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Ethical issues for human nutrition in the context of global food security and sustainable development

Jessica Fanzo

The Berman Institute of Bioethics, The Nitze School of Advanced International Studies, Johns Hopkins University, Washington DC 20036, United States

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ABSTRACT

One of the great dilemmas of our time is how we will secure and provide plentiful, healthy and nutritious food for all, do so in an environmentally sustainable and safe manner, while addressing the multiple burdens of undernutrition, overweight and obesity and micronutrient deficiencies. The food security directive focuses predominantly on ensuring the world is producing and consuming enough calories in bulk to reduce hunger and safeguard survival, as opposed to a goal that includes nutrition for well-being and development. To advance the dialogue, it is necessary to consider the ethical questions that swirl around integrating nutrition into the food security paradigm. The health, environmental, economic, and societal costs will be substantial if we do not change our course of action when it comes to feeding the world. Yet solving this problem is riddled with ethical and moral implications. Key ethical issues to consider include how to make societal decisions and define values about food security that impact nutrition outcomes, and the ethical trade-offs between environmental sustainability and ensuring that individual dietary and nutritional needs are met. Such complex issues underscore the need to articulate the broader ethical landscape of the nutrition debate within global food security.

1. Introduction

1.1. Eating is an ethical act

Wendell Berry wrote, “Eating is an agricultural act” (Berry, 1990). With approximately 800 million people suffering from food insecurity, one out of every three people burdened with some form of malnutrition, and a saddled global food system, the view that “eating is also an ethical act” resonates well (FAO, 2013). Through the act of eating, we are more than just consumers. Eating often involves moral decision-making rooted within the context of cultures, traditions and social structures that impact human nutrition and health outcomes in a globalized way.

1.2. Malnutrition remains a deep challenge

Inadequate nutrition has been described as “a scourge in our world” (DFID, 2011). Not getting the right amount and type of food and nutrients, inadequate health care, and disabling environment, can lead to undernourishment and/or obesity—both of which have serious, deleterious effects on health, development, and productivity. Inadequate nutrition contributes to early deaths for mothers, infants and young children, and impaired and often irreversible physical and brain development in the young. This in turn can lead to poor health into adulthood, which affects not only individual well-being but also the social and economic development of nations (Black et al., 2013; Hoddinott et al., 2013).

We are witnessing multiple burdens of malnutrition, with some countries, communities and households suffering from combinations of undernutrition, overweight and obesity, and micronutrient deficiencies. Stunting, which reflects chronic undernutrition during the early stages of life, causes children to fail to grow to their full genetic potential, both mentally and physically (Fig. 1). Although stunting in children under five years of age has declined from 40% to 26% since 1990 (Black et al., 2013), an estimated 160 million children remain moderately or severely stunted (UNICEF, WHO, and World Bank, 2015). Wasting in children under five years of age has decreased 11% since 1990 (Black et al., 2013), but still, 50 million children suffer (UNICEF, WHO, and World Bank, 2015).

A staggering 2.1 billion people suffer from overweight and obesity globally (Ng et al., 2014) and of that an estimated 41 million children under five years of age are overweight, and two-thirds of those children reside in low- and middle-income countries (Black et al., 2013; UNICEF, WHO, and World Bank, 2015). These growing rates of overweight and obesity worldwide are linked to a rise in non-communicable diseases such as cancer, cardiovascular disease and diabetes—life-threatening conditions that are overburdening health systems (Fig. 2). Deficiencies of essential vitamins and minerals (micronutrients) continue to be widespread and have significant adverse effects on child survival and development, as well as adolescent girls and women’s health.

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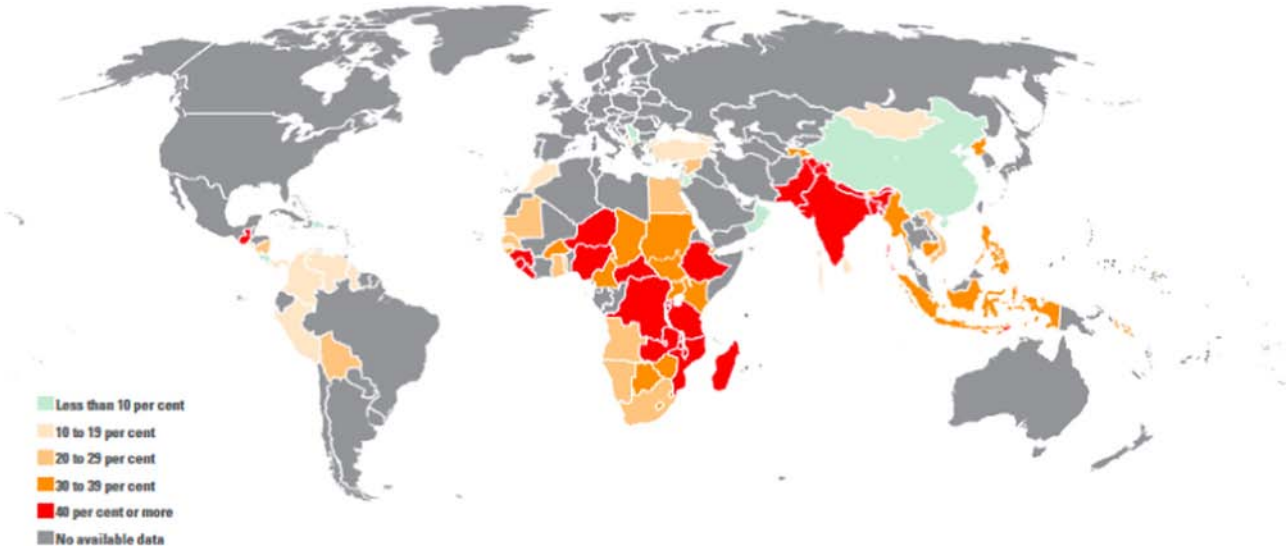

Fig. 1. Global prevalence of stunting in children under five years of age (UNICEF, 2013).

