



An Overview of the Ethics of Eating and Drinking

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Abstract

Eating and drinking are ethical acts. When we make decisions about what to eat and what not to, we are making decisions that impact our own health, the well-being of those who work in the food system, animal welfare, and the environment. Food ethics is the interdisciplinary study of how what we eat – including the way it is produced, distributed, marketed, prepared, and ultimately consumed – impacts human, animal, and planetary health and well-being. Food

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ethics also analyses the justice or fairness of these impacts. Food ethics raises many difficult questions that do not always have clear or easy answers, such as how do we produce enough food to feed everyone well and equitably; how do we ensure that everyone has access to high-quality, nutritious food that is culturally appropriate; how do we do this in a way that treats workers fairly and respectfully, is considerate of animal welfare, and is environmentally sustainable; and how do we shift power across the food system in favor of the public good over multinational food companies. This chapter will explore these questions and more, hopefully encouraging thoughtful discussions and potential solutions for the future.

Keywords

Food ethics · Food security and nutrition · Animal welfare · Environmental sustainability

A Grand Global Challenge: Ensuring Food Security and Nutrition for Everyone

The Burden of Food Insecurity and Malnutrition

One of the great challenges of modern times is how to ensure everyone has access to plentiful, safe, and nutritious food and beverages that are produced in an equitable and environmentally sustainable manner. Every human being has the right to adequate, safe, and nutritious food. The realization of this right is not being realized in most countries and cannot be achieved without equitable, sustainable, thriving food systems that provide the food and nutrition security for our world's population now and into the future.

World hunger is on the rise, after 15 years of decline, due to perpetual poverty, conflict, and climate change-related disasters (FAO et al. 2018). Additionally, malnutrition in all its forms in children and obesity in adults are still problems (Initiatives 2018). Every country is affected by malnutrition in at least one form, whether it be undernutrition, micronutrient deficiencies, or obesity and 88% struggle with multiple forms (Initiatives 2018).

What People Are Eating

Food systems provide the food and beverages that make up diets around the world. The ideal diet is one that is safe, healthy, rich in nutrients and energy, affordable and accessible, and culturally appropriate. However, the ideal is not the norm. While malnutrition is multifaceted and multifactorial, one significant contributor is suboptimal dietary patterns.

Data from the Global Burden of Disease study shows that suboptimal diets are now a major risk factor for disease, disability, and death (Afshin et al. 2019), surpassing both tobacco and high blood pressure (Swinburn et al. 2019). Historically, most diet-related disease and death stemmed from communicable diseases and diets insufficient in calories and nutrients; however, now most of the mortality in the world is in the form of noncommunicable diseases such as heart disease, stroke, cancer, and diabetes (Afshin et al. 2019; Initiatives 2018). Suboptimal diets tend to be low in vegetables, fruits, whole grains, and seafood and fish high in omega-3 fatty acids and high in red and processed meat, packaged foods, and sugar-sweetened beverages (SSBs) (GBD Collaborators et al. 2015; Afshin et al. 2019).

Shifting Diets

With the decline in global poverty and increasing urbanization over the last few decades, dietary patterns have shifted significantly across the world (Ivanic and Martin 2018). On the positive side, vegetable, fruit, and animal source food (ASF) consumption has increased, whereas intake of trans fats has declined in all regions. On the negative side, processed meat consumption increased in all regions of the world. SSB and packaged food consumption also increased in most regions. While there is variation in regional trends, sodium intake is significantly higher than the recommended amount in all regions of the world (Glopan 2016; Initiatives 2018). People are also cooking less and eating away from home more due to lifestyle changes (Kearney 2010). In Latin America, for example, food eaten away from home has been steadily rising across several countries including Mexico and Brazil (Popkin and Reardon 2018).

A country's economic status does not necessarily indicate a population consumes healthy diets. Independent of wealth status, all countries consume too few vegetables and fruit, too many SSBs, and too much sodium. In high-income countries, populations are also consuming significant red and processed meat and trans fatty acids, which do not align with a healthy diet (Willett et al. 2019; Initiatives 2018).

What Constitutes an Ethical Issue for Eating and Drinking?

Exceptional Facets of Eating and Drinking

Eating is an ethical act. By choosing what we eat and drink, we are making decisions beyond our immediate survival and needs and participating in something much grander. Food and beverages are rooted in the history of humanity and development and are integral to our values, traditions, cultures, religions, and everyday situations that make up our societies. What we choose or choose not to eat and drink defines

who we are and who we aspire to become. These choices are often intertwined with our beliefs and values, our physiological drive toward certain foods and drinks, and our relationship to the origins of food.

