

Commentary

A discussion of stronger public policies to protect and promote healthy diets: what can the U.S. learn from other countries?

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The aim of this paper is to contribute to global discussion on public health policies for protecting and promoting healthy diets, as it is advancing in the U.S. This discussion assesses specific cases of successful policy making from several countries across the world, often against industry resistance. We discuss five key public policies and interventions: i) food labeling; ii) marketing restrictions and healthy school food policies; iii) fiscal policies; iv) models for classifying the (un)healthiness of a product; v) interventions to address food industry influence and conflicts of interest in public health policy. The paper also argues how the U.S. can adapt or adopt some of these public policies, while also preparing for the challenges from the ultra-processed food industry that may perceive these advances as threats to its business. We conclude the discussion by postulating that the U.S. is primed to advance several of these initiatives that have already been espoused in law and evaluated to be effective in other countries. The U.S. will have unique challenges, as many of the food industry actors have deep political influence on American politics and markets, although these global lessons can enable the legislative, policy, and civil society ecosystems with additional tools and strategies to progress policy movement toward defending people's health and wellbeing over industry's influence and profit.

INTRODUCTION

In the past few decades, the consumption of ultra-processed food products (UPF) increased globally, including in the U.S., and UPF now dominate the diets of Americans (L. Wang et al. 2021; Juul et al. 2022). Between 2012 and 2017, almost 60% of all calories consumed by Americans came from UPF (Baraldi et al. 2018).

UPF are described as "formulations of ingredients, mostly of exclusive industrial use, typically created by series of industrial techniques and processes. (...) Processes and ingredients used for the manufacture of ultra-processed foods are designed to create highly profitable products (low-cost ingredients, long shelf-life, powerfully branded). Their convenience (imperishable, ready-to-consume), hyper-palatability, and ownership by transnational corporations using pervasive advertising and promotion, give ultra-processed foods enormous market advantages. [They can] replace freshly made regular meals and dishes, with snacking any time, anywhere" (Monteiro, Cannon, Lawrence, et al. 2019). Ultra-processed foods are of a low nutritional quality, often with too much ingredients such as added sugars, salt, saturated fats, and too little of other

ingredients such as nutrients, fiber, and other protective elements naturally found in minimally processed food (Martínez Steele et al. 2017). There is ample evidence that the consumption of diets high in UPF is harmful, and associated with a higher cardiovascular and heart disease mortality - with the association notably stronger in women, both in the U.S. and across the world (Zhong et al. 2021).

In the U.S., some sub-segments of the population have a higher consumption of UPF and hence a greater risk of developing diet-related diseases, particularly young people, non-Hispanic whites and non-Hispanic Blacks, and individuals from lower socio-economic backgrounds, and or/ a lower level of formal education (Baraldi et al. 2018). Individuals facing intersectional inequities, including poor people, children, women, BIPOC (Black, Indigenous, People of Color), and those with disabilities, have the worst health outcomes from the consumption of unhealthy diets, and yet are consistently and heavily targeted by the aggressive marketing of food companies (Swinburn et al. 2019). In the last few years, Coca-Cola, PepsiCo, McDonald's, and other companies selling UPF have been challenged even by their own shareholders to audit the impacts of these marketing prac-

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tices on children and youth (The Coca-Cola Company 2019; PepsiCo 2021; McDonald's 2020).

In response to these issues, experts and international health organizations have called for the adoption of public policies for better protecting and promoting healthy diets against such commercial determinants of health (Swinburn et al. 2019). There is a set of key public policies often discussed in public health: i) improving the healthiness of food products, with targets on the content of nutrients of concern; ii) restricting marketing to children, particularly for unhealthy products; iii) introducing fiscal interventions, with a focus on taxes levied on unhealthy foods; iv) improving food labeling, and introducing nutrition front-of-pack labelling (FoPL); and, v) adopting food policies to make schools and other public places healthier (Swinburn et al. 2019). Although the effectiveness of these public policies at improving public health has been demonstrated in many cases, most countries, including the U.S., have only implemented them to a limited extent or not implemented them at all. But these policies are beginning to get better articulated, systematically adopted, and democratically institutionalized, as we will discuss further in this article (World Health Organization 2022a; World Cancer Research Fund International 2023; Committee on World Food Security 2021; Global Center for Legal Innovation for Food Environments at the O'Neill Institute at Georgetown University and Global Health Advocacy Incubator 2023; Swinburn et al. 2013).

In this discussion paper, we present illustrative examples of public policies for protecting and promoting healthy diets, then identify efforts made in various countries and future action needed in this policy space in the U.S. In light of the recent 'White House Conference on Hunger, Nutrition, and Health' that took place in October 2022, a novel National Strategy has indeed been proposed by the U.S. Government. Though not as comprehensive as the public health crises in the U.S. demand this guidance be, under this strategy's "Pillar 3 - Empower All Consumers to Make and Have Access to Healthy Choices," proposals such as addressing "marketing of unhealthy foods and beverages," as well as creating "healthier food retail, restaurant, and college campus environments" have been propounded (White House 2022). We believe there is therefore currently a window of opportunity in the country for strategically adapting and substantively adopting international recommendations and implemented policies from other countries. The present discussion paper offers evidence for how some of these public policies have been advanced in other countries, often despite severe food industry opposition.

