

Food Security and Sustainable Development Goals: Relationships and Implications for Attainment

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Abstract

Food security is a phenomenon that is of global public health interest. It is also integral to the attainment of the 2030 target for the 17 Sustainable Development Goals (SDGs). Food is a basic necessity of life and central to human existence. Food security is relevant to the gross productivity at both the individual and national levels. The objectives of this review are to establish the connection between food security and 17 SDGs, challenges to secured food systems as well as global trend in food insecurity. A search for relevant articles published until November 2024 from popular repositories was conducted. The key terms used for the search included words and/or phrases related to food security, sustainable development goals, food insecurity, and challenges of food security. This review presents an overview of the continuous increase in the rate of food insecurity, the challenges limiting the actualization of food security, and the sheer connection between food security and other SDGs, as well as the implications for the attainment of other SDGs. Due to the existing network between food security and these SDGs, the application of one health concept would be crucial to overcoming several challenges in public health. Multi-sector collaboration and partnership would be important in reducing food insecurity to the barest minimum.

Keywords: Food System; Food Security; Sustainable Development Goals; Health; Food Insecurity.

1. Introduction

Food is a source of health, substance, and a necessity of life. Food is crucial to disease prevention and healthy living in broader terms [1 - 3]. A sustainable food system implies a system that ultimately offers food security and nutrition as necessities for bodily and mental development as well as optimal social functioning [4]. The food system comprises the processing, packaging, and transportation of food to consumers [5], [6]. It influences food production and consumption patterns [7].

Food security has been defined as the circumstance in which individuals have physical, economic, and social access to safe, nutritious, and sufficient food to meet their dietary needs and food preferences for a productive and healthy life [8], [9]. However, food insecurity is such a complex term to define. Food insecurity is the insufficient physical, social, and economic access to safe, nutritious, and culturally acceptable food for a healthy and productive lifestyle [10 - 12]. Food insecurity is continuously a threat across various stages of food production and consumption. More than sufficient food is produced annually to feed the world's population, but only a limited percentage makes it to consumption due to waste or improper storage. Food loss accounts for about one-third of the food produced and thrown away uneaten [13].

At the World Summit on Food Security in 2006, four pillars of food security were outlined. These include availability, accessibility, utilization, and stability [4], [14 - 16]. Strengthening these pillars would lead to an improvement in food security [17]. The availability of food is largely dependent on its production and distribution. To ensure food security, there must be enough arable and fertile land to grow food. Availability of food could also be affected at any stage of the food production chain. Hence, adequate and effective food processing, storage, transportation, and distribution are important in sustaining food availability [5].

Food accessibility could be direct access, which refers to the ability to grow and harvest food by an individual, while economic access refers to the ability of an individual to be able to buy food i.e., affordability [18]. Oftentimes, food availability does not guarantee equal accessibility. Poverty, educational status, and income level are some of the factors that play critical roles in access to food, and consequently food security. These factors impact how much food can be bought, what type of food is bought (nutritious or less nutritious), and how food is shared within a household [19].

Food utilization is a function of the effective metabolism of the human system. It is the only biological process among the pillars of food security and involves the conversion of food into nutrients that are absorbable by the body to meet its physiological needs. Food utilization consists of food diversity and dietary contents, which are both functions of adequate food quality [20]. However, food quality largely depends on non-food inputs such as clean water, sanitation, and adequate diet (individual's energy level and nutrient consumption) [4], [20] and feeding pattern [18]. The quality and quantity of food is not always a reflection of food availability. Food must be safe to be eaten. The

method of food storage and preparation affect food safety [18]. Likewise, the health and hygienic practices, put in place during food processing, are of utmost importance to this pillar.

The impact of stable access to healthy food plays an important role in food security. There must be stability of the other three pillars i.e., availability, utilization, and accessibility [4], [16]. Food security can be threatened by political instability, climate change, and natural phenomena such as tsunamis, floods, etc. Several social problems (e.g., unemployment, inequalities, etc.) in many major cities of the world have been linked with the problem of food insecurity [18].

