 2, 2014) (“Paradoxically coexisting with undernutrition, an escalating global epidemic of overweight and obesity – “globesity” – is taking over many parts of the world.”). See also Alexander Copp, *The Ethics and Efficacy of a “Fat Tax” in the Form of an Insurance Surcharge on Obese State Employees*, 15 QUINNIPIAC HEALTH L.J. 1, 3 (2011-2012).

6. Merav W. Efrat & Rafael Efrat, *Tax Policy and the Obesity Epidemic*, 25 J.L. & HEALTH 233, 240-44 (2012).

7. *Id.* However, other studies have shown that obesity decreases long-term health care costs because of the shortened life span. See, e.g., Tim Worstall, *Alcohol, Obesity and Smoking Do Not Cost Health Care Systems Money*, FORBES (Mar. 22, 2012), <http://www.forbes.com/sites/timworstall/2012/03/22/alcohol-obesity-and-smoking-do-not-cost-health-care-systems-money/> (“But the argument we cannot use is that these behaviours increase the costs of health care. The reason we cannot use this argument is that it simply isn’t true. Those who die young save health care systems money, not cost.”).

8. *Adult Obesity Facts*, CENTERS FOR DISEASE CONTROL AND PREVENTION, <http://www.cdc.gov/obesity/data/adult.html> (last visited Mar. 2, 2014).

9. Youfa Wang et al., *Will All Americans Become Overweight or Obese? Estimating the Progression and Cost of the US Obesity Epidemic*, 16 OBESITY 2323, 2323 (2008).

10. White House Task Force On Childhood Obesity, *The Challenge We Face*, SOLVING THE PROBLEM OF CHILDHOOD OBESITY 1 (2011), http://www.letsmove.gov/sites/letsmove.gov/files/TFCO_Challenge_We_Face.pdf (“Childhood obesity also creates potential implications for military readiness. More than one quarter of all Americans ages 17-24 are unqualified for military service because they are too heavy. As one military leader noted recently, ‘We have an obesity crisis in the country. There’s no question about it. These are the same young people we depend on to serve in times of need and ultimately protect this nation.’”) (internal citations omitted) (last visited Apr. 23, 2014).

Facing this pandemic, numerous governments around the world are taking measures to fight obesity.¹¹ However, some of these actions negatively impact society while ineffectively addressing the causes of obesity.¹² Part I of this article gives an overview of the causes of obesity. Part II of this article discusses various measures and strategies that countries are using to combat obesity. Part III discusses how these measures are unlikely to increase public welfare because they do not effectively address the causes of obesity and because they adversely affect the most vulnerable populations. Part IV describes why reasonable substitutes for unhealthy foods must be made available. Part V proposes creating reasonable substitutes by increasing access to healthier foods as a solution to obesity.

I. THE CAUSES OF OBESITY

Generally, overweightness is caused by excessive caloric intake. For starters, research demonstrates that caloric intake should average around 2,000 calories a day, depending on personal body characteristics and daily physical output.¹³ Because food intake is largely a personal choice, advertisement campaigns often promote exercise and physically active lifestyles and discouraged consumption of high caloric foods.¹⁴

However, further research indicates that the value of certain food groups and nutrition, thereby providing a more complex picture of nutrition and diets — simple overconsumption is not the sole cause of obesity. As scientists have learned more about the nutritional value of food, they are more suspect of certain foods such as high fructose corn syrup.¹⁵ Fats are

11. See *infra* Part II.

12. See *infra* Part III.

13. See, e.g., DIETARY GUIDELINES FOR AMERICANS 2010, U.S. DEPARTMENT OF AGRICULTURE AND U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES (2010) available at <http://www.health.gov/dietaryguidelines/dga2010/dietaryguidelines2010.pdf> ("Estimates range from 1,600 to 2,400 calories per day for adult women and 2,000 to 3,000 calories per day for adult men, depending on age and physical activity level.").

14. Joan R. Rothenberg, *In Search of the Silver Bullet: Regulatory Models to Address Childhood Obesity*, 65 FOOD & DRUG L.J. 185, 214-15 (2010) ("Americans in particular value their individual freedom to enjoy eating as one of life's great pleasures. . . . Placing legal restrictions on specific foods serves to restrict this freedom of personal choice. . . . Instead, programs should focus on attractive regulatory alternatives chosen voluntarily to encourage positive changes in lifestyle, and the development of healthful behaviors."). See also, e.g., *Learn the Facts*, LET'S MOVE, <http://www.letsmove.gov/learn-facts/epidemic-childhood-obesity> (last visited Apr. 23, 2014).

15. See John S. White, *Straight Talk About High-Fructose Corn Syrup: What it is and What it Ain't*, AM. J. CLIN. NUTR. 1716S, 1717S (2008) (testing a hypothesis against a 2004 paper that hypothesized high-fructose corn syrup "is a direct causative factor for obesity. [The 2004 scientists] based their hypothesis on a temporal relation between [high-fructose corn syrup] use and obesity rates between 1960 and 2000."). However, modern research has found that "The hypothesis that [high-fructose corn syrup] is a unique cause of obesity is not supportable in the United States or elsewhere, and the reasons are clear." *Id.* at 1720S.

242 ANNUAL SURVEY OF INT'L & COMP. LAW [Vol. XX

also more concerning to nutritionists because of the greater caloric value per gram compared to carbohydrates and proteins, and animal fats are thought to be particularly unhealthy because of the associations with heart disease and cancer.¹⁶ Overall, extensive research on causes of obesity has revealed that there is no one simple answer to the cause.

Still, many individuals gain weight despite adequate exercise and maintaining a healthy diet.¹⁷ As a result, research points to the interactions between caloric intake and caloric output, and to the effect certain foods have on the human body. For example, there is some evidence that sugar in any form may be toxic to the body, including sugar from fruit.¹⁸ Also, the effects of the modern diet testify to the relationship between food and obesity: “[e]very country that has adopted the Western diet — one dominated by low-cost, highly processed food — has witnessed rising rates of obesity and related diseases.”¹⁹

Moreover, sociological research shows that the increase in national weight gain is not proportionate to the national increase in caloric consumption. Factors unrelated to unhealthy food intake also play significant roles in weight gain.²⁰

Research led by the Harvard Medical School has concluded from a very large sample, including a cohort of 120,000 people studied over 20 years, that, within each four-year observation period, participants gained an average of 3.35 pounds (1.52 kilograms). While certain foods were identified as significant factors in weight gain, giving up smoking was by far the most significant individual cause identified. Watching television was also found to be a significant factor in weight gain, as was non-optimal hours of sleep (less than six or more than eight), whereas physical activity was the largest contributor to weight loss.²¹

16. See, e.g., Dominik D. Alexander et al., *Meta-Analysis of Animal Fat or Animal Protein Intake and Colorectal Cancer*, 89:5 AM. J. CLIN. NUTR. 1402, 1402 (2009) (finding that “In this meta-analysis, no consistent evidence of a positive association between consumption of animal fat and colorectal cancer was observed.”).

17. See, e.g., Kevin D. Hall et al., *Quantification of the Effect of Energy Imbalance on Bodyweight*, 378 THE LANCET 826, 834-835 (2011).

18. Robert H. Lustig, Laura A. Schmidt, & Claire D. Brindis, *Public Health: The Toxic Truth About Sugar*, 482 NATURE 27, 27-29 (2012), available at <http://www.nature.com/nature/journal/v482/n7383/pdf/482027a.pdf>.

19. *Id.* at 27.

20. Jonathan Barrett, *Fat Taxes: A Proportionality Approach*, 18 N.Z. J. TAX’N & POL’Y 242, 245 (2012).

21. *Id.* (citations omitted).

Other research has found a correlation between food restrictions and an increased desire to eat the restricted food, and the impulse to eat the forbidden food increases when there are additional food restrictions at home.²² These studies indicate that the social environment plays an important part to overall weight regardless of specific food intake.

Taken together, the corpus of scientific research indicates that the reasons for globesity are complicated and lack a panacea. Nevertheless, researchers emphasize the importance of eating a healthy diet of approximately 2,000 calories per day and maintaining physical activity throughout the week.²³

II. ACTIONS TAKEN BY GOVERNMENT

To combat obesity, a number of governments have placed excise taxes on certain unhealthy foods to influence individuals' eating behaviors. Excise taxes provide a relatively easy regulation for luxury goods and services.²⁴ For instance, the implementation of excise taxes on certain goods, such as tobacco and petroleum, has correlated with a decrease in consumption.²⁵

22. Tara Parker-Pope, *The Lure of Forbidden Food* (April 21, 2014, 5:21PM), <http://well.blogs.nytimes.com/2014/04/21/the-lure-of-forbidden-food/>.

23. Keith Devlin, *Top 10 Reasons Why The BMI Is Bogus*, NPR (Jul. 4, 2009), <http://www.npr.org/templates/story/story.php?storyId=106268439>. Because of the focus on using body mass index (BMI) to measure obesity rates, some studies have shown that the focus on weight might be misleading. As the standard for determining the amount of body fat, BMI is misleading because it only compares weight to height without measuring actual body fat or health. Instead, the focus should be on nutritional and cardiovascular health.