METHODS

In this discussion paper, we present illustrative examples where key public policies have been implemented:

- the introduction of FoPL, as a key public policy for improving food labeling;
- restrictions on the marketing of foods to 0-18 year olds, and related healthy school food policies;

- fiscal policies, in particular taxes on unhealthy products.

We also discuss models for classifying food products based on their (un)healthiness. In addition, we present solutions to address undue corporate influence and conflicts of interest (CoI) in public health, as these represent key barriers against the introduction of the above public policies (Swinburn et al. 2019).

When we mention the "food industry" in our article, we refer to the producers of food and beverage products, distributors, retailers, and others in the supply chain, including actors providing services to the industry (marketing, lobbying, public relations, financing, etc.). We also refer to trade associations, business groups, think tanks, chambers of commerce, and other third parties, where the links with food industry might be more subtle, yet critical for their role in enabling the food industry to successfully obstruct public policies. This includes some that appear independent such as the "Institute for the Advancement of Food and Nutrition Sciences," located at the same postal address as the North American branch of the food industry "front group" International Life Sciences Institute (ILSI) (Mialon et al. 2021). ILSI was founded by and represents large food industry actors, and has been shown to use science in a biased way to protect the profits of its member companies (Steele et al. 2019).

For this discussion, we selectively chose cases where i) the public policy was national in scope, and ii) the public policy was mandatory. Where there was no example that met those two criteria, we used alternatives discussed in the literature and the databases below. We also noted the limitations of existing policies. We discuss the current situation in the U.S., compared to those international examples, taking into account these limitations. We also focus on those efforts that relate to the current U.S. policy space, including potential opportunities, and discuss resistance that could be anticipated from the food industry.

The objective of this paper was not to conduct a systematic analysis, or provide a comprehensive assessment, or cover all existing public policies and regions where they have been implemented. Several databases and networks already exist in that sense (see the sources below). Evidence for the effectiveness of those policies and interventions, and why they should be prioritized, is summarized for example in Swinburn et al. 2019.

The sources of data we consulted were:

- global databases with examples of implementation of public policies at the country level:
 - The World Cancer Research Fund's NOURISHING framework (World Cancer Research Fund International 2023), an inventory of public policies to promote healthy diets, and its database of implemented actions;
 - The Global database on the Implementation of Nutrition Action (GINA) (World Health Organization 2022a);
 - The Committee on World Food Security (CFS) Voluntary Guidelines on Food Systems and Nu-

- trition (Committee on World Food Security 2021);
- The FULL global food laws database (Global Center for Legal Innovation for Food Environments at the O’Neill Institute at Georgetown University and Global Health Advocacy Incubator 2023).
 - the academic literature;
 - information from the websites of civil society organizations and governments;
 - web content published by other relevant entities, such as multilateral institutions and industry actors.

We did not need ethics approval for the present paper, as we only collected publicly available information.

EXISTING PUBLIC POLICIES ACROSS THE GLOBE AND OF POTENTIAL USE IN THE U.S.

FOOD LABELING

The introduction of front-of-pack labeling is the most commonly discussed public policy regarding food labeling, and consists of having a label presenting information on the (un)healthiness of a product on the front of processed foods, the primary field of vision. Summary indicators are now the most common FoPL, presenting the overall nutritional quality of a product (Kanter, Vanderlee, and Vandevijvere 2018; World Cancer Research Fund International 2023). Chile was the first country to adopt a mandatory FoPL policy in 2012, as part of a broader law to limit the consumption of unhealthy products in the country (Kanter, Vanderlee, and Vandevijvere 2018). The country did not use a summary indicator, but black-and-white warning octagons on food products that were too energy dense and/or contained too much sodium, saturated fats, or added sugars (Kanter, Vanderlee, and Vandevijvere 2018).

That law faced strong opposition from the food industry. Nestlé, for example, directly lobbied the then President of the Republic (Mialon, Corvalan, et al. 2020). Within the Chilean government, the Minister of Finance and former Member of Parliament was a spokesperson for a leading trade association, ABChile, while the Ministries of Economy, Agriculture, and Foreign Affairs, were all on lobbying on the food industry’s side. ABChile also ran a media campaign with celebrities speaking against the law. The food industry, at that time, claimed that the law would lead to decreases in corporate income, and thus an adverse outlook on employment in Chile, and also claimed that the law would breach international trade agreements. However, these intimidation tactics did not work and their predictions did not materialize once the law was adopted (Paraje et al. 2021, 2022). Nevertheless, these arguments have continued to be used in other countries (Crosbie, Carriedo, and Schmidt 2022). After the law was adopted in Chile, PepsiCo and Kellogg’s challenged it in the Court. The food industry used similar practices to delay or prevent the adoption of new FoPL in several other countries like Mexico (Crosbie, Carriedo, and Schmidt 2022), Colombia (Mialon, Gaitan Charry, et al. 2020), Brazil (Mialon, Khandpur, et al. 2020),