1.3. Delineating the ethical issues for human nutrition

The nutrition aspects of the debate about feeding the world *well* and sustainably are deeply rooted in ethics. This paper does not focus on just one ethical issue in addressing nutrition in the context of achieving food security and more broadly within the sustainable development agenda. Instead, it provides a review of some of the pressing ethical concerns that shape policy, action and accountability in the nutrition field. The paper attempts to highlight disagreements about what values should be taken into account, what trade-offs between values are justifiable, and what strategies are ethically acceptable. While not intended to bring about concrete answers to these issues, it is hoped that tangible progress on ethical issues and disagreements is possible even in the absence of consensus about agreed values.

The ethical questions highlighted in this paper include:

- How do societal decisions, measures and values about food security ensure inclusivity of nutrition?
- Is there a right to adequate nutrition, and if so, what are the obligations and responsibilities of different actors to progressively realize that right?
- What moral obligations do states bear to fulfill the right to nutritious food for their citizens, particularly the most vulnerable?
- What are the ethical trade-offs between environmental sustainability and ensuring individuals' dietary and nutritional needs?
- What ethical obligations, if any, do we have with respect to the consumption of certain nutritious foods, such as resource-intensive foods from animal sources?

Such issues do not have easy answers and, for that reason, merit serious thought. Articulating the broader ethical landscape of the nutrition debate within global food security is a necessary first step. Considerations relative to the assignment of obligations and responsibilities to public and private actors involved in nutrition and global food systems are another important element in the debate.

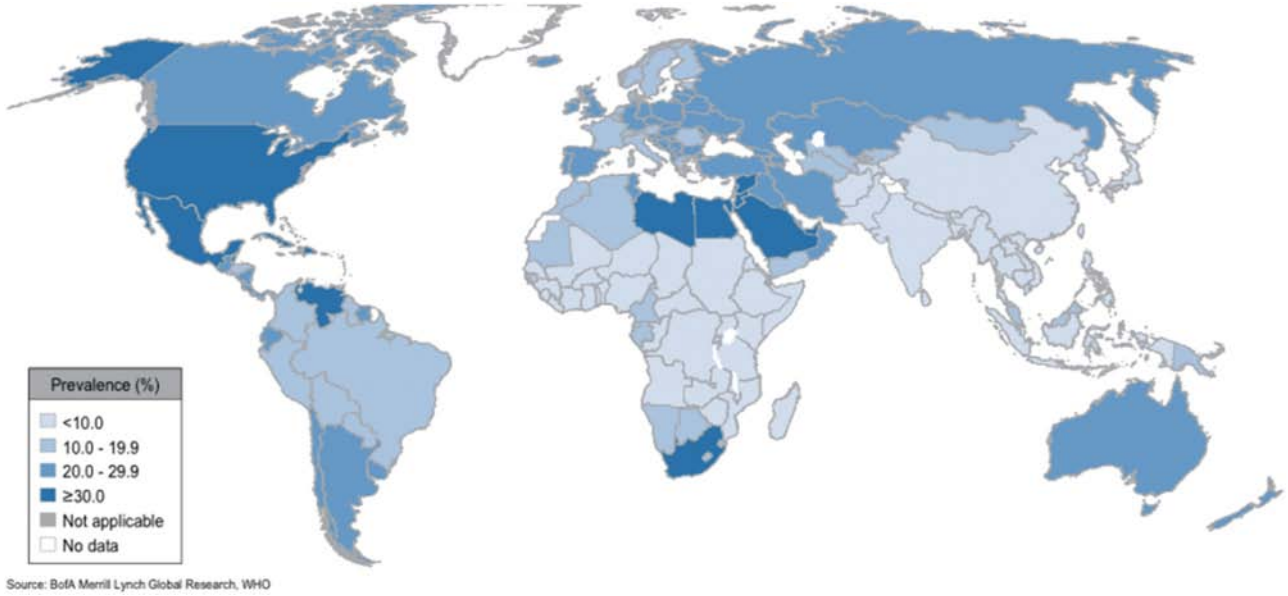

Fig. 2. Global prevalence of overweight and obesity among adult women (WHO, 2013).

2. Ethical issue 1: the ethical implication of traditional views of food security: nutrition inclusivity

Some would argue that food should be considered an exceptionalism in our society. Food is an essential aspect of human function, existence and experience and often, diverse and distinct social problems come together around food (Thompson, 2015). The idea that "you are what you eat" has some truth to it: Our food choices are often intertwined in our beliefs and values, our relationship to where the food comes from, and our larger connection with an increasingly globalized world.

In order to understand the importance of food in the context of improving nutrition outcomes, one can begin with the well-established framework of food security. This section outlines three ethical challenges that prohibit the inclusivity of nutrition within the food security directive. The first challenge is how the definition, although well intentioned to ensure all citizens have access to nutritious food, does not match the reality of what is researched, funded and implemented within the food system. The second challenge is that while the definition of food security is, in theory, inclusive of ensuring nutrition as part of its goal, it is not enough to achieve nutrition outcomes because of the multi-faceted complexity of nutrition. It takes more. The third challenge is the moral significance and implications of how food security is measured which is limited from a nutritional perspective and provides an inaccurate picture.