24. J. Fred Giertz, *Excise Taxes*, THE ENCYCLOPEDIA OF TAXATION AND TAX POLICY 125 (2005).

25. There is a strong correlation between taxes on tobacco and the decline in consumption. See, e.g., Matthew C. Farrelly et al., *The Impact of Tobacco Control Programs on Adult Smoking*, 98 AM. J. PUB. HEALTH 304, 304 (2008) (concluding that "State tobacco control program expenditures are independently associated with overall reductions in adult smoking prevalence." See also, e.g., Sam Schwartz et al., *A Comprehensive Transportation Policy for the 21st Century: A Case Study of Congestion Pricing in New York City*, 17 N.Y.U. ENVTL. L.J. 580, 596-97 (2008) (describing the decrease in congestion in London and Stockholm as a result of congestion pricing); see also Michael H. Schuitema, Comment, *Road Pricing as a Solution to the Harms of Traffic Congestion*, 34 TRANSP. L.J. 81 (2007). However, it is possible that consumers "acclimate" to the costs and begin to budget the extra expenses, thereby decreasing the value of the tax and increasing the detrimental effects of the policy. See John A. Brunner-Brown, *Thirty Minutes or Less: The Inelasticity of Commuting*, 43 GOLDEN GATE U. L. REV. 355, 358 (2013) (discussing that, because excise taxes control only the periphery without affecting actual behavior, consumers adjust their budgets and absorb the extra costs). See also Pearl Bader et al., *Effects of Tobacco Taxation and Pricing on Smoking Behavior in High Risk Populations: A Knowledge Synthesis*, 8 Int J Environ Res Public Health 4118, 4130-4131 (concluding that tobacco taxes only affect some, but not all, high risk users. In particular, the most vulnerable to the incentive were the "youth, young adults and persons of low socioeconomic status.").

For food consumption, excise taxation can have several desired effects, such as raising revenue, redistributing wealth (on account of only the rich purchasing the luxury item), and discouraging consumption of particular goods or habits.²⁶ Obesity taxes often have two goals: first, taxes can artificially raise costs in order to create a disincentive to purchase unhealthy food; second, these taxes can subsidize healthy foods, which would further influence consumption behavior with lower costs.²⁷ Through either incentive, excise taxes on unhealthy foods disincentivize the consumption of unhealthy foods.²⁸

A. MODIFYING FOOD PRICES

Studies confirm some effectiveness in price manipulation and demonstrate food demand elasticity²⁹ for food substitutes.³⁰ For example, one study lowered two high school cafeterias' baby carrot and fresh fruit prices by fifty percent, and student purchases of these items increased by

26. Giertz, *supra* note 24, at 125.

27. See, e.g., Denis Campbell, 'Fat Tax' on Unhealthy Food Must Raise Prices by 20% to Have Effect, Says Study, THE GUARDIAN (May 15, 2012), <http://www.theguardian.com/society/2012/may/16/fat-tax-unhealthy-food-effect>. See also, e.g., Mark Bittman, *Bad Food? Tax It, and Subsidize Vegetables*, N.Y. TIMES (July 23, 2011), <http://www.nytimes.com/2011/07/24/opinion/sunday/24bittman.html>. See also Lisa M. Powell and Frank L. Chaloupka, Food Prices and Obesity: Evidence and Policy Implications for Taxes and Subsidies, 87 MILBANK Q. 229, 229 (2009).

28. See Bittman, *supra* note 27 ("Simply put: taxes would reduce consumption of unhealthy foods and generate billions of dollars annually. That money could be used to subsidize the purchase of staple foods like seasonal greens, vegetables, whole grains, dried legumes and fruit.").

29. For a discussion on elasticity, see David J. DePippo, *I'll Take My Sin Taxes Unwrapped and Maximized, with A Side of Inelasticity, Please*, 36 U. RICH. L. REV. 543, 558 (2002) ("Price elasticity 'measures how much the quantity demanded of a good changes when its price changes.' More precisely, it is the percentage change in quantity demanded over the percentage change in price. While the price elasticities of different goods vary enormously, goods are generally placed into two categories – price-elastic or price-inelastic demand. Goods are considered to have a price-elastic demand if a one percent change in price generates more than a one percent change in the quantity demanded. Conversely, if a one percent change in price precipitates less than a one percent change in the quantity demanded, the goods are considered to have a price-inelastic demand.") (internal citation omitted).

30. Substitute goods are "[d]ifferent goods that, at least partly, satisfy the same needs of the consumers and, therefore, can be used to replace one another. Price of such goods shows positive cross-elasticity of demand. Thus, if the price of one good goes up the sales of the other rise, and vice versa. Also called substitutes." *Substitute Goods*, BUSINESS DICTIONARY, <http://www.businessdictionary.com/definition/substitute-goods.html> (last visited Apr. 23, 2014). The economic term of substitute good differs from the Food & Drug Administration's definition of a cultural food substitute, as evaluated as a cultural eating pattern under 7 C.F.R. § 246.10 ("(i) Any proposed substitute food must be nutritionally equivalent or superior to the food it is intended to replace. (ii) The proposed substitute food must be widely available to participants in the areas where the substitute is intended to be used. (iii) The cost of the substitute food must be equivalent to or less than the cost of the food it is intended to replace."). Whereas the FDA requires substitute foods to be similar in nutrition and availability, economics requires substitute foods to only be substitutable for the consumer.

two-fold and four-fold, respectively.³¹ Another study manipulated the low-fat snack prices in vending machines with three reductions: ten percent, twenty-five percent, and 50 percent.³² The researchers found a corresponding increase in consumption of nine, thirty-nine, and ninety-three percent, respectively.³³ In addition to suggesting price manipulations to influence purchase behavior, this study suggests that healthy food choices can still be profitable.

Because such studies measure only total consumption, they do not calculate changes in individual consumption — i.e. these studies do not present evidence for reduced food consumption from specific target groups. Nevertheless, such studies are indicative of trends throughout a given population and, following the principles of demand elasticities and substitutes, a number of governments have enacted excise taxes on certain foods.

B. EXAMPLES OF INDIVIDUAL ACTIONS BY FOREIGN GOVERNMENTS

This section provides a few examples that demonstrate modern efforts to curb obesity. While these efforts exemplify the wide spread attention of unhealthy foods, they also disregard research demonstrating consumption elasticities, as discussed in Part IV.

Denmark has become a "world leader" in anti-obesity taxation as it already had a relatively low adult obesity rate — thirteen percent — when it began enacting anti-obesity policies.³⁴ Since Denmark passed its first restriction on trans-fatty acids in 2003, the Danish government has continued to proactively legislate taxes on unhealthy food.³⁵ These taxes affect junk foods such as ice cream, candy, chocolate, and soda, as well as oils and dairy products. These taxes are applicable to foods with more than 2.3% of saturated fat content.³⁶ At the same time of increasing the price on junk food, the tax on saturated fats also affects even normal

31. Simone A. French, *Pricing Effects on Food Choices*, 133 J. NUTRITION 8415, 842S-843S (2003).

32. *Id.* at 842S.

33. *Id.*

34. Burns-Grant & Marriott, *supra* note 4, at 203.

35. Burns-Grant & Marriott, *supra* note 4, at 203-204 ("This early signal of government interest in public health was followed with further significant health related tax reform implemented in July 2011. The food-related reforms included increasing tax on ice cream, chocolate and candy by 25 per cent; differentiation of taxes on soft drinks depending on their sugar content, with increased taxes on soft drinks with sugar and reduced taxes on soft drinks without sugar; and taxes on oils and certain dairy products related to the amount of saturated fat content. The Danish Minister of Taxation noted at the time that cross-border shopping was a factor limiting the taxes from being higher.").

36. Burns-Grant & Marriott, *supra* note 4, at 204.

246 ANNUAL SURVEY OF INT'L & COMP. LAW [Vol. XX

cooking ingredients like butter, cheese, and meat.³⁷ As a result, for example, pastry chefs have had to rework the recipes slightly and to change suppliers.³⁸ Due to good lobbying efforts, fluid milk is excluded.³⁹

Similarly, Britain and France had proposed legislation to increase the value added tax (VAT) on foods high in fat, sugars, and salt in order to reduce weight and nutrition related ailments. The proposal included a 17.5% price increase in Britain and a tax increase from 5.5% to 19.6% in France, each of which would have been significant enough to actually affect consumer behavior.⁴⁰ Despite the VAT's regressive nature, the policymakers from each country argued that the positive health implications and the increase in government services and benefit spending would mitigate the VAT's negative impact.⁴¹

Hungary passed the Public Health Product Tax in 2011, "to discourage the consumption of foodstuffs undesirable from a public health point of view, promote healthy nutrition, and improve financing of health services."⁴² Like other countries, Hungary targeted particular groups of pre-packaged products that are high in sugar and fat.⁴³ Finally, health officials from Scotland, Ireland, and Romania have each considered or urged their respective governments to consider taxes on unhealthy food, including sugar in food and drinks as well as fast food.⁴⁴

C. EXAMPLES OF FOOD REGULATOR ACTIONS WITHIN THE UNITED STATES

The United States Congress has the constitutional power to influence social policy through incentives and taxation and has used this power to influence food consumption. In fact, the United States government taxed sodas as early as World War I in order to deter consumption of luxury foods.⁴⁵ And as individual states have taken measures to curb obesity

37. Burns-Grant & Marriott, *supra* note 4, at 204.

38. Associated Press, *Denmark: Lower trans fat or go to jail*, NBCNEWS (Oct. 17, 2006), http://www.nbcnews.com/id/15307763/ns/health-diet_and_nutrition/t/denmark-lower-trans-fat-or-go-jail/#.UzYTM6gq-BI.