Malaysia and Vietnam (Pettigrew et al. 2022), and South Africa (González 2022). This lobbying has often been coordinated by trade associations representing global companies like Nestlé, Kellogg’s, Coca-Cola, and PepsiCo. Despite such challenges, other countries have since then adopted warning labels, a similar FoPL model to that of Chile (World Cancer Research Fund International 2019a). Mexico and Argentina recently included an additional message on products with sweeteners and caffeine, with a recommendation to avoid their consumption in children (World Cancer Research Fund International 2023).

Another popular FoPL model is the Nutri-Score, a color and letter-coded model, which takes into account both ingredients that should be limited, and “positive” ingredients such as fibers (Kanter, Vanderlee, and Vandevijvere 2018). Nutri-Score was first adopted in France in 2017, again after strong opposition from the food and media industries (Julia and Hercberg 2018), including from Nestlé, Unilever, PepsiCo, Coca-Cola, Mondelez, and Mars, with them even proposing an alternative system. Nutri-Score is now used in Belgium and Germany (World Cancer Research Fund International 2023), and discussions are ongoing at the European Union level to decide on which FoPL model to adopt for the region (European Commission 2021). Another FoPL model is the Health-Star Ratings system from Australia and New Zealand (Kanter, Vanderlee, and Vandevijvere 2018), which uses stars instead of letters and colors. However, the use of both Nutri-Score and Health-Star Ratings is not made mandatory in the countries where they have been implemented (World Cancer Research Fund International 2023).

U.S. POLICY SPACE

There is currently no public policy regarding the use of nutrition FoPL in the U.S. In 2021, a handful of senators from the states of Connecticut, New Jersey, Rhode Island, Massachusetts, and Maryland, also proposed a bill called “Food Labeling Modernization Act 2021,” which would require the FDA to introduce FoPL (Sen. Blumenthal 2021). In August 2022, a regulatory petition was filed with the U.S. Food and Drug Administration (FDA) asking the FDA to establish “a simple, standardized, evidence-based, and mandatory front-of-package labeling system for all packaged foods sold” in the country (Center for Science in the Public Interest, Association of SNAP Nutrition Education Administrators, and Association of State Public Health Nutritionists 2022). The food industry has tried to dilute these efforts by launching its “Facts Up Front” initiative (The Consumer Brands Association and FMI 2012), led by the Consumer Brands Association – a trade association with member companies, such as Coca-Cola, Abbott, General Mills, Danone, Conagra, Bayer, and PepsiCo (Consumer Brands Association 2023) – and the Food Industry Association, with similar membership from the largest global food companies (FMI 2023).

LIMITATIONS OF EXISTING PUBLIC POLICIES AND WAY FORWARD FOR THE U.S.

Considering progress on FoPL globally despite industry opposition, we see a caveat with the current FoPL models: they consider the degree of processing of foods only indirectly and to a limited extent, although we know this is crucial information for protecting and promoting healthy diets (Northcott et al. 2023). We suggest that FoPL policies should be more focused on UPF. In France for example, amongst products with a favorable Nutri-Score (with a letter A or B on a scale from A to D), more than half were found to be UPF (Ebner et al. 2022). Therefore, even products with a good Nutri-Score can be UPF. A particular concern is that in models such as Nutri-Score or Health-Star Ratings, when a food company has a bad score because of the presence of too many unhealthy ingredients (such as added sugars), it can add “positive” ingredients (such as dietary fiber) to improve its score and labels. In the case of UPF, such approach to FoPL allows industry to continue selling unhealthy foods, while slightly revising the ingredient list. This may confer a good image and label to products whose consumption still leads to ill-health. Thus, products can be reformulated and still likely remain ultra-processed and unhealthy.

Other FoPL, like warning labels from Chile, only target unhealthy ingredients, so the industry can use less of such ingredients. But this may lead to the development of even more processed products, with additives for example, to keep the taste or texture of foods, and the possibility to label and market these heavily processed but reformulated products as “healthier options”. In Chile, the country which has the longest experience with warning labels, and hence evidence of their impacts already, people are decreasing their consumption of products carrying warning labels, which ought to lead to an improvement in public health. However, early evidence suggests that individuals are not eating less UPF, simply just shifting to UPF with other additives, such as artificial sweeteners (Zancheta et al. 2021). Thus, in this complicated situation, legislators trying to advance public health must take into account industry’s use of new processes and ingredients.

Ideally, FoPL models would interpret and translate information based on the list of ingredients and markers of ultra-processing (such as the processes used). We further discuss this point later. Existing FoPL models miss a broad range of markers of ultra-processing (i.e., ingredients and processes that make a product a UPF). While more countries are now adopting new FoPL, which is certainly a step forward, particularly when public health prevails over corporate influence, it remains critical to ensure that these battles do not prevent the public health community from engaging in deeper discussions like this on FoPL and the degree of processing of foods.