2.1. Lost in translation: there are definitions and then there is reality

The 1996 World Food Summit (WFS) adopted the following definition: "Food security exists when all people at all times have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life" (FAO, 1996). Reformulations have attempted to elevate the importance of nutrition not only within the Right to Food doctrine, but also in UN member state mandates. In 1995, the International Food Policy Research Institute (IFPRI) proposed the following definition of nutrition security, in contrast to food security: "Nutrition security can be defined as adequate nutritional status in terms of protein, energy, vitamins, and minerals for all household members at all times." This definition suggested a nutrients-based approach but did not address overall diets, or how other sectors could contribute to improved nutrition. It was not until 2006 that a new definition proposed a more multi-sectoral approach to nutrition. The definition was: "Nutrition exists when food security is combined with a sanitary environment, adequate health services, and proper care and feeding practices to ensure a healthy life for all household members" (World Bank, 2006). This definition took a broader understanding that securing adequate nutrition requires multiple sectors (including agriculture, health, education and environment).

In 2012, FAO developed the following draft formulation for the Committee on Food Security (CFS): "Nutrition security exists when all people at all times consume food of sufficient quantity and quality in terms of variety, diversity, nutrient content and safety to meet their dietary needs and food preferences for an active and healthy life, coupled with a sanitary environment, adequate health, education and care" (FAO/AGN, 2012). The CFS member states did not adopt this definition, and the food security definition remains the same as the 1996 version, despite numerous attempts to ensure inclusivity of nutrition.

Although one could argue that a definition is only just that, a definition, its translation can have lasting impacts on how the goal of food security is pursued in policies and programs. Food-security-mandated research and implementation agencies, as well as governments, have primary responsibilities to ensure that food gets to those who need it with a focus on meeting caloric needs, mainly through the agriculture sector. Because nutrition has often been left out of that equation, addressing malnutrition remains a neglected, unaccounted part of the mandate. Lifting nutrition to a more central place within food security, as the original and reiterations of the definition imply, would change how agencies and governments react and act to protect civilians and ensure that safe and nutritious food is provided in an equitable way.

Yet, most research, funding and food security programs have focused solely on ensuring the world produces and consumes enough *calories in bulk* by increasing staple crop yields to reduce hunger and safeguard survival, neglecting the role of nutrition within that security framework. Examining food security through a caloric-sufficiency lens certainly would address hunger. Filling stomachs with food, to ensure that starvation subsides, is an important goal. However, it serves more as a Band-Aid approach to larger issues of health, development, equity and dignity. Providing each individual with sufficient calories does not necessarily impact their overall nutritional status, but can have a substantive impact on the many people who suffer from seasonal and chronic hunger. To address nutrition more specifically, the quality of those calories becomes important and different populations have distinct nutritional needs at key stages of their growth and development. There is deep debate on which stages are most important to address, which vulnerable groups should be targeted and prioritized for nutrition interventions, and which point in the "lifecycle" is most effective in breaking the cycle of malnutrition. This is presented in Section 4.

2.2. Improving nutrition outcomes requires more than food

While the WFS definition of food security includes nutrition language as an essential part of food security, food security itself is only one aspect of achieving optimal nutrition. Food security is necessary, but not sufficient for nutrition security (Jones et al., 2013). In order to have robust nutrition outcomes, food (in both quality and quantity) is essential, but so are optimal healthcare, improved hygiene and sanitation, and adequate childcare practices, to name a few.

As the modified food security nutrition definitions alluded, nutrition requires multiple disciplines and sectors to make demonstrable impacts (World Bank, 2013). The UNICEF causal framework for nutrition effectively demonstrates the importance of sectors including agriculture and food, health, education, environment, water and sanitation, and women's empowerment (Fig. 3). However, implementing full-scale multi-sectoral responses that go beyond just food security is challenging. There are rarely sufficient resources to mount all of the interventions needed to secure adequate nutrition for everyone. This often makes decisions over resource allocation morally challenging. This is further discussed in Section 3.

Tackling the ethical issues these debates engage is complicated. While scientists widely agree on the general framework for nutrition (Fig. 3), they frequently disagree about what are considered the "right" interventions for reasons that are not always clear but that often rely on divergent empirical predictions. The argument is often framed in terms of "doing the right thing," even when it is extremely difficult to discern what the right thing is through evidence-based decision making.

Nutrition has implications with respect to a range of sectorial approaches that need to be combined to reach the desired goal, beyond food. By focusing only on food-related aspects of nutrition, and more so only on quantity of calories consumed, there are limits to what improvements can be made on the nutritional status of populations. This interpretation of food security raises an ethical problem as to how to approach and address nutrition