Several of the SDGs and food security are interwoven either directly or indirectly [21], and the relevance of food security to the actualization of these SDGs is not intangible [22], [18], [23]. To achieve a meaningful, sustainable development, food security is essential, which is an indicator of a thriving and healthy economy as well as social and environmental well-being [24], [25]. SDG 2: Zero Hunger (End Hunger, Achieve Food Security and Improved Nutrition, and Promote Sustainable Agriculture) directly targets food insecurity. One of the goals of SDG 2 is to feed the hungry. More precisely, it implies ensuring that all have a nutritious, safe, and sufficient food to maintain a healthy and productive lifestyle [26]. SDG 12, which has been established to have a substantial positive influence on transitioning into low-carbon emission and green economies, mainly focuses on ways to curb food loss and wastage, which are major risk factors for food insecurity [27].

1.1. Method

A literature search was conducted for relevant articles published until November 2024 from Google Scholar, PubMed, PubMed Central and Web of Science. The key term used for the search included one word and or phrase related to food security, food insecurity, food system, pillars of food security, and global trends in food insecurity. Other search terms were related to challenges of actualization of food security, including poverty, antimicrobial resistance, climate change, deforestation, market inflation, and post-harvest loss. In addition, terms related to the relationship between food security and the 17 SDGs were searched to highlight their interdependence and the implications for each SDG's attainment. At every instance, the word public health or global health was added to the search sentences.

1.2. Global trend in food insecurity

The 2023 global report on food crises revealed that more than a quarter of a billion people are currently facing acute levels of hunger, quite a significant number are also on the verge of extreme deprivation of food [28]. Although empirical data from literature have established the existence of food insecurity globally, it is unevenly distributed [29]. The problem of food insecurity seems to be enormous in the African region [18]. A recent report shows that about 21% of people from the African region faced severe hunger in 2020. This is twice the total proportion of the entire world population facing severe hunger [30]. An estimate of over 50% of the population from Africa is also faced with moderate to severe food insecurity around the same period [31]. However, West and East Africa sub-regions are the worst hit by food insecurity with over 68% and 65% of the population respectively experiencing moderate to severe food insecurity [30].

Over the years, Latin America and the Caribbean have experienced a noticeable increase in food insecurity compared to other world regions, precisely between 2018 and 2020. These regions have recorded a prevalence rate of 9.2% rise. Around the same period, food insecurity is being experienced at a slower rate in Asia while it has almost remained unchanged in Oceania, Europe, and North America [29]. The COVID-19 pandemic also had a significant effect on food insecurity. Globally, before the pandemic, about 22.8% of people were moderately or severely food insecure in 2015. A slight increase was experienced in 2018, preceding COVID-19, while the first year of the pandemic had a remarkably significant increase to 30.4% [30], [32].

1.3. Factors contributing to food insecurity

1.3.1. Poverty

Lack of food has always been a direct indicator of an entrenched poverty [33] as depicted in **Fig. 1**. It impedes agricultural practices through inability to secure land, as well as lack of money to purchase good seeds, fertilizer, and erect infrastructure. Food insecurity at the national and household levels is a problem in both developing and developed countries [34]. About 25 million Nigerians were predicted to be at risk of facing hunger due to poverty between June and August 2023, a deviation from the earlier prediction of around 17 million people currently facing food insecurity [35].

1.3.2. Antimicrobial resistance

Antimicrobial resistance (AMR) has a great influence on every aspect of life (Human, Animal, Environment, and Agriculture) (**Fig. 1**). It is a threat to food safety [36]. The spread of microbes from food to consumers may occur through direct or indirect routes [37]. The development of "Superbugs" in the animal gut can spread through the entire food chain via fecal contamination of soil or water, or through farm products that were irrigated with contaminated water. It could also be gotten via the consumption of contaminated food, where food hygiene practices during food handling and preparation were not observed. To curtail AMR in the food system, there are five keys to food safety that must be strictly adhered to. these include; Choose, Cook, Clean, Separate, and Safe temperature [38].

1.3.3. Climate change

Floods, tsunamis, and droughts are on the rise due to global climate change [39]. These contribute to the cycle of food shortage, economic instability, and poverty. The pressure on food security because of climate change has been identified as a great concern because climate change negatively affects food security (**Fig. 1**) in all of its dimensions [40]. Record temperatures and prolonged droughts in 2022 led to sharply reduced crop yields in many regions. The impact of this extended through the year 2023 [41]. Severe flooding, landslides, and unexpected frost also have a devastating impact on agricultural production, both on animal and crop production processes [42]. Heatflation is also a major factor that describes how higher temperatures lead to smaller harvests and higher prices [43].