Another caution with FoPL is that even if an ideal model were adopted, the industry could then say that detailed labeling is all that is needed; people need to read these labels, be responsible for their own choices, and bear the consequences these choices have on their health (Bellatti and Simon 2011). This would further build impunity against the

role of UPF in exacerbating a global epidemic of non-communicable diseases. This might shift the attention away from the fact that it is the industry that is creating and then fueling the market of UPF, aggressively marketing and promoting the consumption of unhealthy diets in the first place.

With no existing regulation in this space, it is urgent that the U.S. adopt a mandatory FoPL which, to the greatest possible extent addresses these limitations.

PROTECTING INFANTS, CHILDREN, AND YOUNG PEOPLE FROM THE HARMFUL IMPACT OF FOOD MARKETING, AND INTRODUCING HEALTHY FOOD SCHOOL POLICIES

There is ample evidence that advertisement and other forms of marketing influence the preferences of children and young people and their habits, which leads to ill health (National Academies of Sciences, Engineering, and Medicine 2006; Hastings, Stead, McDermott, et al. 2003; Cairns, Angus, and Hastings 2008). Going even beyond this, McDonald’s engaged teachers to work behind the counter at local outlets, serving junk food to their students, exploiting teachers’ authority and popularity to promote UPF to young children, under the guise of raising funds for schools (Corporate Accountability 2018). Thus, a key intervention in public health is to protect that segment of the population from food marketing, particularly for unhealthy products.

Australia, Hungary, Finland, and Brazil, amongst other countries, have regulation in place, where food marketing to children is not permitted through any medium (World Cancer Research Fund International 2023), including digital marketing on social media and other online platforms. These restrictions apply to specific products, such as those containing certain unhealthy ingredients (World Cancer Research Fund International 2023), as in the case of Peru. Other countries like Sweden greatly restrict all advertising to children.

The International Code of Marketing of Breastmilk Substitutes (BMS), passed by the World Health Assembly in 1981, is another example that specifically focuses on a certain category of products, and is now implemented (partially or fully) in national law in 144 countries (World Health Organization 2022b). The Code was adopted after intense advocacy and in response to the aggressive and inappropriate marketing of breastmilk substitutes by food companies in the 1970s, which was widely implicated in the deaths of thousands of babies in Africa and Asia (Muller 1974, 2013). The worst illustration of that marketing was when caregivers were presented infant formula in hospitals by senior nurses hired by baby food companies such as Nestlé. Not only did mothers trust their advice to use BMS, but other nurses felt they had to “obey” these more senior nurses.

In addition to these marketing restrictions, there are specific public policies for food products sold and served in and around schools, as a space where children spend much of their time. Chile introduced a ban in schools of marketing of products that had too many unhealthy ingredients (World Cancer Research Fund International 2023). Costa

Rica, Ecuador, Uruguay, and other countries have a similar ban (World Cancer Research Fund International 2023). Uruguay also recently adopted a new law to prohibit the sales of products with a warning label in schools (Alianza ENT Uruguay 2022). France, Slovenia, and Bermuda have specific bans on the sales of snacks and certain drinks in school settings (World Cancer Research Fund International 2023). South Korea has “Green Food Zones” where the sales of products with too many unhealthy ingredients are banned in a 200 meter-zone around schools (World Cancer Research Fund International 2023).

Here again, industry interference has also been evident across countries that have tried developing and rolling out such laws. In 2020, the Government of India, for example, finalized a law banning the sale and marketing of unhealthy food products in schools as well as within a fifty-meter radius. Since 2013, representatives from national trade associations (such as the National Restaurants Association of India, All India Food Processors Association, and Retailers Association of India- backed by food and beverage corporations such as Coca-Cola, Nestlé, McDonald’s, Dominos, PepsiCo) had been members on an expert group constituted by India’s High Court, to help develop guidance on the availability of unhealthy foods to children in schools (Sahai Endlaw 2015; India Resource Center, n.d.). In the end, the language specifically identifying a list of unhealthy products, as articulated in the draft law, such as sugar-sweetened beverages (SSB), was entirely eliminated (India Resource Center 2020; Ministry of Health and Family Welfare - Food Safety and Standards Authority of India 2019, 2020). In Brazil, there was also intense lobbying and other forms of influence during the development of restrictions on marketing to children (Mialon, Cediél, et al. 2022), with the rapporteur of the group working on the Bill owning a distribution subsidiary of Coca-Cola, and the food industry pushing for the use of self-regulation instead of mandatory legislation. Once the law was approved anyway, the food industry went to Court and got it suspended.