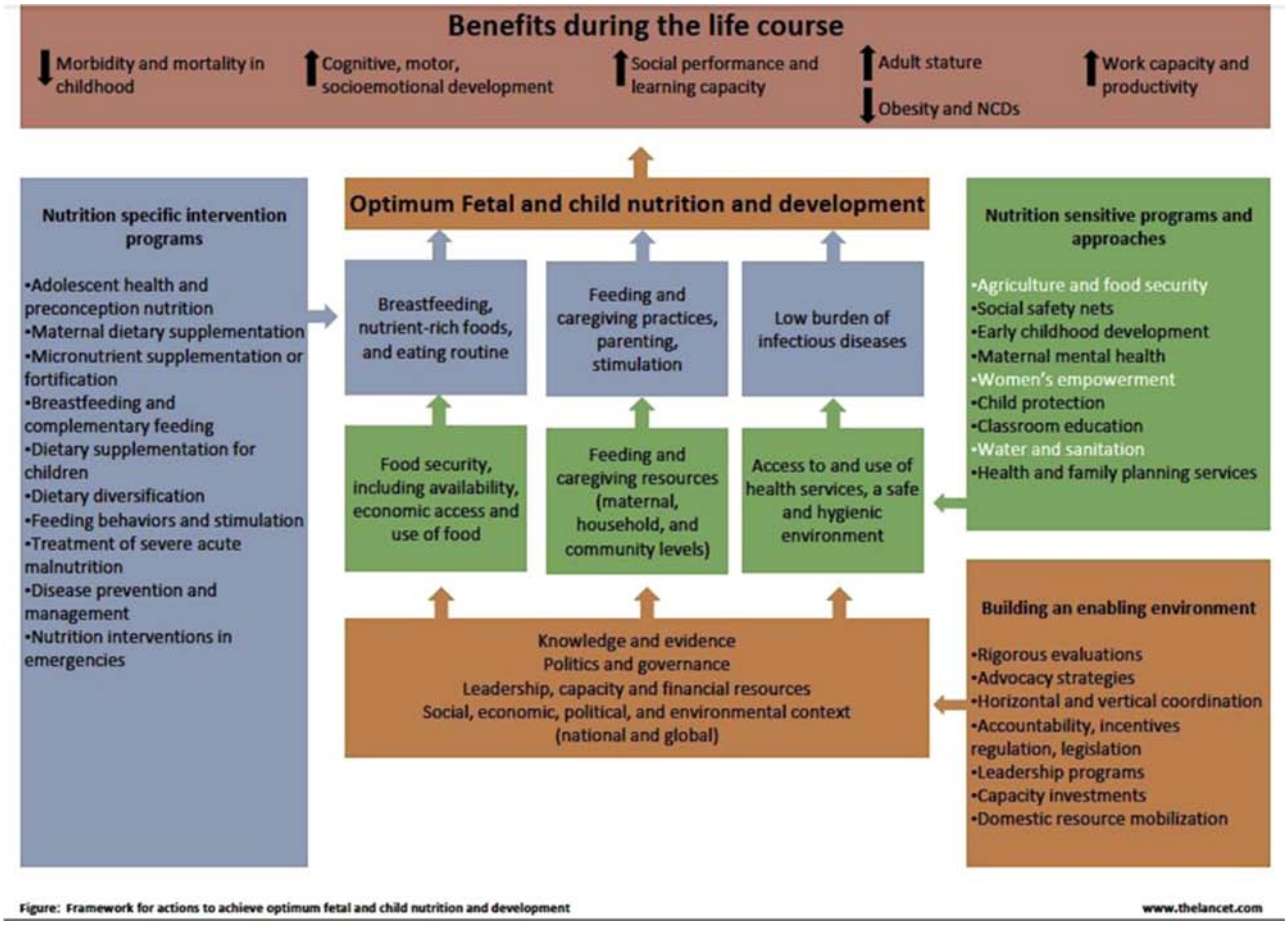

Fig. 3. The nutrition specific and sensitive interventions to address the causes of malnutrition (Lancet, 2013; UNICEF, 1990).

within the global food security context.

2.3. *Moral assumptions and implications in measuring food security*

The criterion used to measure food security has generated major criticism over the last decade with the persistent storyline that aggregate increases in food supply and improved income are the ways in which agriculture can and should contribute to nutrition. However, the major lesson of the last 20 years is that stepped-up food production alone cannot reverse malnutrition (Herforth and Tanimichi-Hoberg, 2014). The Food and Agriculture Organization (FAO) is the primary agency that tracks food insecurity, using one central indicator referred to as prevalence of undernourishment. Although there have been improvements on the indicator, it is defined as the percentage of the population whose food intake is insufficient to meet dietary energy requirements, taken from country food supply data. This indicator considers only caloric intake and does not incorporate data on the quality of food consumed (including intake of protein, vitamins and minerals) (Lappé et al., 2013), nor does it equate to overall food security.

Not only does this measure of food security neglect nutritional aspects of undernourishment, it also fails to capture the WFS definition of food security or the four pillars of food security: availability, access, utilization and stability. Shallow in its assessment of food security, this indicator does not appropriately guide policy-making and programming in addressing the determinants of food insecurity or malnutrition. Yet, it is anticipated that this measure will be considered as a major indicator for the post-2015 Sustainable Development Goals. Aside from the FAO indicator, most of the food indicators in use today do not measure access to adequate nutritious food for all, and currently, there are no reliable global estimates of what would fully capture the facets of food security.

Food security needs to be measured with indicators and targets that ensure action and accountability toward access to adequate nutritious food. Access to a range of diverse foods, reflected in dietary quality, is core to ensuring adequate food for all. There is also a need for indicators and targets that take into account the environmental sustainability of the foods we produce and consume—measures that are lacking in global food security calculations. While there are some indicators that have been recently established and proposed, there is no global consensus on what indicators to track.

The extent to which people now and in the future experience nutritional deficiencies and food security relies on decisions about food and agriculture policy made today by national governments and international institutions. These policy decisions are frequently premised on measured projections of the food supply. If these projections miss the mark, as does the undernourishment indicator for nutrition, there is potential for harm and injustice. Given the importance of these measured projections and data to influence public policy and potentially people's well being, measurements should be based on transparent, ethically defensible assumptions and accompanied by other indices to provide a more realistic, responsible picture.

3. Ethical issue 2: duties, institutions and accountability of nutrition

As former Secretary of State Madeleine Albright, co-Chair of the

Aspen Institute's Food Security Strategy Group, recently wrote, "In a world where one-third of all edible food never makes it to the mouths of the hungry, we all have an individual moral responsibility to do our part." This section presents ethical issues of duties, institutions and the appropriate assignment of accountability for ensuring nutrition are achieved by all.

