



# **Food Insecurity in Developed Countries Around the World – Characteristics, Responses and Challenges An International Review**

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This study was commissioned at the request of the National Council for Food Security and the Ministry of Welfare and Social Affairs and funded with the assistance of the Ministry of Welfare and Social Affairs

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Jerusalem | August 2024

# Abstract

## Background

Food insecurity is the absence of regular access to safe and nutritious food sufficient for growth, development, and healthy, active lives. It is a global problem, impacting the physical, mental, and social development of children and the health and well-being of adults. Global research indicates an increase in food insecurity worldwide, both in developing and developed countries, even when there is sufficient food to meet the needs of all the citizens of the country.

With the aim of assisting the development of a national plan to reduce and prevent food insecurity in Israel, the National Council for Food Security, in collaboration with the Ministry of Welfare and Social Affairs, approached the Myers-JDC-Brookdale Institute to conduct an international review of the policies and practices of developed countries worldwide in dealing with food insecurity.

## Objective

The objective of the review is to assist the development of an evidence-based national plan to address food insecurity in Israel by learning from practices in developed countries regarding legislation, policy, assistance programs, and through mapping challenges, barriers, and best practices.

## Method

Review of recent articles, research reports, and websites of governmental and international organizations operating in the field of food insecurity in developed countries.

## Findings

According to UN estimates in 2021, nearly one in every three people suffered from moderate or severe food insecurity, and one in every ten people worldwide suffered from hunger. In OECD countries, between 2019 and 2021, food insecurity averaged 7.5%. Worldwide, food insecurity is more prevalent among children and families with children, especially single-parent families; women; individuals with low income or no income at all; individuals relying on allowances and social assistance; individuals residing in rural and remote areas; the homeless; migrants, refugees, and asylum seekers; individuals from minority cultural and ethnic groups;

individuals suffering from physical or mental illnesses or disabilities; individuals experiencing difficult and traumatic life events; and college students without family financial support.

The Food and Agriculture Organization (FAO) of the UN has defined four pillars of food security essential for survival: food availability, access to food, utilization of food, and stability of all three over time. The central issue in developed countries is not food availability but access to food (manifested in economic difficulty for low-income earners to purchase food and physical difficulty for people with disabilities and the elderly to access food), and utilization of food (manifested in difficulty in purchasing or lack of knowledge or skills to prepare healthy food).

Regarding legislative and policy actions to reduce food insecurity, the “right to food” is established in international conventions but is not anchored in the constitutions of most developed countries. In recent years, some developed countries including Switzerland, Australia, Canada, and Scotland have recognized the need to develop a nationally legislated plan to address food insecurity by allocating resources and developing comprehensive, multidimensional, and long-term plans.

Many countries, particularly in Europe, rely on the activity of NGOs to provide food assistance based on soliciting donations of food from the public or surplus food from the food industry. These programs rely mostly on volunteer work and are not directly managed by the government. Research indicates that these organizations are not successful in preventing severe and persistent food insecurity, largely because their supply of food does not meet the demand.

In addition to these programs, many developed countries provide financial government assistance to low-income households or households with no income to increase their access to food and other basic needs. Assistance is provided in various ways: targeted financial support for food (such as food vouchers or subsidized food for people experiencing food-insecurity); support through allowances (such as universal income guarantee, child allowances, and elderly allowances) and social support (such as rent assistance, education subsidies, health expenditure assistance, and financial support programs through local welfare departments). Research indicates that targeted allowances for vulnerable population groups such as the elderly and children help reduce food insecurity in these groups, especially in low-income households. While food voucher assistance programs were found to help reduce the prevalence and severity of food insecurity, rates of food insecurity among participants in these programs remained high.

Additional interventions focus on food assistance programs for vulnerable population groups, including specific food programs for children (mainly operated through school lunch programs), programs for mothers and

infants, and programs for students. Findings show that a combination of social assistance, financial support, and expanded national insurance programs led to a significant decrease in food insecurity among eligible households. In addition to governmental interventions, initiatives at the urban and community levels, such as urban agriculture initiatives, social equality promotion, economic development, and promotion of healthy and sustainable food consumption, are implemented to reduce food insecurity among urban residents.

Challenges and barriers in the field are attributed, among other things, to the narrow focus of legislation and government policy on food insecurity as a singular factor of individual food scarcity, without addressing the broader societal influences of poverty and without aspiring to systemic changes; governments' reliance on emergency measures of NGOs and charitable organizations as long-term solutions; the lack of systematic, consistent, and comprehensive measurement of the prevalence of food insecurity and the lack of research to evaluate the effectiveness of programs in reducing it; and the failure to consider the voices of service recipients, making it difficult for them to influence solutions tailored to their needs.

## **Recommendations**

- Include the “right to food” in new legislation and develop monitoring mechanisms to guarantee its implementation.
- Invest in uniform, systematic, and consistent methods of identification, monitoring, and measurement of food insecurity and its characteristics. These methods should accompany existing programs aimed at reducing food insecurity by evaluating their effectiveness.
- Countries are advised to develop long-term macro-strategies and formulate comprehensive national social policies that extend to areas related to food insecurity. These areas include education, employment, mental health, housing, welfare, transportation, food prices, and more.
- Increase investment in targeted interventions for vulnerable groups such as women and children, youth, the elderly, and students.
- Countries should promote a collaborative approach that strengthens local leadership and community initiatives, enhances partnership and the autonomy of service recipients, and promotes the building of coalitions and collaborations among stakeholders, programs, and different sectors.
- Establish and support a national council for food security with representatives from the private and public sectors. This council should engage in coordination, evaluation, data collection, development of responses, and oversight of their implementation, providing professional recommendations to policymakers on a regular basis and during emergency times, and promoting national policy in the field.

# Executive Summary

## Background

**Food insecurity** is the absence of regular access to safe and nutritious food sufficient for normal growth and development, and for healthy and active lives. It is a global problem impacting the physical, mental, and social development of children and the health and well-being of adults. International reports about the prevalence of food insecurity customarily distinguish between its various levels of severity.<sup>1</sup> Most reports distinguish between the following two levels:

**Moderate food insecurity** is an individual's uncertainty about their ability to obtain food and reduction in the quality or quantity of food they consume due to insufficient funds or other limitations on resources; **severe food insecurity** is a situation in which people are experiencing food deprivation, hunger, and at the most extreme, have gone for days without eating. Global research indicates an increase in food insecurity worldwide, in both developing and developed countries, even when there is sufficient food to meet the needs of all citizens of the country. The COVID-19 epidemic and the conflict between Russia and Ukraine, which led to disruptions in food supply chains and an increase in food prices, significantly influenced this increase in food insecurity.

With the aim of assisting the development of a national plan to reduce and prevent food insecurity in Israel, the Ministry of Welfare and Social Affairs, in collaboration with the National Council for Food Security, have approached Myers-JDC-Brookdale Institute to conduct an international review of the policies and practices of developed countries worldwide in dealing with food insecurity.

## Objective

The objective of the review is to assist in evidence-based decision making in order to help families who live in food insecurity in Israel, by learning from practices in developed countries regarding legislation, policy and programs for the reduction and prevention of food insecurity, and by mapping challenges, barriers, and best practices implemented by countries for families and individuals who live with food insecurity.

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<sup>1</sup> See a specification of different food-insecurity levels in the enclosed Glossary of Terms.

## Method

The review is based on a variety of information sources: internationally published academic articles, evaluation studies on government programs, government websites, and websites of NGOs and associations that promote services and rights for populations who experience food insecurity in developed countries. The data was collected during the months of February-July 2023. Searches were performed via search engines Proquest, Science Direct, PubMed and Google Scholar, using search strings that were designed to answer the research questions.

## Findings

### Prevalence and characteristics of food insecurity worldwide, and particularly in developed countries

Household food insecurity is a global problem, to varying degrees, but it is always more prevalent among populations or individuals who live in poverty. According to UN estimates for 2021, **one in every ten** people worldwide has suffered from hunger, and nearly **one in every three** people has suffered from moderate or severe food insecurity. In OECD countries, an average of 7.5% of the population experienced food insecurity between 2019 and 2021. These countries are far from achieving the goals set by the UN General Assembly (Sustainable Development Goals, or SDGs) pertaining to moderate food insecurity, but close to the target of lessening the prevalence of severe food insecurity in the adult population. Food insecurity has been found to be more prevalent among children and families with children, especially single-parent families, as well as among women; individuals with low income or no income at all; individuals relying on allowances and social assistance; individuals residing in rural and remote areas; the homeless; immigrants, refugees, and asylum seekers; individuals from minority cultural and ethnic groups; individuals suffering from physical or mental illnesses or disabilities; individuals who have experienced difficult and traumatic life events; and academic students without family financial support.

### Effects of food insecurity

Food insecurity can have an adverse effect on the physical and psychological development of children, and its effects can extend to adolescence and adulthood. Among adults, illnesses associated with food insecurity include nutritional deficiencies, anemia, diabetes, and obesity. Food insecurity can also cause psychological distress and social stigma, and has social and financial effects, reducing productivity and raising healthcare expenses.

## Existing responses to food insecurity in developed countries

- **Legislation and policy:** a review of legislation and policy to reduce food insecurity has revealed that the “right to food” is established in international conventions but is not anchored in the constitutions of most developed countries. The approach that urges developed countries to anchor the right to food in legislation mostly seeks to address the **access to food** dimension, which in developed countries is mainly manifested in low-income earners having financial difficulties to purchase food. Beyond the need for declarative legislation that reflects a country's responsibility for providing food to all of its citizens, in recent years some developed countries including **Switzerland, Australia, Canada,** and **Scotland** have begun to develop nationally legislated plans to address food insecurity, by allocating resources and developing comprehensive, multidimensional, and long-term programs.
- **Government assistance for increasing household income:** many developed countries provide financial government assistance for low-income or no-income households in various ways: targeted financial support for food (such as food vouchers or subsidized food for people experiencing food-insecurity); support through allowances (such as universal senior-citizens allowance, child allowances, and income guarantee), and social support (such as rent assistance, education subsidies, healthcare expenditure assistance, and financial support programs through local welfare departments), all intended to help households increase their access to food and other basic needs. Research indicates that targeted allowances for vulnerable populations such as seniors and children help reduce food insecurity among these populations, especially in lower-income households and among those who experience more severe levels of food insecurity. In this way, financial government support not only assists in reducing food insecurity but also decreases inequality, which is harmful to the most vulnerable households. Research shows that social support alone is insufficient to reduce food insecurity, and that integrated, comprehensive actions to increase household income – by social benefits and supports, financial support earmarked for food, as well as by raising the minimum wage – is required to meet the basic needs of working households.
- **Government food assistance:** evaluation studies on government food-voucher programs for low-income families indicate that such programs improve their participants' food security compared to non-participants in similar circumstances, and that such programs improve the participants' nutrition and even their health, especially in children. Nonetheless, while food-voucher programs were found to reduce the prevalence and severity of food insecurity, rates of food insecurity among participants remain high despite the intervention, indicating that the support they offer is insufficient to completely prevent food insecurity among participants.



- **Programs focused on vulnerable populations:** in addition to income-based food assistance programs, developed countries implement intervention channels that focus on specific populations, to ensure food security among their most vulnerable groups. Such programs are often implemented concurrently. *Specific food programs for children* are usually comprehensively operated in developed countries through school meals feeding programs. Such programs are in place in more than 161 countries worldwide, and they contribute to meeting the UN Sustainable Development Goals by ensuring food security and providing equal opportunity for children to maximize their academic achievements. These programs are usually based on agricultural surplus, and therefore also assist in preventing food waste. Evaluation studies indicate that such programs are effective in reducing food insecurity, increasing the intake of healthy food, and improving pupils' learning capabilities. In recent years, some countries have been operating school meals programs for all school children regardless of household income, in an attempt to minimize and even eliminate food insecurity among children. *Designated programs for pregnant women, mothers, babies, and infants* are intended to allow low-income families with young children and pregnant women access to healthy food, and sometimes also include access to pregnancy-essential vitamins. Evaluation studies indicate that such programs have positive effects such as reducing the rates of food insecurity and promoting a healthier diet. *Designated programs for students* in higher education institutions include "food pantries" (a free supply of canned food), meal donations, food sharing, on-campus fruit and vegetable gardens, cooking classes, and community collaborations. Such programs are often led by volunteer students, campus community members, or paid staff/students. academic literature indicates that not enough evaluation studies have been conducted on programs for academic students, and the existing studies point to a lack of awareness of the existence of such programs, and little utilization of the existing programs because of shame and fear of stigma.
- **Urban and community food programs:** alongside the advantages and opportunities of urban living as compared to rural life, recent years have seen an increase in awareness of the challenges of urban spaces, mainly for disadvantaged population, such as high availability of low-quality food, increase in food prices, and declining agriculture. As the community is by nature intended to uphold a well-functioning food system that provides access to healthy and food to all its residents, academic literature posits that including food security in urban policy is essential. Beyond providing enough food for everyone, the purpose of an urban food policy is also to ensure the promotion of social, financial, and environmental sustainability. A review of innovative urban practices indicates that promoting healthy and sustainable food intake; promoting food-centered urban governance and food economy; and encouraging urban agriculture, are all practices of urban policy that are implemented in cities worldwide to reduce food insecurity.

- **Assistance by NGOs:** interventions by non-governmental organizations are meant to resolve three types of barriers pertaining to food access and utilization: the financial barrier of low-income, the logistic barrier of lack of private or public transportation, and the material barrier of lack of facilities for cooking, refrigeration and storage. NGOs mostly rely on donations of food from the community or surplus food from the food industry, and on volunteer work within the communities, and are usually not directly managed by the government. Although such organizations fulfill an emergency demand for food, they often become established and serve as long-term support providers. However, research shows that they are not successful in preventing severe and persistent food insecurity, and accepting their assistance involves shame and stigma that may prevent individuals from seeking their help.
- **Programs that promote a healthy diet:** programs for improving food and nutrition literacy are aimed toward the **food utilization** dimension. Skills learned in these programs usually include: receiving a commensurate return for money, balancing food groups, managing a budget, and storing and preparing food. Such programs are based on ensuring a provision of fruits and vegetables to people who live in food insecurity by various means, particularly through school meals programs and through classes and activities about healthy diet. Interventions that encouraged healthy food intake and provided supplementary food for adults have been found to correlate with reducing food insecurity, and sometimes even helped reduce the cost of healthcare services for nutrition-related chronic diseases.

## Program monitoring, research, and evaluation

Measuring food insecurity is essential for monitoring the overall prevalence of food insecurity, its prevalence in certain populations, its risk factors, the influences of food insecurity and of the interventions and policies implemented to address it. One of the challenges of measuring food insecurity is its complexity, as it encompasses both objective and subjective perspectives. A review of measures for evaluating food insecurity in high-income countries, at the individual and household levels, found that the most common tool is the HFSSM scale (Household Food Security Survey Module), developed by the United States Department of Agriculture (USDA). Alongside this tool, the Food Insecurity Experience Scale (FIES) that was developed by the UN FAO has been increasingly used in recent years to monitor the progress of world countries towards UN SDG “Zero Hunger”, allowing a global comparison. In response to the United Nation’s requirement that member countries regularly and annually report about their progress towards the Zero Hunger goal, in recent years developed countries have been working to develop and establish monitoring, research and evaluation mechanisms to assess trends and best practices to reduce food insecurity within their borders. Moreover, both governments and international

organizations are endeavoring to establish measures and outcomes to assess the effectiveness of interventions aimed at reducing and preventing food insecurity. The UN emphasizes the importance of routine, consistent, high-quality, and accessible collection of data and statistics, and posits that the success of policies and programs that promote food security and good nutrition substantially hinges on enhancing the capability of nations to collect and analyze quantitative and qualitative data and utilize it to plan and formulate policy.

## Gaps, challenges, and barriers

- **Legislation and policy challenges** stem from the narrow focus of policy on food insecurity at the individual level, without addressing the broader societal influences of poverty and without aspiring to systemic changes. Other challenges stem from the reduction of governmental financial support for families with children, and governments' reliance on the work of nonprofit organizations as a long-term solution, even though it is intended to be a short-term emergency response.
- **Challenges in the implementation and operation** of programs and responses for reducing food insecurity: Measurement challenges: the lack of systematic, consistent, and uniform measurement of the prevalence of food insecurity makes it difficult to monitor trends and examine the success of interventions in reducing it. In addition, more evaluation studies on food-assistance programs are required to examine the effectiveness of various interventions and to establish best practices.

Challenges at the program level: over-reliance on volunteers; bureaucratic complexity in identifying eligible individuals and households; logistic challenges of food distribution; material or social assistance that does not meet the needs of those who require the service; gaps between supply and demand in food banks (centers that provide free food for people who live in food insecurity); insufficient effectiveness of programs that focus of food literacy in reducing food insecurity when not combined with additional programs aimed at addressing the financial difficulties in purchasing food; failure to consider the voices of service recipients, impeding them from influencing solutions and tailoring them to their needs and plights.

Challenges at the program participants' level: lack of awareness of existing programs among eligible populations, shame and fear of stigma, and limitations on the ability to participate in community programs due to time constraints and mobility issues.

## Recommendations

- To promote policies and develop the best responses for households coping with food insecurity, it is recommended to include the “right to food” in legislation and to develop monitoring mechanisms to guarantee its implementation.
- Investing in uniform, systematic, and consistent methods of identifying, monitoring, and measuring the prevalence of food insecurity and its characteristics, and accompanying programs aimed at reducing and preventing food insecurity by evaluating their effectiveness. Mapping the characteristics and prevalence of food insecurity in various countries and areas is essential to develop responses that are suitable for the population and the food insecurity characteristics of each area.
- Countries are advised to develop long-term macro-strategies and formulate comprehensive national social policies that extend to areas related to food insecurity, including education, employment, mental health, housing, welfare, transportation, and food prices.
- Increasing investment in targeted intervention for vulnerable groups such as women and children, youth, seniors, students, etc. For example, providing free meals for children aged 3-18 will prevent food insecurity among children, increasing senior-citizen allowances can prevent food insecurity among the elderly, and developing responses for students who face food insecurity will help students from a low socioeconomic background gain a higher education that will open more equal opportunities for them in the job market.
- Countries are advised to promote a collaborative approach that will help strengthen local leadership and collective community effectiveness, and will enhance the active participation and agency of service recipients in decision making processes, in choosing the service they use, and in implementing active participation in food citizenship.
- Forming coalitions and collaborations between different sectors, programs and stakeholders, and creating a shared vision and cooperation between policy-makers, academy researchers and organizations that operate food insecurity responses, are critical for forming relationships and establishing trust in the food-assistance sector. Increasing the coordination between and integration of types of agencies, various resources, activity times, service types, and geographic coverage areas, can provide better outcomes for service recipients and create better relationships between distributors, direct food suppliers, and social initiatives in the community.
- Supporting a national council for food security as an integrating entity with representatives from the private and public sectors, to coordinate, evaluate, collect data, develop responses and oversee their implementation, provide professional recommendations to policymakers on a regular basis and in times of emergency, and promote national policy in the field.

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# 1. Introduction

Food insecurity is a global problem because of which extensive parts of global population cannot obtain nutritious food, and hundreds of millions are suffering from hunger and undernourishment (Sheehy & Chen, 2022).

Definition: the most common and acceptable definition of **food security** today is the UN FAO's definition,<sup>1</sup> as specified in its annual reports (FAO, 2008, p.1): "food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life".

This definition depicts food security as supported by **four essential pillars** (FAO, 2008):

1. **Food availability** at the national and local levels – the reliable supply of food of appropriate quality, through domestic production or importation, including availability of food outlets, availability of food in stores, and quality and available diversity of food at affordable prices;
2. **Access to food** at the household and individual levels – the economic and physical capacity to acquire foods that are safe, culturally appropriate and nutritious, including the capacity to buy and transport food, and the mobility to shop for food;
3. **Food utilization** at the individual level – the physical, social, and human resources to transform food into adequate and safe meals, including the knowledge and skills to decide what food to purchase, how to prepare it; the existence of facilities for cooking and storing food; time available to shop, prepare and cook food;
4. **Food supply stability** – the existence of the former three pillars: availability, access and utilization, simultaneously and stably over time. The consistent supply of food and the capability to account for risks such as natural disasters, price flux, and war and conflict, as well as economic stability, household resilience, and insurance measures against natural disasters and crop failures (Clapp et al., 2022; Bowden, 2020b).

**Food insecurity** is also defined as a multidimensional problem that exists when people do not have adequate physical, social, or economic access to food (Iriti et al., 2022). Sometime the problem is specifically connected to a point in time, and sometimes it is prolonged and characterized by a constant experience of worry and insufficient money for food (Loopstra, 2018). The FAO defines food insecurity (FAO, n.d-b): "the absence of regular access to safe and nutritious food sufficient for normal growth and development, and for healthy and active lives".

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<sup>1</sup> See Article 3.1: [Abbreviation Index](#), for further details.

Food insecurity is manifested in four dimensions: the *quantitative dimension* – an absence of food provision for the household and for individuals within it; the *qualitative dimension* – changes in nutrition characterized by restricted diversity and lack of a balanced and healthy diet; the *psychological dimension* – feelings of uncertainty and anxiety about food provision and feelings of deprivation and lack of choice; the *social dimension* – characterized by modifications to food practices, such as acquiring foods from nonprofit sources or stealing, and inability to participate in social gatherings that involve food (Loopstra, 2018).

International reports about the prevalence of food insecurity customarily distinguish between various levels and severities,<sup>2</sup> particularly between the following two levels (FAO et al., 2022):

1. **Moderate food insecurity** – a situation in which individuals are uncertain about their ability to obtain food, and sometimes have to reduce the quality and/or quantity of the food they consume due to insufficient funds or other limitations on resources. This situation pertains to consistent lack of access to food, reducing the ability to eat a healthy and balanced diet, disrupting normal food patterns, and may have negative effects on nutrition, health, and welfare (FAO et al., 2022).
2. **Severe food insecurity** – a situation in which individuals experience food deprivation, hunger, and in extreme cases go days without eating, severely risking their health and welfare (FAO et al., 2022).

Food insecurity is distinct from hunger; hunger is the physiological experience of food deprivation and is defined as a potential consequence of food insecurity that, because of prolonged, involuntary lack of food, results in discomfort, illness, weakness, or pain that goes beyond the usual uneasy sensation. Food insecurity is the lack of resources to obtain food (USDA. (n.d-a). Current trends indicate that hunger and food insecurity are on the rise internationally since 2015 (Borras & Mohamed, 2020).