U.S. POLICY SPACE

In the U.S., the scope of most public policies adopted in this space to date is quite limited. The U.S. has no legal measure in place regarding the WHO International Code of Marketing of Breastmilk Substitutes (World Health Organization 2022b), although the ingredients and their labeling in infant formula are regulated. In 2010-11, two cities in California (Santa Clara and San Francisco) introduced bans in restaurants on the giveaway of toys and other free items (vouchers and coupons for example) in children’s meals that did not meet certain standards in terms of healthiness (mostly around unhealthy ingredients) (World Cancer Research Fund International 2023). There is also a Children’s Food and Beverage Advertising Initiative (CFBAI), developed by food companies and covering advertisement to children under 13 years of age (World Cancer Research Fund International 2023). Food companies can voluntarily participate in the CFBAI, where they agree not to advertise any of their products in schools. In venues other than schools, participating companies pledge not to advertise

products to children that do not meet certain criteria for unhealthy ingredients. The state of Maine has prohibited the marketing in schools of foods that do not meet certain nutrition criteria (World Cancer Research Fund International 2023). At the country-level, the Healthy Hunger - Free Kids Act, introduced in 2010, sets specific standards around unhealthy ingredients in foods sold in schools (World Cancer Research Fund International 2023). In addition, there are state-specific bans or other public policies on the sales of foods in schools (World Cancer Research Fund International 2023).

LIMITATIONS OF EXISTING PUBLIC POLICIES AND WAY FORWARD FOR THE U.S.

Here again, while these public policies are greatly needed, their main vulnerability is that most existing bans do not include all types of marketing, particularly that on digital platforms, or all types of products, or all types of spaces where children can get exposure to industry influence, also with no law yet explicitly mentioning UPF. Other marketing restrictions do not apply to the entire country, and/or to all foods, all ages, or all media. Moreover, the CFBAI is not mandatory in nature. But even when there are mandatory restrictions on marketing, in other countries for example, compliance is found to be low (Polacsek et al. 2012), unless there is better communication to school administrators about the restrictions and help for schools to implement them. Therefore, even mandatory approaches of this sort should be strengthened with better enforcement of the law. In addition, the protection of commercial speech under the U.S. Constitution means that corporations have a right to market their products even when this is at the expense of public health, and might use that right to challenge proposed government regulation (Pomeranz 2022). Other legal approaches in the US also appear to be available to the industry which often favor its point of view.

FISCAL POLICIES (SUBSIDIES AND TAXATION)

Fiscal policies, including subsidies for healthy foods, such as fruits and vegetables, and taxation of unhealthy products, could help protect and promote healthy diets (World Cancer Research Fund International 2019b), and indeed there is evidence that implementing them results in people tending to eat a healthier diet (Powell et al. 2013). It has been estimated that in the U.S., even a “1% decrease in the price of all fruits and vegetables could translate into a mean decrease of around 6,700 cases of coronary heart disease and almost 3,000 ischemic strokes” (Brambila-Macias et al. 2011).

Among specific products, taxes on SSB are the public policy most commonly discussed and recommended by international health organizations (Y. C. Wang et al. 2012). Several countries have introduced SSB taxes since the early 2010s. Amongst the most recent countries in that list, Peru and Ethiopia have introduced a 25% tax on SSB, which is considered to be a high and effective tax rate in terms of anticipated positive health outcomes in the population (World Cancer Research Fund International 2023).

During the development of such laws, industry interference has been especially pronounced, such as in the case of South Africa, where industry actors like the Consumer Goods Council South Africa, Coca-Cola Beverages South Africa, and South African Sugar Association promoted self-regulation and voluntary actions in lieu of SSB taxation (World Cancer Research Fund International 2019b). They also positioned SSB as a cheap source of energy for poor people and threatened to roll back investment and community support in the region (Abdool Karim, Kruger, and Hofman 2020). They also funded research to sow doubt on existing scientific literature (Abdool Karim, Kruger, and Hofman 2020). Despite such well-resourced and synchronized industry interference, South Africa adopted SSB taxation in 2017. Brazil, Mexico, Chile, and Colombia also faced strong opposition from the food industry while trying to introduce new taxes on SSB (Pedroza-Tobias et al. 2021; Carriedo et al. 2021; Mariath and Martins 2022).

U.S. POLICY SPACE

SSB taxes were pioneered in various US cities in the early 2010s. Today, Cook County in Illinois, the Native Navajo Nation, the cities of Berkeley, Oakland and San Francisco (California), Boulder (Colorado), Albany (New York), Philadelphia (Pennsylvania), and Seattle (Washington), all have SSB taxes in place (World Cancer Research Fund International 2023). While these have begun to yield some positive results, the industry also strengthened its position by leveraging the legal apparatus of preemption which allows a higher level of government to restrict or fully eliminate the power of lower levels of governments to regulate and enact laws on specific topics and issues (Crosbie et al. 2021). The food industry also disseminated mis- and dis-information to influence public opinion against the taxes via industry-backed ballot initiatives in Washington, California, Pennsylvania, and Oregon (Falbe, Adler, and Roberto 2021). In addition, deceptive marketing targeted at children and BIPOC communities has continued (Jacobson 2016; Rudd Center for Food Policy & Health et al. 2022).