3.1. Everyone's business, nobody's responsibility: duties and institutions

Because nutrition requires a multi-sectoral response, many more institutions bear some responsibility to ensure that everyone is sufficiently nourished. These institutional stakeholders include governments, international and national corporations, the private sector, civil society, non-governmental organizations (NGOs), the United Nations (UN), donors, farmer/producer organizations. Securing the rights and interests of individuals, as consumers and producers, is central to the mandates of these institutions.

The interconnections between national and international institutions that work on tackling malnutrition are complicated, with many different players that count nutrition, food and hunger as part of their core directive. Yet, there is no clear leader or governance structure at the national level to ensure that nutrition is equitably addressed (Levine and Kuczynski, 2009). The "nutrition architecture" has traditionally been described as disorganized, disjointed, and scattered (Levine and Kuczynski, 2009). Failing to fit squarely within the food security mandate, nutrition has historically been viewed as everyone's business but nobody's responsibility.

In the last five years, there has been a more substantive, unified advocacy response to ensure nutrition is a development priority—momentum spurred in part by many international organizations and governments partnering to draw greater investments and attention to nutrition. International organizations are prioritizing long-term investments towards nutrition programming and complementing these with increased governance and management of multi-sectoral nutrition policies (SUN, 2013). Nutrition has also become increasingly recognized at the highest political levels, with its inclusion in G8 meetings, and the UN Secretary General's Zero Hunger Call. The Copenhagen Consensus, in both 2008 and 2012, chose nutrition as one of the best-valued investments to improve overall development (Hoddinot et al., 2012).

The Scaling Up Nutrition (SUN) movement has spearheaded the unified response. It unites people—from governments, civil society, the UN, donors, businesses and researchers—in a collective effort to improve nutrition. SUN has also been an important catalyst in garnering country-level attention to the global malnutrition challenges by building national commitment to accelerate progress to reduce stunting and other forms of malnutrition, including overweight. As of 2015, over 50 countries have joined SUN and have committed to ending undernutrition in their respective countries through evidence-based, financed interventions taken to scale (SUN, 2013).

The collective and coordinated response of the international community during the past years, through multilateral mechanisms as well as bilateral channels, is an implied acknowledgment that food and nutrition security represents a global public good (Page, 2013).

3.2. Allocation decisions and accountability

Often, allocation decisions are framed as a stark choice between a preventative approach (also called a nutrition-sensitive approach), which addresses the more underlying causes of malnutrition, and a treatment approach (also called a nutrition-specific approach), which addresses the more immediate causes of current malnutrition (Fig. 3). These decisions are highly debated in the nutrition community, often leaving the community split into two major groups of practitioners that use different programmatic models to address malnutrition (Menon and Stoltzfus, 2012).

In one camp, there is a focus on preventive interventions, including food system and agriculture approaches, women's empowerment, and behavior change communications interventions. The other camp focuses on curative interventions. This division puts excessive pressure on governments to determine where and how they should act, and with whom they should align. In the absence of consensus among experts, governments may lack the epistemic basis they need to fulfill their moral obligations. This debate arguably undermines the development of integrated efforts due to the reinforced divergence in thinking and action by focusing on single topics or approaches, rather than providing a more comprehensive view to addressing the manifestations of malnutrition (Menon and Stoltzfus, 2012).

4. Ethical issue 3: the ethical implication of reaching the most vulnerable

In the nutrition field, it is important to understand who is most vulnerable to malnutrition—in both its forms—undernutrition and overweight. It is also imperative to understand the drivers of vulnerability and the causes and consequences. Discriminatory perceptions can lead to undervaluation of the contributions, needs or abilities of certain disadvantaged and vulnerable groups, which can have impacts on their food and nutrition security. The vulnerabilities for nutrition overlap, but are also distinct to food insecurity exposures. This section examines vulnerability through two lenses: an undernutrition perspective and an obesogenic environment perspective.

4.1. The most vulnerable from an undernutrition perspective

Groups vulnerable to malnutrition typically include those with increased nutrient requirements at specific points in the lifecycle, in particular young children, adolescent girls, and pregnant and lactating women (Fig. 4). The nutritional needs of children under two years of age are critical for growth, cognitive development and long-lasting productivity into adulthood (Adair et al., 2013). Most growth faltering occurs between the ages of six and 24 months, when the child is no longer protected by exclusive breastfeeding, and is also more exposed to disease and infectious diseases through contaminated food and water. Some evidence suggests that even when a child is adequately nourished after 24 months of age she is unlikely to recover growth "lost" in the first two years as a result of malnutrition (Victora et al., 2010). Some argue that nutrition interventions should prioritize these first 100 days of life (from conception to 24 months).

Others argue that adolescence is the key stage to break the malnutrition cycle. During, adolescence, a period of rapid growth, many important physical, intellectual, and psychological events take place. There is a sharp increase in the nutritional demand rarely satisfied in the poor, who carry the cumulative burden of past deprivation and lack of access to adequate nutrition and sanitation. Well-nourished girls have earlier menarche and optimal growth, particularly in height. Girls living in poverty take longer to grow and are usually still growing during their first pregnancy and competing for nutrients with the developing fetus (Prentice et al., 2013).