Another distinction pertains to the length of time an individual or a household is experiencing food insecurity. It is customary to distinguish between two conditions:

1. **Chronic food insecurity** – often occurs in households where the total income, from employment or government financial assistance, is insufficient for their needs (Temple et al., 2019), or where the high cost of other expenses (e.g. housing, energy, transportation, health and education) leaves little income for food (Davidson et al., 2020).

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<sup>2</sup> See specification of food-insecurity levels in the enclosed Glossary of Terms.

2. **Transitory food insecurity** – usually due to short-term shocks such as natural disasters, pandemics, or civil unrest (such as strikes) that interrupt food supply for a population and affect local availability. These shocks could also include more immediate personal factors such as job loss, short-term increases in education or health costs, or other unexpected expenses (Bowden, 2020b).

In 2015, the UN General Assembly announced an Agenda to achieve 17 international Sustainable Development Goals (SDGs) that are expected to be accomplished by 2030 (United Nations, n.d). The agenda was signed by 193 heads of state, including Israel's (the Ministry of Environmental Protection, n.d). The rate of achieving the second SDG – Zero Hunger (SDG2), which includes eradicating hunger, achieving food security, improving nutrition, and promoting sustainable agriculture, is the most criticized SDG of the Agenda. According to the UN FAO report, the world is not on track to achieve Zero Hunger by 2030 (FAO, 2020). According to the UN report for 2022, which provides a global overview of progress on SDG implementation, the world is on the verge of a global food crisis and the number of people who experience hunger and food insecurity is steadily increasing, in a trend that has begun even prior to the Covid-19 pandemic.

Global research validates the UN's assertion and indicates an increase in food insecurity around the world in both developing and developed countries (Sheehy & Chen, 2022). According to UN estimates, in 2021 **nearly one in every three** people has suffered from moderate or severe food insecurity, and **one in every ten** people worldwide has suffered from hunger (United Nations, 2022a).

To adequately meet the UN SDGs of eradicating hunger and achieving food security for all humankind, it is imperative to understand the factors that affect food insecurity worldwide. Understanding these factors can contribute to building political will, designing effective policies, and targeting scarce resources (Smith et al., 2017).

Food insecurity is manifested in each of the four dimensions of the food security definition: **food availability** (agricultural production and market conditions), **access to food** (financial and physical), **food supply stability** (food prices, income, and economic shocks) and **food utilization** (Zereyesus et al., 2022). These dimensions include several main factors that affect the way individuals, families and communities experience various levels of food security and food insecurity:

- **Crises that affect food production and importation:** domestic food production is a basis for food security in wealthy countries, usually located in areas with convenient conditions for agriculture, such as North America, Australia, New Zealand, and Kazakhstan. There are also countries, mostly in Europe, with a relatively small area of arable land per capita, that manage to produce food in large quantities and high quality by using



advanced technologies (Borras & Mohamed, 2020; Sheehy & Chen, 2022). Countries that do not produce sufficient food domestically have to rely on international trade and food importation. Large-scale pandemics, military conflicts, wars, terrorism, persecution and involuntary displacement, natural disasters and climate events can disrupt food systems as well as food production and distribution, destroy crops and infrastructures, and uproot people from their homes and livelihoods. Furthermore, such crises can also lead to food scarcity and price rises (FAO, 2021). For example, in 2021 food prices rose considerably because of disruptions to supply chains and shipping costs due to the **Covid-19 pandemic**. Moreover, global food prices increased by 28% between 2020 and 2021, and again by 29% between 2021 and 2022. The price of grain increased by 75% between May 2021 and May 2022, and the price of fertilizer soared to an all-time high (FAO, n.d-a). Inflation reduces purchasing power and poor households' access to food and increases both the number of people who require food assistance and the cost of such assistance (WFP, 2022b). The crisis in recent years is also attributed to the **War in Ukraine**, impacting the production capabilities of Ukraine and Russia, which are the main producers and exporters of essential food products as well as fertilizer, minerals and energy, and supply about a third of global wheat and barley export (United Nations, 2022a). Russia's invasion into Ukraine has destroyed agricultural production in Ukraine, disrupted supply chains and food shipments, and affected global crops, fertilizer and energy prices. The war caused food scarcity and additional inflation of food prices, and the prices of many agricultural products monitored by the UN FAO reached an all-time high in February 2022 (Giner & Placzek, 2022). Moreover, the increasing frequency of **extreme climate events** in 2022, including heavy rain, floods, hurricanes, droughts and more, has also disrupted supply chains, particularly in low-income countries (FAO et al., 2022).

- **Food waste:** food insecurity does not necessarily attest to food scarcity in the individual's environment. Nearly one-third of all food produced globally is either wasted or lost, while millions of people go hungry (Hossain et al., 2021). Food waste is one of the reasons that people still suffer from food insecurity in supposedly affluent countries. Food abundance coupled with access barriers leads to an accumulation of large quantities of food waste (Bellia et al., 2015; Coque & González-Torre, 2016), so that merely increasing food quantities in the country does not necessarily contribute to reducing food insecurity among populations (Hossain et al., 2021).
- **Poverty:** poverty is the most significant cause of hunger, food insecurity, undernourishment and health inequality. The premise among policy makers is that hunger is primarily a by-product of poverty, that wealthy countries do not have hunger, and that the solution is economic development (Borras & Mohamed, 2020; Sheehy & Chen, 2022). Because of this conception, interest in the causes of food insecurity centered primarily on developing, low-income countries. However, over the years food insecurity has increased in developed,

high-income countries as well (Carrillo-Álvarez et al., 2021). The work of Amartya Sen (Sen, 1982) has shown that even when food was widely available in markets, people did not always have access to it. Sharp spikes in prices, recession that led to unemployment, and climate events that reduced productivity, prevented people from purchasing food. These occurrences expanded the understanding of food security, from a macro to a micro approach looking at whether individuals or households have steady access to food (Clapp et al., 2022). In high-income countries, data from national surveys have routinely shown that household income determines the household's financial capability to purchase food and is the most consistent and strongest predictor of food insecurity (Loopstra, 2018). While the relationship between low income and severe food insecurity is strong, the factors that lead to food insecurity in developed countries, particularly those with strong social safety nets, are more complex (Seivwright et al., 2020); **individual** factors that are prevalent among people living in poverty, such as lower level of education, unemployment, weak social networks, and lack of social capital, were found to be linked to a higher risk of experiencing food insecurity **in Australia, the UK, and the US** (Ramsey et al., 2012; Thornton et al., 2014). **In the US**, employment and wages have been found to be the strongest predictors of food insecurity (Berg & Gibson, 2022). Yet while unemployment has been found to be related to a higher risk of food insecurity, the majority of food-insecure households in the OECD include an employed adult, highlighting the complex nature of the problem (Giner & Placzek, 2022).

The aforementioned factors indicate that food availability is rarely an issue in developed countries. The main issues are **access to food** (manifested in physical difficulty for people with disabilities and seniors to access food, and financial difficulty for low-income earners to purchase food), and **utilization of food** (manifested in difficulty to purchase or lack of knowledge or skills to prepare healthy food).

**In Israel**, food insecurity and assistance to food-insecure families are on the public's and policy makers' agenda (Even-Zohar, 2020). The latest National Insurance Institute survey from 2021 indicates that approx. 16% of all families in Israel (522,000 families) were living in food insecurity, with 265,000 of them living in severe food insecurity (Endeweld & Karady, 2023). With the aim of assisting the development of a national plan to reduce and prevent food insecurity in Israel, the National Council for Food Security in collaboration with the Ministry of Welfare and Social Affairs, have approached Myers-JDC-Brookdale Institute to conduct an international review of the policies and practices of developed countries worldwide in dealing with food insecurity, with an emphasis on practices that were found effective in improving the food insecurity level of affected individuals and households. This review was conducted in continuation of another comprehensive review about food insecurity in Israel, also conducted by Brookdale Institute (Or Sharvit & Brender, 2021).

## 2. Review Objectives and Questions

The review is intended to assist in evidence-based decision making in order to shape practices for addressing food insecurity in Israel at the national level, by learning from practices in developed countries regarding legislation, policy and programs for families that suffer from food insecurity, and by mapping challenges, barriers, and best practices implemented by countries for such families. The objective of the review is to promote understanding regarding the following questions:

- What is the prevalence of food insecurity worldwide, particularly in developed countries, and what are the characteristics of living with food insecurity?
- What are the causes and effects of food insecurity in developed countries?
- What are the trends in legislation and policy pertaining to assistance to food-insecure families in developed countries?
- What models exist for government involvement in food insecurity?
- What services and responses are provided for food-insecure families?
- What are the best practices for working with food-insecure families?
- What are the impact indicators for programs intended for food-insecure families?
- What are the challenges in legislation and policy pertaining to food insecurity?
- What are the challenges in implementing and operating programs intended for food-insecure families?

# 3. Method

The review was conducted between February 2023 and June 2023 using data collection from several sources:

1. Websites of international organizations, government agencies, and civil-society organizations that operated services for food-insecure families;
2. Review of publicly-available sources, e.g. policy papers by the Food and Agriculture Organization (FAO), International Fund for Agricultural Development (IFAD), and World Food Programme (WFP);
3. Review of academic sources that came up in Google and Google Scholar searches, and in the databases Proquest, PubMed and Science Direct, using search strings that were designed to answer the research questions:
  - (food insecurity) AND (policy) AND (trends OR initiatives OR reforms) AND (high-income countries OR developed countries)
  - (food insecurity) AND (legislat\*)
  - (food insecurity) AND (models OR strategies OR programs OR state involvement OR policy)
  - (food insecurity) AND (services OR programs OR strategies OR practice OR models)
  - (food insecurity) AND (indicators)
  - (food insecurity) AND (challenges OR barriers) AND (legislation OR implementing OR policy)

## 3.1 Acronym Index

The UN Food and Agriculture Organization	Food and Agriculture Organization	FAO
A survey module about household food security by the US Department of Agriculture	Household Food Security Survey Module	HFSSM
The US Government's Department of Agriculture	United States Department of Agriculture	USDA
The UN Food and Agriculture Organization's scale of food insecurity	Food Insecurity Experience Scale	FIES
The UN World Food Programme	World Food Programme	WFP
The World Health Organization	World Health Organization	WHO
The United Nations International Children's Emergency Fund	United Nations International Children's Emergency Fund	UNICEF
The Developed Countries' Organisation for Economic Co-operation and Development	Organisation for Economic Co-operation and Development	OECD

## 4. Findings

### 4.1 Global food insecurity – prevalence, characteristics and impacts

#### 4.1.1 Food insecurity worldwide, and particularly in developed countries

##### Tools for measuring food insecurity

While food insecurity in developing countries is being regularly measured and monitored, recent years have seen a growing trend of studying the prevalence of food insecurity in developed, high-income countries. These studies show an alarming increase in the number of households and individuals in the rich world whose fundamental right to adequate food, as recognized by the Universal Declaration of Human Rights, is not guaranteed (Carrillo-Álvarez et al., 2021). Measuring the prevalence of food insecurity at the *individual* or *household* level is usually accomplished using direct experiential perception-based questionnaires and diet quality assessments based on food intake (Doustmohammadian et al., 2022). A review of tools for assessing food insecurity at the individual and household levels in 2000-2020 found 23 measurement tools used by high-income countries. The following are the four most commonly used measurement tools (Carrillo-Álvarez et al., 2021):

1. **USDA HFSSM Scale** (Household Food Security Survey Module) – the most commonly used and most validated. The HFSSM was developed by the United States Department of Agriculture (USDA) to measure household food insecurity. It was first used in 1995, and has since undergone changes to the measurement focus and to the definitions of food insecurity levels. Its most recent version was formulated in 2012. The HFSSM focuses on the **Access to food** dimension (Carrillo-Álvarez et al., 2021) and includes 18 items that make reference to the past 12 months and emphasize food deprivation due to a lack of finances for food, and not for reasons of dieting or time restraint (Loopstra, 2018).

The USDA Scale classifies three levels of food security: (1) **Food security**: attributed to households with regular access to diverse food in sufficient quantities; (2) **Low Food Security**: attributed to households where individuals reported worrying about the family's food management and were concerned that food will be insufficient for the family; (3) **Very Low Food Security**: households where one or more household members experienced reduced food intake and disrupted eating patterns at times during the year because they could not afford enough food (Coleman-Jensen et al., 2022). This measurement tool has been routinely used for national surveys in **the US** since 1995, as part of the Census Bureau population survey, and in **Canada** since 2004. Food insecurity is also measured using items from within the HFSSM in national health surveys in **Portugal, Australia**, and in **England, Wales and Northern Ireland** (Loopstra, 2018). It has a 10-item version and

an abbreviated 6-item version. Countries can choose to use different versions according to considerations of length. For example, the last two measurements as part of the “Food and You” survey in **the UK** used the 10-item scale, while **France** used the 6-item module in its food-intake survey for 2014-2015 (Giner & Placzek, 2022). **New Zealand** and **Spain** also make use of the abbreviated tool (Carrillo-Álvarez et al., 2021).

2. **FIES** (Food Insecurity Experience Scale) – the second most commonly used scale, developed by the FAO in 2013 as a formal tool for evaluating the progress on UN SDG “Zero Hunger” by 2030 (SDG2), to produce annual comparable estimates of food insecurity worldwide by measuring people’s direct experiences of food insecurity at the individual level (Carrillo-Álvarez et al., 2021). Since 2014, the FAO has been operating in collaboration with the Gallup World Poll (GWP) to collect data annually from all 149 participating countries (Smith et al., 2017). The FIES has been translated into more than 170 languages and dialects and is currently the only method of evaluating food security at the household or individual levels that ensures global comparability of measures, due to the possibility of calibrating these measures against a global reference standard. The FIES questionnaire comprises eight items designed to assess the respondent’s access to adequate food. The FIES measurement system enables the assessment of household or individual food insecurity across two levels – severe or moderate (Giner & Placzek, 2022). Like the HFSSM Scale, this tool also focuses on the Access to food dimension and does not identify whether the actual diet is sufficient or not in relation to all nutrition dimensions (Grimaccia & Naccarato, 2020).
3. **HFIAS** (Household Food Insecurity Access Scale for Measurement of Food Access) – based on the HFSSM, this tool was developed in 2007 by the FAO to provide a simple and friendly measurement tool to assess the impact of food assistance program on promoting household **access to food**, in different cultures and contexts. This scale allows assessment of the prevalence of household food insecurity and changes in the population’s food insecurity status over time. It is intended to be used mainly in low-resource areas, and has been validated mainly in developing, low-income countries (Carrillo-Álvarez et al., 2021).
4. **Single Item Australia Scale** – developed in 2007 to assess the prevalence of food insecurity in Australia as part of the NSW Population Health Survey that is conducted once every three years. In this scale, food insecurity is measured by a single item: “In the last 12 months was there any time you have run out of food and not been able to purchase more?” (Australian Bureau of Statistics, 2015). In a systematic review of 57 articles about food security in Australia, McKay et al. (2019) have found that in 36 studies that directly measured food insecurity, 22 (61%) used this single item as a measure of food security. Similarly, other single-item indicators of food hardship are often included as part of larger scales used to measure material deprivation,

particularly in EU health surveys (Loopstra, 2018). For example, the European Quality of Life Survey included a single item to measure food insecurity: “Could your household afford a meal with meat, chicken or fish every second day if you wanted it?” (Carrillo-Álvarez et al., 2021). Such items are limited in that they do not capture psychological or quantitative dimensions of food insecurity, and do not specify the time period or frequency of relevant experiences (Loopstra, 2018).

## Prevalence of food insecurity worldwide and in developed countries

Food insecurity in the household is a global problem to varying degrees, but it is always more prevalent among populations and individuals who live in poverty (Reeves et al., 2021a). Global research indicates an increase in food insecurity worldwide, in both developing and developed countries, even when there is sufficient food to meet the needs of all the country’s citizens (Long et al., 2020), and despite the UN “Zero Hunger” Sustainable Development Goal by 2030 (Iriti et al., 2022). The COVID-19 epidemic and the conflict between Russia and Ukraine significantly influenced this increase in food insecurity (Sheehy & Chen, 2022).

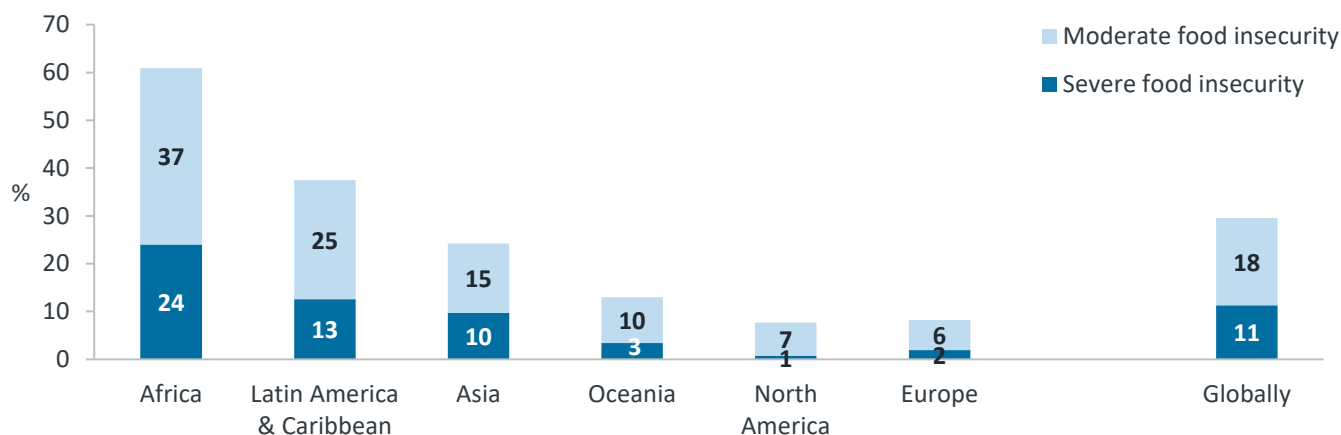
As aforesaid, UN estimates assert that in 2021 **one in every ten** people worldwide has suffered from hunger, and **nearly one in every three** people has suffered from moderate or severe food insecurity (United Nations, 2022a). The Global Report on Food Crises for 2022 indicates that in 2021 close to 193 million people across 53 countries/territories had suffered from acute food insecurity<sup>3</sup> and needed urgent assistance. This represents an increase of nearly 40 million people compared to 2020. True to 2021, the number of acutely food-insecure people has risen by 80% since 2016. (FSIN, 2022). According to the World Food Programme (WFP), the number of severely food-insecure people has more than doubled, from 135 million prior to the COVID-19 pandemic to 276 million in the summer of 2022 (WFP, 2022a). The countries in the harshest conditions in terms of food security, amounting to the risk of starvation and death – are Ethiopia, South Sudan, southern Madagascar and Yemen (FSIN, 2022). The formal annual flagship report – The State of Food Security and Nutrition in the World, attesting to the condition of global food security and nutrition, is a collaboration between several central organizations in the field: the Food and Agriculture Organization (FAO), International Fund for Agricultural Development (IFAD), World Food Programme (WFP), World Health Organization (WHO), and United Nations International Children’s Emergency Fund (UNICEF). It is intended to report the progress of each country in achieving the goals of ending hunger, achieving food security for its citizens, and improving nutrition, and includes an in-depth analysis of the main challenges facing this goal in the context of the UN Sustainable Development Goals for 2030. The latest

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<sup>3</sup> See enclosed Glossary of Terms.

report, for 2023 (FAO et al., 2023) indicates that after increasing sharply in 2020, the prevalence of moderate or severe food insecurity remained mostly unchanged in 2022, and the prevalence of severe food insecurity even increased by high rates. In 2022, 30% of the entire world population – 2.4 billion people – suffered from moderate or severe food insecurity. 11% of the entire world population – 900 million people – coped with severe food insecurity in 2022. The prevalence of severe food insecurity had increased from 9% in 2019 to 11% in 2022 (FAO et al., 2023). **Figure 1** details the prevalence of moderate and severe food insecurity in 2022, in each of the continents.

**Figure 1: Prevalence of moderate and severe food insecurity in 2021, by continents (percent)**

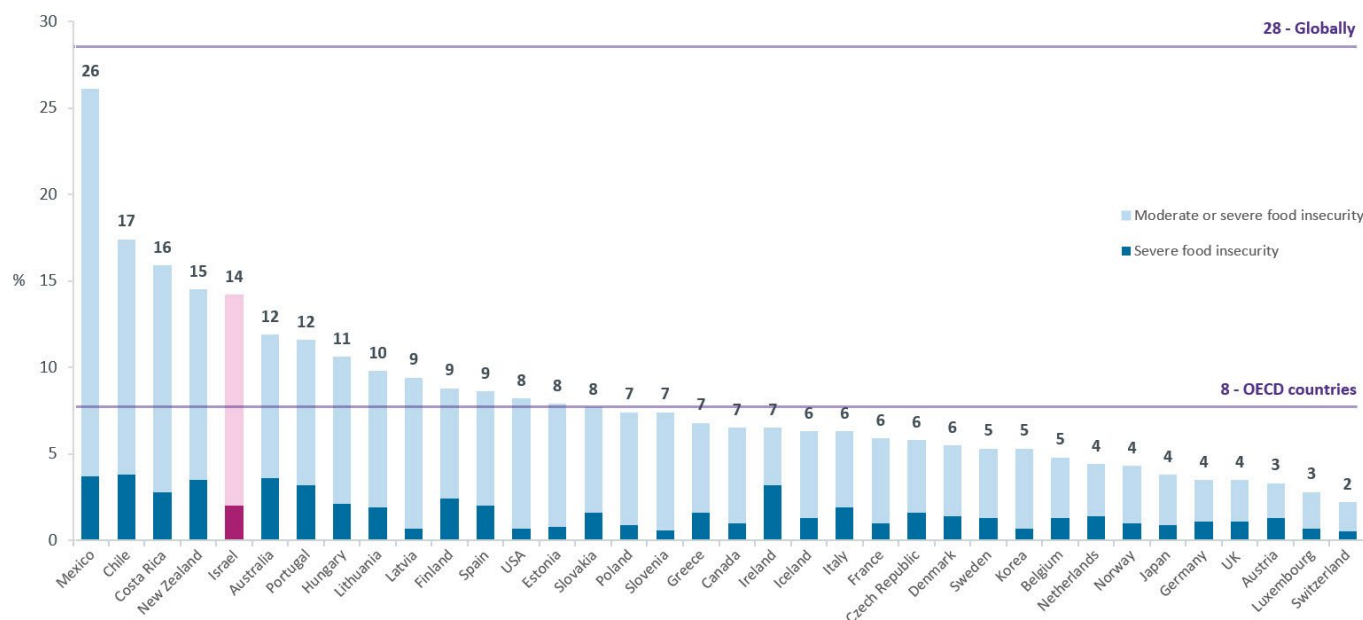


Data source: Food Insecurity Experience Scale – FAOSTAT <https://www.fao.org/faostat/en/#data/FS>

**Figure 1** shows that the highest prevalence of food insecurity in 2022 was in Africa, where 61% of the overall population had coped with moderate or severe food insecurity (one in every two people). In Asia that same year, the prevalence of food insecurity was 24% (one in every four); in Latin America and the Caribbeans, 38% of the overall population (one in every 2.5); in North America, 8% of overall population, and in Europe, 8% of overall population (one in every 12.5) (FAO et al., 2023). While food insecurity is more prevalent in developing countries, it also exists in developed OECD countries. Using the FAO's FIES scale, it was found that 7.5% of total population in OECD countries had faced food insecurity between 2018 and 2020 (Giner & Placzek, 2022). **Figure 2** presents the prevalence of moderate to severe food insecurity in OECD countries in 2019-2021.