Regarding subsidies for healthy diets, the Healthy Incentives Pilot (HIP) was introduced by \$20 million from the Farm Bill (Commonwealth of Massachusetts 2023; Olsho et al. 2016). Participants in the Supplemental Nutrition Assistance Program (SNAP), a government program which provides food-purchasing assistance to low income people, received extra money to buy fruits and vegetables through the HIP. Evaluation of the HIP suggested that SNAP participants purchased significantly more of the targeted fruits and vegetables (Olsho et al. 2016). In January 2023, the U.S. Department of Agriculture's Food and Nutrition Service announced that it will invest \$25 million and select up to three states to offer funding to implement an Electronic eHIP (USDA 2023). Some states like Massachusetts have indicated that they may continue HIP when its funding runs out.

LIMITATIONS OF EXISTING PUBLIC POLICIES AND WAY FORWARD FOR THE U.S.

A growing number of countries adopted SSB taxes, even though the tax rate and the products covered differ between countries. This is perhaps the policy where there is most progress globally. Subsidies for healthy products also exist, but have not received as much attention. The main challenge in the U.S. is that SSB taxes do not apply to the entire country, and vary in their nature and scope, as well as jurisdiction and implementation. Similarly, piecemeal introduction of programs like HIP can postpone the positive impact a systemic transition to healthy foods can have on the American people. Additionally, the U.S. also lacks a streamlined evaluation mechanism for its tens of fiscal subsidies and incentive programs. For additional investment and continued prioritization of these programs, a comprehensive measurement system will be imperative to assess impact and address vulnerabilities (Budd Nugent et al. 2021).

On the other hand, ingredients such as sugar have been the center of government subsidies to maintain their prices and protect production supply chains. With the Agriculture and Food Act of 1981, "the U.S. Sugar Program maintains a minimum price for sugar with the goal of protecting sugar-industry growers and processors" (Indiana Sugars 2021). In 2018, it was reported that the U.S. spent up to US \$4 Billion annually on sugar subsidies alone (Beghin and Elobeid 2017). International institutions, such as the World Trade Organization, have also pushed for subsidies to regulate the price of sugar in international trade (Office of Agricultural Affairs, New Delhi 2021). Such fiscal measures are exacerbating the problem of added sugar being used by food manufacturers to optimize taste and make their portfolios more attractive to consumers (Moss 2013), even if the consumption of such products leads to ill health. Questioning those subsidies is as important as advocating for more universal subsidies to promote healthy diets.

MODELS FOR CLASSIFYING THE (UN)HEALTHINESS OF A PRODUCT

A nutrient profiling model (NPM) serves to classify food products based on their relative (un)healthiness. Then, public policies such as FoPL or marketing restrictions use NPM for setting a threshold on critical ingredients and distinguish food products based on their ingredient profiles. The Pan-American Health Organization/World Health Organization-Regional Office for the Americas for example published NPM guidelines in 2016 (PAHO/Regional Office of the Americas for the WHO, Brazil 2022).

U.S. POLICY SPACE

Various NPM or other benchmarking tools are available to set thresholds for unhealthy ingredients in food products in the U.S., and each city and state use its own criteria when adopting new public policies such as a FoPL or SSB tax.

LIMITATIONS OF EXISTING MODELS AND WAY FORWARD FOR THE U.S.

We see the very notion of “Nutrient Profiling Model” to be problematic. Indeed, dozens of scientific studies have now shown that the consumption of UPF leads to ill-health, beyond the nutrient content of food products, as described in our introduction. These epidemiological studies have used the NOVA classification of foods, developed in Brazil in the late 2000s, which classifies foods based on their level and markers of processing, not based on their nutrient content. However, the results from these studies have yet to be translated to concrete policy action. We argue that given the scientific evidence now existing, profiling of products based on their markers of ultra-processing should be used instead of the present NPM as a modality to build public policy to advance public health. We argue that the very fact that NPM focus on nutrients, rather than on the degree of processing of foods, is therefore a foundational concern, which then cascades onto other public policies for healthier diets. In Chile, as mentioned earlier, individual increased their intake of sweeteners after the adoption of FoPL, because the existing NPM does not take these and many other additives and types of food processing into account when setting the standards for which products should be labeled and how. In India, the food industry ensured that language identifying specific unhealthy products was avoided in its new law for schools and their vicinities, thus hardly impacting the overall consumption of UPF.

NPM are the foundation for most public policies discussed earlier, and hence are the focus of attention from the food industry. If a different type of profiling model were proposed, based on markers of ultra-processing, we anticipate much resistance from the food industry and its proxies. If we take the earlier example of France, two thirds of food products would fall under the UPF category if using a UPF-based profiling model (Ebner et al. 2022). The food industry is already challenging the science on UPF and health, particularly when applied to public policy mechanisms such as dietary guidelines (Monteiro and Jaime 2020). While debate is essential in science, the criticism primarily comes from institutions such as ILSI, and individuals that have ties with the UPF industry, thus having a clear conflict of interest and bias. The criticism of the NOVA classification has emerged primarily from entities and individuals with some form of relationship with corporations such as Coca-Cola, Abbott Nutrition, Danone, Ferrero, General Mills, Mondelez, and PepsiCo, amongst others (Mialon, Sêrodio, and Baeza Scagliusia 2018). The introduction of an alternative profiling model in the U.S. and elsewhere would be essential not only to allow for a standardized and strategic approach to regulate all UPF, but also to foster streamlining of policy interventions and assessment across populations, regions, and types of UPF.