Humanity is realizing that decisions about what food we eat can dictate or be dictated by food systems and even beyond the food system – to planetary, economic, and social systems. “Perhaps the main reason nutrition has thrust planetary health into public consciousness is the role of food in culture. Food is essential to life, and diet and culture form the very fabric of life” (The Lancet Planetary Health 2019).

Defining Food Ethics

Food ethics is a field of study that examines the ethics of human conduct in the production, processing and packaging, distribution, preparation, and consumption of food. It looks at the reasons and rationales of the entirety of the food system – from production to consumption and the societal significance of food in the larger global architecture of development. For non-philosophers, food ethics raises issues of food and social justice, food sovereignty, and sustainability that involve many actors including governments, food and beverage industries, food system actors and producers, and, of course, consumers and citizens (Thompson 2015).

Considering the Ethical Issues of Eating and Drinking

The Many Ethical Issues of Eating and Drinking

There are many ethical issues with regard to eating and drinking. A significant number of ethical issues involve equity: equity of access, knowledge, and demand. In relation to food security and nutrition, there are significant inequities, including who has access to high-quality nutrients that provide for optimal human health. Additionally, not everyone has equal access to knowledge and “know-how” of what is healthy and what is sustainable. And who has the right to provide that knowledge? Consumers and food system actors have prejudices and expectations that impact both the demand and supply of food and the relationship between the two. Some have a louder voice than others.

What are the health, societal, and environmental consequences of various eating habits and the food systems in which food is produced? What ethical obligations, if any, does society have in consuming certain foods and beverages that make up our collective dietary patterns? How are our individual and societal decisions about what to eat expressive of cultural, religious, aesthetic, and moral values? Do the answers to these questions generate moral obligations to adopt, or to abandon, particular eating habits? This overview will examine some of the most immediate ethical issues and constraints that face our global population when it comes to the foods produced, moved, and ultimately consumed around the world.

The Growing of Foods: Environmental Sustainability and Animal Welfare

Introduction

One of the world's greatest challenges is ensuring our growing population has enough healthy food without overstepping the boundaries of what our planet can endure. Meeting this challenge requires a deeper understanding of the health, environmental, and ethical issues associated with food production and consumption.

Human Health

As countries accumulate wealth, populations often shift from plant-based diets rich in vegetables, fruit, and legumes to ASFs and highly refined foods (Hawkes and Popkin 2015; Popkin et al. 2012).

There are profound inequities, both globally and within countries, with respect to access to and affordability of nutritious, perishable foods because of their cost and availability through functioning supply chains (FAO 2014). One example of this inequity is the consumption of ASFs. Although many countries are shifting from plant-based diets to more ASFs (Keats and Wiggins 2014; Zeisel and da Costa 2009), access to ASFs among the poorest remains limited in both availability and affordability. This limitation can affect health because some ASFs provide nutrients that are more difficult to obtain in adequate quantities from plant-source foods alone (Black et al. 2013; Dewey and Adu-Afarwuah 2008). Deficiencies of these nutrients lead to serious health impacts, including anemia, blindness, and stunting. In contrast, over-consumption of red and processed meats contributes to increased risk of obesity and chronic diseases such as heart disease and colorectal cancer (You and Henneberg 2016; Bouvard et al. 2015). The benefits of ASF consumption are nuanced: for nutritionally vulnerable populations, ASFs can provide essential nutrients that are otherwise hard to obtain, but for others, consumption of these foods needs to be limited to mitigate the risk of chronic disease.

Environmental Sustainability

Animal production systems and practices can create substantial negative environmental impacts because of greenhouse gas emissions (GHGe) and other air pollutants, contamination of surface and groundwater, conversion of land (usually forested) for grazing, and degradation of ecosystem services. These impacts arise directly from the animals (e.g., wastes) and indirectly from the production of animal fodder (e.g., clearing land for feed or pasture). In many agricultural landscapes; however, animals are positively valued as investments, sources of fertilizer and energy, and important contributors to ecosystem services.