1.3.4. Deforestation

Continuity and sustainability of life are dependent upon adequate land preservation. This can be achieved by tendering the land in a way that ensures long-term use, viability, and well-being [44]. Rainforest protects the quality of drinking water, and it also help in reducing

global warming, which is a threat to sustainable agriculture [45]. Africa and South America are the two regions that are mostly at risk of irreversible damage resulting from deforestation [45]. The destruction of tropical forests through logging, bush burning, and overall wasting of other natural resources will always result in global warming and environmental crisis (**Fig. 1**). These factors directly impact food security, thereby leaving future generations with diminished resources [45].

1.3.5. Market inflation

The cost of food items in recent years has been highly unstable. Usually, a rise in the cost of food is directly proportional to a rise in micro-nutrient deficiencies, resulting from an inadequate supply of nutritious food commodities among the poor. Simulations performed using the International Model for Policy Analysis of Agricultural Commodities and Trade (IMPACT) have predicted that inflation-adjusted prices of maize, rice, and wheat would increase between 31% to 106% by the year 2050 [46]. This would likely compound the increase in food prices, higher levels of food insecurity, and poverty for urban poor households.

1.3.6. Post-harvest loss/wastage

Another key contributing factor to global food insecurity is post-harvest losses [47], [36]. Post-harvest loss causes direct physical and quality loss of food, which in turn leads to a reduction in its economic value and could also render it unsuitable for human consumption. In sub-Saharan Africa, about one-third (37%) of all food produced per year is projected to be prone to food losses, which do not make it to consumption [48], [49]. Food loss during storage is most critical, particularly in developing countries, since most losses occur at this stage [50]. There can be a 50 to 60% loss of food grains during storage due to poor storage practices [51].



Fig. 1: One health interdependence between human, animal and environmental health.

2. Food security and related 17 SDGs

Food security is a core component of sustainable development, and it is intricately connected with several other SDGs. The overall aim of all the SDGs is to achieve an improved well-being of people and the planet while also ensuring prosperity for all [24]. SDG 2- Zero Hunger (sustainable agriculture) specifically addresses food security. The relationship between food security and the SDGs are grouped into 3 categories. One, the SDGs that are related to food security playing a significant role in their attainment. Two, SDGs that are integral to food security actualization, and three, the category in which both food security and SDGs are in synergy for mutual attainment.

2.1. Food security plays a significant role in the attainment of these SDGs

2.1.1. SDG 2- zero hunger

The overall goal of SDG 2 is to revamp the food system and sustain it [6]. It is intricately associated with the attainment of food security through the plan to end hunger, improve nutrition, and sustain agricultural practices for food security. Small-scale farmers are playing central roles in achieving this through sustainable agricultural practices and income [52]. In Myanmar, the introduction of permanent crop systems to farmers resulted in the harvesting of high-value food crops with a short-term yield period, which is important to ensure food security for farmers and their local communities [53]. The impact of SDG 2 includes availability and equal access to food items by all at all seasons. Improved nutrition could be achieved through health promotion and education on healthy food choices, and better methods of food preparation to retain the nutritional contents of foods. Food wastage would be reduced through the reinforcement of the importance of good food processing, storage, and preparation, thus reducing food insecurity [54]. However, zero hunger is non-attainable with food insecurity

2.1.2. SDG 3- good health and wellbeing

The prime focus of all the SDGs is to have healthy and adequately nourished individuals [55]. Nutrition is an important socioeconomic determinant of health [56]. Access to quality, affordable, and healthy diets would help to reduce the transmission of infectious diseases and the morbidity of non-infectious diseases [57]. Food insecurity can lead to poorer diet, insomnia, less physical activity, obesity, and depression [58], [59]. It can also lead to behavioral problems among children, such as difficulty in concentrating [60] as well as increased risk of addiction and anxiety [61], [62]. Globally, about 45% of under-5 children's mortality is linked to malnutrition, especially in sub-Saharan Africa [63]. Food insecurity influences people's attitudes to seeking medical care for the vulnerable family members, e.g., sick children and pregnant women, thus leading to higher mortality rates among children and mothers [64]. Food utilization (choice, storage, hygiene,

and preparation) [4], [16] ensures that adequate food consumption furnishes the body with the ability to fight diseases, which is a public health preventive measure against disease [65]. Food security has a positive influence on the actualization of SDG 3, while SDG 3 also has an indirect influence on the sustainability of food security at the individual and national levels.