39. Burns-Grant & Marriott, *supra* note 4, at 204.

40. Adriana Badilas, *Food Taxes: A Palatable Solution to the Obesity Epidemic?*, 23 PAC. MCGEORGE GLOBAL BUS. & DEV. L.J. 255, 274-75 (2011).

41. *Id.* at 274-75.

42. Emilie Majster, *European Union Food Law Update: A Special Look at the Focus on Nutrition and Consumer Information*, 8 J. FOOD L. & POL'Y 181, 187 (2012).

43. *Id.* at 187-188.

44. *Id.* at 188.

45. War Revenue Act, § 313, 40 Stat. at 300 (Oct. 3, 1917) ("That there shall be levied, assessed, collected, and paid — (A) Upon all prepared sirups or extracts (intended for use in the manufacture or production of beverages, commonly known as as soft drinks . . .) . . . [a tax].")

through measures such as small taxes,⁴⁶ the federal tax code utilizes other methods of incentivizing healthy life-style habits, such as increased activity.⁴⁷

Modernly, through the Farm Bill for instance, Congress influences the agriculture business, which then influences food prices for consumers.⁴⁸ Farm subsidies were originally intended to provide abundant, affordable, and safe food for Americans.⁴⁹ The programs have been successful and enhanced through new bills.⁵⁰ Indeed, the 2008 Farm Bill appropriated approximately \$307 billion in various programs, of which \$35 billion subsidized commodity crops, such as wheat, corn, cotton, and soybeans.⁵¹ Therefore, additional taxes on certain foods do not implement a wholly new policy on food consumption, but rather implement a shift in food policy.⁵²

Additionally, numerous states and individual cities have implemented, proposed, or discussed taxes or prohibitions on junk foods or unhealthy foods. For example, New York City successfully passed legislation to

46. See Wendy Sheu, *The Evolution of the Modern Snack Tax Bill: From World War I to the War Against Obesity* 21 (2006) (Third Year Paper) (on file with the Harvard Law School Library), available at <http://dash.harvard.edu/bitstream/handle/1/8846753/Sheu06.pdf> (citing H.B. 3283, 79th Leg., Reg. Sess. (Tex. 2005); L.B. 628, 99th Leg., 1st Sess. (Neb. 2005); L.D.505, 121st Leg., Reg. Sess. (Me. 2005); S.B. 114, 2004 Leg. Sess. (W. Va. 2004); H.B. 1215, 79th Leg. Ass., Reg. Sess. (S.D. 2004); H.B. 2116, 49th Leg., 2nd Sess. (Okla. 2004); S.B. 374, 46th Leg., 2nd Sess. (N.M. 2004); H.B. 1164, 113th Leg., 2nd Sess. (Ind. 2004); S.B. 897, 92nd Leg., Reg. Sess. (Mich. 2003); H.B. 481, 2003 Leg. Sess. (Ga. 2003); A.B. 9145, 226th Leg. Sess. (N.Y. 2003); S.B. 5928, 58th Leg., Reg. Sess. (Wash. 2003); S.B. 1520, 2002 Leg. Sess. (Cal. 2002)).

47. See, e.g., Efrat & Efrat, *supra* note 6, at 257. "At the federal level, the expense of an employer-provided wellness program for employees is deductible by the employer as a business expense under Internal Revenue Code § 162." *Id.* at 252. See also Jeff Strnad, *Conceptualizing The "Fat Tax": The Role of Food Taxes in Developed Economics*, 78 S. CAL. L. REV. 1221, 1224 (2005) ("As of the middle of 2000, seventeen states and two major cities imposed junk food taxes. Six other states have imposed junk food taxes in the past but repealed them prior to 2000. In many cases, the soft drink industry or food and beverage industry played an active role in repeal. Many of the existing junk food taxes pre-dated the obesity epidemic and were enacted when there was much less concern about the health impact of such foods.").

48. See, e.g., Anthony Kammer, *Cornography: Perverse Incentives and the United States Corn Subsidy*, 8 J. FOOD L. & POL'Y 1, 4-5 (2012).

49. Mary Beth Blausen, *The 2008 Farm Bill: Friend or Foe to Conservationists and What Improvements Are Needed?*, 12 VT. J. ENVTL. L. 547, 548 (2011).

50. Stephen L. Johnson, *Implementation of the Food Quality Protection Act*, 52 FOOD & DRUG L.J. 525 (1997).

51. Melanie J. Wender, *Goodbye Family Farms and Hello Agribusiness: The Story of How Agricultural Policy Is Destroying the Family Farm and the Environment*, 22 VILL. ENVTL. L.J. 141, 160 (2011).

52. See, e.g., Kammer, *supra* note 48, at 4-19 (providing an overview of the Farm Bill's history that "follows a pattern of large-scale, transformative legislation passed in response to a national emergency, followed by decades of drift, rent-seeking, and incremental adjustments" to the point that the Farm Bill now is a "modern subsidy system.").

248 ANNUAL SURVEY OF INT'L & COMP. LAW [Vol. XX

ban trans-fat from restaurants,⁵³ and New York has attempted to limit access to soda beverages by prohibiting certain types of establishments, such as restaurants and movie theaters, from selling soda beverages larger than sixteen ounces.⁵⁴ However, the National Association for the Advancement of Colored People challenged the law and the State Supreme Court (the trial level court) held this ban to be unconstitutional; New York Court of Appeals (the state's highest court) is expected to review this law in 2014.⁵⁵ In a similar effort to influence consumer behavior, California requires chain restaurants to list the calories on the menu.⁵⁶ In addition, San Francisco Supervisors are considering a two-cent per ounce tax on "sugary beverages including sodas, sports drinks and energy drinks, but excluding 100-percent fruit and vegetable drinks."⁵⁷ Around the country, other implemented regulations include restricting food stamp purchases of unhealthy food, fast food zoning ordinances, and banning trans-fats.⁵⁸

The abundance of laws domestically and abroad demonstrates a clear concern with the consumption of certain foods. With these laws in effect, in dispute through the courts, and under consideration by policymakers, governments have made it clear that excise taxes are an available tool to regulate food consumption behavior.

III. HOW FOOD TAXATION WORKS

Without using data driven legislation, governments might ineffectively waste government resources, frivolously regulate, and limit the quality of life. Therefore, data on the impact of the laws on residents — not just the change of consumption — must be measured with reasonable accuracies and considered when designing efforts to decrease the obesity epidemic.

53. Amanda MacMillan, *NYC's Fat Ban Paying Off*, CNN HEALTH (July 16, 2012, 5:03PM), <http://www.cnn.com/2012/07/16/health/nyc-fat-ban-paying-off/> ("A five-year-old ban on the use of trans fats in New York City restaurants has sharply reduced the consumption of these unhealthy fats among fast-food customers, a study by city health officials has found.").

54. Michael M. Grynbaum, *Health Panel Approves Restriction on Sale of Large Sugary Drinks*, N.Y. TIMES (Sept. 13, 2012), <http://www.nytimes.com/2012/09/14/nyregion/health-board-approves-bloombergs-soda-ban.html>.

55. *New York City 'Soda Ban' Litigation Resource Page*, NATIONAL CHAMBER LITIGATION CENTER, <http://www.chamberlitigation.com/new-york-city-soda-ban-litigation-resource-page> (last visited Apr. 20, 2014).

56. Stephanie Rosenbloom, *Calorie Data to Be Posted at Most Chains*, N.Y. TIMES (Mar. 23, 2010), <http://www.nytimes.com/2010/03/24/business/24menu.html>.

57. Victoria Colliver, *United front in S.F.'s war on sodas, other sweet drinks*, SF GATE (Feb. 2, 2014), <http://www.sfgate.com/bayarea/article/Supervisors-ready-to-push-for-new-tax-on-soda-5196702.php>.

58. Alexis M. Etow, *No Toy For You! The Healthy Food Incentives Ordinance: Paternalism or Consumer Protection?*, 61 AM. U. L. REV. 1503, 1540.

A. TAXATION MUST BE SALIENT

For taxation of food to be most effective, the price modification has to be as salient as possible to the consumer — i.e. food cost adjustments need to be integrated into the displayed price.⁵⁹ Tax salience is important for fat taxes because "a growing literature, both in and outside the laboratory, suggests that, in fact, taxpayers exhibit different responses to taxes that are more or less 'salient' — that is, noticeable or easy to process."⁶⁰ On the other hand, consumers might ignore "hidden taxes" without realizing the impact of the tax.⁶¹ With salient taxes, the consumer can make an informed decision and will be more likely to understand why the unhealthy food costs more before going to the cash register.⁶²

On the other hand, without knowing that there is a tax added to particular food items when selecting those items, the consumer might not see the connection between the elevated grocery bill and the taxed goods. Even if the consumer does notice the tax when reviewing the bill, the effect of the tax is only on future purchases. This method of providing customers notice is akin to giving speeding tickets without posting the speed limits, and this method might not work if consumers forget about the tax or if the taxes change.