In an interconnected, globalized food system, balancing climate and environmental stewardship, as well as fostering human and animal health, is a significant challenge. It requires concerted efforts to reduce consumption of ASFs in high-income countries, encourage moderate consumption in growing economies, and increase access to ASFs for the poorest and most nutritionally vulnerable populations.

Animal Welfare

Animal welfare is how an animal is coping with the conditions in which it lives and is cared for. An animal is considered to be in a state of good welfare if it is safe from harm; healthy; well nourished; comfortable; not suffering from unpleasant states such as pain, fear, and distress; and able to express innate, natural behavior. Proper animal welfare requires disease prevention and veterinary treatment, nutrition, appropriate shelter, management, humane handling, and humane slaughtering. Indicators of poor welfare include impaired growth and reproduction, bodily harm or damage, increased disease and immunosuppression, and reduced life expectancy (Broom 1991).

The industrial revolution brought changes in the way animals were viewed, relying on them more heavily for consumption. Now, many of the animals consumed globally are raised in concentrated animal feed operations (CAFOs) or on large-scale factory farms, in which animal welfare principles are considered only for industrial production purposes and for food safety for humans (Armstrong 2016). Many of the factory farms put animals in a more “unnatural state” than their wild predecessors would be exposed to or behave like.

Ethical Issues

There are major concerns with the expansion of industrialized animal systems and demands for meat (Willett et al. 2019; Nierenberg 2018; World Resources Institute 2018). Additionally, food systems are designed for efficiency, not animal welfare, amplifying concerns. This efficiency has environmental impacts as well as impacts on human and animal health. Antibiotics are used to reduce infections usually from underlying care issues of sanitation or overcrowding in factory farm animal systems. Agriculture uses about 70 or 80% of the antibiotics sold in the USA alone. There is a growing concern of increased antibiotic resistance now and into the future (IACG on Antimicrobial Resistance 2019).

If certain resource-intensive foods are considered critically important for human health, then their distribution and access must be equitable – and any existing imbalances need to be addressed. There are also low-resource alternatives that should be considered to fill nutrient gaps for all countries. These foods, such as farmed fish, mollusks, insects, and protein-rich plant food, may be less popular but can make significant contributions to nutrition while leaving a smaller footprint on the planet.

The dietary choices of people in high-income countries have significant ramifications for less wealthy populations. The energy-intensive lifestyles and diets of those who can afford them are significant anthropogenic contributors to climate change. However, economically poor households are likely to experience a disproportionate burden of climate change impacts (Olsson et al. 2014). Food security among these households will most likely deteriorate under future climate scenarios, and diets could worsen along with nutritional outcomes, reversing years of progress. Those who are wealthier will suffer less, even though their choices have far-reaching consequences. Society must address the questions of justice that are central to the

increasingly globalized nature of food choices intertwined with environmental degradation.

From environmental and food security justice perspectives, addressing these ethical issues requires concerted efforts to reduce consumption of animal products in high-income countries and to discourage high consumption in growing economies with populations that are now wealthy enough to increase meat and dairy in their diets. Some have argued that a 30% reduction in production and adult consumption levels of ASFs would meet national GHGe targets and would simultaneously reduce years of life lost from heart disease by 15% (World Resources Institute 2018).

The Quality of Foods: Fresh, Organic, and Local Foods and Their Movements

Introduction

Food varies greatly in its quality, including how fresh it is as well as if it is organic or locally produced. Some of these characteristics impact how nutritious the food is, although the size of these impacts and the impact itself are sources of debate.

Freshness

While the vegetables and fruit at the grocery store may look fresh, there is a lot of variation in the length of time between when the produce was picked and when it is sold in the store. Additionally, many consumers are unaware of how old this food may be. Apples and potatoes are typically stored the longest, often stored for up to 12 months before being sold, while carrots may be stored up to 9. Additionally, produce may sit on grocery store shelves for days or weeks, especially if there is low turnover (The Guardian Staff 2003). While consumers have no control over the age of the produce at the grocery store, they can buy fresher food directly from farmers either at growers-only markets or through community-supported agriculture (CSA) shares. However, farmers markets and CSAs are not available everywhere and are often more expensive than the grocery store.

The freshness of vegetables and fruit is important because produce has the highest nutritional value right after it is picked. The largest causes of nutrient losses are heat, light, and oxygen. When produce is kept in storage between the field and the grocery store, the temperature and humidity levels are optimized for preservation, but there are still losses. One study looked at 19 vegetables and fruits and found that after 15 days in the refrigerator, many had lower levels of vitamin C and antioxidant activity. While there was a range in the levels of decrease, vitamin C decreased by over 70% in tomatoes and almost 50% in beets. For antioxidant activity, the largest decreases were over 81% in bananas and 73% in tomatoes (Galani et al. 2017).