2.1.3. SDG 4- quality education

Quality education often influences health-seeking behaviors and other socio-determinants of health such as housing, sanitation and hygiene, employment, income level, nutritional choices, etc. [66], [67]. Absenteeism from school is lower in children from households that are food secure because they are protected from sickness resulting from inaccessibility to adequate and nutritious food. They are seldom affected by food borne diseases, which is often a result of complications from inefficient food safety practices [68], [69]. Nutritious foods aid cognitive development in children and retention. Lack of which could lead to impaired learning capacity with possible irreversible lifelong implications [21], [70]. Macro-nutrient deficiencies are also implicated in reduced learning ability, with the reduction in IQ level [71]. School feeding program (SFP) is a social safety net that has been established to offer both educational and health benefits to the most vulnerable children, as well as improving food security at the household level [72]. However, without food security, such as the exclusion of animal proteins in SFP due to concern over it being a source of Food-Borne Disease (FBD) would reduce the cognitive development in children [73]. Thus, quality learning would be impeded, absenteeism from schools would thrive and quality education remains unachievable, leading to continuation of vicious cycle of poverty.

2.1.4. SDG 10- reduced inequalities

Inequalities could manifest in various forms including ethnic affiliation, social status, educational level, and economic strength - all of which, the predicate marginalization of disadvantaged individual [59]. Inequalities would prevent subsistence and rural farmers from accessing loans to increase their production capacity. It also restricts underprivileged from selling their farm produce at fair prices [74], [75], [70]. Food production from agriculture and aquaculture is a key factor in reducing inequalities by enabling the poor to have a sustainable level of income and food supply [76]. Food security, along with the attainment of other SDGs (1,2,3,4,8), would help to reduce inequalities in its various forms.

2.2. SDGs are integral to food security

2.2.1. SDG 5- gender equality and girls' empowerment

The role of women in the food system cannot be quantified as they play significant roles from production through processing and distribution phases (**Fig. 2**). In Afghanistan, a project implemented by UNODC in 2022 encouraged the practice of small backyard poultry farms by women. This was done to increase food security through egg production and income generation for over 1,000 female-headed households [53]. A reduction of between 100-150 million hungry people is achievable in 34 countries if women have equal access to agricultural inputs, education, and markets as men [48]. Their impact in achieving food security at the household level can also not be under estimated [10]. Being homemakers, they see to the effective day-to-day running of the home.

2.2.2. SDG 9- industry, innovation and infrastructure

Innovations have the tendency to bring about improved and quality crop and animal breeds [77] (**Fig. 2**). It could also result in greater turnover of farm products. Adequate and modern infrastructure is relevant to food security, most especially during the harvest and storage stages [77]. Infrastructure is very important to food security. For example, the transportation of animal products, fruits, and fresh vegetables in vans with a cooling systems would reduce food-borne diseases associated with keeping food for longer times at high temperatures [73]. Also, the involvement of industries in the post-harvest stage [39] will reduce food loss due to poor preservation. Farm products could be processed into forms that would increase the average shelf life, while also reducing food wastage [42]. Nonetheless, in the absence of capable industries, innovations and infrastructure, food security is unachievable just as a secure food system can lead to industrial revolution and innovations.

2.2.3. SDG 11- sustainable cities and communities

Communities and early civilizations' understanding of sustainability is historical [78]. Water and food supply crises, rising greenhouse gas emissions [79] came from environmental mismanagement, inequality, or both [80]. Environmental sustainability (**Fig. 2**) was developed in acknowledgement of the increasing concern about current consumption and production patterns in unsustainable use of natural resources [81]. Sustainable agriculture, which is crucial to the attainment of food security, cannot be achieved in the absence of sustainable environment and communities [59]. Adoption of the land rotation system by farmers would allow cultivable lands to regain and maintain their fertility, thus making food available all-round year [80]. Reforestation in the fallow portions would contribute to the sustenance and repopulation of the wild, including the vulnerable species, culminating into a balanced ecosystem [6]. In an atmosphere of a non-sustainable environment and communities, food security is unattainable.

2.2.4. SDG 12- responsible consumption and production

This addresses food loss and food waste. Feeding the population of nine billion by 2040 would require a great level of food security [82]. Food wastage indirectly implies waste of money, energy, and water, resulting in great harm to the environment [83] and human existence. Though more than sufficient food is produced globally and annually, only a limited percentage makes it to consumption due to poor processing and carriage. Food "waste" refers to "food that is fit for consumption but consciously discarded at the retail or consumption phases" [13]. SDG 12 is a means to reduce the prevalence of food insecurity (**Fig 2**).