Therefore, for unhealthy food taxation to be effective, the retailer must already have clearly displayed the extra cost of the unhealthy food.⁶³ Moreover, the taxes need to be high enough to influence customer choice. As demonstrated with the above-mentioned studies, the degree of price modification correlates to the degree of influence on consumption.

B. TAXATION IS ARBITRARY

The idea behind taxing unhealthy food is that consumers are concerned with pricing and, when faced with a price increase via taxes on food, consumers will switch their purchases from the taxed food to healthy, untaxed food. However, although efforts to tax unhealthy foods are laudable, they are also detrimental to the general welfare of society.⁶⁴

59. See Katherine Pratt, *A Constructive Critique of Public Health Arguments for Antiobesity Soda Taxes and Food Taxes*, 87 TUL. L. REV. 73, 127-28 (2012).

60. Brian Galle, *Hidden Taxes*, 87 WASH. U.L. REV. 59, 62 (2009).

61. See Edward J. McCaffery & Jonathan Baron, *Isolation Effects and the Neglect of Indirect Effects of Fiscal Policies*, 19 J. BEHAV. DECISION MAKING 289, 289 (2006).

62. *Id.*

63. See McCaffery & Baron, *supra* note 61, at 289.

64. See Pratt, *supra* note 59, at 122-23.

250 ANNUAL SURVEY OF INT'L & COMP. LAW [Vol. XX

Unhealthy food taxation can be a bad policy because the legislature might arbitrarily choose which unhealthy food to tax. That is to say that, instead of influencing the consumption of *any* potentially unhealthy or potentially obesigenetic food, unhealthy food taxations are placed on notorious unhealthy culprits while leaving other unhealthy food untaxed. The arbitrary nature of the taxes is detrimental to the intent because consumers switching from one obesigenetic food to another obesigenetic food defeat the purpose of the tax.

An example of this includes Denmark's taxation on dairy products, but to not tax liquid milk.⁶⁵ Another example is New York's ban on certain soda sizes due to sugar that avoids addressing the dangerous effects of energy drinks, which have been more acutely linked to deaths than sugar in sodas.⁶⁶ There are policy decisions to tax one food and not similarly unhealthy food because of the politics and lobbying efforts. Indeed, "[c]areless taxation can have a perverse effect on the purchase of foods that compliment or substitute each other."⁶⁷ As a result, taxation on unhealthy junk or fatty food incentivizes the consumption of non-taxed unhealthy food, when available, thereby defeating the purpose of the taxation and doing little to combat globesity.

C. OBJECTIVE STANDARDS STILL TAX TRADITIONAL COOKING

Legislatures can avoid arbitrary policies by ranking and taxing foods according to an overall health risk, such as with the SSCg3d system devised by British researchers.⁶⁸ By matching the level of taxation to a

65. Burns-Grant and Marriott, *supra* note 4, at 204.

66. See Barry Meier, *Caffeinated Drink Cited in Reports of 13 Deaths*, N.Y. TIMES (Nov. 14, 2012), <http://www.nytimes.com/2012/11/15/business/5-hour-energy-is-cited-in-13-death-reports.html> ("Federal officials have received reports of 13 deaths over the last four years that cited the possible involvement of 5-Hour Energy, a highly caffeinated energy shot"); see also Barry Meier, *Monster Energy Drink Cited in Deaths*, N.Y. TIMES (Oct. 22, 2012), <http://www.nytimes.com/2012/10/23/business/fda-receives-death-reports-citing-monster-energy-a-high-caffeine-drink.html> ("Five people may have died over the past three years after drinking Monster Energy, a popular energy drink that is high in caffeine, according to incident reports recently released by the Food and Drug Administration.").

67. Badilas, *supra* note 40, at 263 (citing Oliver Mytton et al., *Could Targeted Food Taxes Improve Health?*, 61 J. EPIDEMIOL. COMMUNITY HEALTH 689, 689 (2007), available at <http://jech.bmj.com/content/61/8/689.abstract>).

68. See Badilas, *supra* note 40, at 264-65 ("The second method of taxation, known as model SSCg3d, was drafted by British researchers. The SSCg3d is a scoring system where points are assigned to all foods based on the content of eight nutrients. The scores range from -12 to +29. Scores ranging from of -12 to 2 are considered healthy, intermediate foods fall between 3 and 8, while a score higher than 9 is regarded as unhealthy. For example, spinach is rated -12, while chocolate cookies are rated +29. Cookies are rated higher because they contain a variety of ingredients that are unhealthy, such as: enriched flour, hydrogenated oils, and refined sugars. An added benefit of the SSCg3d formula is that it addresses price elasticity. Because the SSCg3d formula scores all foods, substitute foods—which are nutritionally similar to the foods they replace—are also scored. Consequently, consumers who do not want to pay more for their favorite unhealthy

food's health score, price modification can influence consumption behavior away from generally unhealthy foods to generally healthy foods.⁶⁹ Because evaluating overall health risks in foods reveals the overall benefits and risks in a much more objective fashion, this method should be preferred over excise taxes on unhealthy food groups that are arbitrarily chosen.

Nevertheless, certain traditional cooking ingredients would still face taxation because of the irredeemably unhealthy characteristics. Denmark's taxes on butter and oil would increase the cost of cooking at home, even when the products are used to cook healthy foods, such as asparagus. On the other hand, fresh pasta alone is deemed a "healthier food choice,"⁷⁰ and would be exempt from taxation. This can be problematic because consuming fresh pasta in excess can be unhealthy.⁷¹ Because the SSCg3d system would characterize necessary ingredients as unhealthy yet not address the quantity consumed, the SSCg3d system might not be the best system for determining foods to tax.

Either way, influencing behavior through taxation is only effective when the increased cost in one good can induce the purchase of a reasonable substitute. However, as discussed below, food consumption decisions often lack reasonable substitutes and therefore, price increases rarely affect consumer behavior.

D. INCREASING FOOD COSTS TAXES REGRESSIVELY

Excise taxation on food is a form of a regressive tax. While "[a] regressive tax may seem to be an equitable form of taxation because everyone, regardless of income level,"⁷² regressive taxes are generally

food cannot turn to substitute foods because, under the SSCg3d model, the substitute foods are also taxed at the higher rate." (internal citations omitted)) (citing Oliver Mytton et al., *Could Targeted Food Taxes Improve Health?*, 61 J. EPIDEMIOL. CMTY. HEALTH 689, 689-91 (2007), available at <http://jech.bmj.com/content/61/8/689.abstract>). See also *Model SSCg3d*, FOOD STANDARDS AGENCY, <http://multimedia.food.gov.uk/multimedia/pdfs/nutrientmodel.pdf> (last visited Mar. 4, 2014).

69. See Badilas, *supra* note 40, at 264-65.

70. MIKE RAYNER ET AL., NUTRIENT PROFILES: OPTIONS FOR DEFINITIONS FOR USE IN RELATION TO FOOD PROMOTION AND CHILDREN'S DIETS 193 (British Heart Foundation Health Promotion Research Group, Department of Public Health, University of Oxford, 2004), available at <http://multimedia.food.gov.uk/multimedia/pdfs/nutrientprofilingfullreport.pdf>.

71. Even if fresh pasta is healthier, eating excessive calories can still contribute to obesity. "To be sure, Americans are filling up on carbohydrates like pasta, potatoes, and bread. In the early '70s we ate 136 pounds (62 kilograms) of flour and cereal products per capita, and now it's 200 pounds (91 kilograms)." Cathy Newman, *Why Are We So Fat?*, NATIONAL GEOGRAPHIC (2004), available at <http://science.nationalgeographic.com/science/health-and-human-body/human-body/fat-costs/>.

72. *The Why of Taxes*, IRS, http://apps.irs.gov/app/understandingTaxes/teacher/whys_thm03_les02.jsp (last visited Apr. 24, 2014).