Organic

Organic food has expanded dramatically over the past decade (United States Department of Agriculture 2017). One of the main benefits of organic food is that it is grown without, or with fewer, synthetic pesticides. While organic farmers can still

use natural pesticides as well as a handful of synthetic ones, they generally use much less. Consequently, organic vegetables and fruits have less pesticide residues. The USDA Pesticide Residue Monitoring Program inspects produce for pesticides and found that organic produce had an average of 0.8 pesticide residues, while conventional produce had 3.2 (United States Department of Agriculture 2016). One review of 343 studies found that organic produce had 4 times less pesticide residues as well as much lower concentrations of the toxic metal cadmium (Barański et al. 2014).

While there is a consensus that organic food has less pesticide residues, the studies on nutritional value are less clear. One difficulty is that vegetables and fruits can have vastly different nutritional values even when grown in the same way. Comparing produce that is grown in different places and at different times, as well as with different practices, is very difficult. Despite these difficulties, researchers have repeatedly tried to confirm or deny that organic produce has more nutrients. One review of 55 studies and another of 223 studies found that organic produce does not have any significant nutritional benefits (Dangour et al. 2009; Smith-Spangler et al. 2012). However, a later review of 343 studies found that organic produce does have more nutrients. This review confirmed some of the earlier results, such as that organic and conventional produce had similar levels of vitamin C and E and many minerals. However, this review found that organic vegetables and fruits had between 19% and 69% higher antioxidant activity (Barański et al. 2014). Another study comparing the same crops in adjacent fields found that organic tomatoes had 79% and 97% more flavonoids compared to the neighboring conventional tomatoes (Mitchell et al. 2007). Another review of 170 studies found organic milk had a significantly better fatty acid profile with 7% higher PUFA and 56% higher n-3 PUFA (Średnicka-Tober et al. 2016a). Another review of 67 studies found that organic meat also had a better fatty acid profile with 23% higher PUFA and 47% higher n-3 PUFA (Średnicka-Tober et al. 2016b).

What all of this means for people's health is even less clear. While the USDA and Environmental Protection Agency (EPA) claim that the pesticide residues found on produce are completely safe, others disagree. There are questions about how pesticides with similar mechanisms of action may add to the effects of one another, potentially even with synergistic effects. There are also questions about cumulative exposure over the life span (Boobis et al. 2008). Eating organic foods is associated with lower pesticide exposure. One study looking at urinary pesticide levels found that children and adults who ate organic food for 6 days had significantly lower pesticide levels in their urine (Hyland et al. 2019). One study found that organic diets were associated with reduced risk of cancer (Baudry et al. 2018), but overall the clinical benefits of eating organic foods are unclear (Smith-Spangler et al. 2012).

Organic farming also has other benefits, such as reducing the pesticide exposure for farm workers and those living in the surrounding areas. Organic farmers often grow more crops and varieties, increasing biodiversity. Organic farmers may, but not always, have more sustainable practices. They often enrich the soil with compost, nitrogen-fixing crops, cover crops, and crop rotation and may use no-till practices.

This results in more biodiversity, richer soil and less erosion, and less water and air pollution.

Local

There has been a recent call to “eat local,” and many people are increasingly trying to buy food that was grown and produced locally. Both individuals and organizations, such as schools, are sourcing more of their food from local farmers. The number of schools using local food in their cafeterias was 2,095 in 2009 compared to 400 in 2004 and only 2 in 1996. While there is no precise definition for what the distance should be for food to be considered local, the Food, Conservation, and Energy Act of 2008 limited it to 400 miles, and this was later adopted by the USDA. Most people buy local food from farmers markets and CSAs, both of which are increasing. There were 5,274 farmers markets in 2009 compared to 2,756 in 1998, and there were 1,144 CSAs in 2005 compared to 400 in 2001 and only 2 in 1986. Today there are even more of both throughout the country (Martinez et al. 2010).