**Figure 2: Average prevalence of moderate to severe food insecurity in general OECD population, 2019-2021, based on FIES (percent)^**



Data source: Food Insecurity Experience Scale – FAOSTAT <https://www.fao.org/faostat/en/#data/FS>

^ No available information about Columbia and Türkiye

According to **Figure 2**, on average 7.5% of the total OECD population experienced moderate food insecurity in 2019-2021. The prevalence of moderate or severe food insecurity had ranged between 2.2% of total population in Switzerland to 26.1% in Mexico. In Israel, rates of food insecurity are high in relation to most OECD countries – 14.2% in moderate food insecurity and 2% in severe food insecurity. Severe food insecurity is relatively rare in developed countries, ranging between 0.7% to 4% of total OECD population in the aforementioned period. On average, OECD countries are far from achieving the SDG targets related to moderate food insecurity, while close to the target of lessening the prevalence of severe food insecurity in the adult population (Giner & Placzek, 2022).

**In conclusion**, although the prevalence of food insecurity varies across countries, it is always more prevalent among populations and individuals living in poverty. Global research indicates an increase in food insecurity rates worldwide, in both developing and developed countries, even when there is sufficient food to meet the needs of all the country's citizens. The COVID-19 pandemic and the conflict between Russia and Ukraine significantly influenced this increase in food insecurity. According to UN estimates, **one in every ten** people worldwide has suffered from hunger, and nearly **one in every three** people has suffered from moderate or severe food insecurity in 2021. In 2019-2021, an average of 7.5% of total OECD population had experienced moderate food insecurity, and OECD countries were found to be far from achieving the SDG targets related to moderate food insecurity, while close to the target of lessening the prevalence of severe food insecurity in the adult population. In Israel, rates of food insecurity are high in relation to most OECD countries.

#### 4.1.2 Characteristics of food-insecure populations

Food insecurity often coincides with financial insecurity, health insecurity, and housing insecurity. Therefore, certain populations tend to be at a higher risk of food insecurity, in both developing and developed countries (Borras & Mohamed, 2020; Temple et al., 2019). In this manner, despite heterogeneity in global populations, differences in governments and policies, variations in local economies and markets, and differences in agricultural production, it is possible to identify the main characteristics of the typical food-insecure person around the world (Smith et al., 2017). The five characteristics found to be most associated with an increase in food insecurity are: low levels of education, weak social networks, lack of social capital, low household income, and unemployment. The relationship between food insecurity and gender, the number of adults in the household, rural living, employment status, and GDP per capita varies according to the country's development ranking (Smith et al., 2017). The main characteristics of food-insecure people can be divided into demographic characteristics, health characteristics, and social characteristics (Bowden, 2020b). The following is a description of the main characteristics.

##### Demographic characteristics

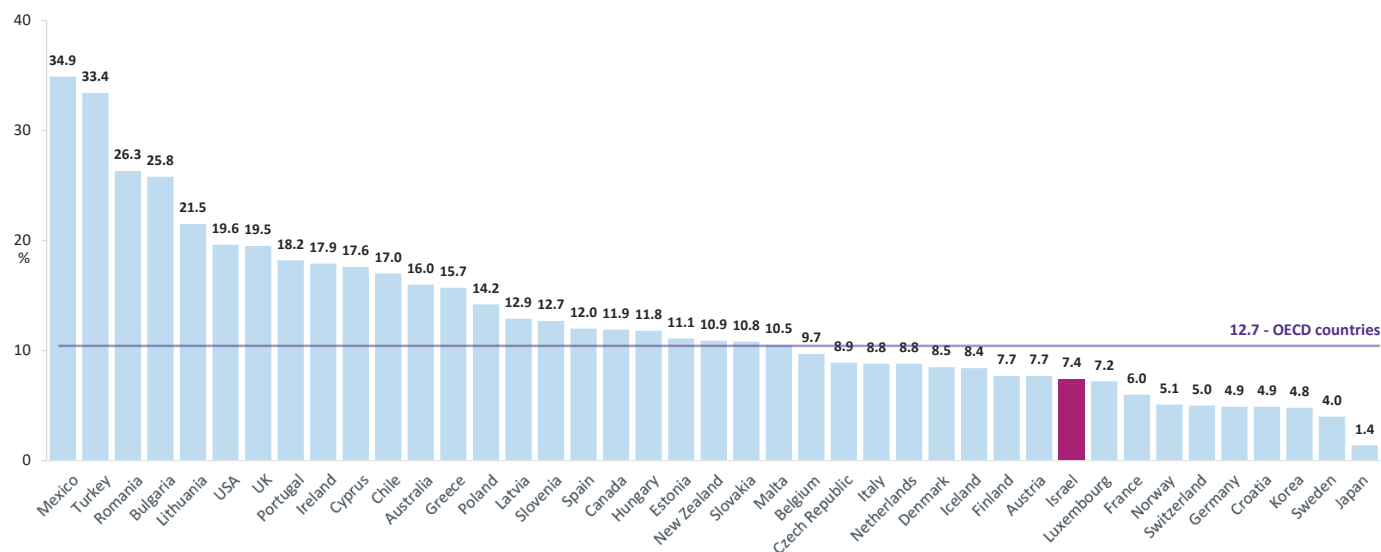
**Age:** literature indicates that adults and seniors on one hand (Bowden, 2020b) and children on the other hand (Walker et al., 2021) are at a higher risk of reporting food insecurity:

- **Seniors:** although old age in itself does not increase the risk of food insecurity (Temple et al., 2019), some factors pertaining to the health and living conditions of elderly people can make them vulnerable to food insecurity (Forsey, 2018). However, research findings about the vulnerability of **adults and seniors** to food insecurity are mixed; On one hand, some studies indicate that **seniors** are at higher risk of reporting food

insecurity (Bowden, 2020b). According to **Australia's** National Rural Health Alliance, seniors aged 70-80 are at risk of food insecurity when they are dependent on government financial assistance, live in rented housing, and cannot live independently. Other factors that may put seniors at higher risk of food insecurity are: illness and social isolation (Forsey, 2018) and limited mobility, which makes it difficult to access local food stores and carry goods (Burns et al., 2015). On the other hand, in **the US** the rate of people who reported food insecurity between 2011 and 2017 was found to be lower among those aged 65 and older than among those younger than 65 (Walker et al., 2021).

- **Children:** as opposed to mixed findings concerning seniors, academic literature agrees that children are at high risk of food insecurity. In children, food insecurity may be manifested in lack of meals or fresh food, in eating meals at the homes of other family members, and in attending school without breakfast and lunch. This condition can adversely affect children's physical health, social and emotional well-being, and their academic achievements (Foodbank, 2018a; Foodbank, 2018b). A Foodbank study in **Australia** (Foodbank, 2018b) found that **children** are more likely to live in food-insecure households (22%) than adults (15%). As adult caretakers will usually give up their own nutrition to feed their children and protect their food security, a condition of food insecurity among children is an indicator of extreme severity of household food insecurity (Knowles et al., 2016). Children are particularly at risk if they live in a household that is affected by other factors specified in this article. For example, a study by Godrich et al. (2017) about the prevalence of food insecurity in children from rural and distant areas of West **Australia** found that a fifth of all relevant children live in food insecurity; especially those whose families rely on government financial assistance or live in a low socio-economic area. High rates of food insecurity among children were found to be high even in the richest countries in the world. For instance, in 2017 in **the US**, one in every six children aged 17 and under (17.5%) was living in poverty. The rates were higher among African-American children (29%) and Hispanic children (25%). 12.5 million US children live in households that experience food insecurity (Fernald & Gosliner, 2019) **Figure 3** shows the prevalence of moderate to severe food insecurity among children under 15, in the richest countries in the world.

**Figure 3: Prevalence of moderate or severe food insecurity in children aged 0-15, living in moderately or severely food-insecure households, in the richest countries in the world, 2014-2015**



Data source: Gallup's WFP data that included the FIES for 2014-2015, processed by Pereira et al., 2017.

**Figure 3** shows that the average prevalence of moderate or severe food insecurity among children under 15 who live in a moderately or severely food-insecure household in the richest countries is 12.7%, meaning **one in every eight children** in high-income countries suffers from moderate or severe food insecurity. The rich countries with the lowest rates of moderate or severe food insecurity (one in every 20 children) are **Japan, Sweden, Korea, Germany, Switzerland,** and **Norway**. **Israel**, by this rating, is below the average: one in every 14 children suffers from moderate or severe food insecurity. In **Lithuania, the UK, and the US** one in every five children suffers from moderate or severe food insecurity; in **Bulgaria** and **Romania**, one child in four, and in **Mexico** and **Türkiye** one child in three suffers from moderate or severe food insecurity.

**Gender:** women have been found to report food insecurity at higher rates than men (Walker et al., 2021). For example, in **the US**, the rate of women who reported food insecurity in national health surveys between 2011 and 2017 was consistently higher than the men (Bowden, 2020b). In **Australia** as well, the rate of women who usually experience food insecurity was found to be higher (27% compared to 18% in men) (Foodbank, 2018a). Women are at high risk of becoming food insecure due to entrenched societal power inequality and a range of socioeconomic conditions such as domestic violence, and poor employment and education (Bastian et al., 2022).

**Family structure: households with children** are a group at risk of food insecurity. An increase in poverty rates among such households had been observed in many studies, both national (Coleman-Jensen et al., 2018; Loopstra et al., 2019) and international (Smith et al., 2017). This increase is partly due to the decreased earning trajectories of parents who work less to look after children and are also due to increased demands children place on financial resources (schooling and childcare) compared with households without children, leaving less money available for food (Reeves et al., 2021a). Many high-income countries like **the US, Italy, Greece, Spain, Israel, Chile** and **Türkiye** were found to have a higher than 15% rate of families with children who live in poverty (Fernald & Gosliner, 2019). In **Canada**, 16% of households consisting of couples with children under 18 were food insecure in 2021 (Tarasuk et al., 2022).

**Single-parent households** experience times of food insecurity in higher frequency than other households. This may stem from limited available income or time constraints that impede full-time employment. The risk of food insecurity for single-parent households is likely to be heightened by the presence of other factors such as disabilities, mental health difficulties, living in remote areas and relying on government financial assistance (Bowden, 2020b). Food insecurity in single-parent households is more common among women (Giner & Placzek, 2022). Foodbank's Hunger Report (Foodbank, 2018a) stresses that in **Australia** in 2019, food-insecure women were 21 percentage points more at risk than food-insecure men (49% compared to 28%) to raise children on their own for prolonged periods of time. Mothers are an especially vulnerable group when they belong to low-income or single-parent groups (O'Connell et al., 2019). In **the UK**, 29% of all single-parent households in 2019-2020 were food insecure (Boyle & Power, 2021). In **Canada** the prevalence of household food insecurity in 2021 was found to be 2.8 times higher among adolescents who live with a single parent, compared to adolescents who live with two parents, and 3 times higher among single parents who live with children compared to couples without children (PROOF, 2022). In 2021, 38% of all single-parent mothers in Canada lived in food insecurity (Tarasuk et al., 2022).

**Financial situation:** people in low-income households are exposed to food insecurity and often face challenges in acquiring sufficient quantities of adequate and healthy food (NSW Council of Social Service, 2018). This vulnerability is compounded by the rising cost of living (e.g. housing, social services and petrol) (Bowden, 2020b). In **the UK** for instance, the probability of low-income adults to be food insecure was found to have increased from 27.7% in 2004 to 45.8% in 2016 (Loopstra, 2022). In **the US** in 2016, 32% of all people with income 185% below the poverty threshold were food insecure, a much higher rate than that year's national food insecurity rate – 12.3% (Borras & Mohamed, 2020). In **Europe**, the strongest correlation with food insecurity was the household's income

quartile (Garratt, 2020) In **Canada**, a close relationship was found between household income and its level of food insecurity. The lower the household income, the higher the risk of food insecurity. Moreover, households with very low incomes are at much higher risk of experiencing severe food insecurity (PROOF, n.d-a). In Canada, the workers most likely to report food insecurity are low-wage workers, those with short-term work, those who work several jobs, and workers who support several individuals based on one source of income (Tarasuk et al., 2022). A relationship was also found between food insecurity and reliance on government allowances; for example, an analysis of FSA data in **the UK** found that food insecurity is particularly prevalent among recipients of national-insurance allowances such as unemployment allowance. Reliance on government allowances was found to be specifically associated with severe food insecurity (Boyle & Power, 2021). In **Europe**, a review of 27 countries included in the European Quality of Life Survey in 2007 and 2011 found that food insecurity was significantly more prevalent among recipients of work allowances and social security allowances (Garratt, 2020). In **Canada** a high prevalence of food-insecure household has been found among those relying on public programs, except for public old-age pension, and in 2021 63% of all households that reported social assistance (district welfare programs and disability allowances) as their main income source were food insecure. About half of them lived in severe food insecurity and at the highest risk of experiencing adverse health outcomes (Tarasuk & Fafard St-Germain ,2022).

**Living area:** healthy food is more expensive in rural areas, with prices being even higher in remote areas, mainly due to shipping and logistics costs. These costs are rolled over to retailers, and finally to consumers. Foodbank (Foodbank, 2018a) in Australia estimates that people in rural or remote areas are on third more likely to be food insecure than people who live in cities. Furthermore, remote areas have fewer branches of large food chains, creating a dependency on smaller stores that stock a limited variety of food, usually for higher prices. Remote areas were also found to have more access to fast food than to healthy food (Bowden, 2020b).

**Homeless people:** homeless individuals are usually exposed to food insecurity due to insufficient funds to purchase nutritious food, and limited facilities for storing and preparing meals (Chigavazira et al., 2014; Herault & Ribar, 2016). In **Australia**, Herault and Ribar (Herault & Ribar, 2016) have found that even though women usually experience food insecurity at a higher rate, the relationship between homelessness and food insecurity is stronger for men. Other barriers that affect the food security of young homeless people are living in poverty or with low income, and limited access to stores that sell healthy food at affordable prices (Crawford et al., 2014).

**Immigration and citizenship status:** refugees and asylum seekers usually face challenges of poverty, unemployment, difficulty obtaining a visa, difficulty accessing healthcare services, language barriers, and difficulties pertaining

to cultural differences (Lawlis et al., 2018). Moreover, such individuals often send their wages to family members who remain at their country of origin, and their access to government assistance funds or work income is limited. A study by McKay et al. (2018) in **Australia** found that for asylum seekers with limited income or no income, emergency food assistance services were their main source of weekly food. The same study also found that despite financial insecurity and food insecurity, two thirds of all asylum seekers did not patronize food-assistance emergency services. This fact was attributed to barriers such as culturally or religiously inadequate food; discomfort about taking food from others who need it; or transportation difficulties. In **the US** in 2020, Sudanese immigrant families and refugee families were found to suffer from food insecurity in much higher rights than in the general population – 40%-71% (Mansour et al., 2020).

**Ethnic minority groups:** people of ethnic origin that differs from the general population, and cultural minority populations such as indigenous people, are more likely to experience food insecurity (Borras & Mohamed, 2020; Bowden, 2020b). For instance, in **the US** in 2011-2017, black people were 69% more likely to be food insecure than white people, and Hispanics were 24% more likely. This gap was maintained throughout the time period (Walker et al., 2021).

## Health characteristics

In a representative national sample of **US** families, based on national health surveys from 2011-2017, people who cope with chronic medical conditions reported higher levels of food insecurity (Walker et al., 2021). Diminished health stemming from diagnosed disorders or disabilities, such as mental illness, physical disability, dual diagnosis, chronic illness, or serious illness, may put people at risk of food insecurity even in countries with public healthcare systems. Moreover, when these issues intersect with the aforementioned demographic characteristics (age, gender, family structure, etc.), they further heighten risk and increase vulnerability to food insecurity (Bowden, 2020b). In **Canada**, a healthcare service utilization review in **Ontario** had found that food-insecure households require more than double the healthcare financial support than food-secure households (Tarasuk et al., 2015).

## Social characteristics

Alongside demographic and health characteristics, other factors related to life events and circumstances were found to increase the risk of food insecurity, such as witnessing or experiencing violence, removal of children from their home, relationship breakdown, racism and discrimination, intergenerational or childhood trauma, and reintegration after incarceration (Bowden, 2020b).

## Higher education

In addition to the aforementioned populations, **students** in colleges and universities were identified in the last decade as a population at risk of food insecurity (Hagedorn-Hatfield et al., 2022a). The first article presenting the problem of food insecurity among students during their academic studies was published in 2009 (Chaparro et al., 2009). Since then, research measuring the prevalence of this problem is expanding globally. The last **US** review found that 41% of all students experience food insecurity. The problem exists in all types of institutions, both public and private, across different degrees and academic programs (Hagedorn-Hatfield et al., 2022a).

The causes of food insecurity among students are mainly attributed to the ever-increasing costs of academic tuition (estimated at a 1,200% increase since the 1980s) (Bhutada, 2021), and to the reduction of government support, forcing many students to rely on loans and scholarships. Taking out loans puts students in debt, sometimes forcing them to choose between food and other needs, such as rent, medications, transportation, academic equipment, and more (Smith et al., 2020). It is important to note that in some countries there are higher education funding systems, and a comparative review of these systems among 28 OECD member countries indicates that in the US, the UK and Korea, the private sector is more dominant in participating in academic tuition, while in most European countries the public sector is the more dominant. Most OECD countries support higher education through public funds (Goksu & Gungor Gokso, 2015). In **the US**, more than half of all Bachelor's Degree graduates were found to have relied on federal loans in 2023 (US\$40,000 on average) (Hanson, 2023), and many students skipped meals or remained hungry because they were unable to afford food as well as all the necessary academic expenses. The transition away from home leads to a risk of food insecurity starting in the first year of school, and food insecurity rates increase as students progress academically (Hagedorn-Hatfield et al., 2022a; for regularly updated student debt loan statistics in the US, see [Education data initiative](#) online). In the past few decades, the demographics of college students in the US have changed, with more first-generation, minority, and lower socioeconomic status students seeking a college degree as a means to end the poverty cycle. Various studies have shown that students at higher risk of food insecurity are from low-income households, are first-generation higher-education students, have a reported disability, or belong to ethnic minority groups (Olfert et al., 2021; Olfert et al., 2023). Moreover, students sometimes lack food literacy, including cooking and food budgeting skills, to regularly prepare meals. Due to busy schedules with little time and money for food shopping and cooking, students sometimes rely on a less varied and less nutritious diet. It was found that students who do not cook for themselves are at higher risk of food insecurity (Hagedorn et al., 2019). A recent study had found that food insecure students have a lower than 42% chance of graduating. These rates may be attributed to a lower capability to focus, leading to poorer academic performance among



food insecure students (Wolfson et al., 2022). Various studies have also found adverse effects of food insecurity on mental health, manifested by symptoms of depression and anxiety, adverse effects on sleep quality, lower perception of resilience, and feelings of loneliness, lack of support, and lack of belonging (Al-Khani et al., 2019; DeBate et al., 2021; Wattick et al., 2018).

**In conclusion,** food insecurity often coincides with financial insecurity, health insecurity, and housing insecurity. Therefore, certain populations tend to be at a higher risk of food insecurity, both in developing and in developed countries. Food insecurity is more prevalent among children and families with children, especially single-parent families; women; individuals with low income or no income at all; individuals relying on allowances and social assistance; individuals residing in rural and remote areas; the homeless; immigrants, refugees and asylum seekers; individuals from cultural and ethnic minority groups; individuals suffering from physical or mental illnesses or disabilities; individuals who have experienced difficult and traumatic life events; and academic students without family financial support.

#### 4.1.3 Effects of food insecurity on children and adults

Food insecurity has an adverse effect on the physical, emotional and mental health of adults and children, as well as on their social circumstances, and these effects can be exacerbated as the severity of food insecurity increases (Tarasuk et al., 2013b). **Among children,** food insecurity was found to possibly cause the following adverse effects (Borras & Mohamed, 2020):

- **Social effects** – children from food-insecure families tend to spend less time with other children outside of school, and refrain from inviting friends to their homes because they are embarrassed and ashamed of the lack of food (Foodbank, 2018b; Borras & Mohamed, 2020).
- **Academic effects** – hungry children achieve lower scores in mathematics and literacy compared to children who are not hungry (Borras & Mohamed, 2020). Food insecurity was found to possibly affect children's preparedness for school, academic achievement, and school attendance, as well as their energy for participating in physical activity outside of school. A survey conducted in 2017 and 2018 among teachers in **Australia** indicates that two-thirds (67%) of all teachers have reported that students who come to school hungry or having skipped breakfast miss more than two hours of schoolwork a day (MacDonald, 2019).
- **Health effects** – food-insecure children have a higher prevalence of poor general health compared to food-secure children (Holley & Mason, 2019). Moreover, a higher prevalence of tooth decay, frequent stomach aches and headaches, and chronic diseases, was found among food-insecure children (Borras & Mohamed,

2020). Food-insecure children are twice as likely to suffer from asthma, and almost three times as likely to suffer from iron-deficiency anemia (Kirkpatrick et al., 2010; Borrás & Mohamed, 2020), respiratory issues, type-2 diabetes, hypertension and cardiovascular diseases, and even some types of cancer (Ramsey et al., 2011; Gundersen et al., 2018). Studies in **Australia** have even linked childhood food insecurity to the childhood obesity “epidemic”, due to a higher intake of high-energy food or additional carbohydrates to compensate for the overall food deprivation and the scarcity of fruit, vegetables and lean protein (NSW Council of Social Service, 2018). Furthermore, children who grow up in food-insecure households can carry the unhealthy food habits they have developed during childhood to their adult life, bequeathing the social and health inequality they have experienced in childhood to their own children (Pryor et al., 2016). Living in food-insecure households was found to shorten life expectancy and delay the development of children and adolescents.