2.2.5. SDG 13- climate action

The forest is home to more than half of the world's land animal, insect, and plant species [84]. Forest helps in combating climate change due to its capacity to remove carbon from the atmosphere and reuse it for energy synthesis. This is referred to as "forest mitigation" [85]. Annually, approximately 12 million hectares of forest are destroyed globally [59], [84]. Climate change and extreme weather conditions

(**Fig. 1**) have consistently been identified as a major factor in the global rise in hunger and poor nutrition [18], [84]. The avoidance and reduction of emissions of heat-trapping greenhouse gases into the atmosphere is known as “Climate change mitigation” [86]. This is a responsible climate action that could help in the attainment of food security. Adequate and effective climate action is a sure way to curtail food insecurity to the barest minimum (**Fig. 2**).

2.2.6. SDG 14- life below water

Life below water is an important component of the ecosystem, serving as an important source of dietary proteins [65] (**Fig. 2**). The lives below water are continuously being threatened by human activities, leading to pollution of water bodies [79]. Food security is threatened by activities that disrupt marine biodiversity (**Fig. 1**). These activities include all factors that lead to the disruption of biodiversity and the marine ecosystem [87]. Climate change also poses a great risk to the survival of species in the ocean, leading to a phenomenal loss of species [84] (**Fig. 1**). The presence of micro-plastics in marine animals and sea foods has been linked with certain diseases in humans [87] and threat to food safety. Protecting marine ecosystems, encouraging good fishing practices, and reducing water pollution are crucial to the attainment of food security.

2.2.7. SDG 15- life on land

Every meaningful development is centered on land. Land and natural resources are primary sources of livelihood and developmental assets for rural people. It provides a foundation for achieving several SDGs goals [22]. SDG 15 seeks to “protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, halt and reverse land degradation and halt loss of biodiversity” [84]. The extinction of a single species could disrupt the entire food chain, leading to dysfunctional interspecies relationships and trophic levels. Maintaining biodiversity is vital for a healthy and functional ecosystem [49]. There are identifiable links between deforestation and the potential emergence of new corona virus illnesses [88]. Unbridled use of wildlife for food would result in a higher risk of animal viruses being transferred to humans [89] or increasing zoonoses. There is a need for a balanced ecosystem for a secure food system and a sustainable terrestrial ecosystem (**Fig. 2**).



Fig. 2: Sustainable Development Goals (SDGs) That Are Integral to the Attainment of Food Security

2.3. Food security and SDGs are in synergy

2.3.1. SDG 1- end poverty

Food is a basic need of life, and healthy food choices are integral to disease prevention [90]. Lack of food has always been an assessment tool to measure poverty. Previous studies have identified low socioeconomic status as a consistent risk factor for food insecurity [91]. Food insecurity makes it more difficult for new generations to escape from poverty [65]. Poverty restricts access to healthy seedlings and fertile grounds [92], [93]. It is also linked with inaccessibility to agricultural infrastructures and advanced equipment (**Fig. 2**), which could aid in high agricultural outputs [93]. Income level often influences choices and purchasing power for food items [21]. This could result in diminished quality of diets being consumed and increasing risks of malnutrition, under-nutrition, or overweight and obesity [65]. Food safety, an important component of food security, is always threatened by poverty as it predisposes people to food-borne diseases [73]. Poverty restricts access to quality and nutritious food. It limits food storage options, sanitation, and cleanliness, which are crucial to maintain food safety [94]. SDG 1 is continuously threatened by food insecurity. Lack of access to quality and nutritious food would keep people in perpetual poverty as they would have limited access to quality education, and hence, there might not be decent employment, which is important for poverty eradication. Also, a lack of quality food may keep an individual unhealthy.

2.3.2. SDG 6- clean water and sanitation

Clean water is significant in the actualization of food security. Sustainable agriculture, which is one of the targets in achieving food security, is the largest user of water. Irrigation system of farming accounts for up to 70% of total water consumption [13]. To achieve clean water and sanitation, agricultural practices need to be done with caution. The use of synthetic fertilizers and pesticides should be minimized to guide against pollution of water bodies for other agricultural and human use [59], [95]. Lack of clean water affects adequate hygiene in

food preparation. lack of safe water increases the risk of food contamination or safety compromise. Also, many food-borne diseases (e.g, typhoid, cholera, etc) would thrive in contaminated water [73]. Inadequacies in SDG 6 is a threat to sustainable agricultural practices and food security. Likewise, inadequacies in sustainable agricultural practices threaten the actualization of SDG 6.