252 ANNUAL SURVEY OF INT'L & COMP. LAW [Vol. XX

disfavored because the taxes disproportionately affect lower income earners when measured as a percentage of income.⁷³ That is, increases in food prices increase the cost of living, thereby increasing a larger percentage of food expenditures for lower income households than for higher income households.⁷⁴ This problem is compounded by the already existing price gap between healthy and unhealthy food:⁷⁵ “[t]he price difference — about \$1.50/day — represents the price difference per person for consuming a much healthier versus much less healthy overall diet, for example, comparing Mediterranean-type diets rich in fruits, vegetables, fish and nuts versus diets rich in processed foods, meats and refined grains.”⁷⁶ Already this cost causes the trend that “low-income households in high-income countries . . . consume lower quality diets, consisting mainly of high-calorie foods.”⁷⁷

While consumers notice the difference with increased costs, this taxation policy does not promote a higher living standard for everyone. Because food taxes are regressive in nature, they will price certain consumers out of the market, thereby creating a literal situation of the haves and the have-nots, which lowers welfare for society as a whole. Therefore, “[i]t is concluded that fat taxes are generally disproportionate and should not, therefore, play a significant role in public health responses to the obesity epidemic.”⁷⁸

E. SUBSIDIES ARE ALSO INEFFECTIVE

In addition to the discriminatory effects of fat taxes, legislatures should consider the inelastic demand of dietary choices: food consumption decisions are more complicated than just the price of food. After all, for a mere \$1.50 more per day, an individual can switch from an unhealthy diet to a nutritious and healthy one.⁷⁹ Such a conversion would be a relatively inexpensive and relatively easy method of reducing the long-

73. See IRS, *supra* note 72. For a discussion of the regressivity of a food tax, see Pratt, *supra* note 59, at 122-135.

74. IRS, *supra* note 72.

75. Sean B Cash & Ryan D Lacanilao, *Taxing Food to Improve Health: Economic Evidence and Arguments*, 36 AGR. RESOURCE ECON. REV. 174, 178 (2007).

76. Mayuree Rao et al., *Do healthier foods and diet patterns cost more than less healthy options? A systematic review and meta-analysis*, 3 BRIT. MED. J. OPEN 1, 11-12 (Dec. 5, 2013), available at <http://bmjopen.bmj.com/content/3/12/e004277.full?sid=820d6e1a-280e-47a6-b8c5-498bfa4657e3>.

77. Christiane Schroeter et al., *Determining the Impact of Food Price and Income Changes on Body Weight*, 27 J. HEALTH ECON. 45, 47 (2008).

78. Barrett, *supra* note 20, at 243.

79. See, e.g., Mayuree Rao et al., *Do healthier foods and diet patterns cost more than less healthy options? A systematic review and meta-analysis*, 3 BRIT. MED. J. OPEN 1, 11-12 (Dec. 5, 2013), available at <http://bmjopen.bmj.com/content/3/12/e004277.full?sid=820d6e1a-280e-47a6-b8c5-498bfa4657e3>.

term costs of obesity and improving general health and welfare. It would seem that, because healthy food is generally more expensive,⁸⁰ and because prices influence individuals' purchasing decisions, simply incentivizing the purchase of healthy food through taxation and subsidies should encourage the conversion to healthy food.

Because food consumption elasticities are predictable,⁸¹ artificially increasing the costs of food through taxation should have relatively predictable results of a decreased consumption in taxed foods (when alternatives are available) and provide increased revenue from the continued consumption of the taxed food.⁸² This seems to be a win-win, with taxes decreasing the incentive to purchase unhealthy food and subsidies increasing the incentives to purchase healthy foods. Thus by taxing unhealthy food, legislatures could encourage individuals to consume less unhealthy food and more healthy food with both a carrot and a stick.

Point-of-sale rebates and government subsidies have been successful in promoting consumption of particular products, such as energy efficient products.⁸³ The savings are salient: consumers can immediately notice the difference in a beneficial way.⁸⁴ Consequently, incentives can be effective in influencing people to buy healthier food.⁸⁵

80. See, e.g., Rao et al., *supra* note 79, at 11-12.

81. See United States Department of Agriculture Economic Research Service, *Food Demand Analysis*, <http://www.ers.usda.gov/topics/food-choices-health/food-consumption-demand/food-demand-analysis.aspx> (last updated June 5, 2012).

82. See Brandon Schaufele et al., *Primer on Fat Taxes and Thin Subsidies: A Graphical Analysis*, Richard Ivey School of Business 4, http://sites.ivey.ca/agri-food/files/2009/09/Primer-on-Fat-Taxes-and-Thin-Subsidies_-A-Graphical-Analysis.pdf (last visited Apr. 24, 2014).

83. See How to Use Midstream Incentives to Promote ENERGY STAR® Certified Consumer Electronics, *Energy Star 2*, http://www.energystar.gov/ia/partners/downloads/ENERGY_STAR_CE_Program_Utility_Guide.pdf (last visited Apr. 24, 2014) ("Over the past twenty years, the U. S. Environmental Protection Agency (EPA) has successfully leveraged the ENERGY STAR program to remove barriers to energy efficient electronics purchases, transforming the market numerous times, setting and revising ENERGY STAR specifications.").

84. See, e.g., Barrett, *supra* note 20 "Rather than seeking to make demerit goods unattractive by increasing their price through a tax, a government may promote merit goods by lowering their prices through 'thin subsidies'."

85. See Ralph-C Bayer & Changxia Ke, *Discounts and Consumer Search Behavior: The Role of Framing* (Oct. 2010) (research paper) (on file with The University of Adelaide School of Economics), available at <http://economics.adelaide.edu.au/research/papers/doc/wp2010-21.pdf>; see also Gorkan Ahmetoglu et al., *Pricing Practices: Their Effects on Consumer Behaviour and Welfare* (Mar. 2010) (report prepared for the Office of Fair Trading by Mountainview Learning, University College London), available at http://www.oft.gov.uk/shared_of/business_leaflets/659703/Advertising-of-prices/Pricing-Practices.pdf.

F. NON-MONETARY COST OF FOOD

Decreasing the cost of an unfamiliar alternative food does not create an incentive for a consumer to reject a loved and desired food. The difference in predictability in subsidizing healthy foods compared to subsidizing other products partially lies in consumer behavior. In fact, a recent USDA study found that “[f]ood decisions are often based more on emotion than rational thought.”⁸⁶ For instance, among substitute goods, consumers are particularly adverse to complex pricing situations or unfamiliar situations and instead rely on the default choice, even when the price is higher.⁸⁷ Furthermore, substitute goods must first be even available. While consumers are limited in options for purchasing light bulbs, toilets, or even automobiles,⁸⁸ consumers have a vast array of food products available.

Subsidies have already affected food pricing, yet studies show that subsidies do not have a large impact on consumption demand.⁸⁹ And when specifically tailored for curbing obesity, “small taxes or subsidies are not likely to produce significant changes in BMI or obesity prevalence but that nontrivial pricing interventions may have some measurable effects on Americans’ weight outcomes, particularly for children and adolescents, low-SES populations, and those most at risk for overweight.”⁹⁰ Simply put, not all consumer decisions are based on monetary constraints.

Switching from a loved, unhealthy meal can cost more than the price for the food at the register. For some, switching foods can cause anxiety, uncertainty, or at least unhappiness; the technical term for this anxiety is “food neophobia.”⁹¹ The healthier alternative food may take extra

86. David R. Just et al., *Could Behavioral Economics Help Improve Diet Quality for Nutrition Assistance Program Participants?* (June 2007) (Economic Research Report No. (ERR-43) for the United States Department of Agriculture Economic Research Service), available at <http://www.ers.usda.gov/publications/err-economic-research-report/err43/report-summary.aspx>.

87. Ahmetoglu et al., *supra* note 85.

88. See Sheila Bonini & Jeremy Oppenheim, *Cultivating the Green Consumer*, STANFORD SOCIAL INNOVATION REVIEW (Fall 2008), http://www.ssireview.org/articles/entry/cultivating_the_green_consumer/ (fluorescents and hybrids are not always real substitutes because they are not the same, though they still are reasonable substitutes).

89. Lisa M. Powell & Frank J. Chaloupka, *Food Prices and Obesity: Evidence and Policy Implications for Taxes and Subsidies*, 87 MILBANK Q. 229 (Mar. 2009), available at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2879182/>.

90. *Id.*

91. The condition for the fear of new food is called “neophobia.” See Patricia Pliner & Karen Hobden, *Development of a scale to measure the trait of food neophobia*, 19 APPETITE 105, 117 (Oct. 1992), available at <http://www.sciencedirect.com/science/article/pii/019566639290014W> (Finding “that neophobia is distinct from finickiness, a tendency to dislike the taste of foods . . . We also found that trait neophobia correlated negatively with familiarity with foreign cuisines and novel foods.”).

preparation time,⁹² or food might go to waste for lack of knowledge on preparation.⁹³ For instance, cutting vegetables alone might take an unskilled hand several minutes, and continually referencing a recipe slows down the entire process. Therefore, because there is only a limited amount of free time available to consumers, time is a very valuable commodity.⁹⁴ Encouraging consumers to switch away from packaged food to unpackaged using subsidies or marginal taxes will be ineffective because the additional preparation time may not be an option for individuals.⁹⁵

Overall, fat taxes are a bad idea because they ignore data on consumer behavior and on the needs of society. Even when salient taxes indicate which foods have an increase in cost to the consumer, the legislature's selection of foods to tax is arbitrary, while potentially leaving similarly unhealthy food untaxed on account of lobbying. More importantly, the taxes will also target normal cooking ingredients, such as butter and cream, which will disproportionately affect the poorest groups because food taxes are inherently regressive. Furthermore, promoting cooking ingredients over prepackaged foods neglects the reality that many individuals lack the time or skill to prepare fresh food. Altogether, unhealthy food taxation policies can diminish consumer welfare because they simultaneously demand more food preparation time and reduce choices through. For these reasons, food taxation will not work.⁹⁶

92. Donald Rose, *Food Stamps, the Thrifty Food Plan, and Meal Preparation: The Importance of the Time Dimension for US Nutrition Policy*, 39 J. NUTRITION EDUC. & BEHAV. 226, 229 (2007) ("The less time one spends, the more one needs to rely on convenience food, which costs more. At one extreme of the production process for a specific meal, everything would be made from scratch, which is the . . . most time consuming. At the other extreme, the meal would be purchased in prepared form . . . [requiring] the least amount of time."), available at <http://www.sciencedirect.com/science/article/pii/S1499404607004708>.