- **Emotional and mental effects** – food insecurity may also be manifested by anxiety, depression, and other forms of psychological distress (Borrás & Mohamed, 2020). Food deprivation has been linked to emotional changes such as decline in happiness, irritability, anger tantrums, hyperactivity, inappropriate behavior at home and at school, being more tired, and sleep effects. Children from food-insecure households have been claimed to be up to 2.5 times more at risk of experiencing borderline or atypical emotional and behavioral difficulties (Foodbank, 2018b). Moreover, the experiences entailed in food insecurity – chronic hunger, skipping meals, limited access to food, or reliance on food that was donated or thrown out – lead to extreme mental stress and may cause mental health problems and diminished wellbeing among children and adolescents (Pryor et al., 2016). A strong association has been found between persistent childhood food insecurity and poor mental health in young adulthood (Pryor et al., 2023). The Gallup World Poll in the years 2014-2019, conducted among a representative sample of approx. 164,000 adolescents aged 15-24 in 160 countries, has found that food insecurity is related to mental health problems in adolescents. Mental health problems during the transition to adulthood can, if left untreated, have lasting and negative consequences on the development of social ties, on academic success and employment opportunities, and can undermine future economic growth and security of nations due to their associations with poverty, violence, unemployment, and economic and gender inequality (Brück & d’Errico, 2019; Elgar et al., 2021).

**Among adults**, many of the adverse effects of food insecurity are similar to its effects on children (Borrás & Mohamed, 2020):

- **Health problems** – in comparison to food-insecure children, food-insecure adults tend to suffer from worse health, according to self-reports, and from a higher prevalence of dental problems. Food insecurity was also

found to be linked to iron deficiency, diabetes, hypertension and hypoglycemia. It has also been found that food insecurity may limit elderly people's capability to engage in their everyday activities (Borras & Mohamed, 2020). In **Canada** for example, compared to food-secure individuals, food-insecure individuals have been found to be more likely to suffer from heart conditions, hypertension, asthma, diabetes, obesity, food allergies, poorer dental hygiene, bowel disorders, ulcers, arthritis, back problems, and migraines (Borras & Mohamed, 2020). In **the US** as well, food insecurity have been found to be significantly linked to ten chronic diseases: hypertension, stroke, chronic heart conditions, asthma, COPD, diabetes, kidney disease, cancer, hepatitis, and arthritis (Borras & Mohamed, 2020). Moreover, several studies have found a relationship between food insecurity and early mortality. For instance, a study among participants aged 18 and older from **Ontario Canada**, who participated in a national health survey in the years 2005-2010, has found that the chance of dying within four years of responding to the survey was higher by 65% among moderately food-insecure individuals, and by 131% among severely food-insecure individuals, compared to food-secure individuals. This data was obtained after controlling for age, gender, and other factors (Gundersen et al., 2018). Nationally in the US, food insecurity is estimated to contribute nearly \$52 billion in excess healthcare spending. Food-insecure Medicare beneficiaries incur US\$5527 higher health care expenditures annually compared with those who are food secure (Oronce et al., 2021).

- **Mental health issues** – food insecurity affects mental health and may cause depression that is linked to worry, anxiety or fear (Caraher & Furey 2018). In **Canada**, food-insecure individuals have been found to suffer more from depression and anxiety, and to experience high stress levels, dissatisfaction from their lives, and mood disorders, compared to food-secure individuals. An increased probability of post-partum depression has also been identified among food-insecure pregnant women (Borras & Mohamed, 2020), and food insecurity have been found to impact parenting, increase frustration towards children, and lead to reduced sensitivity to infant cues and distress (Loopstra, 2018).

**In conclusion**, food insecurity can have an adverse effect on the social, physical and psychological development of children, and the effects of deficient development can extend into adolescence and adulthood. Among food-insecure adults, associated diseases were observed, including nutritional deficiencies, anemia, diabetes, and obesity. Furthermore, food insecurity can result in psychological burden and social stigma (Elgar et al., 2021), and can also have socioeconomic impacts in terms of productivity and healthcare expenditure (Carrillo-Álvarez et al., 2021).

## 4.2 Existing responses for food insecurity and their effectiveness

Considering the many adverse effects of food insecurity, and the global difficulty in meeting the UN Zero Hunger goal by 2030, there is a critical need for mapping and implementing policies and programs that effectively address the problem (Lindberg et al., 2023). This chapter will examine how world nations are coping with food insecurity. The review will initially focus on relevant legislation as part of international covenants and in select developed countries and will then specify the existing responses for addressing food insecurity, with an emphasis on practices that have been found effective in achieving the desired outcomes for food-insecure individuals based on evidence from relevant evaluation studies.

### 4.2.1 “Right to food” legislation and national food policies

Some researchers have asserted that food insecurity stems from the right to food not being anchored as a basic human right, constitutionally and legally (Sheehy & Chen, 2022). From a rights-based approach, there is acknowledgement that food is the basic right of every individual, and cannot be dependent on markets, charity, or government decisions. At the international level, **the right to food** is established in international law as part of the United Nations Universal Declaration of Human Rights (UDHR), which establishes a person's right to an adequate standard of living, including food, and the right to security in the event of deprivation for any reason (Giner & Placzek, 2022). At the core of the right to food is the state's responsibility to ensure the availability of accessible food that will meet the nutritional needs of the population equally, and without dependence on charity or individual wealth. Furthermore, the State must take into account future need for food and act sustainably (OHCHR, 2021). When individuals cannot satisfy their own food needs, this right imposes a de facto obligation on the State to intervene and provide for them (Eide, n.d). Later on, international conventions have established this right, e.g. the International Covenant on Economic, Social and Cultural Rights (ICESCR), and the Universal Declaration on the Eradication of Hunger and Malnutrition. The right to food is also established in conventions to protect vulnerable populations, like the Convention on the Rights of the Child, Convention on the Elimination of All Forms of Discrimination against Women, Convention on the Rights of Persons with Disabilities, all of which include the right to have access to sufficient quantities of adequate food; the Universal Declaration of Human Rights; and the inclusion of the “Zero Hunger” goal in the UN Sustainable Development Goals to end hunger by 2030 by the combined effort of all nations that have signed the convention (Sheehy & Chen, 2022). Nonetheless, and despite the anchoring of these rights in the previously mentioned conventions, there is currently no oversight on national legislation meant to ensure them (Sheehy & Chen, 2022).

Nationally, world nations take different approaches to realize the right to food security and the obligation to provide it. Some nations enact explicit constitutional protections, some enact implicit constitutional protections, and some do not anchor this right in the constitution but integrate it in family law, in policy, and in programs. A review by Sheehy & Chen (2022) has found that more than 30 nations have recognized the right to food by **direct constitutional protection**: Belarus, Bolivia, Brazil, Columbia, Costa Rica, Cuba, the Democratic Republic of the Congo, Ecuador, Egypt, Fiji, Guatamala, Haiti, Honduras, Kenya, Iran, Malawi, the Maldives, Mexico, Nepal, Nicaragua, Nigeria, North Korea, Panama, Paraguay, the Philippines, Moldova, the Seychelles, North Africa, Switzerland, Ukraine, Uganda, Zimbabwe, Guyana, and Suriname (South America). Except for Switzerland, all of the above are developing countries, with a higher prevalence of chronic hunger and malnutrition than in developed countries.

## National food security programs

Despite being a developing country, prior to the Covid-19 pandemic **Brazil** was a beacon and an international standard for national implementation of a rights-based approach to food security. Its success can be mostly attributed to the effective enforcement of legislation, regulations and policies aimed at strengthening **availability, access** and adequate quantity of food for its citizens. The Brazilian government has incorporated food security in its agenda as a top priority since 2003. Its **"Fome Zero"** (zero hunger) program began as a political policy and was then translated into action. The Brazilian government took a holistic approach to food insecurity, poverty and social exclusion, by establishing an institutional setting that promoted cooperation and coordination among government ministries and different levels of government. The program's objective was increasing access to affordable food, and it succeeded in significantly reducing the number of citizens going undernourished in Brazil. In 2010, Brazil incorporated the right to food into its federal constitution, demonstrating strong national and political commitment to eliminating hunger and undernourishment among its populace. Brazil has further instituted numerous social and economic initiatives as part of its efforts to eliminate hunger and undernourishment (such as supporting food banks, a food-voucher program, community kitchens, encouraging purchase of local agricultural produce, and more). In 2017, Brazil implemented a national food security program – **"Prato Para Todos"** (Meals for All), which reinforced the involvement of civil society in the challenge. Brazil had created a **national council for food security**, composed of two-thirds civil society organizations and one-third government representatives. The council reports directly to the President and advises the government on guidelines and policies to advance the right to food in Brazil. As a result of its significant efforts, Brazil has successfully reduced undernourishment by 82% between 2002 and 2014. The number of hungry people in Brazil fell during that time

from 19 million to 3.4 million. The UN's World Hunger Map for 2020 indicated that undernourishment rates in Brazil remained under 2.5% in the years 2017-2019. However, the Covid-19 Pandemic had hit Brazil hard, and hunger has returned to Brazil. Approximately 55% of the population, some 117 million people, are food insecure (Sheehy & Chen, 2022).

Among developed countries, **Switzerland** – one of the richest countries in the world – is the only one to enshrine the right to food in its constitution. The majority of Swiss people earn a sufficient income to purchase food, and the government has strong and comprehensive welfare programs to support a high standard of living for vulnerable populations. Switzerland is also a proactive partner in the FAO's initiatives to combat global hunger, particularly in times of emergency. Unlike Switzerland, most of the world's developed nations provide indirect and **implicit constitutional protection** on the right to food, through other rights like the right to life, the right of development and the right to human dignity (Sheehy & Chen, 2022). **Australia**, like Switzerland, is one of the world's most food-secure countries, with most Australians having access to sufficient quantities of healthy and diverse food. Although the right to food is not enshrined in its constitution, Australia has established one of the most comprehensive constitutional frameworks in the world to guarantee all aspects of food security; it has legislated hundreds of laws and regulations that ensure food availability, access to food, and adequate food for all, and has developed a well-functioning administration to implement the relevant legislation. In addition, the Australian government provides payments and other supports for vulnerable populations, such as low-income individuals and indigenous people (Sheehy & Chen, 2022). Moreover, in 2016 the **South Australia** government had initiated a food-assistance collaboration between government ministries, researchers from academia, and community organizations (a combination of policy, research and practice), to jointly develop policies and to declare a shared vision. In November 2019, South Australia's Health and Welfare Minister and Social Services Minister jointly launched the South Australian **Food Relief Charter**. Fifteen NGOs had signed the charter, including representatives of food rescue and redistribution organizations, direct food providers, associations, and advocacy and social service organizations. The objective of the charter, led by the South Australia government, is to provide a vision and a system of guidelines for the food-relief sector, to optimally facilitate the provision of assistance. Charter documents express commitment to common goals of collaboration and collective impact, quality service, and improvement of client outcomes, including: increasing food security among South Australians and improving their health outcomes; establishing cross-sector standards for best food-assistance practices; creating opportunities for individuals to develop the skills and ability to become food secure; and training a skilled and sustainable workforce for the food-assistance sector (Pettman et al., 2022).

In recent years, other countries are acting to expand legislation and to formulate a **national food policy** to address domestic food insecurity. For instance, in 2019 the **Canadian** government established its first national food policy – **Food Policy for Canada (FPC)**. The FPC's vision statement includes a central objective and the aspiration that people in Canada will be able to access a sufficient amount of safe, nutritious, and culturally diverse food (Deaton & Scholz, 2022). The FPC's effectiveness in reducing the prevalence of food insecurity in Canada depends mostly on the extent to which interventions effectively increase household income and/or address economic issues like food prices, housing costs, etc. (Deaton & Scholz, 2022). The FPC specifies four areas of action: (1) access to healthy food in Canadian communities; (2) Preferring domestic Canadian food over imported food; (3) food security in northern and indigenous communities; (4) Reducing food waste (AAFC, 2019). In terms of access to healthy food, the FPC relies on the Local Food Infrastructure Fund (LFIF), a five-year initiative (2019-2024) developed as part of the Canadian government's food policy at a cost of CA\$70 million and is set to end on March 31, 2024. The LFIF funds projects that strengthen food systems and improve **access to food** for vulnerable populations, through two funding streams: the first focuses on improving infrastructure and equipment related to food access for community-based organizations (e.g. community kitchens or gardens, equipment for refrigeration, food storage, or food transportation, etc.), and the second supports larger projects that aim to reduce food insecurity through enhanced and sustainable local food systems. The government is investing about CA\$25 million in an ad campaign to promote consumption of Canadian agricultural produce, and CA\$20 million in innovative ways to reduce food waste and rescue food (Government of Canada, 2022). It is important to mention an older strategy for poverty reduction, implemented in Canada for ten years in 2005-2014, in the **Newfoundland** and **Labrador** province. This strategy, although not explicitly designed to address food insecurity, had an essential impact on its reduction, by improving households' financial circumstances through interventions like cancelling or reducing district income tax for low-income and medium-income households, raising the minimum wage by CA\$4 per hour over four years, increasing social-assistance rates and linking them to inflation, increasing tax exemptions on liquid assets, increasing income for social-security recipients, and more. It resulted in an unprecedented reduction of food insecurity among social-security recipients in Newfoundland and Labrador, primarily among full-time workers by also among part-time workers, by almost half (44%) during 2007-2012. The rate of food insecurity among households that report any kind of social-security income had decreased from 59.9% in 2007 to 33.5% in 2012 (Loopstra et al., 2015).

In **Scotland**, in early 2021 the government issued a position statement about a human-rights approach to tackling food insecurity, and in October 2021 it launched a national plan draft to help reduce food insecurity in Scotland in a manner that will end the reliance on food banks. The draft plan supports a comprehensive preventive

approach that includes action to increase income from work and from social security; reducing cost of living; support for emergency **Access to food** as necessary; collaborating with people with lived experience (service recipients and providers) in planning monitoring and evaluation systems and in collecting and analyzing data – all to ensure that everyone has a sufficient income to afford food that is adequate for their needs and preferences. These measures include financial assistance and consultation, alongside comprehensive support services as necessary (Scottish Government, 2021; Archer et al., 2021). In June 2023, the Scottish Government published the Cash First plan towards ending the need for food banks in Scotland, which includes actions to be taken between 2023 and 2026 to reduce the need for emergency food responses (such as food banks). Such actions include: programs for emergency financial support alongside financial advice and assistance in exhausting rights; examining new models that provide immediate assistance; establishing support funds for times of crisis; strengthening collaborations between the public and community sectors; free financial-consultation services; strengthening social-community responses, and more (Scottish Government, 2023).

**In conclusion**, the “right to food” is established in international conventions but is not enshrined in the constitutions of most developed countries. The approach that urges developed countries to enshrine the right to food in legislation seeks to solve all dimensions of food security: access, availability, utilization, and the stability of all three over time. In developed countries, the most important dimension is **access to food**, mostly manifested in low-income earners having financial difficulties to purchase food. Beyond the need for declarative legislation that reflects a nation’s responsibility for providing food to all of its citizens, in recent years developed countries have begun to recognize the need to develop nationally-legislated plans to address food insecurity, by allocating resources and developing comprehensive, multidimensional, and long-term programs, in collaboration with those who require the services.

#### **4.2.2 Government assistance for reducing food insecurity**

A wide range of entities and stakeholders take part in food assistance efforts, with investments from both public and private resources. As previously mentioned, the main difficulty for food-insecure individuals in developed countries is not **the availability of food**, but mostly **access to food** and **food utilization**. Therefore, this article will detail the main measures taken by governments of developed countries to reduce food insecurity by emphasizing increasing access to food, whether by increasing household income and reducing poverty, or by providing direct food assistance or food vouchers. It will also detail responses for encouraging better utilization of food.



## Government assistance for increasing household income

Responses that seek to increase household income are based on the findings aforementioned in the Introduction Chapter, which have found that in developed countries, poverty and household income are the factors that determine an individual's financial capacity to purchase food, and that income is the main and strongest predictor of food security (Loopstra, 2018). The lower the household income, the higher the risk of food insecurity. Moreover, households with very low incomes are at much higher risk of experiencing severe food insecurity (PROOF, n.d-a). As a result, most high-income countries provide financial assistance to vulnerable populations such as households with children, seniors, and low-income households. This is achieved by targeted financial support for purchasing food; by payments such as income guarantees or income supplements; or by universal benefits such as child benefits or old-age allowance (Loopstra, 2018). Moreover, social assistance combined with a policy for increasing minimum wage and financial support directly increase household income, thus reducing the risk of food insecurity (Men et al., 2021). The goal of government programs that provide direct financial support for low-income households is to improve their access to basic needs (Fernald & Gosliner, 2019) and to ensure a minimum level of food security for vulnerable households (Slater et al., 2014). Such programs have become a common means of social protection, with some one billion individuals benefiting from them across 186 countries (Manley et al., 2020). **There is a growing body of evidence suggesting that these programs are effective, and many studies have shown that such interventions decrease the food insecurity of the lowest-income households** (Brown & Tarasuk, 2019; Ionescu-Ittu et al., 2015; Men et al., 2021). The following are several examples of public policy components that reduce food insecurity (PROOF, n.d-b).

- **Seniors' public pensions** – A policy of financial support for seniors through a universal pension that is granted to all senior citizens over 65 years of age, in conjunction with a cash income supplement for low-income seniors. **Canada's** public pension programs for seniors are an example of policy protecting against food insecurity by improving household income stability (McIntyre et al., 2016). Research has shown that the risk of food insecurity for low-income seniors in Canada decreases by half once they become eligible for age-based programs at the age of 65, and their public-pension income was more beneficial than the social-assistance income they were eligible for prior to age 65 (McIntyre et al., 2016). Studies have found that as a result of this policy, seniors have one of the lowest food insecurity rates in Canada (Mah et al., 2022; McIntyre et al., 2016).
- **Child benefits** – a policy of financial government support for families with children and low income or no income at all. A review across 142 countries indicates that on average, households with at least one child

younger than 15 years of age are 4 percentage points more likely to have moderate or severe food insecurity (and 2 percentage points more likely to have severe food insecurity) than households without children. However, the additional risk of food insecurity among households with children is lower in countries that provide financial assistance for such families (either means-tested or universal) than in countries with low financial assistance or no financial assistance (Reeves et al., 2021a). Another international analysis found a negative correlation between children's social-protection expenditure and food insecurity (Fernald & Gosliner, 2019). At the national level, countries with a policy of financial support for families with children have been found to have a lower food insecurity average than countries without such policy. Furthermore, such policies have been found to decrease the severest levels of food insecurity, and their impact was greatest among low-income families (Reeves et al., 2021a) and single-parent families (Schmidt et al., 2016). Thus, this kind of policy decreased not only the food insecurity average among low-income or no-income families with children, but also food insecurity inequality, as it provides the most support for the poorest households (Slater et al., 2014). In **Canada** for example, the universal Canada Child Benefit (CCB) program, which supports households with children under 18 years of age, is a central component in Canada's federal strategy for reducing poverty. A study on CCB implementation has shown that the greatest impact of these benefits is on the lowest-income families, who are the most likely to experience food insecurity in general, and severe food insecurity in particular. While the overall prevalence of food insecurity among families with children has not been found to have decreased following CCB implementation, the prevalence of severe food insecurity among low-income families has decreased by one-third. Reducing severe food insecurity is particularly important because of its related adverse health outcomes. It was therefore found that the program can potentially have the maximal impact by transferring more funds to families with the lowest income (Brown & Tarasuk, 2019). An examination of the impact of universal child benefits – an extra CA\$100 for each child under 6 across Canada – found that in comparing eligible families to non-eligible families, this additional income had reduced food insecurity by 4.2 percentage points. The impact was even higher when the sample was limited to households with income below the median (Ionescu-Iltu et al., 2015).

A review to examine the correlation between national social expenditure and the prevalence of poverty and food insecurity in 2014-2016, had found that more investment in services for families with children in high-income countries correlates to lower prevalence of poverty and food insecurity in such households. For example, **the US** had spent only 0.6% of the GDP (Gross Domestic Product) on families with children (Fernald & Gosliner, 2019), and the prevalence of food insecurity among families with children was 20% (Pereira et al., 2021), while in countries like **Korea**, **Germany** and **Japan**, who had spent between 1% to 2% of

their GDP on families, the prevalence of food insecurity among families with children was 5% or less (Korea and Germany – 5%, Japan – 1%). In the few countries with the largest rates of GDP spent on family services, like **Norway** and **Sweden**, which spent 3%-3.5% of their GDP on family services, the rates of food insecurity among households with children were 5% or less (Norway – 5%, Sweden – 4%). In the context of tackling poverty, studies have indicated that on average in OECD countries, an increase of approx. 1% in national social expenditure correlates to a 1% reduction in poverty rates among children. Yet research emphasizes that to lift the lowest-income families out of poverty, much greater changes in economic conditions are required (Fernald & Gosliner, 2019).

- **Raising the minimum wage** – a policy of raising the minimum wage is one of the ways governments can reduce food insecurity among households of low-income earners. For example, a study in **Canada** had shown that an increase of CA\$1 in minimum wage correlates to a less than 5% probability of experiencing food insecurity, and an increase of CA\$1,000 in annual household income correlates to a less than 5% probability of severe food insecurity (Men et al., 2021).
- **Social support** – a policy of social assistance for low-income households is a way for governments to increase the income of households and their access to services. Assistance is provided in various ways, including: rent assistance, education subsidies, healthcare expenditure assistance, and financial support programs through local welfare departments. Evidence of the impact of social support programs on food insecurity is mixed; for example, in **the US**, welfare programs for increasing family income and food rights by US\$1,000 have been found to reduce food insecurity by 1.1 percentage points (Schmidt et al., 2016). Similarly, a study that examined the impacts of social protection expenditure **across Europe**, which included housing assistance and its correlation with food insecurity, had found that during the years of great recessions in Europe, in countries with low levels of social protection expenditure per capita, increased unemployment and reduced wages have been found to correlate with food insecurity more than in countries with relatively high social protection expenditure (Loopstra et al., 2016). Nonetheless, and despite the contribution of social assistance for food-insecure individuals, it is apparent that in many cases the provided assistance is insufficient to lift them out of food insecurity. In **Canada** for instance, receiving social assistance is one of the strongest predictors of population food insecurity, and severe food insecurity is much more common among households that rely on social assistance (Tarasuk et al., 2022). Additionally, most food-insecure households actively participate in the workforce, indicating that the current governmental social security net is insufficient for tackling the food insecurity problem (Mah et al., 2022). This can also be attributed to the severe and complex preliminary condition of these individuals, who are often coping with poverty and other, broader risk factors

(see characteristics of the food-insecure population in Article 4.1.2). It seems therefore that a combination of protective measures is required to tackle this complex problem. **Findings show that a combination of social assistance, targeted financial support for food, and expanded national insurance programs have led to a considerable significant decrease in food insecurity among eligible households** (Li et al., 2016).