INTERVENTIONS TO ADDRESS FOOD INDUSTRY INFLUENCE AND COI IN PUBLIC HEALTH POLICY

All public policies addressing health eating, no matter how strong the evidence base for their effectiveness in protect-

ing public health, have faced intense opposition from the food industry. Some implemented public policies, like tax on trans fats in Denmark, have even been withdrawn due to industry pressure (Vallgård, Holm, and Jensen 2015).

The influence of the food industry on public health policy is known as “corporate political activity” (CPA) and takes various forms. When trying to counter a new public health policy, food companies try to generate support from third parties within and outside the industry; they attempt to shape scientific evidence and information in a way that is beneficial to their products and practices; they lobby policy-makers; they provide donations to politicians and legislators; they use preemption, and other forms of direct and indirect resistance to the policy process; they challenge the adoption of public policies in court; and they intimidate and sue their opponents (or threaten to do so), who rarely have the same resources as the industry to defend themselves (Mialon, Swinburn, and Sacks 2015). Indeed, even when it comes to global governance of food systems, the food industry often has more power and influence than any other actor, in some cases even stronger than nation states, in platforms such as the Codex Alimentarius, the recent UN Food Systems Summit (Canfield, Anderson, and McMichael 2021; Crosbie, Carriedo, and Schmidt 2022), and the Food and Agriculture Organization (FAO) (Naik, Faircloth, Dreger, et al. 2022). Where CPA is a process occurring between the food industry and a third party, conflicts of interest are a related, but distinctive concept, where certain “activities or relationships compromise the loyalty or independent judgment of an individual who is obligated to serve a party or perform certain roles”. A CoI for example exists when a researcher receives corporate funding. CoI therefore occurs “within” an individual or institution, posing potential bias against or for the issue in focus (Rodwin 2018).

There is an urgent need to address the CPA of the food industry, CoI, and issues of governance in the food systems for truly moving towards healthier diets (Swinburn et al. 2019). Solutions to ensure industry cannot negatively interfere with public health policies already exist and are implemented in several countries. A review of the literature (Mialon, Vandevijvere, et al. 2020) found that four main approaches could be undertaken in that sense: i) increasing transparency, especially from public institutions, on CPA and CoI; ii) monitoring CPA and CoI, and educating all sections of society on those issues, including companies’ shareholders, to then build pressure for industry to change its practices; iii) managing those issues, by setting systematic and strong rules on what can and cannot be permitted; and, iv) prohibiting by law some of the most harmful corporate practices. Countries like Brazil, Colombia, and Mexico, amongst many others have codes of conducts and policies on CoI for government officials. In Brazil, the agendas of senior government officials, such as that of the President of the Republic and Ministers, are publicly disclosed. Mexico, India, and South Africa have a law that allows citizens to ask for information on the activities of public authorities (also referred as “freedom of information” laws). Brazil and Chile both have a website dedicated to government

transparency. The above-mentioned review also describes a broad range of interventions that were implemented to try and restrict the influence of the tobacco industry on public policy, such as mandatory taxes on tobacco companies that are then used for health promotion and awareness raising activities for government officials.

U.S. POLICY SPACE

Some public policies on industry interference and CoI already exist in the U.S. (Mialon, Vandevijvere, et al. 2020). The use of the “revolving door” is somewhat regulated, where an employee from the government has a cooling-off period before she can work in the industry she formerly oversaw. There are some limited measures in place about transparency of politicians, with lobbying disclosures for the House of Representatives, and disclosures of the submissions made to public consultations from federal agencies such as the FDA. Companies with publicly held securities have to disclose their annual reports through the U.S. Security and Commission Exchange (SEC), published on an online database, although these only offer a high-level snapshot of their global business, and not a comprehensive insight into their CPA, including food policy-focused efforts. Moreover, a majority of food industry actors are global in nature, and lobbying disclosures are not required for them to transparently report their lobbying and other CPA practices for all the markets they operate in.

LIMITATIONS OF EXISTING INTERVENTIONS AND WAY FORWARD FOR THE U.S.

Most of the examples described above are not yet systematically applied to the food industry in any country. Few evaluations of these interventions have been conducted, so little is known about their effectiveness in addressing CPA and CoI. Beyond those specific restrictions on CPA and CoI, counteractions from public health advocates, and a more meaningful engagement and organizing of citizens, in particular peasants, indigenous, young, BIPOC, women, and other marginalized groups is essential to demand policy safeguards and transparency (Maani, Petticrew, and Galea 2023). Globally, civil society action continues to advance demands for CoI measures across diverse fora where the food industry engagement has been rampant and risking compromising public policy outcomes (Harris et al. 2022). Civil society organizations have also called for a comprehensive legal framework for corporate accountability in food governance, critiquing the FAO (United Nations Food and Agriculture Organization) strategy for engagement with corporations (Dorado et al. 2021).