Local food has several advantages. One of which is the ability to get fresher produce that has higher nutritional quality. It supports local farmers, increasing the resilience of the local food system and local economies, making communities more self-reliant. Additionally, many people buy local produce from smaller farms with more sustainable environmental practices. However, local food is not always more sustainable. While local food does travel fewer miles, this does not always result in less GHGe as it is usually transported in much smaller volumes and via less efficient transportation methods. Additionally, food miles are one of the smallest sources of GHGe in the food system. Local food is also more expensive and more difficult to access.

Ethical Issues

While fresh, organic, and local food have benefits for human and planetary health, they are not accessible to everyone. Some communities do not have any grocery stores, let alone ones that sell organic produce or a farmers market. Additionally, organic produce is much more expensive than conventional, often 20 to 100% more (Martin and Severson 2008), and not everyone can afford to eat all, or even some, organic food. It is ethically unacceptable that only those who can afford to buy organic can get the added health benefits and avoid pesticide exposure. It is unacceptable that the true cost of food, including the health and environmental impacts, is not reflected in prices but instead is born by the poorest and most marginalized.

The Distribution of Foods: Availability and Access

Introduction

Food security is when all people have physical, economic, and social access to safe, sufficient, and nutritious food at all times to meet their physical needs for a healthy

life. Two critical components of food security are food availability and access. When people do not have access to healthy foods, they may be at increased risk of being overweight as well as for diet-related diseases such as diabetes, cardiovascular disease, and some cancers. Alternatively, people can be at increased risk of being undernourished (Feng et al. 2010; Holsten 2009; Glanz et al. 2005).

Food Availability and Access

Food availability is when there is enough food for all people on a consistent basis. This depends on food production and reserves. However, this does not ensure food security for communities or individuals. Food security also requires access, or when all people have enough resources to acquire food. This depends on availability but also on physical and economic access. Food distribution, or where food is located, the built environment, and people's mobility, access to transportation, and time determine physical access. How much food costs and how much money people have to spend on food determine economic access to diets (Powell et al. 2013).

Cost of Food and Food Prices

The cost of food disproportionately impacts the poor because they spend a higher proportion of their income on food, with poor households in low-income countries spending 50 to 80% of their household budget on food (FAO 2011).

Evidence, mainly from high-income countries, indicates that healthier diets tend to be more expensive, with healthier diets costing about USD 1.50 more per day (Rao et al. 2013; Drewnowski and Specter 2004; Drewnowski 2004). Additionally, healthier diets are more expensive per calorie than diets with lower nutritional quality (Darmon and Drewnowski 2015). Vegetables and fruits are especially prohibitively expensive for many (Miller et al. 2016; Teo et al. 2013). Globally, the price of a basic diet, which only meets caloric needs, often exceeds daily wages. Therefore, many can only afford the least healthy food – low in nutrient density and high in sodium, sugar, and unhealthy fats (Aggarwal et al. 2012). Unfortunately, daily consumption of these low-quality, high-energy diets increases the risk of obesity and the chronic, noncommunicable diseases associated with being overweight.

As incomes increase, it is projected that three billion more people will enter the global middle class by 2030. Dietary data analyzed from 187 countries found that higher incomes are associated not only with higher consumption of healthy foods but also with a substantially increased consumption of unhealthy food items, indicating that the links between socioeconomic status and diet quality are complex (Imamura et al. 2015). As incomes increase, diets will continue to shift from those centered on traditional staples, coarse grains, and roots and tubers to more diverse diets (Alexandratos and Bruinsma 2012; Kearney 2010). This is and will continue to generate increased demand for ASFs; processed, packaged foods; and take-away foods (Glopan 2016; Ranganathan et al. 2016; Drewnowski and Popkin 1997). High-income countries such as the USA already have high demands for ASFs. Countries such as China and Brazil have seen increases in income and concomitant increased demand for animal protein (Tilman and Clark 2014). Future modeling

across different shared socioeconomic pathways shows that global food demand will increase by 47% by 2050. Demand for ASFs will double, with a slowing demand for starchy staples (Gouel and Guimbard 2019). In some areas, there is also a growing demand for healthier foods with fewer unhealthy fats, less sugar and salt, and fewer additives.

Food Environments: Food Deserts and Food Swamps

The food environment is the physical environment, political and cultural context, and the economic conditions in which people acquire and consume food. This includes food outlets where people buy food; the built environment that allows people to access these outlets; food promotion and advertising; people's incomes, educations, and values; as well as society's political and cultural norms.