Academic literature is divided on the question of what is preferable – government support via food, food vouchers, or cash (the Cash vs. Food debate). On the one hand, food-insecure households that receive the extra income have been found to spend it in ways that improve their food security (PROOF, n.d-b). A meta-analysis study found that social protection programs improve both the quantity and the quality of food consumed by service recipients. The average social protection program increases the value of food expenditure or consumed food by 13%. Households have been found to use these funds to improve the quality of their nutrition, and to increase their intake of calories from animal sources, resulting in significant nutritional benefits (Hidrobo et al., 2018). In the long term, financial support and food vouchers have been claimed to be more effective than food assistance (Gentilini, 2016), as they improve access to food and indirectly help recipients make better nutritional decisions. In this way, enabling families to purchase accessible, adequate and affordable food helps families purchase and consume healthier food (Durao et al., 2020). Food vouchers have also been claimed to be more effective than financial support in increasing household expenditure on food purchases (Giner & Placzek, 2022). On the other hand, other studies did not corroborate that food-based programs are more effective than money-based programs (Schmidt et al., 2016), and both have been found to correlate with reduced food insecurity (Loopstra, 2018; Oronce et al., 2021; Schmidt et al., 2016).

**In conclusion**, many developed countries offer financial government assistance for low-income or no-income households by providing food-specific financial support, income guarantee, universal benefits and social support, to increase their access to food and other basic needs. Research indicates that targeted allowances for vulnerable populations such as seniors and children help reduce food insecurity among these groups, especially in lower-income households and among those who live in the most severe levels of food insecurity. In this way, financial government support not only assists in reducing food insecurity but also in reducing inequality, which harms the most vulnerable households. This indicates that social support alone is insufficient to reduce food insecurity, and that a comprehensive integrated action of increasing household income – by social benefits and supports, by financial government support, and by raising the minimum wage – is required so that working households can earn an adequate living and fulfill their basic needs.

## Direct government assistance in food or food vouchers

A policy of government food assistance in developed countries is sometimes implemented based on a means test, in an attempt to reach the poorest and most vulnerable populations, such as children and babies, senior citizens, and others. This section will review examples of means-based food voucher programs in developed countries, which were accompanied by evaluation studies to evaluate their effectiveness in reducing food insecurity; it will then review targeted programs that focus on specific populations considered particularly vulnerable: children, mothers and babies, and students. Lastly, it will review programs that promote a healthy diet among these groups.

### Means-based food voucher programs

The objective of food voucher programs is to improve vulnerable households' access to food, increasing their food security. Depending on specific arrangements, food vouchers can be used in designated markets or stores. This manner of support is widely used in low-income and medium-income countries. Eligibility for food voucher programs is usually contingent on household income (means test) and personal and familial status. Certain programs are aimed at specific household categories, such as households with a pregnant woman and young children, single-parent households, and households with children, students, or senior citizens (Rizvi et al., 2021).

In **the US**, the Supplement Nutrition Assistance Program (SNAP) is considered the federal government's main response to food insecurity. It provides financial assistance for low-income Americans and enables eligible households to shop for food in participating stores. This extensive program provides benefits for one in every eight Americans. SNAP benefits are calculated using a complex federal formula that determines the family's "net" monthly income after medical, childcare, and housing costs are deducted. Eligibility criteria require households to have savings and properties no higher than US\$2,250, gross monthly income at 130% of the poverty line or less (approx. US\$26,000 annually for a family of three), and net income equal to or below the poverty line (approx. US\$20,400 annually) (Loopstra, 2018). In 2022, a three-person household with no income received a maximum benefit of US\$658 a month, while a household with a net monthly income of US\$1,000 received benefits of US\$358 ( $\$1,000 \times 0.3 = \$658$ ). Eligibility for SNAP is re-examined each year, according to income (Sheehy & Chen, 2022). In certain cases, acceptance into SNAP automatically makes participants eligible for assistance through other programs, such as free school meals, food assistance for women, infants and children (WIC), and the Head Start program for toddlers, which includes comprehensive nutritional, health and education interventions as well as parent services such as parent training and empowerment (Schanzenbach, 2023). During Covid-19, the US government took action to expand the program's scope: from February 2020 to June 2021, the number of

SNAP assistance recipients grew by 15% (from 37 million individuals to 42 million), and total federal expenditure on SNAP grew by 116% (from US\$4.5 billion a month to US\$9.7 billion a month) (Berg & Gibson, 2022). In the 2021 fiscal year, SNAP assisted 41.5 million people a month, and its overall cost was higher than US\$113 billion. About half of all SNAP participants are children (44%), and about 31% of all US children aged four and under participate in it (Sheehy & Chen, 2022).

#### **Findings of evaluation studies about SNAP effectiveness:**

- SNAP has been found to reduce the probability of food insecurity by 7 percentage points (Swann, 2017). SNAP participation has been correlated with many positive outcomes besides improvement in food insecurity, including impact on nutritional diversity (Gordon et al., 2017), better self-reported health by 11% (Gregory & Deb, 2015), fewer ER visits during pregnancy (Arteaga et al., 2018), Asthma improvement (Heflin et al., 2019), and hypertension improvement (Ojinnaka & Heflin, 2018), alongside a reduction in health expenditure (Berkowitz et al., 2017; Fernald & Gosliner, 2019). Research also points to many other advantages, such as improved nutrition and academic achievement, improved use of health services, and long-term self-sufficiency (Miller & Thomas, 2020).
- SNAP participation has been found to reduce the risk of psychological distress in young adulthood related to food insecurity in childhood. Family participation in the program can have a positive effect on the child's mental health and development due to reduction of parental stress, increase in parental welfare, improving parent-children relationship, and improving the overall functioning of the family (Pryor et al., 2023).
- SNAP participation has been proven to improve child nutrition (Bitler, 2016). Children in households that participated in SNAP for six months have been found to be one-third less likely to be food insecure than children who have recently been approved for SNAP but have yet to receive assistance (Mabli & Worthington, 2014). However, research has found that SNAP benefits are often insufficient to fulfill the parents' needs to provide a balanced diet for all household members (Gundersen & Seligman, 2022).
- SNAP has been found to increase financial self-sufficiency as measured in profits and family income, employment at high-school graduation, and future poverty (Hoynes et al., 2016).
- Households that are eligible for food vouchers tend to be more food insecure than ineligible households, attesting to these families' dire preliminary condition by nature of their eligibility and the focus of such programs on the most vulnerable populations on one hand, and the difficulty to fulfill all their needs on the other hand. While 11% of all US households had experienced food insecurity in 2018, the rate of food-insecure

households among all SNAP-participating households had been 47.5% (Miller & Thomas, 2020). At the same time, SNAP participants have been found to be 20% less likely to be food insecure compared to food insecure individuals who are not participants, indicating the program's contribution to an initial reduction of food insecurity among participating households (Giner & Placzek, 2022).

In **Korea**, the government provides various food support programs for tackling the negative effects of food insecurity, which they believe also reflects food inequality. Meaning, inequality in people's capability to access food. A coupon program offering a rice-purchase discount for low-income households provides up to 10 kilograms of rice for an individual whose household income is less than 50% of the standard median income. In 2020, 117,000 tons of rice were sold for discount vouchers, to 975,000 individuals. Korea also has food support programs for pregnant women, and fruit-intake support programs for children, without means tests. Another central program implemented in Korea in recent years as a trial is the Food Voucher Assistance Program (FVAP), based on the SNAP model, which provides food-purchase vouchers for eligible low-income households. Unlike SNAP, FVAP directs people to purchase certain types of food only, to prevent the purchase of unhealthy food or non-food products. The main objective of FVAP is to improve the quality and quantity of household nutrition, and to increase intake of agricultural products. The vouchers allow the purchase of specific agricultural foods like fresh fruit and vegetables, milk, fresh meat, honey, tofu, simple processed vegetables, and grain. The program includes only local products and no imports, to increase its positive economic impact on the domestic market. As part of the pilot, households were also given electronic vouchers (EBT cards) that can be used to purchase food online and in physical stores. The electronic voucher has lower operational costs and its use can be monitored via a computerized system in participating stores, allowing data analysis (Rizvi et al., 2021). As part of FVAP, an eligible single-person household receives food vouchers worth KRW 40,000 (approx. US\$31) each month. The sum is adjusted for household size using the square root of household size. The program was implemented as a pilot in 15 counties in 2022, and is intended to be expanded to the national level in 2025 (Jee Kim & Kim, 2023).

#### **Findings of evaluation studies about FVAP effectiveness:**

- An evaluation study examined 1,200 participants in three areas, measured before and after the intervention, and compared to a control group. It examined the weight of purchased food and estimated the improvement of diet quality according to the Healthy Eating Index (HEI), and found that the program had achieved its objective and had increased intake and quality of food in low-income households. The study also found a positive economic impact on the domestic agriculture market (Jee Kim & Kim, 2023).



**Argentina** had experienced a social crisis due to a high level of poverty, exacerbated by the Covid-19 pandemic and its effects on loss of work and income. According to a 2022 UNICEF report, 19% of all households in Argentina skipped at least one meal a day due to insufficient income (Moreno, 2023). Additionally, 52% of all children and adolescents lived in financial poverty. 13% of all children under 18 have experienced extreme poverty (households with income lower than the basic food basket price), about a million have skipped at least one meal each day due to insufficient income, and 36% of all households with children have stopped buying several food items due to income limitations. About 25% have declared that they have incurred debt due to food shopping (UNICEF, 2022). Argentina's food assistance policy – *politica alimentaria*, is implemented using a series of programs run by Argentina's Ministry of Social Development (*NDS*). The *Tarjeta Alimentar (TA)* program was one of the government responses as part of the National Hunger Elimination Program (*PACH*), and is considered the flagship program for social protection, with an allocation of 0.44% of the GDP in 2022. It was described by the UN in 2022 as a good practice for achieving the UN's SDGs (United Nations, 2022b). The program was formulated to minimize increases in poverty among the most vulnerable populations, by ensuring access to food and promoting access to healthy food. *TA* was originally set up as a cash-transfer support program with money paid directly to the final beneficiary through an independent debit card, with restricted use of funds, and with the benefit amount adapted to the number of children in the household. It has since undergone some changes: first, its coverage was expanded and the benefit amount updated, and later on the debit card was replaced with an additional cash transfer. Current *TA* coverage overlaps almost completely with the child allowance recipients, except for children between the ages of 15-17. The allowance does not include an indexation mechanism. Since its launch, the allowance has been updated three times, in approximately one-year intervals, with the amount increased by 50% the first two times, and by 40% the last time. The program's launch had increased total expenditure on food programs from 0.05% of the GDP to 0.44% in 2022 (Moreno, 2023). Service recipients include parents with children under the age of six who already receive the Universal Children Allowance (*AUH*), pregnant women who receive pregnancy benefits, and disabled individuals who receive the Universal Child Allowance. Those eligible can use a prepaid card to purchase all types of food except for alcoholic beverages. Since its inception, from December 2019 to January 2021, the Argentinian government had transferred ARS 4,000 each month to every eligible household with one child below the age of six. The amount increases to ARS 6,000 for every household with two or more children under six. During the pandemic, this amount were doubled to improve purchasing power. Since February 2021, the benefit amount has been increased by 50% (United Nations, 2022b). *TA* implementation took place in two stages: in the first three months, the card was distributed in large events, which also included healthy-diet training for eligible individuals. More than 650,000 people from 14 counties



participated in more than 11,500 such workshops. In the second stage, which took place until April 2020, more than one million and five hundred thousand cards were distributed throughout the country. Upon the breakout of COVID-19, the government quickly transferred the *Tarjeta Alimentar* benefit amount to the Universal Child Allowance account, as those with such an account already had a prepaid card. Today, *TA* is one of Argentina's leading social programs, both in terms of population coverage and in terms of nationally-allocated resources. True to 2022, some 1,529,700 eligible individuals and some 1,945,000 children were assisted by the program. *TA* utilizes 57% of the Ministry of Social Development's budget. In 2020, the Argentina government invested in the program ARS 95,355,000 (about US\$349,000) (United Nations, 2022b).

**Findings of evaluation studies about *TA* effectiveness (United Nations, 2022b):**

- In terms of extreme poverty, households who receive *Tarjeta Alimentar* assistance are more protected than similar, ineligible households; 10.3% of participating households have suffered from severe food insecurity, while the rate of food insecurity among all households who did not participate in the program amounted to 31.3%.
- 46% of all participating households had stated that they had bought a larger amount of food, compared to 14% of all non-participating households.
- The program has also been found to have contributed to preserving or improving the quality of food consumed. This means that there is a greater probability that children who receive the benefit will consume accepted levels of fruit, meat, and dairy, compared to children who do not receive the benefit.
- More than 50% of food intake among participating families is of healthy food, mostly dairy and animal-source protein.
- The prevalence of food insecurity among households that participate in the program or receive child allowance (AUH) was lower than the prevalence among households that received meals or food boxes from community kitchens.

**In conclusion**, evaluation studies on government food-voucher programs for low-income families indicate that such programs improve their participants' food security compared to non-participants in similar circumstances. Research also indicates that such programs improve the quality of the participants' diet and even their health, especially in children. Nonetheless, despite the decrease in food insecurity prevalence and severity, the rates of food insecurity among participants remained high even after the intervention, implying that the level of support such programs provide is insufficient to prevent food insecurity among the eligible people who require them (Loopstra, 2018; Giner & Placzek, 2022).

## Programs for vulnerable populations

Alongside food assistance programs based on an income criterion, developed countries implement other intervention channels that are focused on specific populations, to ensure food security among their most vulnerable groups. Such programs are often implemented concurrently. This section will review food programs in developed countries intended for children, for women and babies, and for students, as well as their effectiveness according to relevant evaluation studies.

### ■ **Food programs for children**

Targeted programs that provide meals for children are usually comprehensively operated in developed countries through school meals programs. Such programs exist in more than 161 countries worldwide (FAO, 2019), and they contribute to meeting the UN's Sustainable Development Goals by providing equal opportunity for children to maximize their academic achievements (Giner & Placzek, 2022). These programs regularly provide free or subsidized breakfast and lunch for pupils in primary and secondary schools, to improve their diets and reduce health inequalities that impact their well-being, behavior, and learning capacity (Edith Cowan University & Telethon Kids Institute, 2018; MacDonald, 2019; Placzek, 2021). Some developed countries operate programs that are based on means testing of children's households, while some assist by making food indiscriminately and universally available for all children (Giner & Placzek, 2022).

**The US** implements a National School Lunch Program (NSLP) in private and public schools and childcare institutions. This program is operated by virtue of the National School Lunch Act of 1946, to ensure that school-age children have access to quality food and an adequate diet. The program provides nutritionally-balanced lunch meals at low cost or no cost to eligible school children, with government financial support. In its first year, some 7.1 million children participated in NSLP. It has since reached millions of children across the US, and in 2019 it operated in about 100,000 public schools at a total cost of US\$14.2 billion, providing free or low-cost lunches to 29.6 million children on every school day (Giner & Placzek, 2022). The program is federally directed by the USDA's Food and Nutrition Service (FNS). It utilizes government funds to purchase agricultural surplus, which it provides to participating schools (Long et al., 2020). At the state level, the NSLP is directed by state agencies, which operate the program through agreements with school food authorities. Participating school districts and independent schools receive USDA food and cash subsidies for each meal they serve. In return, NSLP institutions are obligated to serve lunch meals that comply with federal nutrition standards, and to offer free or reduced-price lunch to eligible children: children who participate in certain federal assistance programs such as SNAP, children who are registered for the Head Start government

program, or based on their status as homeless, immigrants, refugees, or foster children. Children from households with an income between 130% and 185% of the federal poverty line are also eligible for reduced-price meals.<sup>4</sup> Schools are not allowed to charge more than 40 cents for a reduced-price lunch. Through the Team Nutrition initiative, FNS provides training and technical support for nutrition professionals in schools, to allow them to prepare and serve nutritious and child-appropriate lunch meals that comply with program requirements (Giner & Placzek, 2022).

In **Australia**, the School Breakfast Club Program meal project is jointly operated by Foodbank Australia (a non-profit food assistance organization) and Victoria State Government and is designed to improve **access to food** and **food utilization** for children who live in food insecurity. The project has been in place since 2015 in about 500 primary schools in areas of low socioeconomic status, and it provides free healthy food to eligible pupils to prevent adverse effects of their socioeconomic status on their academic achievements (Bowden, 2020a). The families' financial participation in school meals as part of these programs is usually determined by local authorities based on family income.

**France** has several government school programs: an in-school meals program *Programme d'alimentation scolaire*; a breakfast provision program *Dispositif petits déjeuners à l'école*; and a social pricing program (subsidized food) in school canteens for all pupils – *Tarification sociale des cantines scolaires*. Pupils' participation rate in subsidized meals is high, with about 75% of the 12.9 million school-age students in France eating at least once a week at the school canteen, which provides breakfast and lunch meals, and 60% eating there at least four times a week. France provides financial support to municipalities to encourage even small towns to adopt social pricing. Meals consist of a first course, a main course, a dairy product and/or dessert (Giner & Placzek, 2022). In 2020-2021, some 12.4 million French pupils in pre-school, and in primary and secondary schools, had received food through various school programs (GCNF, 2021).

In **the UK**, all four constituent countries (**England**, **Northern Ireland**, **Scotland** and **Wales**) offer the option of free school meals for eligible pupils – Free School Meals (FSM). In 2020/2021, Scotland had the highest rate of pupils who were eligible for free meals – 37.5%. In Northern Ireland – 28.4%, Wales – 20.9%, and England – 20.8%. In recent years, the British government has been acting to provide free meals **for all school children**,

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<sup>4</sup> The US federal poverty line is an income indicator determined each year by the American Ministry of Health, and is used to determine eligibility for certain benefits and for participation in programs. See [US Ministry of Health website](#) for additional explanations about the calculation and the various levels of assistance according to family structure.

regardless of household income. Providing free meals for all school-age children is a targeted strategy for eliminating food insecurity among children, who are a particularly vulnerable population. As part of the Universal Infant Free School Meals Scheme, all children in primary 1-3 (ages 5-7) are eligible for free in-school meals since 2014. In August 2021, eligibility was extended to also include children in primary 4 (age 8), and in August 2022 it was further extended to include children in primary 5 (age 9). The Scotland government is planning to extend eligibility to primary 6 and 7 (ages 10-11) in 2024 (Archer et al., 2021).

In **Vermont, USA**, a targeted strategy in collaboration with the National Life Group (NLG) was implemented in 2018 to reduce and even eliminate food insecurity among State children. As part of the initiative, a reduced-price meal plan was canceled, and 65 schools offered **free universal meals for all school pupils**. To ensure that all children are included in the project, complementary programs were simultaneously implemented, such as the Breakfast After the Bell program for students who arrive late; expanding summer feeding options for children and their families to increase access by children in rural and remote areas to these services by converting the meals to electronic vouchers; and providing food for adolescents and young adults who are disconnected from the school system and live with limited resources and support networks. Moreover, the strategy incorporated food with other leisure and health services to reduce the stigma associated with accessing food services. It has also improved direct outreach to adolescents, by encouraging them to access food services independently, without a parent (Popkin et al., 2019). In **Finland** as well, free school catering is part of the national effort to establish healthy nutrition and promote health, academic achievements, and welfare. However, the Everybody Eats! a program that provides a full and balanced in-school meal, is actually accessed by only about 10% of all pupils (Giner & Placzek, 2022).

Like Vermont, some countries implement complementary programs during school breaks, to provide responses for children even when they do not attend school. Participation in such programs is sometimes possible without strict eligibility terms, for all children who wish to participate. For example, in **the UK**, Holiday Clubs are summer-break clubs that provide breakfasts and lunches in schools or community centers, incorporated with other activities such as field trips, physical activity, and cooking. These activities are usually open to all, regardless of family income, to reduce the stigma associated with accessing these services (Long et al., 2020). The US implements the Summer Food Service Program (SFSP) in the entire country and not just in Vermont, in low-income neighborhoods (Giner & Placzek, 2022).

### Findings of evaluation studies about program effectiveness:

- School meals programs have been found effective in reducing food insecurity, particularly among children (Edith Cowan University & Telethon Kids Institute, 2018; MacDonald, 2019).
- School meal programs contribute both to enhancing support services for families and both to pupil health and welfare, especially in children from low-income families, ensuring that children receive all food groups and ingredients that are necessary for their development (Giner & Placzek, 2022).
- An **Australian** evaluation study funded by the Victoria State Government found that the school breakfast club program meets the students' nutritional needs, and also improves the children's academic capacities, such as concentration and engagement in class, attendance and punctuality, as well as their attitudes towards school, willingness to learn, and social relationships and skills (MacDonald, 2019).
- A one-of-its-kind qualitative study examined the views towards the program of staff and participants in the Holiday Club **in the UK**, and found that participants perceived both nutritional contributions (alleviating hunger, a rich and diverse breakfast, and experiencing new foods), and social contributions (alleviating loneliness and creating new interactions) (Defeyter et al., 2015). The voice of participants is critical and essential to evaluating the contribution of programs to reduce food insecurity (Moonan et al., 2022).

- **Food programs for women, infants, and children**

In **the US**, the supplemental feeding program for Women, Infants, and Children (WIC) is one of the most common food assistance programs in the country, with about half of all babies born to low-income and food-insecure women participating. WIC provides vouchers for low-income pregnant and postpartum women, and to parents of infants and children under five, to purchase nutritious food. The program also provides education for a healthy and adequate diet, postpartum breastfeeding guidance, and referrals to health services and other social services, to improve women's nutrition and health, to provide food for children, and to reduce risks such as preterm birth or low birth weight. The program is nationally operated by 89 agencies throughout all 50 states, through 33 organizations. Services are provided in various locations, including local clinics, hospitals, schools and community centers. Participants receive benefits for the purchase of food items, as well as food packages tailored to their specific nutritional needs. They also receive nutrition education, breastfeeding support, and referrals to healthcare services as needed, via their local WIC clinic. In some states, benefits are provided via vouchers or debit-type cards and can be used in authorized grocery stores or in WIC-only stores (USDA, 2019). In 2022, some 1,260,000 women participated in the program, with a total cost of US\$5,739

million, and a monthly average of about US\$48 per woman (USDA-WIC, 2023). The Wise Investment in Our Children Act was introduced to Congress in 2015, with the intention of bridging the gap created in children who are out of WIC at the age of 5 and have yet to be included in an alternative program such as NSLP, but its legislation has not yet been completed. The Act suggests extending children's eligibility to food as part of WIC to age six, when the children start preschool, to ensure the continuity of responses and to reduce food insecurity among children from birth to their later school years (Cho, 2022).