93. Carol Goland, *Community Supported Agriculture, Food Consumption Patterns, and Member Commitment*, 24 J. CULT. & AGRIC. 14, 20 (Spring 2002), available at <http://onlinelibrary.wiley.com/doi/10.1525/cag.2002.24.1.14/abstract>.

94. Rose, *supra* note 92, at 228 ("Other investigators have shown that an increase in the value of women's time increases spending on food away from home.") (citing J. Manrique & H.H. Jensen, *Working Women and Expenditures on Food Away-From-Home and at-Home in Spain*, 49 J. AGR. ECON. 321 (1998); C.D. Zick et al., *Trade-Offs Between Purchased Services and Time in Single-Parent and Two-Parent Families*, 30 J. CONSUM. AFF. 1 (1996); H. Soberon-Ferrer & R. Dardis, *Determinants of Household Expenditures for Services*, 17 J. CONSUM. RES. 385 (1991); V.A. McCracken & J.A. Brandt, *Household Consumption of Food-Away-From-Home: Total Expenditure and by Type of Food Facility*, 69 AM. J. AGR. ECON. 274 (1987).

95. See, e.g., Rose, *supra* note 92, at 226-232 (noting that the value of time increases as individuals have less of it. "For some time-stretched households, already strained by economic trends affecting the broader low-income population, the nation's food safety net may be inadequate." Essentially, even decreasing prices will not benefit socio-economic groups that have little time, such as single mothers.).

96. Furthermore, consumers might find ways around the restrictions. For example in Denmark, "[the tax] ministry said one of the effects of the fat tax was that some Danes had begun

IV. THE IMPORTANCE OF REASONABLE SUBSTITUTES

Providing consumers reasonable substitutes could circumvent the pitfalls in these incentivizing tax policies. Foods can only be reasonable substitutes when they are logistically available, i.e. individuals must be able to go to a local store and purchase the food, which often does not happen with inner city bodegas.⁹⁷ Areas lacking fresh, healthy food are known as “food deserts.”⁹⁸ The substitute good must also have similar costs in order to be a substitute because, even when there is inelastic demand for food, healthy yet more expensive foods do not substitute for cheap, unhealthy foods. More importantly, a reasonable substitute is an alternative good that can *reasonably* replace the original good and satisfy the needs of the customer, at least partly.⁹⁹ That is to say that broccoli can be substituted for zucchini, margarine for butter, but not a salad for a BigMac.

A. FOOD CONSUMPTION ELASTICITY

Consumption of most types of food is relatively inelastic:¹⁰⁰ people will continue to eat the food they are accustomed to eating regardless of price fluctuations. For instance, there are only poor substitutes for cheese, which has a greater relative inelasticity than beef, for which chicken and pork are substitute goods.¹⁰¹ Other foods have reasonable substitutes, such as whole wheat bread for white bread, potatoes for pasta, and even apples for oranges.¹⁰² More specifically, the U.S. Department of Agriculture Economic Research Service estimates

that for a 1-percent increase in a food price, the demand for its own quantity would decrease by 0.621 percent for beef, 0.728

crossing the border into Germany to stock up on food there.” *Denmark to abolish tax on high-fat foods*, BBC NEWS EUROPE (Nov. 10, 2012, 12:48 PM), <http://www.bbc.com/news/world-europe-20280863>.

97. See Diane Cardwell, *A Plan to Add Supermarkets to Poor Areas, With Healthy Results*, N.Y. TIMES (Sept. 23, 2009), http://www.nytimes.com/2009/09/24/nyregion/24super.html?pagewanted=all&_r=0; Naresh Kumar, *Healthy Bodegas Initiative to Increase Fresh Food Access in NYC*, PSFK (June 14, 2010) (U.S. blog), <http://www.psfk.com/2010/06/healthy-bodegas-initiative-to-increase-fresh-food-access-in-nyc.html#!zHehc>.

98. Sarika Bansal, *The Healthy Bodegas Initiatives: Bringing Good Food to the Desert*, THE ATLANTIC (Apr. 3, 2012), <http://www.theatlantic.com/health/archive/2012/04/the-healthy-bodegas-initiative-bringing-good-food-to-the-desert/255061/>.

99. *Substitute Goods*, BUSINESS DICTIONARY, <http://www.businessdictionary.com/definition/substitute-goods.html> (last visited Apr. 23, 2014).

100. United States Department of Agriculture Economic Research Service, *Food Demand Analysis Table 1*, <http://www.ers.usda.gov/topics/food-choices-health/food-consumption-demand/food-demand-analysis/table-1.aspx> (last updated June 5, 2012).

101. *Id.*

102. *Id.* (demonstrating a substitution relationship between apples and oranges; for every 1-percent price increase in oranges).

percent for pork, and 0.372 percent for chicken. The estimates of income elasticities . . . show that for a 1-percent increase in per capita income, for example, the quantities demanded would increase by 0.392 percent for beef, 0.659 percent for pork and 0.077 percent for chicken.¹⁰³

Values equal to or greater than 1.00 indicate relative elasticity, i.e. demand is relatively affected by price, and values less than 1.00 indicate relative inelasticity, i.e. demand is insensitive to price. These ratios by the USDA indicate that the demand for food is relatively inelastic: people continue to buy certain foods regardless of price changes.

These inelasticities indicate a larger problem in the difficulty of changing food habits. For instance, while it is relatively easy to switch from a car to a bus or from HotPockets to LeanPockets, it can be hard to switch from a BigMac to a sandwich — and it can be even harder to switch from a BigMac to a salad. In fact, "even relatively large fat taxes appear to do little to reduce fat intake, [so] long-run health increases seem unlikely to materialize."¹⁰⁴ Individual consumption, because it is relatively inelastic, does not change with price increases unless there is a truly reasonable substitute. Therefore, placing fat taxes on unhealthy food is ineffective at changing eating habits.

The reasons for this inelasticity are complex. For instance, the lack of familiarity with certain food creates an artificial barrier against even financially and logistically available food. One artificial barrier to eating healthy food, even when it is actually and financially available, is the lack knowledge of how to cook the healthy food in an appetizing fashion. Such artificial barriers decrease the availability of reasonable substitutes for consumers. And when actual substitutes are logistically or financially unavailable, consumers will not have the option to avoid unhealthy food but instead will buy the original product, regardless of the extra taxes and bearing the extra costs.¹⁰⁵ Simply put, "it is not possible to accurately predict the effectiveness and effects of fat taxes."¹⁰⁶

103. United States Department of Agriculture Economic Research Service, *Food Demand Analysis*, <http://www.ers.usda.gov/topics/food-choices-health/food-consumption-demand/food-demand-analysis.aspx> (last updated June 5, 2012).

104. Hayley H. Chouinard et al., *Fat Taxes: Big Money for Small Change*, 10:2 F. HEALTH ECON. & POL'Y Art. 1, 24, available at <http://faculty.ses.wsu.edu/LaFrance/reprints/CDLP-BEP-2007.pdf>.

105. Barrett, *supra* note 20, at 249 ("Depending on the elasticity of the demand for the taxed product, consumers will either end up bearing an extra financial burden, or changing the mix of products they consume in ways that can be difficult to identify." And so, while taxes may curb the

258 ANNUAL SURVEY OF INT'L & COMP. LAW [Vol. XX

B. UNFAMILIAR FOODS INCREASE FOOD PREPARATION TIME

Even if healthy food is actually available, food decisions are not based solely on availability and price. Because consumers are risk adverse in their decisions,¹⁰⁷ and due to neophobic responses to new foods, consumers might avoid purchasing food that they do not know how to prepare.¹⁰⁸ Therefore, food that is a reasonable substitute in terms of availability or in terms of cost might fail to be a reasonable substitute in terms of acceptance.

Taxing unhealthy food does not equate to providing a reasonable substitute, even when healthy food is simultaneously subsidized. For example, unhealthy food that is prepackaged, pre-prepared, or fast food can be a more attractive option because it requires little preparation time.¹⁰⁹ Even when individuals do not lack the time to prepare food, many individuals lack the knowledge of how to even prepare healthy foods. For instance, while preparing a simple vegetable may take only minutes, it still requires more effort than microwaving a frozen dinner or baking a packaged pizza. Without the knowledge in food preparation, individuals are not faced with choosing between substitute meals. Instead, the tax policies offer the individuals the choice between 1) an arbitrarily expensive yet easy meal and 2) a subsidized yet unfamiliar food. Therefore, increasing the cost of unhealthy food forces individuals to choose between increased costs in food and increased time devoted to food preparation.¹¹⁰

The increase in food cost and the increase in preparation time individually decrease the relative incentive to reduce consumption from

consumption of particular goods, these goods may be substituted by perhaps more harmful alternatives.”).