The term food desert has been used to describe both urban and rural communities with few healthy food options. These communities may not have any places to buy fresh produce, and any produce that is available may be wilted and discolored. These communities may not have any grocery stores, and the nearest ones may be miles away. Additionally, people may not have access to personal vehicles or effective public transportation to get there. The term food swamp has been used to describe communities with many unhealthy food options such as corner stores, carry outs, and fast-food restaurants. These outlets sell processed foods high in sugar, salt, and trans and saturated fats. Food swamps have been found to have a greater impact on obesity than food deserts (Cooksey-Stowers et al. 2017). Many food justice activists prefer the term food apartheid over food desert or swamp as these terms describe natural environments, not human-made ones. Additionally, these terms do not describe the structural factors, such as racism, that have created these food environments.

Ethical Issues

There are many ethical issues in how food is distributed. Often there is enough food, but it is not equitably distributed, leaving many people hungry or without healthy food options. It is unacceptable for people to go hungry or suffer from disproportionate rates of noncommunicable diseases solely because of where they live. Additionally, these issues were created and are still perpetuated by structural factors such as racism and economic injustice.

The Use of Foods: Knowledge, Culture, and Food Waste

Introduction

With urbanization, rising incomes, changing lifestyles, and social media, many consumers are getting more and more information about the links between diet and health, contributing to shifts in dietary patterns. However, consumers are often not fully informed about how the food system works, what constitutes a healthy diet, and what is sustainable or, more broadly, ethical.

Awareness, Knowledge, and Culinary Literacy

The increasing complexity of food production and lengthy food supply chains has placed greater burdens on consumers. Many consumers are inundated with media articles about the health of our diets and the food system. Deciphering the science and the “latest findings” is a challenge. While some messaging on nutrition, such as eating more vegetables and fruit and less salt, has been consistent and is more widely understood, other advice about what is considered a healthy, sustainable diet is more complicated and often contradictory. Cryptic and diverging information about health and nutrition has left many consumers confused as to what makes up a healthy diet and what foods are sustainable and ethical (Kraemer et al. 2016).

By providing information and skills to consumers and then allowing them to make their own choices, consumer demand shifts are possible (Keats and Wiggins 2014). This shift can then influence food supply and broader systemic and environmental changes. Increasing consumer demand for healthier foods with fewer unhealthy fats, less sugar and salt, and fewer additives has impacted food producers. Educating consumers about where food comes from and enhancing the public’s awareness and knowledge of what is considered a healthy diet may also have long-term benefits in maintaining consumer confidence. Food labelling, health statistics on menus, dietary guidelines, nutrition literacy programs, and cooking classes can increase consumer education and knowledge (Hawkes et al. 2015; Afshin et al. 2017). Furthermore, price incentives for healthy foods, health-related food taxes and subsidies, and stricter regulation of junk food advertising provide some policy options to help make consumer choices more geared toward those that are more healthy (Hagmann et al. 2018).

Culture and Tradition

Culture is inherent in *agriculture*. Food comes from the land and is grown from the knowledge, traditions, and norms of the people who cultivate that land. Therefore, food can be a powerful lens to preserve social traditions and norms, in both positive and negative ways. The types of foods we consume, the ways in which we prepare and cook meals, and the way we eat those meals are the foundations of many traditions around the world that embody cultures and what we value. Food systems, and the people and institutions that engage with them, are consistently shaping and being shaped by social norms, our culture, and historic traditions (Counihan and Van Esterik 2012).

Food choices can be deeply personal and often hinge on our sense of identity, ideals and aspirations, and habits. Food itself is central to our sense of identity, often being shaped by the geography, hierarchy, and diversity of a certain culture. Everyday events, special occasions, and celebrations influence food consumption, often calling for special foods.

Yet, the food environment around us is altering how we access, prepare, and consume food, including the ever-growing influence of supermarkets as well as restaurants, bodegas and corner stores, small kiosks, and vending machines. Social media is also now shaping desires, competition, and food choices. While some of the

world still purchases from local, informal markets, food is increasingly being purchased in larger markets and has traveled longer distances, sometimes from distant parts of the world. These purchasing patterns have been influenced by rapid urbanization, income growth, and expansion of modern food processors, distributors, and retailers (Gómez and Ricketts 2013; Lu and Reardon 2018).