A smaller program in **the UK** – the Healthy Start Voucher Scheme – only distributes food vouchers without supplemental services. This program has been implemented in **England, Wales** and **Northern Ireland** since 2006. In **Scotland**, a similar program –Best Start Foods – was launched in August 2019. Both programs are intended to allow low-income families with young children and pregnant women access to healthy food and vitamins. Eligibility terms are determined according to income level, pregnancy stage, and child age. Participating families receive vouchers or cards that help them pay for products such as infant milk formula, milk, fresh, frozen or tinned fruits and vegetables, fresh or dried pulses, and vitamins. In August 2021, 376,000 people received vouchers or cards as part of both programs (Archer et al., 2021).

In 2019, **South Korea** approved a suggestion by the country's organic movements in collaboration with the Ministry of Agriculture, to implement a program for providing organic food to pregnant women and new mothers – *Organic Food Assistance Programme (OFAP) for the Pregnant Women*. This suggestion was submitted via the "Citizens Participation Budget", by which the public submits suggestions for new projects in an open and transparent process, and suggestions that receive the most votes are provided a budget and are implemented by the government and local authorities. As part of this program, a box of organic food is sent twice a month to pregnant women and new mothers, to preserve their health and to expand the sale of organic food nationally. The project was first implemented in 2020, with 80,000 female participants. The women order products online via designated websites built by local authorities, which offer individual food items, a food box, or a regular food package. Participants bear 20% of the cost, with the rest funded by local authorities. The project is also a proactive government drive to assist local farmers, and to provide nutritious, safe and local food to citizens (Hossain et al., 2021).

### Findings of evaluation studies about program effectiveness:

- WIC participation was found to positively affect birthweight and food security (USDA-WIC, 2023), and to reduce the prevalence of food insecurity among participating households by at least 20% – according to a national sample of children under five in eligible households (Kreider et al., 2016).
- WIC reduces expenditure on healthcare services, and has been found to reduce long-term adverse effects of premature birth or low birth weight (Cho, 2022). Each US\$1 invested in the program has been found to save US\$2.48 in health expenditure of program participants and their children. Pregnant women's participation have been found to reduce their risk of preterm birth by 48%. This effect was even more pronounced among women without insurance or access to medical care during pregnancy, and in cases of high-risk pregnancies (NWICA, 2019).
- Aging out of WIC at the age of five has been found to increase food insecurity among this group by at least 1.1 percentage points, and the prevalence of food insecurity is estimated to decrease by 15% should the aging out age be postponed to preschool age (Cho, 2022).
- In the UK, the availability of the Healthy Start Scheme has been found to increase the quantity and variety of fruits and vegetables purchased (DEFRA, 2021). However, uptake of eligible families into the program was low, with only 54% of all eligible households participating in 2021. Pregnant women were less likely to participate than households with children. Additionally, the voucher value has not been increased in 2009-2021 (Parnham et al., 2021).

### ▪ Food programs for students

The prevalence of food insecurity among students in higher education institutions in the US is much higher than among the general population. The prevalence varies considerably between various institutions, from 10% to 85%. Interventions within the institutions include: food pantries, meal donation programs, free weekly meals, food sharing, campus gardens, cooking classes, and community collaborations. In some cases, the programs are led by volunteer students from the campus community or by paid staff/students.

**Food pantries** are the most common type of program in colleges and universities for reducing students' food insecurity. Originally, food pantry programs were meant for students who were transitionally hungry, and were often limited to canned and preserved food items with lower dietary quality than fresh food. They are therefore not suitable to address student chronic hunger (Hagedorn-Hatfield et al., 2022). To provide fresh, healthy and high-quality food, some campuses have cultivated **campus gardens** to improve fruit and vegetable

availability for students. Other interventions for supplementing food pantry supply are no-cost or low-cost farmers' markets. Such programs are often funded by grants, temporary emergency funds, government funds, donations, funds from external organizations and fundraising, and student fees (Hagedorn-Hatfield et al., 2022).

**The US** College and University Food Bank Alliance (CUFBA) is a professional organization that invests in creating campus-based programs, with branches in more than 700 campuses throughout the US in 2020, compared to 88 branches in 2012 (CUFBA.org). CUFBA works with various non-profits including Swipe Out Hunger, a national non-profit founded in 2010 that provides food for college students in about 450 campuses. Swipe Out Hunger helps colleges and universities operate shared-meal programs on campuses. According to its 2021-2022 influence report, Swipe Out Hunger had provided meals for 4.8 million students on 450 campuses throughout all 50 states (swipehunger, 2023). The Build Back Better Act (BBB) was enacted in November 2021 and promotes public investments for assistance and financial promotion of vulnerable populations such as children, seniors, and people with disabilities. BBB is also aimed at investment in programs and policies that will provide access to reasonably-priced higher education, and will assist students at risk of food insecurity (Nikolaus et al., 2020). **Oregon, USA** implements food voucher programs such as Mealbox, which operates at Oregon State University (OSU) and offers online apps that allow students to ask for food assistance from their university or college. Such programs provide students with the means to purchase meals throughout the semester without relying on donations from other students. Several US States, including **California** and **New Jersey**, have enacted a Hunger Free Campus Bill – ensuring funding for on-campus programs such as food pantries and meal-sharing programs (Hagedorn-Hatfield et al., 2022).

**Chile** has the Food Scholarship for Higher Education program (FSHE), intended to provide students with the means for a sufficient and healthy diet that will allow them to meet academic requirements. The scholarship is provided via the Ministry of Education (MINEDUC), but only to the 60% most vulnerable students. The assistance method is an **electronic voucher** (an EBT card), used to purchase food online as well as in brick-and-mortar stores. The card only allows the purchase of healthy food items. Students can prepare their meals using ingredients from registered retail stores, or purchase healthy meals at fast food chains or at their education institution's cafeteria. These healthy meals are preapproved by the National Council for Food Assistance (JUNAEB) before they can be sold to the public, and their cost is usually equal to the provided daily allowance, equal to US\$2. The President of Chile has undertaken to increase the monthly sum to about US\$5.8 in June 2022. Among more than 1.1 million higher-education students in Chile, more than 500,000 receive this scholarship, amounting to an annual budget of US\$230 million. JUNAEB outsources and



centralizes a service model through private companies that provide the EBT cards and are in charge of their loading and replacement, as well as customer service, nutritional education, registration of food retailers across Chile, and development of innovative technologies and initiatives (Giner & Placzek, 2022).

#### **Findings of evaluation studies about program effectiveness:**

- There is insufficient evaluation of programs for students (swipehunger, 2023) and literature that focuses on the coverage range, impact, and efficacy of existing initiatives and programs to reduce food insecurity among students (Hagedorn-Hatfield et al., 2022).
- A study that examined interventions and initiatives implemented in the US to reduce food insecurity among higher-education students found that food-pantry interventions were the most common (97%) and had improved the students' academic outcomes. These programs all utilize rescuing unused food (Hagedorn-Hatfield et al., 2022). However, less than 10% of all students mentioned using the food pantry as a means of coping with food deprivation, even when such a program was a common strategy for food security in their institution (Waity et al., 2020).
- Research had found that students hesitate to access routine food assistance programs due to a fear of social stigma, but also because of lack of awareness of active programs in their vicinity, access difficulties, or inconvenient activity times (Hagedorn-Hatfield et al., 2022; Peterson & Freidus, 2020). Another study had found that students who were aware of their campus's programs were 49% less likely to be food insecure compared to those who were unaware of such programs (Olfert et al., 2021). Moreover, it has been found that sometimes students are unaware of their own food security condition (Hagedorn-Hatfield et al., 2022).
- The failure of programs to reach the most vulnerable students has been claimed to perpetuate campus inequality and to emphasize the need for focused efforts among the most vulnerable populations (Nikolaus et al., 2020).

**In conclusion**, in addition to income-based food assistance programs, developed countries implement intervention channels that are focused on specific populations, to ensure food security among their most vulnerable groups. Such programs are often implemented concurrently.

Targeted food programs for children:

- Are usually extensively implemented in developed countries through school meals programs, and are in place in more than 161 countries worldwide;
- Regularly provide free or subsidized breakfast and lunch for pupils in primary, middle and high schools, to improve their diets and reduce health inequalities that impact their well-being, behavior, and learning capacity;
- Evaluation studies indicate that such programs are effective in reducing food insecurity, in improving the participants' learning capabilities, and in increasing the intake of healthy food;
- Most developed countries implement such programs subject to means tests, but recent years have seen a growing trend of providing food for all school children, without eligibility terms and regardless of household income, in an effort to significantly reduce the risk of food insecurity among children.

Targeted food programs for women, infants and young children:

- Are intended to allow low-income families with young children, and pregnant women, access to healthy food and sometimes even essential vitamins during pregnancy;
- Evaluation studies indicate that such programs have positive effects on reducing the rates of food insecurity and on access to a healthier diet.

Food programs for students in higher-education institutions:

- Include "food pantries", donated meals, food sharing, campus gardens, cooking classes, and community collaborations;
- Such programs are often led by volunteer students, campus community members, or paid staff/students;
- Not enough evaluation studies have been conducted on such programs, and the existing studies point to lack of awareness of the existence of such programs, and little utilization of existing programs because of shame and fear of stigma.

### 4.2.3 Programs for promoting healthy diet and informed utilization of food

Countries invest in strengthening and improving nutrition and food literacy to promote sustainable and healthy diet and reduce the health impacts of foods that are considered harmful. Programs for improving food and nutrition literacy are aimed towards the **food utilization** dimension. In developed countries, food utilization pertains less to the existence of means of storing and preserving food, and more to the assumption that food-insecure people find it difficult to utilize food adequately due to lack of knowledge or skills. The skills learned in these programs are usually: receiving a commensurate return for money, balancing food groups, managing a budget, and storing and preparing food. In **Australia**, a study of nutritional knowledge and skills and nutrition planning among some 2,000 Australian parents had found that more than half (57%) of respondents reported difficulties identifying healthy and unhealthy foods. Lack of knowledge about the nutritional value of food was more evident among households in low socioeconomic status, and may cause imbalance between the quantity of available food and its nutritional value (Venn et al., 2017). Australia therefore implemented several programs to promote a healthy diet, like Jamie Oliver's Ministry of Food, aimed at improving food utilization, the knowledge and skills required to achieve a healthy diet, plan meals, and manage a budget, and the Foodbank WA Food Sensations for Adults, aimed at teaching a healthy diet to adults and improving the skills required to purchase and prepare healthy food (Bowden, 2020a).

Countries also implement **programs for increasing the intake of fruits and vegetables**. For example, **the US** implements Gus Schumacher's Nutrition Incentive Program (GusNIP), funded by the USDA and the National Institute of Food and Agriculture (NIFA), with the support of the Food and Nutrition Service (FNS). The program's objective is to transfer grants to programs that act to increase food security while contributing to local economies and food systems in the US. The program financially supports projects that distribute financial incentives to low-income consumers with an elevated risk of chronic illness, in return for them increasing their purchase of fresh fruits and vegetables (GusNIP NTAE, 2022).

In addition to programs for adults, developed countries act to combine healthy nutrition in school meals, and integrate food literacy classes for all students. Some of these programs are subject to national nutritional requirements and guidelines, meant to positively impact students' food choice and intake, and especially to encourage the intake of fruits and vegetables (Giner & Placzek, 2022). In **the US** for instance, the FNS acts to increase the availability of fresh produce in schools. The Fresh Fruit and Vegetable Program provides primary-school children from low-income families with a variety of produce they may not be exposed to otherwise. The Farm to School Initiative is another supplemental program that integrates fresh and local produce into school

lunch menus (USDA, 2017). In **France** as well, at least half of the first courses and dessert courses in school meals must be fresh fruits or vegetables. More than 7,000 official audits are conducted each year to ensure a high level of health safety in these meals. As of January 2022, France has set additional goals for itself, including the obligation to incorporate in the courses 50% high-quality, sustainable products, including 20% from organic agriculture. Initiatives for providing fruits and vegetables and fresh agricultural produce are also implemented at a higher level. For example, **the European Union** implements the EU School Fruit, Vegetables and Milk Scheme in its constituents' school, promoting the free provision of milk, fruits and vegetables to millions of children, from nursery to secondary school, across the EU. The scheme has been operational since 2017, and EU countries regularly approve its list of products in collaboration with their health and nutrition authorities to achieve two goals: (1) increasing the intake of select agricultural products such as fresh fruit and vegetables and regular milk, to replace the intake of high-calorie processed food, high in added sugar, fat, salt, and artificial additives; (2) improving children's healthy eating habits. The program also supports relevant educational activities, such as healthy diet classes, farm visits, cultivating school gardens, cooking workshops, theme days, games and more – to connect the children to agriculture and teach them healthy eating habits. Parents are sometimes included in educational activities that cover local food chains, organic farming, sustainable production, and food waste. The overall EU budget for the program in 2017-2023 was €250 million per school year. This budget was distributed by countries based on the number of children and level of regional development. Of all EU countries, the countries with the largest number of participating students in 2021/2022 were **Germany**, with 2.76 million students, **Sweden**, with 1.72 million students, **Spain**, with 1.69 million students, and **Poland**, with 1.65 million students (European Commission, n.d).

Besides providing fruit and vegetables and fresh agricultural produce in daily meals for children, some countries also incorporate healthy diet classes in schools. In **France**, the Taste Classes Scheme has been operating in schools since 2012 – under the joint aegis of the Ministry of National Education and the Ministry of Agriculture. The aim of the classes, as a training tool, is to develop pupils' curiosity about food, and to prevent obesity and children's apprehension about certain types of food products (Giner & Placzek, 2022). Similarly, **Australia** implements the Stephanie Alexander Kitchen Garden Program, aimed at instructing school pupils on how to improve their nutrition and establish the school community's ability to grow, prepare, and consume healthier food (Bowden, 2020a).

### Findings of evaluation studies about program effectiveness:

- An evaluation study had found that GusNIP participants have increased their intake of fruits and vegetables to an even higher level than that of an average adult in the US, their food security had improved, and they reported being satisfied with the program (GusNIP NTAE, 2022). A study by Allcott et al. (2019) had found that eating healthier food is mainly determined by the household's income limitations, and that higher-income households purchase more healthy foods. This indicates that the intake of healthy food among low-income earners can be considerably increased by subsidizing healthy products. However, access to healthy food by itself had only a marginal impact on the intake of healthy food. Differences in access to healthy food have explained only about 10% of the observed differences in healthy food intake between high-income and low-income households.
- A meta-analysis to examine the contribution of various interventions in the US found that interventions that encouraged healthy food intake by increasing the availability of fruit and vegetables, and providing supplementary food for adults, were related to reducing food insecurity (Oronce et al., 2021).
- In **the US** the Food and Nutrition Safety Task Force (FNSTF) in collaboration with stakeholders, SNAP participants, and a representative national survey, found that additional benefits are required to allow participants to purchase a variety of healthy foods such as fruit and vegetables, beans, nuts, seeds, pulses, and full grain. Improving the quality of nutrition for all citizens can significantly reduce healthcare expenses for coping with nutrition-related chronic illnesses (Schanzenbach, 2023).
- Countries are always required to find compromise between policies for the entire population and between policies aimed at assisting the most disadvantaged to systematically minimize gaps ("a little for many or a lot for a few"). For instance, a study about the impact of a national nutrition policy had found that nationally subsidizing 10% of the fruit and vegetable intake for the entire population in the US can prevent or postpone 150,000 deaths related to cardiac and vascular diseases, while funding 30% of the fruit and vegetable intake for SNAP participants only can save lives to a lesser extent but diminish financial gaps by about 32% (Walker et al., 2021).

#### 4.2.4 Urban and community food programs

Recognizing the significant impact of urbanization processes on food security, the State of Food Security and Nutrition in the World 2023 report by the UN FAO and other main food-security organizations had focused on urbanization and agrifood system transformations and healthy diets across the rural-urban continuum. The report indicates that in recent years urbanization has considerably increased, with almost seven in ten people projected to be affected by it by 2050. Living in cities encompasses both challenges and opportunities to ensure everyone has access to affordable healthy diets (FAO et al., 2023).

##### Urbanization opportunities for ensuring food security

City living represents quite a few advantages in relation to food security. Access to healthy and cheap food is usually better in cities than in rural areas; the levels of nutrition and food security are higher and better in cities, due to greater food availability, and also because urban purchasing power is greater and there is better access to healthcare, education, and other services that are essential to health and nutrition. Moreover, urbanization helps preserve food for longer periods of time, increases the diversity of nutritious foods, and provides food-related employment. Indeed, the rate of moderate to severe food insecurity in 2022 among adults in rural areas (33.3%) was higher than in urban areas (26%) (FAO et al., 2023). However, considering transformations in agrifood systems and the acute inequality that persists in urban spaces, the so-called “urban advantage” is not always reflected de facto (FAO et al., 2023).

##### Urbanization challenges as pertains to food security

Academic literature and international organizations concur that urban food security constitutes a problem in both developed and developing countries (Filippini et al., 2019). A study to evaluate the impact of urbanization on food insecurity risks found that urban growth had a significant negative impact on food security at the national level (Szabo, 2016).

Urban living represents several challenges to ensuring affordable healthy diets, including:

- **High availability of low-quality food:** urbanization has been shown to be highly correlated with access to processed food products that contain preservatives and chemical pesticides (Szabo, 2016) and with higher availability of cheaper, pre-prepared food that is often rich in fat, sugar and/or salt. This fact, alongside the insufficient availability of vegetables and fruits for the entire population, can contribute to lower-quality nutrition among city dwellers (FAO et al., 2023). This aspect pertains to the **food utilization** dimension of food security. People living in poverty are particularly vulnerable to food utilization issues. Indeed, studies have

found that urban dwellers living in poverty tend to consume a larger quantity of processed food, because of its low cost as well as its availability (Szabo, 2016).

- **Rising food prices:** urban dwellers are net food consumers, compared to the rural population that is fully or partially involved in agricultural production. Therefore, the higher the urbanization level, the higher the rate of non-agricultural population, and the higher the dependency on food supply from rural areas (Filippini et al., 2019). Urban residents' dependency on food markets makes them more vulnerable to rising prices in comparison to rural residents. Poor urban residents have trouble purchasing sufficient food for their needs due to insufficient income, and are sometimes required to forgo other important expenses, such as health and education expenses, to purchase food (Szabo, 2016). This aspect pertains to the **access to food** dimension. Globally, many millions of adults cannot achieve the 2,100 daily calories recommended for a healthy, active life (Filippini et al., 2019).
- **Damage to agriculture:** urbanization leads to exclusion of small farmers from big food chains, as well as to loss of land and natural capital to urban expansion (FAO et al., 2023). This aspect pertains to difficulties in both the **access to food** dimension and the **food availability** dimension, which are both necessary for the existence of food security.

## Urban food policy

As all communities, including urban communities, are intended to uphold well-functioning food systems that provide access to healthy and accessible food to their entire population, academic literature submits that including food security in urban policy is essential in order to support sustainable urban development. The purpose of **Urban food policies (UFP)** is not only to ensure sufficient food for everyone, but also to ensure that food provision promotes environmental, economic, and social sustainability (Filippini et al., 2019). The Milan Urban Food Policy Pact (MUFPP) is an international protocol signed by 280 cities worldwide (MUFPP, n.d), addressing the development of urban food systems that can contribute to improving food security and sustainable development. A review examining the policies of 32 cities that have developed urban food policies following this protocol had identified three clusters of innovative urban practices to reduce food insecurity (Filippini et al., 2019), as follows:

1. **Sustainable and healthy food intake** – urban practices that focus on actions to promote a healthy diet and to improve access to fresh food. These programs focus on improving **food availability** and **food utilization** skills, and include community food centers, vouchers for cooking classes, community kitchens, and community shops in which community members can choose their own food out of donations or available food surplus. Such

programs can be financed by NGOs, governments, local authorities, or any combination of these (Loopstra, 2018). Actions to promote a healthy diet are also aimed at school pupils, through nutrition education activities. **London's** food strategy supports the extension of time dedicated to nutritional education in schools, by activities such as cooking and classes about agriculture and fresh food. **Amsterdam** and **Chicago** promote activities related to community food gardens in schools. **Ghent in Belgium** has Thursday Veggie Day which encourages the intake of a vegetarian meal at least once a week. As meat intake has been correlated with obesity and climate change, Ghent Municipality sought to combine healthy diet promotion with food systems' environmental sustainability. **Baltimore, USA** had promoted a "fresh menu for kids" in which nine food providers created healthy child menus in line with school nutritional requirements and offered them in smaller sizes and subsidized prices. To ensure access to healthy and environmentally sustainable food, **Amsterdam** invested in mapping the areas in which the nutritional need is the greatest. In **Australia**, the Café Meals Project in 2005-2015 sought to alleviate food insecurity among young homeless people by distributing cards for the purchase of healthy meals in certain cafés, for particularly low prices or free of charge. The participating cafés were youth-friendly and socially minded (Bowden, 2020a). An evaluation study had found that these young people had accessed the offered meals more frequently, and their sense of social inclusion had also increased. Participants had particularly valued the social relationships they had made through the project (Huxtable & Whelan, 2016).