The current political momentum supports the first 1000 days (from conception to 2 years of age), an approach shown to ensure good child outcomes and decreased risk of non-communicable diseases into adulthood. This period is termed "the window of

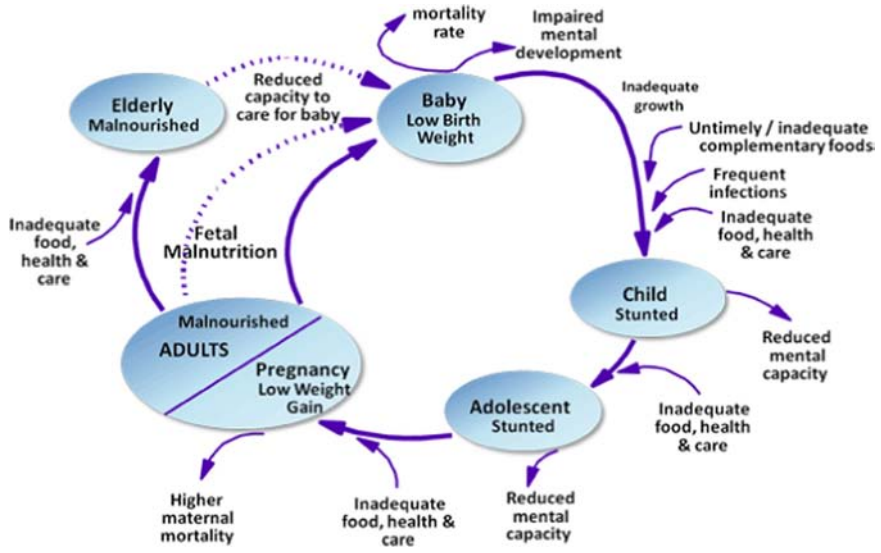

Fig. 4. Poor nutrition throughout the lifecycle (UNSCN, 2000).

opportunity" to make a difference in a child's life; outside this window, some argue the opportunities to have an effect diminish greatly (Victora et al., 2010). Prentice and colleagues argue that addressing the nutritional needs of adolescent girls is an "additional window of opportunity" during which substantial life cycle and intergenerational effects can be accrued (Prentice et al., 2013). However, few "interventions" or programs exist that focus on girls.

This debate has become an ethical issue about the moral relevance of life span and intergenerational effects, which turn in part on empirical disputes about the irreversibility of undernutrition early in life. If nutritional deficiencies are essentially irreversible after a certain time period, the opportunity to change the course of poor nutrition has closed for an entire generation. Missing this window can, in turn, significantly impact morbidity and mortality outcomes. Evidence also suggests that early nutrition affects key risk factors for chronic degenerative diseases of middle and later life, such as osteoporosis and cardiovascular disease (Dwyer, 2006). Moreover, getting this debate wrong can have long lasting consequences. Once a priority decision is taken, it can take decades to steer action in another direction. This debate has significant consequences for policymaking, donor funding, and programming. In this area, explicitly and carefully weighing relevant ethical considerations is indispensable before a course of action is chosen since the consequences of certain policies are pervasive and irreversible.

4.2. Ethics of an obesogenic environment

This obesogenic environment raises ethical considerations of the roles of individuals, schools, the workplace, restaurants, supermarkets, the food industry and government. Obesity has a complex etiology: it is not caused by one factor in isolation, and therefore the most effective interventions will be multi-sectoral. There is extensive literature demonstrating that the environment, particularly home, work and school, impact health-related behavior and health outcomes (Macintyre et al., 2002; Mohan et al., 2005) and that this environment is increasingly obesogenic (WHO, 2003). In middle- and high-income countries especially, disadvantaged, vulnerable and poor families often find themselves in environments that are particularly obesogenic. They have less access to healthy foods – and these foods often tend to be more expensive – and jobs that do not allow for time to prepare healthy meals. They also tend to live in environments that are not conducive to physical activity. Policy initiatives may not always reach these families, because they are often designed around the life circumstances of those with higher socioeconomic status such as bicycle rental programs and green markets (Voigt et al., 2014).

Furthermore, an "ethos of personal responsibility pervades American legal, cultural and political life, reflecting the society's larger emphasis on individual autonomy" (Gostin, 2010) which is reflected in the 'nanny state' discourse surrounding policy approaches to target obesogenic environments. Many see obesity in terms of individuals' rational choices. However, the environment in which people live also plays a role (Gostin, 2010). Some argue that ultra-processed unhealthy foods, produced by transnational food corporations with powerful marketing strategies displace, traditional food systems and dietary patterns—placing healthy choices at a disadvantage, and undermining public health efforts (Monteiro and Cannon, 2012). The food industry justifies food product development and advertising by claiming that they are providing a service to consumers and "giving them what they want." According to this view, it is up to the consumer to make the healthy or not so healthy choice (Moss, 2013).

Children require special protection from harm, and are particularly vulnerable from a dietary and nutritional status perspective due to their limited ability to make genuine choices, their susceptibility to influences such as food marketing, and their developmental need for adequate nutrition. Taken together, these factors raise an ethical issue: How should governments intervene to promote and ensure healthy eating and physical activity within an environment that promotes a "do no harm" approach for children (Harris and Graff, 2011; IOM, 2006)?

Many would agree that the obesity crisis cannot be solved without dramatic changes to the obesogenic marketing environment that surrounds children (Harris et al., 2009). "Child advocates question the ethics of marketing practices targeted to children who cannot yet defend against their influence (Harris et al., 2009)." Resisting advertisements requires the ability to weigh long-term health consequences of consumption against short-term rewards, an ability that is difficult for young children (Pechmann et al., 2005).