2.3.3. SDG 7- affordable and renewable energy

Industry is one of the crucial arms involved in food processing and storage, and it is mostly powered by energy (Fig. 2). It plays an important role in reducing post-harvest food wastage [39]. The availability of adequate and efficient renewable energy tends to lead to an overall increase in agricultural productivity by providing leverage for agricultural infrastructures such as irrigation systems and other energy-driven agricultural technologies that are involved in the processing, storage, and transportation of food products [73], [59]. Also, agricultural wastes, biofuel crops, and agroforestry could be diverted into the production of renewable energy [39], [59]. Both SDGs 2 and 7 aid in the actualization of each other while also improving the income level of farmers

2.3.4. SDG 8- decent work and economic growth

The food system is such a great avenue to create a large workforce, which entirely is dependent on manpower. The availability of a large workforce would also positively influence the accomplishment of food security [18], [81]. Food security would be achieved with a large workforce. Also, it will help to upgrade rural infrastructures through which farmers can and be enabled to earn decent living [74]. Food security helps in the attainment and sustainability of decent work and general prosperity.

2.3.5. SDG 16- peace, justice, and strong institutions

The destruction of natural resources in times of war is prohibited by the Geneva Conventions [96]. This prohibition has both ecological and humanitarian implications. The reason for this is the undisputed appropriation right to life, regardless of the impact of humans on the environment [97]. Wars and social insecurity can also lead to food insecurity. When humans are mainly concerned with survival, it becomes too dangerous to put the land into good use, as there is less time to devote to food production [97]. War is destructive, hence, caution must be applied to avoid the destruction of people's means of livelihood and survival [96]. Also, destroying trees is a willful waste, for by trees man's life is maintained, supported, and sustained [59], [98]. Also, war would lead to the destruction of arable land for agricultural practices, destruction of fruits and crops, leading to food insecurity and ultimately malnutrition. If unrest and injustice abound, poverty and hunger would prevail in such a society. Therefore, SDG 16 is crucial to achieving food security.

2.3.6. SDG 17- partnership for the goals

The concept of one-health (Fig. 1) is core to the attainment of food security as it seeks the common goal of improving the well-being of humans, animals, and the planet [99]. There is a need for a multidisciplinary team approach among several sectors towards the design, implementation, and financing of programs that are targeted at ensuring food security. This would lead to the actualization of several other SDGs [100]. The synergy that exists between other SDGs with respect to food security must be recognized and harnessed to achieve food security at the individual, national, and international levels. This can be achieved through sustainable agricultural practices and ensuring safe and nutritious food options are available and accessible [99]. Food safety is continuously being threatened, thus heightening food insecurity. Since food requires many sectors and processes, a one-health approach can be adopted to curb food insecurity [100]. In addition, the incorporation of one-health curriculum that is tailored to each specialization in academia will be of immense progress towards achieving food security. A tree does not make a forest; collective effort is required to achieve food security and all SDGs.

3. Conclusion

Several factors have been identified as challenges to the realization of food security. Climate change and antimicrobial resistance are the biggest threats owing to the global and far-reaching effects and impacts. In recent times, wars and all forms of instability have also been shown to have a disruptive effect on food security on a global scale. The clear-cut targets of several SDGs towards the actualization of food security further affirm food as a necessity of life and its centrality to many SDGs. For food security at a global level, sustainable agricultural practices, clean water and sanitation, gender equality, clean and renewable energy, maintenance of biodiversity, as well as responsible climatic actions must be given adequate priority. Quality education and poverty eradication have tremendous roles to play in people's attitude and perception toward ensuring food security, especially at the household level. Food choices with respect to available food items, method of preparation, and storage, as well as responsible consumption and production, are central to food security. Also important is the adoption of sustainable agricultural practices. Adequate, healthy, and nutritious food consumption, which is the primary target of food security, is crucial to the attainment of good health and well-being. Thus, food security would help in the prevention of certain lifestyle diseases. Overall, there is a need to further explore the sustainability impact of food security on other SDGs through research, as well as the need to include accessibility to quality, affordable, healthy, and nutritious diets as part of basic human rights.

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