2. **Governance and food economy** – this cluster includes cities that focus on activities pertaining to governance, social equality, and economic development. These cities facilitate inter-agency and inter-departmental collaborations in the food sector and promote collaborations between stakeholders. Moreover, they also address several aspects of the food system: production (existence of short food supply chains), distribution (support for food flow), support for enlarging urban sale areas for agricultural produce and for waste management. For example, the city of **New York** took specific action to improve the efficiency of food distribution routes to ensure access to food throughout the city, and to improve the efficiency of the city's food marketing system by developing sale areas, holding farmers' markets, supporting food producers in various activities such as training workshops, creating an online resource center, and developing a new industrial space for food-production businesses. These actions are intended to improve food availability for residents, but also to create growth and employment opportunities in the city's food-production sector. **Turin in Italy** had implemented the *Il menu l'ho fatto io* project, in which families were involved in developing a healthy and sustainable school menu. This cluster also includes cities that attended to social equality issues, like **San Francisco, USA**, which maximized voucher usage by offering a public online interface. Brazil's **Belo Horizonte**



implements solidary economic activity with a popular cafeteria-style restaurant that is open to all and serves more than 20,000 nutritious meals every day at subsidized prices. Another program – Abastecer – operates select grocery stores that are permitted to sell vegetables at prices lower than market value (Filippini et al., 2019). The Food for All (VicHealth) food insecurity initiative was implemented in **Australia** in the years 2005-2010 by eight local council in collaborations with local groups and organizations. The target population was the residents of eight local councils with a low socioeconomic status, and the program's objective was improving the access of people living in disadvantaged communities to varied food, specifically to fruits and vegetables, improving public transportation to food stores, and lowering the cost of living. These eight councils had received government funding to minimize local barriers to food security facing groups in the local community. Strategies implemented included: program evaluation study, improving inner-community transportation options for food distribution or sale outlets, and developing community kitchens (Bowden, 2020a). The program was evaluated qualitatively and quantitatively and was found successful in improving local government strategies to deal with food insecurity, and in increasing community transport options to fresh food outlets (Slade & Baldwin, 2016). Since 2016, **Milan, Italy** has been implementing a food policy based on cooperation between public agencies, social organizations, research institutions and the private sector, in order to improve food system recycling throughout the city. Milan's food policy strives to realize five goals: (1) access to healthy food for all; (2) sustainable food production; (3) food education and awareness; (4) waste and food waste management; (5) scientific research promotion. So far, the cooperation has resulted in over 40 initiatives concerning reuse and recycling of food, to prevent food waste and to reduce the distance individuals must travel to purchase food in the city, as well as new methods that focus on sustainable food in all meals that are municipally and publicly funded (in schools, hospitals, prisons, etc). Some international organizations take part in this policy initiative, such as Eurocities, the EU Platform on Food Losses and Food Waste, and the C40 food chain (Perlini, 2022). **Ireland** had established the online platform Food Cloud, to facilitate interactions between the food industry, umbrella organizations, and nonprofit organizations that provide food directly to those in need, in order to provide immediate and urgent assistance to the needy (Galli et al., 2018).

3. **Agriculture for food security** – urban agriculture serves both as a tool for an entrepreneurial city, and as a response to urban environmental injustice. This cluster includes cities that address urban food security mostly through actions that enable independent food production, by developing and establishing local agriculture. This aspect focuses on improving food availability. Such practices include ensuring access to agricultural lands and settling ownership issues; providing services for food producers within cities and

their environs; supporting producers and producer organizations; improving food storage in food marketing chains, and supporting technologies and infrastructures of processing, transporting, and distributing food. This group includes cities that take legislative and regulative action pertaining to food quality, to promote a sustainable and healthy diet in their domain. **Montreal Canada**, for example, holds designated events to increase access to markets, like *Cultiver Montreal*. **Almere in the Netherlands** is preparing urban areas for agricultural cultivation as part of the *Agromere Project*, launched to integrate agriculture in city life. In a 250,000m<sup>2</sup> district, 70,000m<sup>2</sup> were provided for homes and infrastructures, and 180,000m<sup>2</sup> were provided for agricultural development. Services provided to encourage farmers include: technical assistance, tools, and financial support. **Turin, Italy** has acted to support a shorter food supply chain, by encouraging the sale of agricultural produce directly to consumers. This developed the typical product basket of Turin County, intended to facilitate the sale of local agricultural produce in urban stores. Baltimore's Community Supported Agriculture (CSA) project encourages workers in administrative and professional unions to purchase CSA products as part of their employee health program, and receive a refund of up to US\$250. **Ghent in Belgium** has promoted its program – *Ghent CPSW* – to redistribute surplus food from retailers and other sources to social organizations, in an attempt to reach those who are vulnerable to food insecurity, improve access to food, and reduce food waste (Filippini et al., 2019). Many cities also implement **community gardens** to help increase access to fresh and healthy produce in urban areas, while also promoting community education and involvement. These programs are especially effective in low-income communities and in food deserts (areas characterized by low access or even no access to fresh food). For example, in **New York**, USA, the Green Thumb program supports more than 550 community gardens throughout the city, providing space, resources and training for residents so they can grow their own food (nycgovparks.org). **Madrid in Spain** had promoted the establishment of urban community fruit and vegetable gardens – *Huertos Suadable* – to produce food and increase employment. **Ghent in Belgium** has the *Heiveld* urban garden project that promotes social employment and allows senior residents to do small-scale agriculture together (Filippini et al., 2019).

## Community food programs

Community participation in food systems relies heavily on the four dimensions of food security: **availability of food**, **access to food**, **food provision stability**, and **Food utilization**. Clapp et al. (2022) had argued that **Agency** should be recognized as a fifth dimension in addition to the four accepted dimensions, as an essential element in policy and intervention frameworks developed to cope with food insecurity and prevent it. Clapp and her associates define "agency", in the current context, as the capacity of individuals or groups to make independent

decisions about the food they produce and eat, and about the ways food is produced, processed and distributed within food systems. According to this dimension, sustainable food systems are respectful and empowering when they allow all those involved to express their wishes and choices in designing the system and the policy. The Agency dimension also relates to an approach of **participation in food citizenship**, which encourages people to transition from being passive food consumers to an active status that entails developing and preserving skills that are necessary to shape the food system (Katre & Raddatz, 2023).

At the community level, food-insecure people can actively participate in local food initiatives like food sharing, community-supported agriculture, community gardens, and community kitchens (Katre & Raddatz, 2023). For example, in community kitchen programs, participants prepare large quantities of food together, and take the prepared meals home with them. Participants often also learn cooking skills and food budgeting as part of the program (Loopstra, 2018). The second largest food program in **Argentina**, developed by the country's Ministry of Social Development (NDS), is the community kitchen program *Programa de Comedores Comunitarios* – implemented through civil-society organizations. NDS purchases, stores, and distributes basic food items that are later processed into meals and distributed as food boxes by non-profits. The kitchens are mainly located in poor urban areas, and access is free and does not require meeting eligibility requirements, registration, or identification. As such, the program cannot be monitored, measured, or evaluated at an individual level, and it is not possible to assess its effectiveness in reducing participants' food insecurity. The budget provided for these kitchens is relatively stable, 0.02%-0.05% of the GDP in 2019-2022 (Moreno, 2023). A review of community kitchens in high-income countries found an increase in reports of consuming nutritious food and access to healthy food. Such projects relied more strongly on the involvement of social services, and included improvements in social skills, social support, enjoyment in cooking, and confidence. However, the problems entailed in such programs are limited funding and staff availability, and often being dependent on schedule constraints such as holidays (Iacovou et al., 2013).

Integrating the effort to meet UN SDGs “zero hunger” (SDG2) and “shaping sustainable cities and communities” (SDG11) is closely linked to issues such as eliminating poverty, coping with the climate crisis, immigration, land degradation, economic prosperity, and more. The State of Food Security and Nutrition in the World report for 2023, by the UN Food and Agriculture Organization and other central international food-security organizations, is in line with the new urban agenda endorsed by the UN in 2016, and contributes to increasing awareness of the need to improve access to affordable healthy diets as a critical component in sustainable urbanization. The report asserts that local authorities are required to establish mechanisms for implementing an efficient policy for available and affordable healthy nutrition for all (FAO et al., 2023).

**In conclusion**, alongside the advantages and opportunities of urban living as compared to rural life (including greater availability and variety of food, better access to healthcare, and more), recent years have seen an increase in awareness of the challenges of urban spaces, mainly for disadvantaged populations. For example, urban growth has been found to have a significant adverse effect on food security at the national level. Challenges that affect access to an affordable healthy diet include high availability of low-quality food, an increase in food prices, and declining agriculture. As an urban community is intended to uphold a well-functioning food system that provides access to healthy and accessible food to its entire population, academic literature submits that including food security in urban policy is essential in order to support sustainable urban development. Beyond providing enough food for everyone, the purpose of an **urban food policy** is also to ensure that the provision of food also promotes social, financial, and environmental sustainability. A review of innovative urban practices indicates that promoting sustainable and healthy food intake; promoting governance and food economy; and encouraging urban agriculture for food security are all practices that are implemented in cities worldwide to reduce food insecurity within their domain. Furthermore, such practices are the only ones that simultaneously address all four dimensions of food security – food availability, access to food, food utilization, and stability of all three over time.

#### 4.2.5 Food assistance by NGOs

Periods of decline in social services in developed countries are often characterized by enhanced activity by food provision nonprofit organizations. Such interventions focus on the **access to food** and **Food utilization** dimensions of food insecurity, and are meant to resolve three types of barriers pertaining to these dimensions: financial barrier – low-income; logistic barrier – lack of private or public transportation; and material barrier – lack of cooking, refrigeration and storage facilities (Bowden, 2020a). These services offer a safety net to alleviate hunger and other effects of poverty, and are often provided by non-governmental or nonprofit organizations (Bowden, 2020a).

**Food banks** (known as **food pantries** in **the US**) and food redistribution programs are non-profit organizations that help cope with food waste and food insecurity by collecting surplus food from farms, supermarkets, and other sources, and distributing it to food-insecure people. Food bank patrons include families, students, immigrants, and low-income senior citizens (Giner & Placzek, 2022). Such organizations usually rely on soliciting donations of food from the community or surplus food from the food industry, and on volunteers within the communities, and are usually not directly managed by the government. They sometimes receive government support (Loopstra, 2018). Although food banks fulfill an emergency demand for food, they often become established as long-term food support providers (Giner & Placzek, 2022).

Food banks have become the first line of response to issues of hunger and food insecurity in wealthy countries. Originating in **the US**, they are currently well established in **Canada**, **Australia**, and several Nordic countries, and have been quickly expanding in **the UK** and other parts of **Europe** in the past two decades (Tarasuk et al., 2019). The term “food bank” has different meanings in different areas of the world; in **the US** and **the UK**, it usually refers to large warehouse distribution centers that receive large food donations and distribute food to smaller organizations or local food banks. In **Canada**, **Europe** and **Australia**, however, food banks are locations where food-insecure people can receive food provisions once every few weeks (Long et al., 2020). While such institutions are at the forefront of the fight against hunger, and feed millions of people annually across the progressive capitalist world, they are widely recognized as temporary and episodic assistance for much deeper structural problems (Caraher & Furey, 2017).

**At the global level**, the Global FoodBanking Network (GFN) works with a network of 56,000 organizations across 44 countries, representing 811 food banks and 191,000 volunteers helping approx. 16.9 million individuals. GFN's mission is to reduce world hunger by developing food banks in communities in need and supporting existing food banks (Giner & Placzek, 2022).

Entities like the European Union and the European Food Bank Federation also support food-bank activity in developed countries. For example, for almost 30 years the **European Commission** has been implementing a food-surplus redistribution program as part of its Common Agricultural Policy. In the years 2014-2016, this policy had been replaced by the Fund for European Aid for the most Deprived (FEAD) as part of the European Union's social policy. The initiative provided clothes, food, and other essential products to the poorest individuals in society. In many cases, nonprofit organizations are the front-line distributors for FEAD, as was the case with the previous policy. This program became mandatory for all EU member states (Galli et al., 2018). In 2019, 12.5 million individuals received food assistance through FEAD (Giner & Placzek, 2022). Another European organization is the **European Food Banks Federation** (FEBA) – a non-profit umbrella organization uniting 351 food banks operating in 30 European countries, to prevent food waste and reduce food insecurity. FEBA's daily mission is reclaiming, collecting, sorting, and storing safe and nutritious food, and redistributing it free of charge to associations that assist families and individuals in need. In 2020, more than 37,000 workers on behalf of FEBA's food banks (85% of them volunteers) collected about 860,000 tonnes of food, which were redistributed to 12.8 million vulnerable individuals across Europe (FEBA, 2021).

At the national level as well, most developed countries have food-bank umbrella organizations that provide food for food-insecure individuals. In **the US** for instance, the Feeding America non-profit network encompasses

about 200 food banks, and works with some 60,000 partners and meal-provision programs (Mook et al., 2020). Feeding America collects donations from large food producers, retailers, shippers, packers, and growers, as well as from government agencies and other organizations, and organizes the shipping and storage of food donations to food pantry branches that distribute it to those in need. In 2020, Feeding America served more than 6.6 billion meals (Feeding America, 2021). In 2022 in **Australia**, the Foodbank organization served some 82 million meals and SecondBite served some 48 million meals via 2,950 non-profits (Foodbank, n.d; SecondBite, 2022). In **the UK**, the two main nonprofit banks are Trussell Trust and Independent Food Aid Network (IFAN). In February 2021, the UK had more than 1,300 Trussell Trust food banks, in addition to more than 1,000 independent food banks operated by IFAN. These rely as well on private food donations from individuals or local or national food factories as their main source of supply (Archer et al., 2021). Food assistance in **Italy** is mostly provided by non-profit and social organizations, which are mostly voluntary and/or religious. The Italian food bank fund *Fondazione Banco Alimentare Onlus (FBAO)* works in a warehouse model, allowing it to save large quantities of food that would have otherwise gone to waste. This non-profit organization has been in operation since the late 1980s, organizing the redistribution of edible food surplus via other nonprofit organizations. Food assistance in Italy is provided through 21 regional food banks that are members of FBAO, which directs and coordinates their activities. The regional food banks make and coordinate connections with food producers and large and small retailers, for collecting and storing food surplus. About 8,000 non-profit nonprofit organizations form the forefront of the service, in direct contact with service recipients and those in need, and from time to time they contact their local food bank to receive large quantities of products based on a permanent agreement that allows them to adhere to requirements of food safety and hygiene. Food assistance methods include distribution of food packages, distribution of prepared meals that are served by mobile units or permanent soup kitchens, provision of food and drink to the homeless, and sometimes also provision of clothing and other material assistance. A significant part of the salvaged food collected by the regional food banks comes from *the Colletta Alimentare Food Collection*. Every year in November, thousands of volunteers visit big retail stores across Italy, and ask the citizens to donate food for those in need. Moreover, The European Union's FEAD funds are another important supply source for Italian food banks. The Agricultural Payments Agency AGEA purchases food from FEAD and transfers it to the relevant food banks (Galli et al., 2018).

To support the work of these NGOs, public authorities and governments can encourage and even mandate food donations to food banks. The European Directive on waste – EU 2018/851 – determines that member states must provide incentives to encourage food donation, and must collect unsold food products and redistribute them to nonprofit organizations (Giner & Placzek, 2022). One example is the “**Good Samaritan Law**” benefit,

granted by certain countries to companies that donate food. In **Italy**, for instance, this benefit is an essential institutional component of the food supply. As part of the benefit, the activity of organizations that collect food and redistribute it to the poor is considered a normal consumer transaction, in an attempt to encourage companies to donate their food surplus and alleviate the financial burden food banks bear due to distribution to the needy. The law transfers the responsibility for food security to nonprofit organizations, simplifying the donation processes for private companies (Caraher & Furey, 2018). Moreover, in 2016 the Italian Parliament passed the **Gadda Waste Reduction Law** (166/2016), with the objective of incentivizing the redistribution of surplus and unused goods for social solidarity and allocation to people in need (Perlini, 2022). The law incentivizes food-recovery processes in private companies, to encourage donations (Galli et al., 2018). Similarly, in **France**, **Canada** and **the US** farmers can donate products that would otherwise be lost and receive tax reductions in return. In **France** food donation grants a tax reduction of 60% of the donation value. Such donations are mainly provided by *SOLAAL*, a non-profit organization supported by the Ministry of Agriculture. In France, destructing edible food is illegal, and stores with an area larger than 400m<sup>2</sup> are obligated to offer a partnership with food assistance associations. A similar obligation is imposed on the food and drink industry (for companies with a turnover greater than EUR 50 million) and on catering companies that serve more than 3,000 meals a day. **Japan** supports stakeholders that contribute food products to food banks by assisting them in shipping and delivery costs, and via mechanisms that encourage food donations to food banks (Giner & Placzek, 2022).

#### **Findings of evaluation studies about food bank effectiveness:**

- In a longitudinal study in **Canada** that examined change among people who accessed food-bank assistance for over a year as of six months of their joining the service, participants had reported that their food insecurity significantly decreased thanks to food-bank assistance. There was no control group, and the participants' baseline was not examined (Roncarolo et al., 2016). However, food banks in **Canada, the US** and **Australia** have been found to be unsuccessful in their goal of preventing hunger (Simmet et al., 2017). It has also been found that despite regular food-bank use, those who access this service continue to experience high levels of persistent and severe food insecurity at a high prevalence (Loopstra & Lalor, 2017).
- A review of studies that examine the nutritional quality of food provided through the food bank had found wide variety in the quality and quantity of food provided. Generally, studies indicate insufficient quantities of fruits, vegetables, and dairy products, as well as of calcium, vitamin A, and vitamin C (Simmet et al., 2017).
- Studies conducted among food-bank users had documented feelings of shame and fear of stigma due to the need to use the service (Garthwaite, 2016). This may explain why in Canada, less than one quarter of the food-insecure population uses food banks (Loopstra & Tarasuk, 2015).



**In conclusion**, interventions by NGOs mainly focus on the **access to food** and **Food utilization** dimensions of food security, and are meant to resolve three types of barriers pertaining to them: the financial barrier of low-income, the logistic barrier of lack of private or public transportation, and the material barrier of lack of cooking, refrigeration and storage facilities. Food banks and food-rescue programs are non-profit organizations that help address food waste and food insecurity by collecting food surplus from farms, supermarkets, and other sources, distributing it to food-insecure people. Such organizations usually rely on soliciting donations of food from the community or surplus food from the food industry, and on volunteers within the communities, and are by and large not directly managed by the government. Although such organizations fulfill an emergency demand for food, in many cases they become established as long-term support providers. Nonetheless, research findings show that these organizations are not successful in preventing high levels of severe and persistent food insecurity, and accepting their assistance is riddled with shame and stigma that may prevent individuals from seeking their help.

#### 4.2.6 Program monitoring, research, and evaluation

##### Measuring tools

Measuring food insecurity is essential for monitoring the overall scope of the problem, its prevalence among various populations, its risk factors, the impacts of food insecurity and of the interventions and policies to cope with it. One of the challenges in measuring food insecurity is its complexity, which, when examining all its dimensions (availability, access, utilization, and stability) encompasses not only the entire food system but also the personal experiences of those who suffer from it. As such, it includes both objective and subjective perspectives (Carrillo-Álvarez et al., 2021).

A review of tools for assessing food insecurity at the individual and household levels in high-income countries in the years 2000-2020, has found that the HFSSM scale was the most common, used in about 72% of all studies and articles designed to evaluate food insecurity. The review also indicates that most existing tools focus on the **access to food** dimension, and there is a significant need for items that examine other aspects of the problem, such as the quality of nutritional intake, and psychological aspects of the problem and its impacts. Food insecurity is mainly assessed by multiple-item questionnaires. These, however, can be long, burdensome for respondents, and expensive to implement. In light of the alarming rates of food insecurity in high-income countries, it is necessary to identify the most suitable measurement tools considering the nature and characteristics of food insecurity (Carrillo-Álvarez et al., 2021).



## Evaluating the effectiveness of food-insecurity reduction programs

Considering the substantial public funding provided for food-assistance programs, and the ever-rising number of people who rely on such programs in developed countries, it is essential to understand whether such programs are effective in improving their beneficiaries' food-security, and how to improve them (Giner & Placzek, 2022).

At the international level, initiatives are developed to facilitate the comparison between different food-insecurity prevalence assessments. For instance, the Committee on World Food Security (CFS) was formed in 1974 as a sub-committee of the UN FAO, supported by the International Fund for Agricultural Development (IFAD) and the World Food Program (WFP). The CFS comprises UN agencies and entities with authority on nutrition and food security, as well as members of civil-society organizations, international agriculture research systems, regional and international financial institutions, private-sector funds, and philanthropic funds. It formulates multi-year work plans and policy recommendations based on scientific evidence submitted to it (FAO, 2020). Additionally, the FAO (the UN Food and Agriculture Organization) is collaborating with the USDA Economic Research Service to develop a global scale of food-insecurity severity based on experiences, which will allow methodological, consistent, and transparent comparisons between countries and cultures. International collaboration can promote informed decision-making to address the causes of hunger and undernourishment (Giner & Placzek, 2022). The **OECD's** Trade and Agriculture Directorate also employs a group of experts who specialize in analyzing agro-food systems (Food Chain Analysis Network, or FCAN). FCAN analyzes food intake and the data sets necessary to develop evidence-based food policy. In 2020, FCAN established new policy approaches for food-insecure households (Giner & Placzek, 2022).

At the national level, in recent years, following the UN's requirement that member countries regularly and annually report about their progress towards the Zero Hunger goal, developed countries have been working to develop and establish monitoring, research and evaluation mechanisms to assess trends and best practices to reduce food insecurity within their borders. In **the US** for instance, the USDA has been collecting information about access to food, expenditure on food, and food-assistance sources among the US population since 1995. Data is collected each December using the annual Food Security Supplement survey, conducted as part of and as a complement to the Population Survey, and providing information about the prevalence and severity of food insecurity in the US. The USDA collects a wide range of interrelated data about food security, food purchase, and food environment, which allows in-depth research about and analysis of programs for reducing food insecurity and participation in them by its Economic Research Service (ERS; [ers.usda.gov](https://ers.usda.gov)) and by academic researchers. ERS research is used to inform federal decision makers on matters related to food-assistance policies. ERS

makes its database accessible to ensure that research results are open to the public. Its database contains more than 1,100 reports and articles about food assistance and nutrition, by ERS researchers or with ERS funding, all peer-reviewed. Private US research institutes, like the Food Research & Action Center (FRAC), have considerable influence over public policy on food insecurity, publish research, and formulate action plans for eliminating food insecurity (frac.org).

Furthermore, oversight on food-assistance programs includes defining guidelines for how the programs must operate and for indicators that must be reported. For example, in **Finland** the government has established a set of principles for monitoring its school-meal programs, which must be implemented locally and nationally (National Nutrition Council of Finland, 2017). This set of principles is organized around three pillars, and stakeholders must report on a predefined list of indicators associated with these pillars (Giner & Placzek, 2022):

1. Monitoring and evaluating the nutritional quality of school meals: a continuous process used by the catering service provider to ensure the compliance of the food served with the recommendations. The process covers all phases of service: menu planning, food procurement planning, recipe creation, food preparation and serving;
2. Monitoring and evaluating participation and inclusion in school meals: monitoring the attendance of pupils at school meals (daily/weekly/annual monitoring) is a key indicator of operation, and the goal “Everybody eats” is defined as a common goal for pupils and households;
3. monitoring and evaluating the health and safety condition of school environments and welfare promotion among learning communities – to be inspected in comprehensive schools every three years.