Whose job is it to ensure that children have a healthy life? Parents and caregivers, schools, communities, or the government? The private sector has substantive potential to contribute to improvements in nutrition, but efforts to realize this have, to date, been hindered by a paucity of credible evidence and trust

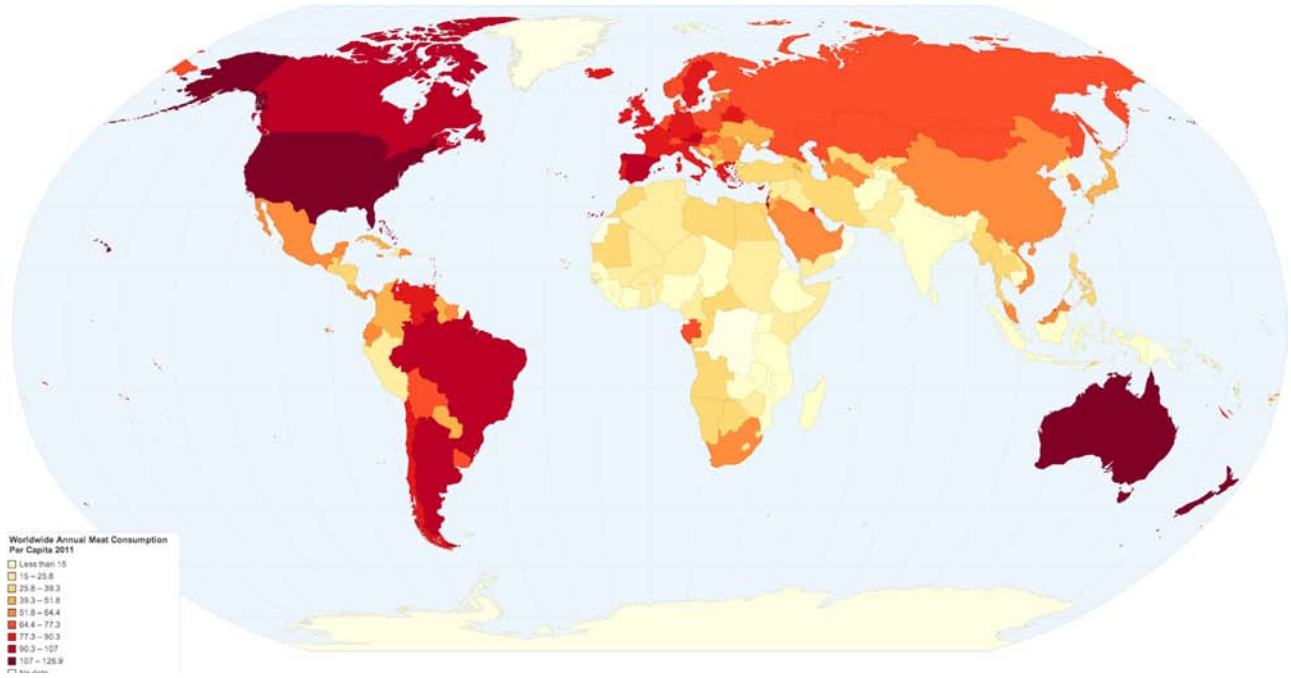

Fig. 5. Worldwide annual meat consumption per capita (FAO, 2014).

(Gillespie et al., 2013). Yach (2014) suggests that an open discourse and partnering is essential between public and private sectors if we are to tackle complex food and nutrition issues, and flatten or reverse childhood obesity trends. However, trust built on an ethical foundation is essential.

5. Ethical issue 4: the intractable, equity debate on sustainable diets

5.1. Sustainable, healthy and accessible diets

Changes in the types of food we eat are driving a new demand for certain types of food, grown and processed in particular ways (Keats and Wiggins, 2014). While populations are increasing, so is overall wealth in some countries, particularly India, China and Brazil. Diets are shifting more towards higher quality, nutrient-dense products such as meat, dairy products, and oils—but also towards more ultra-processed foods. The pressure to produce more food in an environmentally sustainable way, while upholding safety and health standards, bumps up against consumer demands. At the same time, there are profound inequities both globally and within countries, with respect to access to, and affordability of, nutritious foods. There is no ethically simple way to reconcile these competing demands that impact economies, trade and globalization, and ultimately nutrition (FAO, 2013).

Globally, we are recognizing that the health of human beings cannot be isolated from the health of ecosystems (Johnston et al., 2014). More debate has centered on how food insecurity and climate variability impact diets, and how our consumption patterns contribute to environmental degradation. The concept of "sustainable diets" is one that promotes environmental and economic stability through low-impact and affordable foods, while improving public health through adequate nutrition (Macdiarmid et al., 2011).

Although the need to advance commitments towards sustainable diets as a central aspect to sustainable development is clear, gaps persist in our understanding of what constitutes a sustainable diet for different populations and contexts, and how to measure it. It also remains unclear how to assess these diets within our global food system and achieve environmental sustainability in our consumption patterns and dietary goals (Johnston et al., 2014). There are ethical considerations to be elucidated in different models of "sustainable diets." Part of the ethical analysis is assessing the "feasibility" of these models taking into account current population pressures, economic crises, and increasingly inequitable food production, supply and demand. Ethical considerations have concrete consequences, as can be witnessed in the growing demand for "ethical traceability," which is a consumer rather than producer concern (Reisch et al., 2013). In turn, the demands of ethical traceability might translate into concrete health and environmental consequences.