106. Tatiana Andreyeva et al., *The Impact of Food Prices on Consumption: A Systematic Review of Research on the Price Elasticity of Demand for Food*, 100 AM. J. PUB. HEALTH 216, 220 (Feb. 2010), available at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2804646/>.

107. Gorkan Ahmetoglu et al., *Pricing Practices: Their Effects on Consumer Behaviour and Welfare* (Mar. 2010) (report prepared for the Office of Fair Trading by Mountainview Learning, University College London), available at http://www.oft.gov.uk/shared_of/business_leaflets/659703/Advertising-of-prices/Pricing-Practices.pdf.

108. However, there is some effectiveness in forcing consumers to eat certain foods. See Patricia Pliner & Karen Hobden, *Development of a scale to measure the trait of food neophobia*, 19 APPETITE 105, 117 (Oct. 1992), available at <http://www.sciencedirect.com/science/article/pii/019566639290014W> (“An obvious intervention would involve “forced” exposure to novel foods in order to disconfirm the expectation of unpalatability. In other words, the neophobic individual could be ‘taught’ by experience that novel foods do not taste bad; perhaps such experience would result in reduced neophobia. Such an intervention has been shown to be effective in the short term; whether chronic levels of neophobia could be reduced by such means remains to be seen.”) (internal citation omitted).

109. See Rose, *supra* note 92, at 229.

110. See Pratt, *supra* note 59, at 129-30.

any category of unhealthy food.¹¹¹ Importantly, the increases in food costs would especially affect lower-income individuals and potentially prevent them from buying food they normally purchase. While this seems to demonstrate the success of the taxes, it is counter to general welfare policies on account of the regressive impact on the poor. Furthermore, if only one socio-economic group changes the consumption habits, the taxes are not a success because obesity affects all socio-economic groups.

Overall, taxation on unhealthy foods is harmful to society. Like regressive taxes, fat taxes disproportionately affect the population that can afford it least, and an increase in the total cost of certain groceries does not significantly influence shopping habits but only increases the cost of groceries.

V. A METHOD FOR PROMOTING HEALTHY FOOD

Instead of decreasing food availability by taxing unhealthy food or focusing solely on monetary incentives, food policy should focus on increasing the access of healthy food, which is consistent with the World Health Organization's policy: "making healthy choices easy choices."¹¹² Following this idea, an emphasis on portion control and grocery store design can assist individuals in making choices easy. Because in the context of food options, "reasonable substitutes" do not simply mean other available food, but rather food that suits a consumer's needs. Also, public service announcements and educational outreach can provide information about healthy eating habits and the nutrition—or lack thereof—in food.

A. PORTION CONTROL

Research has found many reasons for obesity and many possible answers, yet one characteristic stands out in the data: people eat too much food.¹¹³ Many of the excessive calories come from modern, calorie-rich, unhealthy food, but also from consuming too much

111. See Rose, *supra* note 92, at 230 (stating there is an "inherent trade-off in the meal production process," such that "more time in cooking means lower food costs." Individuals have limited resources for each.).

112. WORLD HEALTH ORGANIZATION, *supra* note 5.

113. See Lisa R. Young & Marion Nestle, *The Contribution of Expanding Portion Sizes to the US Obesity Epidemic*, 92 AMERICAN JOURNAL OF PUBLIC HEALTH 246, 246 (2002) (stating that "[d]ietary intake surveys indicate a per capita increase of 200 kcal/d from 1977–19786 to 1994–1996,7 and the US food supply (total food produced, less exports, plus imports) now provides 500 kcal/d per capita more than in the 1970s. Regardless of how precise the numbers may be, they appear to confirm that Americans consume more energy than they did in the past.").

260 ANNUAL SURVEY OF INT'L & COMP. LAW [Vol. XX

traditional food due to an increase in plate sizes.¹¹⁴ Therefore, a solution for governments wanting to influence food intake through taxation is an excise tax on large dinner plates.

Dinner plates have grown in size over the decades. Compounding the impact of an increase in meals eaten outside the home, accounting for thirty-four percent of the average 1970s food budget and forty-seven percent by the late 1990s,¹¹⁵ restaurants are serving much more food.¹¹⁶ Average dinner plate sizes for household use have also “increased almost 23%, from 9.6 inches to 11.8 inches, since 1900.”¹¹⁷ And when serving themselves, individuals place more food on the new, larger plate regardless of their hunger.¹¹⁸ Furthermore, regulating plate and tablecloth colors might have an impact on obesity because plate and tablecloth colors also affect food consumption.¹¹⁹ Considering the nudging effect plate size and color can have, portion control can play a valuable role in reducing obesity. Unlike taxing food, taxing and regulating plates may easily reduce over eating without limiting access to food.

B. Grocery Store Plans

Another alternative to food taxation is to increase the marketing and accessibility of healthy foods. Grocery store floor plans need to make healthy ingredients more accessible throughout the entire store. Currently, many American grocery stores are purposefully designed to entice customers into the store and keep them in as long as possible — even the music strategically aides in retaining customers.¹²⁰ Entrances greet customers with flowers, produce, and baked goods in order to encourage confidence in the store and to create hunger.¹²¹

The staples, such as milk and meats line the perimeter, “forcing [customers] to travel through other tempting aisles to pick up the

114. *Id.* at 247.

115. *Id.* at 246.

116. *The New (Ab)Normal: Portion Sizes Today vs. In The 1950s*, THE HUFFINGTON POST (May 23, 2012), http://www.huffingtonpost.com/2012/05/23/portion-sizes-infographic_n_1539804.html (“The average restaurant meal is four — four — times larger than it was in the 1950s.”) (emphasis in original).

117. Koert Van Ittersum & Brian Wansink, *Plate Size and Color Suggestibility: The Delboeuf Illusion’s Bias on Serving and Eating Behavior*, J. CONSUMER RES. 215, 216 (2012).

118. *Id.*

119. *Id.* at 221.

120. Troy Johnson, *11 Psychological Tricks of the Supermarket Trade*, FOOD NETWORK (Dec. 8, 2013), <http://blog.foodnetwork.com/fn-dish/2013/12/11-psychological-tricks-of-the-supermarket-trade/>.

121. Tracy Keller, *The Psychology Behind a Grocery Store’s Layout*, NOTRE DAME COLLEGE (Jan. 4, 2013), <http://online.notredamecollege.edu/psychology/the-psychology-behind-a-grocery-store%E2%80%99s-layout/>.

essentials."¹²² With this design, stores set up opportunities for expensive impulse buys for even a quick stop for milk and eggs.¹²³ Drawing customers into the aisles is important because they contain the most profitable items.¹²⁴ Overall, thorough research into customer psychology has led to basic layouts "that keeps customers efficiently moving through the aisles and spending money."¹²⁵ European supermarkets utilize similar techniques.¹²⁶ These store designs influence shopping behavior so strongly that, according to the *Frankfurter Allgemeine*, approximately seventy percent of supermarket purchases are impulse decisions.¹²⁷

If stores are so powerful in convincing customers to buy various products simply through the store layout, then new designs can help influence healthy purchasing designs. For example, it may be feasible to require grocery stores to give produce a larger percentage of the entire floor plan or to have produce throughout the market. Perhaps by making produce more prominent in the grocery store or by placing produce next to unhealthy food, consumers will be presented with comparable meal options, thereby increasing the accessibility of reasonable food substitutes. Psychological research in this area could reveal what tactics stores should utilize. And because the new designs will promote healthy food but not necessarily the most profitable food, legislatures will have to develop methods to encourage these actions, such as through regulation and incentives.

C. FOOD EDUCATION

Education and public outreach need to accompany the monetary influences on healthier food choices. Public service announcement and public outreach will familiarize consumers with the new diet and provide the skills necessary to utilize the food that is already available in stores i.e. the programs will teach consumers how to cook.

122. *Id.*

123. Melanie Greenberg, *Ten Ways Your Local Grocery Store Hijacks Your Brain*, PSYCHOLOGY TODAY (Mar. 14, 2012), <http://www.psychologytoday.com/blog/the-mindful-self-express/201203/ten-ways-your-local-grocery-store-hijacks-your-brain>.

124. Johnson, *supra* note 120.

125. Keller, *supra* note 121.

126. See *In welche Psychofallen wir im Supermarkt tappen*, DIE WELT (May 5, 2012), <http://www.welt.de/gesundheit/psychologie/article106351705/In-welche-Psychofallen-wir-im-Supermarkt-tappen.html>.

127. Lena Schipper, *Psychologie im Supermarkt: Warum wir kaufen, was wir kaufen*, FRANKFURTER ALLGEMEINE (Sept. 8, 2010), <http://www.faz.net/aktuell/wirtschaft/psychologie-im-supermarkt-warum-wir-kaufen-was-wir-kaufen-11024070.html>. "The *Frankfurter Allgemeine Zeitung* (F.A.Z.) is among the most significant national daily and business newspapers in Germany and in the world." *Portrait of the F.A.Z.*, <http://verlag.faz.net/unternehmen/ueber-uns/portraet/wissen-fuer-kluge-koepfe-portraet-der-f-a-z-11090906.html> (last visited May 1, 2014).