Food Waste

Approximately one-third of the food produced for human consumption is lost at the farm gate or wasted at the retail and consumer levels – of the roughly 4 billion tons of food produced each year, approximately 1.2 to 2 tons are wasted. This costs society USD 750 billion per year (Gustavsson et al. 2011). How food is wasted depends on the region and country. In Europe and North America, most of the food that is wasted is in the hands of retailers and consumers (Willett et al. 2019). In sub-Saharan Africa and South and Southeast Asia, more food is lost on farms with significant spoilage of fruits, vegetables, root crops, and some ASFs. Wasting food wastes resources; wasting 1.4 billion hectares of land and 250 km³ of blue water to produce uneaten food (Willett et al. 2019). The global food waste also amounts to 3.3 gigatons of CO₂ equivalents. Wasting food also wastes nutrients. A recent study found that lost food, particularly fruits and vegetables, in the USA contains significant amounts of key nutrients that could help people meet their daily recommended intakes (Neff et al. 2015).

Ethical Issues

When we think about how to nourish the world in an equitable, safe, and healthy way, one often hears the argument that we just need to produce more food and largely that has been the paradigm. However, there is an alternative argument, one that involves a more equitable distribution of wealth, income, and available food. It is key to ensure that everyone has enough food that is culturally appropriate while also wasting less food. Additionally, it is also imperative for consumers to understand what they are eating, where their food comes from, and the potential impacts food has on health, the environment, and other concerns such as labor practices and animal welfare. The autonomy to choose foods is helped or hindered by knowledge, information, culture, and tradition.

The Regulation of Foods: Public Health Policy Options

Introduction

Food policy is the area of public policy concerning how food is produced, processed, distributed, marketed, and purchased. The policies of governments largely determine what is available and accessible to eat (Institute of Medicine and National Research Council 2015). Ideally, these policies would help ensure that all people have access to safe, healthy, affordable food; protect air, water, and land; support farmers and workers; and uphold rigorous standards for animal welfare. Despite shortcomings in these policies, there are opportunities for change (HLPE 2017).

Increasing Unhealthy Food Prices Through Taxes

Making unhealthy foods more expensive and nutritious foods cheaper may be one way to influence consumers' behavior and subsequent food intake (Thow et al. 2014; Eyles et al. 2012). There is strong evidence that taxes and subsidies are effective tools for changing dietary intakes. Studies showed SSB consumption can be reduced between 20 and 50% through taxation, while the consumption of subsidized vegetables and fruits can increase between 10 and 30% (Thow et al. 2014).

One argument against food taxes is they impose a larger burden on the poor than on the rich. Adding food subsidies to taxes could help alleviate this potential regressivity and enable consumers to switch to more healthy foods without incurring additional costs (Thow et al. 2010). Imposing substantial taxes on fattening foods may improve health outcomes such as overweight, obesity, and chronic diseases (Thow et al. 2010).

Improving Food Labelling

Nutrition labelling, usually on the back of packages (BOP), has been commonplace in many countries for several decades. It aims to provide consumers with information about the nutrient content of a given food. The Codex Alimentarius Commission, established by the United Nations, has developed standards for nutrition guidelines on food products. These labels require some degree of nutritional literacy, are context dependent, and are difficult to interpret for many people. For this reason, there have been recent moves to adopt easy-to-interpret labels (e.g., traffic light, star ratings, etc.) on the front-of-the pack (FOP) or on store shelves. It is believed that labels of this type would be easier for consumers to interpret and may lead to better food choices. Consumers can more easily interpret graphic FOP labels that incorporate colors, symbols, and text to indicate nutrition or health compared to labels that only emphasize numeric information, such as daily recommended amounts expressed as grams and/or percentages (Hersey et al. 2013).

Although many countries have adopted both FOP and BOP information on energy and specific nutrients since the development of the CODEX guidelines, there is limited evidence to indicate that these labels have influenced consumer comprehension or purchasing decisions (Mandle et al. 2015).

Dietary Guidelines

“Food-based dietary guidelines (FBDG) are an attempt to translate a vast (and always incomplete) evidence base regarding relations between foods, diet patterns, and health into specific, culturally appropriate, and actionable recommendations. Such guidelines are intended to influence consumer behavior and, in some countries, also inform a range of national food, nutrition, and health policies and programs” (Herforth et al. 2019).