5.2. Achieving quality diets at the expense of sustainability

At the heart of sustainable diets are animal-source foods. Animal-source foods can provide a variety of micronutrients that are more difficult to obtain in adequate quantities from plant-source foods alone, especially vitamin A, vitamin B-12, riboflavin, calcium, iron and zinc (Dewey and Adu-Afarwuah, 2008). Negative health outcomes associated with inadequate intake of these nutrients include anemia, poor growth, rickets, impaired cognitive performance, blindness, neuromuscular deficits and, eventually, death. Although animal-source foods are important sources of essential nutrients, some sources high in saturated fats are also significant contributors to cardiovascular disease and colorectal cancer (Woodcock et al., 2007).

Most countries are shifting from plant-based diets to highly refined foods, meats and dairy products, with the exception of a few poor countries that cannot afford the leap (Popkin et al., 2012; Wilkinson et al., 2009). Americans account for just 4.5% of the world's population, but eat approximately 15% of the meat produced globally (Stokstad, 2010). On average, the US consumes 124 kg/capita/y compared to the global average of 38 kg/capita/y (Wilkinson et al., 2009). The countries that consume the least meat are in Africa and South Asia, where the highest burden of undernutrition lies, with consumption in some countries as low as 8.5 kg/person/year in Ethiopia and 3 kg/person/year in Bangladesh (FAO, 2014) (Fig. 5).

There are several ethical considerations at hand. First, production is attempting to keep up with current demand. However, this increased demand has serious ramifications for both climate change and human health (World Bank, 2010). Production of foods from animal sources is resource-intensive, and is the major contributor to greenhouse gas emissions from the agricultural sector (Walker et al., 2005). Overconsumption and escalating demand for livestock has created ethical conflicts over ensuring animal welfare and limiting drains on the environment (Stokstad, 2010). One-third of global cereal crop production is fed to animals (Godfray et al., 2010), while we know that the world still faces serious famines and seasonal hunger periods. This in itself presents an ethical dilemma: feed people to stave off hunger, or feed animals to keep up with the luxury diets of the middle-class.

Second, if these high-value foods are accepted as critically important for human health, their distribution and access is currently not equitable—an imbalance that needs to be addressed. Many agencies and governments have ongoing programs and investments that attempt to improve value chains for animal-source foods in low-income settings, including milk production and goat farming. There are also low-resource alternative sources that should be considered in filling nutrient gaps for all countries. These sources of foods make significant contributions to nutrition, while leaving a smaller footprint for the planet. Farmed fish, mollusks, insects and protein-rich plant foods can serve as important and alternative sources of nutrient-rich foods (including protein, fatty acids, zinc, iron, B12, Vitamin D), as compared to muscle and organ meats from livestock (FAO/WUR, 2013).

Third, the issue is not only an environmental, agricultural or nutritional argument. Eating animals is also a matter of animal welfare, consumer preferences, taste, and social standing. Popkin noted: “We have created societies in the West that value and consume meat, dairy, poultry, fish and seafood. Over generations, a particular way of life has been promoted and this has shifted expectations about diet to include large amounts of animal sourced foods. The developing world wants to eat the same way and is rapidly increasing its demand for meat and other animal products” (Popkin, 2011). If eating “higher status” animal-source foods is not essential or even important to good nutrition, does it matter ethically that people have inequitable access to foods that give them pleasure and social status? While low-resource, alternative sources of protein, such as insects, are promoted within communities, they are often stigmatized and shunned in some settings and societies.

From environmental and food security perspectives, addressing these ethical issues requires concerted efforts to reduce consumption of animal products in high-income countries, and discourage consumption in growing economies with populations that are finally wealthy enough to increase meat and dairy in their diets. Some have argued that a 30% reduction in production and adult consumption levels of animal-source foods would meet national greenhouse gas emission targets and would at the same time, reduce years of life lost from heart disease by 15% (Wilkinson et al., 2009).

Where there is sufficient scientific and ethical justification to reduce consumption of animal-source foods, how can policies and interventions be constructed in specific national contexts? How can polices and interventions be constructed and implemented and is it ethically acceptable to mandate specific interventions such as taxes, incentives, nudges, and subsidies? It will be important to identify morally relevant differences between middle-income countries (where the aim would be to prevent meat consumption levels from reaching a threshold), and high-income countries (where the aim would be to alter already entrenched patterns of consumption). It will also be important to identify morally relevant obligations and interventions to promote (or not) access to animal source foods (where the aim would be to increase meat consumption in certain situations) while ensuring we stay within resilient planetary boundaries.

6. Conclusion

This paper presents, but does not exhaust some of the ethical issues that the nutritional field is challenged with now and over the next decade. Interestingly, there has been little written, at least explicitly, about the ethics of what we eat and the values we want to uphold for a healthier, sustainable, global food system.

Nutrition has often been forgotten in the food security mandate. Most of the dialogue and focus of the conversation has been on aspects of the unjust way our food is produced. There has been less dialogue on the inequities in access to high quality, nutritious foods and in food choices. This leaves the public confused about what ethical individual choices they should make, who to trust, and what roles government ought to play in solving the issues. Without more thoughtful debate and proposed paths around the ethics of nutrition and how it fits into our globalized food system, inequities will persist. Outlining some of these issues could stimulate productive discussions and potentially solutions for the future.

Gillespie et al. (2013) noted that often, nutrition is considered apolitical, which results in self-defeating, poor accountability to citizens. Commitment and leadership for nutrition at all levels is needed to realize improvements in nutrition (Gillespie et al., 2013; Acosta and Fanzo, 2012). Overcoming entrenched poverty and underdevelopment requires resources. If the basic causes of poor nutrition are to be addressed, greater and more effectively targeted resources as well as better collaboration are needed within governments and in national and international partnerships. Without strong values and ethical standards that set nutrition as a high priority for the improved development of citizens and their countries, progress in achieving global food security will remain stagnant.

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