262 ANNUAL SURVEY OF INT'L & COMP. LAW [Vol. XX

1. Knowledge About Health

Public education and awareness of both of the problems with obesity and the benefits of eating fresh produce must increase. Such education can start with an increase in public service announcements and campaigns.

To fight obesity, First Lady of the United States Michelle Obama launched the initiative Let's Move, which is "dedicated to solving the problem of obesity within a generation, so that children born today will grow up healthier and able to pursue their dreams."¹²⁸ In addition to an increase in physical activity and access to healthy, affordable food, the White House Task Force on Childhood Obesity recommended that parents also "should have greater access to the right tools and resources that increase nutritional knowledge and help them make healthier choices."¹²⁹ The Let's Move initiative is similar to a World Health Organization framework for governments to lead the fight against childhood obesity through policies and programs that promote supportive health environments.¹³⁰

These efforts match existing research on effective strategies, which concludes that stigmatizing obesity and overweightness is not beneficial for reducing obesity.¹³¹ Instead of benefiting public health, the "stigmatization of obese individuals poses serious risks to their psychological and physical health, generates health disparities, and interferes with implementation of effective prevention efforts."¹³²

Despite this research, some awareness campaigns still stigmatize obesity. For example, a Georgia advertising campaign depicted obese children with slogans such as "It's hard to be a little girl, if you're not one" and "Big bones did not make me this way. Big meals did."¹³³ Although this

128. *About Let's Move*, LET'S MOVE, <http://www.letsmove.gov/about> (last visited Apr. 25, 2014).

129. *Empowering Parents and Caregivers*, LET'S MOVE, http://www.letsmove.gov/sites/letsmove.gov/files/TFCO_Empowering_Parents_and_Caregivers.pdf (last visited Apr. 25, 2014).

130. POPULATION-BASED APPROACHES TO CHILDHOOD OBESITY PREVENTION, WORLD HEALTH ORGANIZATION (2012), available at http://www.who.int/dietphysicalactivity/childhood/WHO_new_childhoodobesity_PREVENTION_27nov_HR_PRINT_OK.pdf.

131. See Rebecca M. Puhl & Chelsea A. Heuer, *Obesity Stigma: Important Considerations for Public Health*, 100 AMERICAN JOURNAL OF PUBLIC HEALTH 1019, 1019 (2010), available at <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2866597/pdf/1019.pdf>.

132. *Id.*

133. Paul Campos, *Anti-Obesity Ads Won't Work By Telling Fat Kids to Stop Being Fat*, THE DAILY BEAST (Jan. 4, 2012), <http://www.thedailybeast.com/articles/2012/01/04/anti-obesity-ads-won-t-work-by-telling-fat-kids-to-stop-being-fat.html>.

campaign is targeted at the parents,¹³⁴ the messages and imagery might be lost on the parents, because most parents with obese children do not even know their children are obese.¹³⁵ Advertisements with such negative impacts on the psychological health of children are inconsistent with data driven research and the public health goal of anti-obesity campaigns.

Instead, in line with the research against stigmatizing obesity,¹³⁶ education should focus on positive psychology,¹³⁷ as the Let's Move initiative does, and provide nutritional information and cooking tips. Most importantly, the educational programs should highlight small, manageable changes,¹³⁸ such as suggestions to take the stairs or to eat five vegetables a day. Public service announcements that provide adults familiarity with healthy foods will decrease the anxiety around unknown foods, thereby eliminating many neophobic barriers. Furthermore, the education should introduce quick cooking tips, which will decrease the time required for many individuals in preparing healthy foods.

2. Knowledge About Food

The school classroom is an excellent environment to teach students about obesity and nutrition. For one thing, many adults lack proper information, and even obese children's parents do not recognize the problem.¹³⁹ Due to the lack of parental involvement in healthy food choices and the social context of food,¹⁴⁰ schools have the opportunity to familiarize children with healthy food. Additionally, because "[t]he food choices of preschool and young elementary school children are driven by food preferences and availability,"¹⁴¹ it is important to also provide school children with healthy food programs. Many school programs that provide breakfast or lunch meals to students already exist, and switching the dietary programs is a small burden compared to the burden families face in providing children with new, healthy lunches.

134. Emma Gray, *Georgia Anti-Obesity Ads Say "Stop Sugarcoating" Childhood Obesity*, THE HUFFINGTON POST (Jan. 3, 2012, 5:57 PM), http://www.huffingtonpost.com/2012/01/03/georgia-anti-obesity-ads-stop-sugarcoating_n_1182023.html.

135. Alyssa Lundahl et al., *Parental Underestimates of Child Weight: Meta-Analysis*, 133 PEDIATRICS e689, e700 (2014), available at <http://pediatrics.aappublications.org/content/133/3/e689>.

136. See Puhl & Heuer, *supra* note 131.

137. See P. ALEX LINLEY & STEPHEN JOSEPH, POSITIVE PSYCHOLOGY IN PRACTICE 5 (2004) ("The desired outcomes of positive psychology (i.e., optimal functioning) have been characterized in part as happiness and well-being.").

138. Guide to Behavior Change, National Heart, Lung, and Blood Institute, http://www.nhlbi.nih.gov/health/public/heart/obesity/lose_wt/behavior.htm (last visited Apr. 25, 2014).

139. See Lundahl et al., *supra* note 135, at e700.

140. *What Makes Nutrition Education Programs Effective*, NO KID HUNGRY, <http://bestpractices.nokidhungry.org/healthy-foods/nutrition-education> (last visited Apr. 25, 2014).

141. *Id.*

264 ANNUAL SURVEY OF INT'L & COMP. LAW [Vol. XX

Where schools have implemented healthy school lunch programs, the costs have been manageable. In Norway, for example, school provided fruit for students cost parents an estimated thirty euro cents per day.¹⁴² As a similar national effort, the U.S. Department of Agriculture has created The Fresh Fruit and Vegetable Program (FFVP), which funded nearly 2,000 schools in 2008 with only \$40 million.¹⁴³ Importantly, lunch programs that serve “more fruits and a healthier mix of vegetables did increase students’ vegetable consumption significantly.”¹⁴⁴ These experiences demonstrate the possible success of fighting obesity by providing healthier foods to school children, thereby increasing the available amounts of food instead of punishing consumers with taxes.

VI. CONCLUSION

Countries, states, and cities around the world are implementing and imposing new taxes on consumer food decisions. The targeted foods are suspected of being obesogenic, and the taxes are created to incentivize healthier decisions. However, these laws ignore the studies showing that demand for food is relatively inelastic. This means that the taxes will decrease general welfare by increasing general food costs without providing a real benefit, particularly for the poor. Furthermore, the decision to tax certain foods and not others is arbitrary and the taxes also target traditional cooking ingredients, such as creams, despite the value of these ingredients in the overall scheme of balanced meals and diets. And because these taxes are indiscriminate on the consumer, they are regressive in nature and disproportionately affect lower income individuals even though obesity persists throughout the socio-demographic spectrum.

Like taxing unhealthy food, there are a number of complications with food subsidies. However, subsidies may increase the quality of life for everyone. There is no single “magic bullet” to the obesity epidemic; a number of tactics must be taken but none of them should arbitrarily reduce food availability through taxation.¹⁴⁵ The anti-obesity efforts

142. Badilas, *supra* note 40, at 275-276.

143. *Id.* at 275-276.

144. Joanne Guthrie & Constance Newman, *Eating Better at School: Can New Policies Improve Children's Food Choices?*, USDA ECONOMIC RESEARCH SERVICE (Sept. 3, 2013), <http://www.ers.usda.gov/amber-waves/2013-september/eating-better-at-school-can-new-policies-improve-children%E2%80%99s-food-choices.aspx#.U1qN5oE3zOM> (although the consumption increased, “average amounts consumed were still small.”).

145. *Contra* Judith Pinny, *Tax Working Group Myopia: The Omission of Corrective Taxes to Deal with Obesity*, 16 N.Z. J. Tax L. & Pol’y 325, 335 (2010) (“However, a food tax is not the “magic bullet” to solve all obesity problems. It should be part of a basket of policies, which form the government’s long-term strategy to achieve a healthier population. Advertising restrictions, food labelling, and more nutrition education of the general population are also important tools.”).

2014] "FAT TAXES" FIGHTING GLOBESITY 265

should focus on public outreach and making healthier food more available — not making loved and familiar food less available.

Healthy food must become a reasonable substitute for unhealthy food. Governments can increase the availability of healthy food through education and public service announcements, which will provide individuals the familiarity with and the knowledge on cooking healthy food. Furthermore, regulation can encourage stores to create designs that promote healthy food purchases, and smaller plate sizes can subtly encourage less consumption.

Overall, because arbitrarily taxing foods will only hurt societies in the long run, governments should focus on educating their residents and making healthier foods more available.