While dietary guidelines may help people make healthier choices about food, they also serve other purposes. First, guidelines can provide a unified voice to the public on where the government stands on the latest dietary advice in the context of health promotion and disease prevention. Second, they serve as the foundation for

food and nutrition policies and programs that are instituted within a country and impact budgetary allocations for these programs such as school lunches and food safety net programs. Third, the food and beverage industry often responds to changes proposed in dietary guidelines by reformulating products and answering to consumer demands (Afshin et al. 2017; Mozaffarian 2016; Mozaffarian and Ludwig 2010).

FBDG are available in 90 countries globally: 7 in Africa, 17 in Asia and the Pacific, 33 in Europe, 27 in Latin America and the Caribbean, 4 in the Near East, and 2 in North America (Herforth et al. 2017, 2019). These guidelines also often have universal recommendations across countries such as to consume a variety of foods; to consume fruits and vegetables, legumes, and ASFs; and to limit salt, sugar, and fat. However, very few guidelines address environmental factors such as GHGe and water pollution (Fischer and Garnett 2016) or sociocultural factors such as labor conditions in their recommendations (Herforth et al. 2019).

Regulating Unhealthy Food Marketing

Promotions, marketing, and advertising influence consumer decisions on what foods to purchase and consume. There are many techniques to market and advertise foods that influence consumer behavior, including social media, print and television advertising, in-school marketing, toys and products with brand logos, packaging, and product placements (Story and French 2004).

Marketing and advertising influence consumer preferences and increase consumer demand for certain food products. Marketing to children is especially problematic. While children are influenced by their parents or caregivers' dietary habits, they are also susceptible to outside influences such as food marketing and advertising and; therefore, require special protection. There have been steps taken over the past decade to reduce marketing to children, most notably with the WHO recommendations on marketing of foods and nonalcoholic beverages to children, endorsed by the World Health Assembly in 2010. However, stronger actions are needed, including regulatory approaches by governments to restrict and ban these types of marketing practices (Kraak et al. 2016).

Governments have a responsibility to intervene and regulate such as by banning unhealthy food promotions and marketing or other methods targeting children (Harris and Graff 2011; Harris et al. 2009). With regard to advertising junk food to children, various types of legislation should be considered to put strict measures in place to protect children and assist parents and caregivers in promoting healthy eating at the household level. Education of parents and caregivers on good child feeding practices can also impact food-purchasing behavior. Governments are also justified in intervening in schools to promote healthier approaches to eating and physical activity and ban companies from sponsoring sports programming in order to protect children.

Additionally, actions are needed to protect mothers and infants from infant formula marketing. Barennes et al. (2016) suggest measures such as large-scale education campaigns, exclusion of the formula industry from nutrition education and policy roles, and strong penalties for violations of the International Code of Marketing of Breast-milk Substitutes (Barennes et al. 2016). The International Code

of Marketing of Breast-milk Substitutes needs to be strictly enforced through international legislative enforcement and accountability mechanisms.

Ethical Issues

Governments face intrinsic tensions in their efforts to implement innovative policies to incentivize the production and consumption of healthy foods (Thow and McGrady 2014). At the same time, food and beverage companies see marketing and advertising, product placements, pricing policies, and packaging as a response to consumer demand. This view puts the responsibility solely on the consumer to make the “right” choice. However, the present balance of power is highly in favor of multinational food and beverage corporations, and greater efforts must be made to create healthier food environments for consumers (Baker and Friel 2014; Malik et al. 2013; Monteiro et al. 2013; Monteiro and Cannon 2012).

Governments can use fiscal instruments, such as taxes on SSBs and unhealthy junk foods, and regulatory mechanisms, such as bans on marketing to children, to support healthier diets and hold the food industry accountable. However, that is often met with calls of “nanny state” influence. Social movements and civil society organizations (CSOs) can act to rebalance the power across the food system in the public interest. According to Swinburn et al. (2015), “power and accountability structures need to be aligned in such a way that governments and civil society, acting on behalf of public interest, outweigh the interests of the private sector” (Swinburn et al. 2015).

Conclusion

This chapter presents the potential and defined ethical issues that encompass the food and beverages that the world’s population consumes from the global food system. In many cases, there are no right or wrong answers; however, each issue is enveloped by moral decisions that must be made and often create conflicting views on how to move forward for a food secure and just world. Without more thoughtful debate about the ways forward on the ethics of food security and nutrition and how it fits into our globalized food system, inequities will remain. It is our hope that this chapter outlines some of these issues and stimulates productive discussions and potential solutions for the future.

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