In the U.S., the “Retire Ronald” campaign launched by civil society groups, such as Corporate Accountability, pressured McDonald’s to phase out the use of the clown mascot it had used since 1963 to market its products to children (Corporate Accountability 2017; Kandell 2020). Coca-Cola terminated its membership in the industry front group ILSI, after nearly four decades following a public campaign demanding this (Corporate Accountability 2021). In recent years, shareholder resolutions demanding corporations like

Coca-Cola, PepsiCo, and McDonald’s undertake third-party audits of their products marketed to children and youth, as well as disclose their CPA in all countries where they operate, are gaining support (Corporate Accountability 2022; Vittorio 2019).

DISCUSSION

In this document, we discuss existing and needed public policies for promoting healthy diets. Several countries have now adopted a FoPL system, restrictions on marketing and other measures to protect children and youth, SSB taxation, and other fiscal measures. While generally beneficial, these public policies are based on what we believe is an outdated profiling model for foods, which we have argued should rather be based on markers of ultra-processing rather than on nutrients, given that there is ample evidence that it is the consumption of UPF that is leading to ill-health. This approach may be critical in preventing or at least limiting the food industry from exploiting new public policies and expanding UPF markets (Northcott et al. 2023). Additionally, the resources required to manufacture UPF is not only exacerbating environmental pollution and destruction of biodiverse ecosystems, but also drastically contributing to the climate crisis, with the current industrialized food system responsible for nearly a third of all anthropogenic greenhouse gas emissions (Fardet and Rock 2020; Seferidi et al. 2020). With the climate crisis now being considered one of the major threats to public health, the implications of UPF on human wellbeing are myriad and multidimensional (American Medical Association 2022).

In most cases, the introduction and even the implementation of public health policies discussed in this paper were obstructed by the UPF industry, principally through its trade associations and front groups, representing both global and local manufacturers. Although, there are examples of countries which have adopted measures to try and mitigate that influence of this industry, these challenges will likely continue, and thus the need for stronger public policies to safeguard public interest from interference by the industry.

There is still a long way to go before the U.S. aligns with these public policies already in progress in some other nations, but especially in the Global South. The examples we described above, and many more, are collated in several policy databases, and could readily be adopted and adapted in the U.S. context. Scientific inquiries measuring the impacts, efficacy, limitations, and opportunities related to such public policies are also publicly accessible, as mentioned earlier. There is also evidence that for effectively protecting and equitably improving population health, those public policies should be national in scope, mandatory, and comprehensive enough to cover all UPF, all media, all settings where children and youth are targeted by marketing, all CPA practices, and all CoI situations.

Of the 10 largest food corporations in the world, five are headquartered in the U.S., with deep influence on public policy (Sorvino 2022). Additionally, a handful of powerful companies control almost 80% of market for hundreds of

grocery items consumed by Americans, also dominating every step of the supply chain, from seeds and fertilizers, to slaughterhouses and supermarkets (Lakhani, Uteuova, and Chang 2021). These food industry actors thus have a strong influence on food politics and the public discourse on food in the country. The U.S. Department of Agriculture partners with companies such as PepsiCo, Bayer, and Coca-Cola (USDA 2020, 2021). Preemption, as discussed earlier, also explains why certain public policies, even if adopted locally, cannot then diffuse to other jurisdictions. A recent study also documented the CoI prevalent in the U.S. Dietary Guidelines Advisory Committee (DGAC), the key scientific body that provides recommendations for the cornerstone of U.S. nutrition policies, the U.S. Dietary Guidelines for Americans (Mialon, Serodio, et al. 2022). From the 20 members of the DGAC, 95% had CoI with food and/or pharmaceutical companies, or the front group ILSI. Health professionals also have close relationships with the food industry, such as is seen in the case of Academy of Nutrition and Dietetics, the largest organization of food and nutrition professionals, taking significant funds from UPF companies, which may lead to bias in the adoption of national food and public health policies in the U.S. (Carriedo et al. 2022). These factors may explain why most of the public policies we have described in our paper are not yet adopted in the U.S., underscoring the need to investigate these topics in more depth for public interest.

In conclusion, this paper offers a macro view on what noteworthy efforts have advanced on this front, how they have been challenged, and how some have triumphed despite all odds. The aim is also to urge decision makers, health professionals, the public, and others, to expand their

policy lens to focus not just on, *what* is in food products, but also how these foods are made. It is also pressing to introduce, in the U.S. and elsewhere, stronger initiatives to curb the production and sales of UPF and protect and promote healthy diets, especially including mechanisms to hold corporations liable for the effects their business practices and products continue to have on people's health and that of the planet.

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The authors have no conflict to declare.

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