Monitoring and evaluation of food-assistance programs can focus on the quantity and nutritional quality of the food provided to beneficiaries, on program cost, or on the beneficiaries’ preferences and willingness to access the programs. The information obtained helps policy makers effectively adapt food-assistance programs for the needs of vulnerable individuals (Giner & Placzek, 2022). The wide variety among households classified as food insecure to differing levels is important for evaluating policy efforts that address food insecurity. The following is a summary of analysis measures from studies used to evaluate the effectiveness of interventions in reducing food insecurity (Carrillo-Álvarez et al., 2021; Deaton & Scholz, 2022; Giner & Placzek, 2022; Lindberg et al., 2023; Loopstra, 2018):

- **Overall change in food insecurity prevalence:** the extent to which the program managed to reduce the number of households living in food insecurity from among all participants. It is necessary to examine how programs influence the prevalence and frequency of food insecurity, and whether improvement in the participants’ food insecurity condition also lowers the number of participants;

- **Change in food insecurity severity:** the extent to which the program managed to reduce the rate of severely food-insecure participants, and the manners in which the program affected the experiences of participants from this group;
- **Causes and criteria for program participation:** examining the eligibility terms for program participation, and the actual participation of eligible households in the programs;
- **Satisfaction of participating households, and extent of assistance utilization** – program digitization facilitates the monitoring of this aspect;
- **Program participation impacts** elements in participants' lives, such as health; integration in the job market; financial condition; and the extent to which the program increases the income of food-insecure households and leads to reduction in food prices;
- **Complementary services:** evaluating the existence of an appropriate sanitation environment and healthcare services that allow a healthy and active life. It is also recommended to examine the extent of participants' reliance on social resources and food-assistance organizations.

The indicators that are directly related to food can be attributed to the four dimensions of food security: **access to food**, **availability of food**, **food utilization** and **stability of food supply**. Improvement in these four dimensions is intended to lead to a final result of household food security improvement:

- **Access to food:** increasing the quantity of food purchased; increasing the budget for raw materials/ infrastructure required for preparing and consuming food; household consuming food in socially-accepted ways; there is less financial difficulty to purchase food;
- **Availability of food:** the ability to purchase or receive healthy, diverse, and safe food by participating in food-center programs close to home and at affordable prices;
- **Food utilization:** improving household ability to store and preserve food; greater household intake of food; greater intake of healthy and culturally-appropriate food; household consumes a growing variety of foods. As nutrition is one of the main causes of health, food insecurity must be considered a relevant axis of health inequality, quality of nutrition should be examined in any action contemplated to reduce food insecurity. As the current commonly accepted scales do not address this aspect, it is essential to measure nutritional diversity and food quality to characterize food security. A measure of food-item quality and nutritional intake must be integrated to assess food utilization (Carrillo-Álvarez et al., 2021);
- **Stability of food supply:** households have a more consistent and regular food supply; there is less tension and concern pertaining to food intake.

The UN emphasizes the importance of routine, consistent, high-quality, and accessible collection of data and statistics, and emphasizes that the success of policies and programs that promote food security and good nutrition hinges heavily on enhancing the capability of countries to collect and analyze quantitative and qualitative data and utilize it to plan and establish policy (CFS, 2021).

**In conclusion**, measuring food insecurity is essential for monitoring the phenomenon, in terms of its extent, prevalence in certain population groups, risk factors, impacts, and the impacts of the interventions and policies implemented to address it. One of the challenges in measuring the phenomenon is its complexity, as it includes both objective and subjective perspectives. A review of tools for evaluating food insecurity in high-income countries, at the individual and household levels, indicates that the most common tool is the USDA's HFSSM scale. Alongside the HFSSM, the FAO's FIES scale, which allows a global comparison, has been increasingly used in recent years to monitor the progress of world countries towards the UN goal of Zero Hunger.

In recent years, following the UN's requirement that member countries regularly and annually report about their progress towards the Zero Hunger goal, developed countries have been working to develop and establish monitoring, research and evaluation mechanisms to assess trends and best practices to reduce food insecurity within their borders. Moreover, both governments and international organizations have been endeavoring to establish scales and outcomes to assess the effectiveness of interventions aimed at reducing food insecurity. The UN emphasizes that the success of policies and programs that promote food security and good nutrition hinges heavily on enhancing the capability of countries to collect, analyze, and utilize quantitative and qualitative data to plan and establish policy.

## 4.3 Gaps, Challenges, and Barriers

This article will detail the barriers and challenges specified in relevant academic literature both in terms of legislation and policy and in terms of program implementation and evaluation.

### 4.3.1 Challenges in legislation and policy

- **Focusing on food insecurity as an isolated factor:** in some countries, paradigms of food insecurity and food governance are frequently shifting and evolving between various times and spaces, with various elements of society constantly shaping them. Some claim that these paradigms' most significant weakness is that they are not aimed at changing the broadest societal structures, and that focusing on food insecurity as an isolated factor that is only linked to food scarcity leads to narrow policies that are limited in their ability

to address the issue (Borras & Mohamed, 2020). Another claim is that food insecurity is not a problem that can be solved by civil-society organizations, which only fill the gap of lacking government regulations, but a systemic problem that can only be addressed by systemic changes (Tsiaras, 2022). According to these approaches, focusing on food insecurity as a purely food-related problem can lead to solutions that are purely food-based, such as food charity and redistribution of surplus food, while neglecting the more comprehensive economic and societal issues, and relieving government of its responsibility to alleviate poverty and address its causes (Walker et al., 2021).

- **Focusing on change at the purely individual level:** interventions that focus on emergency food assistance or on developing individuals' nutritional knowledge, skills, or behavior, can address some of the immediate effects of food insecurity at the individual level, yet critics posit that such actions are insufficient to transform the structural causes of poverty and food insecurity at a societal level (Long et al., 2020; Yii et al., 2020).
- **Reducing financial support policies:** in some countries, the past decade has seen a cut in policies that provide financial support for families with children. Research evidence indicate that this could expose low-income households to increased risk of food insecurity (Reeves et al., 2021a). For instance, a 2020 report to the UN Human Rights Council indicated that **the US** had considerably reduced its financial support for SNAP, endangering national food security (Elver, 2020).
- **Relying on nonprofit organizations in lieu of establishing a national policy:** the development of food banks has been described in academic literature as a victim of their success, to a certain extent (Galli et al., 2018). While it is undisputed that the spread and prevalence of food banks across Europe emphasizes the existence of food insecurity (Galli et al., 2018; Schoneville, 2018), some claim that instead of serving as an alarming, glaring reminder of the levels of national poverty, they have in fact become an integral part of the social support system. Moreover, despite data indicating that millions of people throughout Europe are experiencing poverty and food deprivation, some claim that there is little political will or urgency in directly addressing food insecurity, and instead it seems that governments are willing to allow food provision services like food banks to fill the gap, and hunger is being normalized (Rost, 2021). Such critics argue that the mere existence of initiatives like food banks enables policy makers to refrain from making wide-scale changes, to address the basic problems pertaining to poverty and food insecurity (Silvasti, 2014). National food-bank activity is claimed to have an accumulative potential effect, so that the more responsibility nonprofit organizations take upon themselves, the more governments can claim that their resources are not required to address poverty and food insecurity (Galli et al., 2018). In **the UK** for example, the government refuses to recognize that the ever-growing number of food banks is related to its austerity policy, even when it is proven using empirical data (Garthwaite, 2016).

### 4.3.2 Challenges in implementing and operating programs for reducing food insecurity

#### Measuring challenges

- **Lack of program measurement and evaluation:** addressing food insecurity directly or indirectly is an important mission for governments in a time of globally increasing inflation. Nonetheless, and despite the availability of certified and credible measuring approaches, it seems that Europe in its entirety is lagging behind other continents in consistently measuring food insecurity and in collecting relevant data (Grimaccia & Naccarato, 2020). In **Norway** for instance, no surveys of household food insecurity have been conducted for several decades (Richards et al., 2016). Most OECD countries do not collect data about food security, which prevents the development and implementation of evidence-based food-assistance programs. One challenge is identifying the appropriate sets of indicators and developing harmonized guidelines. Another challenge is collecting data on a regular basis so that researchers and policy makers can analyze the information, identify the programs' strengths and weaknesses, and adjust them as required (Giner & Placzek, 2022). Academic literature indicates that there is a lacuna in quantitative evaluation studies with objective evaluations before and after implementation of assistance programs, in measuring food-insecurity, and in follow-up on those who drop out of programs and discontinue the service (Loopstra, 2018). Compared to government-led policy tools, the decentralized nature of food-bank organizations makes aggregating data at the local, national, and international levels difficult (Giner & Placzek, 2022). Therefore, while recent years have seen more and more food banks emerging in developed countries, many food banks have been established in the absence of well-designed evaluations of their effectiveness (Loopstra, 2018).
- **Lack of comparable uniform measurement:** researchers point to an absence of routine measurements, and nonconformity in definitions across different countries. Some countries use Household Income and Expenditure Surveys (HIES) to assess the population's levels of food intake and welfare according to the amount of purchased food, while other countries use the Food Insecurity Scale (FIS) to assess the quantity of food consumed by individuals in the household within a set period of time (Pollard et al., 2021). Furthermore, a main challenge in measuring the extent of the population suffering from food insecurity has to do with the measuring tool type; it was found that single-item scales lead to significantly lower food-insecurity rates compared to multiple-item scales (Seivwright et al., 2020). In a study in **Queensland**, for instance, 12.7% of the university student sample were found to have suffered from food insecurity when using a single-item scale, while 71.8% were found to have suffered from food insecurity when using the FSSM (Hughes et al., 2011). In some countries, multiple measurement scales give rise to gaps in evaluations of food-insecurity

prevalence. Population surveys in **Australia** have shown that a single-item scale consistently resulted in an estimated food-insecurity rate of 5% of the total population, and due to this low prevalence data about food-insecurity prevalence is not routinely collected nationally. However, other Australian studies indicate that the single-item scale indicates the prevalence of food insecurity as at least 5% lower compared to other, multiple-item scales (McKay et al., 2019). Examples include the FAO's annual global food report, based on the FIES tool, which estimated that the prevalence of food insecurity in Australia as 13.4% in the years 2016-2018 (FAO et al., 2018), and 11.9% in the years 2019-2021 (FAO et al., 2022). A review of tools for assessing food insecurity at the individual and household levels in 2000-2020 used by high-income countries, indicates that most existing tools focus on the food access dimension of food insecurity, and items that examine the quality of nutrition, as well as the psychological aspects of food insecurity and its effects, are significantly lacking (Carrillo-Álvarez et al., 2021).

- **Difficulty in investigating the effectiveness of food-assistance programs:** many interventions do not have defined objectives or access to evidence-based evaluation systems. Tools for measuring food insecurity as well as interventions are inconsistent. There is a wide variety of methods for evaluating the effectiveness of assistance programs, from self-reporting to focusing on extremely narrow criteria (vegetable intake, number of healthcare visits, etc.), and the wider long-term influence of each program on family life is not examined. Additionally, most interventions lack a coherent theory of change, which describes how and why it may provide the desired outcomes (Moonan et al., 2022).
- **Difficulty in monitoring actual access by program participants to physical or online retailers** (Rizvi et al., 2021): most food-assistance programs are subject to eligibility criteria defined by public entities at the national or local level, or directly defined by the non-profit organizations that manage the programs. It is difficult to monitor the number of people who actually access food-assistance programs, as well as the number of people who are supposed to be eligible but do not access the service (Giner & Placzek, 2022). Assistance organizations therefore find it hard to estimate the number of actual assistance recipients, to identify eligible individuals who are not receiving assistance, and to examine trends in assistance access over time.

## Challenges at the program level

- **Relying on volunteers:** food-assistance programs generally and food banks specifically are mainly managed by volunteers and nonprofit organizations. Research shows that persistent volunteers often face burnout that puts into question the long-term feasibility of such assistance programs (Denning, 2021).
- **Bureaucratic complexity:** government-led food-assistance programs have become increasingly institutionalized and involve multiple forms and eligibility criteria (Galli et al., 2018). Bureaucratic complexity has been found to distance and suppress public participation, and had for instance, adversely affected the effectiveness of **the US** SNAP program (Garrow & Day, 2017). A systematic review of school meal programs in **the US** indicates that to evaluate student eligibility for programs, States are required to invest significant expenditure and administrative work, and that parents may refrain from registering their children to programs that entail cumbersome registration processes (Cohen et al., 2021).
- **Operational challenges of nonprofit organizations:** food-assistance charitable organizations face organizational challenges in handling surplus food, logistics and redistribution of surplus food, and adjusting assistance to the needs of service recipients. Food surplus expiration dates are a short-term challenge that takes up much of the organizations' attention, and many of them cannot provide a systematic solution for food insecurity. Financial limitations are a common challenge, and gaps between supply and demand often cause shortage in food, resources, and volunteers during certain times of the year, and food surplus during other times of the year. These challenges have led to innovative initiatives, like the Food Cloud online platform in **Ireland**, intended to promote interactions between the food industry and nonprofit organizations. In **Italy** food assistance is provided alongside training in financial-management and awareness of a balanced diet. In **the Netherlands**, attempts have been made to create connections and collaborations between food-assistance organizations and local urban-agriculture organizations, to cope with the operational challenges facing food-assistance organizations (Galli et al., 2018).
- **Material or social assistance that is insufficient to reduce food insecurity:** it had been argued that food insecurity is a symptom of extreme material deprivation and social exclusion, and that it reflects uneven distribution of material and social resources in the populations of developing countries. In **Europe** for example, food insecurity was considerably more prevalent among recipients of work allowances and all social allowances. However, being a social-benefit recipient has not been found to be linked to a lower risk of food insecurity. Social benefits alone have been found to be unsuccessful in fully mitigating food insecurity, either because they are too low or because broader personal and structural risk factors are more influential than financial ones (Garratt, 2020).



- **Gap between supply and demand in food banks:** food banks are open for a limited number of days per week and are forced to limit the amount of food an individual can receive. Besides the food-amount limit, the quality of provided food varies, including expired food, processed food, and as amounts that only last for one to three days. Moreover, the food banks' reliance on fluctuating donations does not allow them to tailor the assistance to the recipients' needs (Loopstra, 2018). A 2019 study to examine the connection between food banks and food insecurity had found that in **Canada**, accessing a food bank was not a common strategy among food-insecure households, and when they lacked money to purchase food, they were far more likely to ask for financial assistance from friends or family, and to skip bill payments. This finding indicates that people who struggle with food insecurity do not view food banks as a solution to their problem (Tarasuk et al., 2019). Moreover, while food-bank assistance has been found to potentially temporarily alleviate recipients' hunger, they cannot address the severe financial difficulties that lead to food insecurity. There is no evidence that food distribution can bring households from food insecurity to food security, and studies have repeatedly shown that food-bank users remain food insecure (Enns et al., 2020; Holmes et al., 2018; Tarasuk et al., 2019).
- **Food literacy limitations:** population surveys conducted in high-income countries had not identified a deficiency in food-preparation skills or food literacy among food-insecure households as compared with food-secure households (Huisken et al., 2016), meaning that training and workshops for enhancing food literacy are limited in their impact on food insecurity (Yii et al., 2020). No evidence has been found to support the assertion that focusing on skills and behavior contributes to reducing food insecurity, and this focus had been claimed to shift scrutiny away from systemic factors pertaining to lacking funds for food (Loopstra, 2018; Yii et al., 2020).
- **Failure to consider the opinions of service recipients:** it is unclear to what extent food-insecure families can influence the interventions. Families do not have the opportunity to ensure that interventions are suited to their complex needs (Moonan et al., 2022). Community initiatives such as food sharing, community-supported agriculture, and community gardens, are usually planned and organized by public-sector associations and organizations with their own agendas. Therefore, when food-insecure individuals are invited to receive the service, they experience disadvantage in knowledge and power, reducing their ability to influence solutions for their problems (Katre & Raddatz, 2023).

## Challenges at the program participants' level

- **Lack of awareness:** potential beneficiaries may not be aware of the existence of assistance programs, of their eligibility for assistance, and how to apply for help (Rizvi et al., 2021).
- **Lack of inclusion:** program participants who receive assistance as part of the programs do not take part in managing, operating, and evaluating the programs.
- **Shame and fear of stigma:** individuals report that they feel embarrassment, frustration, shame, and fear of stigma when they use food vouchers (Rizvi et al., 2021). Fear of stigma has also been found to limit the use of food-bank services (Loopstra, 2018). A systematic research review in **the US** found low participation rates in targeted school meals programs that are only offered meals to students from low-income families, due to stigma, and such programs are unsuccessful in achieving wider health goals. Many parents refrain from registering their children to these programs because of shame and fear of stigma (Cohen et al., 2021).
- **Limitations on program participation:** children, employment, disability, difficulty in social interaction, and lack of transportation means can reduce the capability of households that are vulnerable to food insecurity to participate in community programs (Loopstra, 2018).

In conclusion, a mapping of the challenges and barriers to food assistance indicates that *legislation and policy challenges* stem from the narrow focus of policy on food insecurity as an isolated factor of food deprivation at the purely individual level, without addressing the influences of broader societal structures on poverty and without aspiring to systemic changes. Other challenges stem from the reduction of government financial support for families with children, and from governments' reliance on nonprofit organizations as long-term solutions, even though they are meant as a short-term emergency response. Other challenges pertain to the *implementation and operation of programs* to reduce food insecurity: measurement challenges are manifested by the lack of systematic, consistent, and uniform measurement of the prevalence of food insecurity, making it hard to compare measurements and to examine the success of interventions in reducing it. In addition, there are not enough evaluation studies on food-assistance programs, making it hard to identify their strengths and weaknesses, establish best practices, and examine their effectiveness. At the program level, there are challenges stemming from relying on volunteers and from the bureaucratic complexity of examining participation eligibility, logistic challenges in food distribution, a gap between supply and demand, and ineffectiveness of food literacy programs in reducing food insecurity. At the program participants' level, challenges include lack of awareness of existing programs among those eligible, shame and fear of stigma, and limitations on the ability to participate in community programs due to time constraints and mobility issues.

## 5. Recommendations, operation principles, and best practices

Academic literature offers operation principles and recommendations for promoting policy and developing optimal responses for food-insecure households. The following is a summary of the main recommendations.

### **Anchoring the right to food in legislation, and monitoring its implementation**

Legislation is a critical element in the complex picture of implementing successful national programs for food security. Strong constitutional institutions that include oversight on mechanisms have been shown to be proven tools for maintaining human-rights standards of food security (Sheehy & Chen, 2022). Persistent food insecurity requires a rights-based approach to protect children, who are vulnerable to food insecurity, and their families (Fernald & Gosliner, 2019). Based on the above, a report submitted to the UN Human Rights Council posits that formal recognition of cultural, social and financial rights, and especially the right to food is essential. Only about 30 countries, most of them developing countries, have explicitly recognized the right to food in their national constitutions. Even in countries that do recognize this right in legislation, whether explicitly or implicitly, there is a considerable gap between the law and its implementation. It has therefore been claimed that countries must ensure that appropriate institutions and channels exist so that rights holders can hold them accountable when their right to food is violated, and must also ensure participation in decision-making, transparency and the rule of law, as part of the implementation of this right (Elver, 2020). Moreover, effective implementation of the right to food requires comprehensive adoption of a human-rights based approach. The International Covenant on Economic, Social and Cultural Rights (ICESCR) recognizes that the right to food cannot be promoted without addressing rights to housing, health, cost of living, and national insurance (Elver, 2020). Targeted laws for reducing food insecurity will allow governments to evaluate government interventions as compared with the outcome of actually reducing food insecurity (PROFF, n.d-b). As aforementioned, by virtue of significant efforts in legislation and policy, **Brazil** has successfully reduced the rates of undernourishment within its borders by 82% in the years 2002-2014, and the number of hungry people in Brazil has fallen during that time from 19 million to 3.4 million. In **Switzerland**, the only developed country that has enshrined the right to food in its constitution, the rates of food insecurity are the lowest of all OECD countries (only 2%), and the government has strong and extensive welfare programs that support a high standard of living and vulnerable populations (Sheehy & Chen, 2022).

## Investment in consistent and systematic measurement, monitoring, and identification methods

- At the national level, the OECD report for addressing food insecurity emphasizes that the first step in developing a national policy for reducing food insecurity is developing routine measurement processes that will enable assessment of the prevalence of national food insecurity. Measurement tools must be standardized and comparable to those of other developed countries, to allow international learning about the effectiveness of food-assistance programs and adaptation of policies as needed. There are currently two main measurement scales: the FAO's FIES, and the USDA's Household Food Security Survey Module (HFSSM). The recent rise in food prices and its potential effects on food-insecurity prevalence require implementation of regular food insecurity surveys in OECD countries and worldwide (Giner & Placzek, 2022). Regular monitoring through national household surveys is important for quantifying food insecurity in the population, monitoring changes in prevalence over time, and identifying vulnerable groups (CFS, 2021; GFN, 2020).
- At the organizational level, considering the vital role of food banks and NGOs in emergency food assistance, public authorities should accompany and facilitate these organizations' monitoring and evaluation efforts (Giner & Placzek, 2022).
- At the program level, it is recommended to monitor program influence on food security by examining the baseline, when participants enter the programs, and finding ways to attribute outcomes to program participation. Indicators of food security should be monitored to establish evidence about what works, and to link program objectives to outcomes (Slater et al., 2014), while monitoring social and health conditions over time to verify that gaps are indeed diminishing (Walker et al., 2021). The UN emphasizes the importance of accessible, high-quality, consistent and routine collection of data and statistics. The success or failure of policies and programs that promote food security and good nutrition hinge heavily on enhancing the capability of countries to collect quantitative and qualitative data, analyze it, and utilize it to plan and establish policy and investment (UNStats, 2021). Additionally, the promotion of efficient interventions for addressing food insecurity requires that interventions be based on change theory, using a systematic approach in both implementation and evaluation (Moonan et al., 2022).
- At the individual and household level, investments are required for **identifying** those who suffer from food insecurity and seek help from programs over time. To improve the identification of this population, the OECD recommends that governments map vulnerable households to facilitate the implementation of a targeted assistance policy (Giner & Placzek, 2022), while taking into account characteristics like gender, education

level, number of adults in the household, living in a rural area, employment status, and GDP per capita, whose relation to food insecurity varies by the country's development ranking. This recommendation suggests that a specific development policy should be adapted for each country, and that an all-inclusive approach to assistance may be ineffective. Models of multilevel linear probability can be used to identify the characteristics most associated with a national increase in food insecurity, and assistance programs should then focus on these characteristics (Smith et al., 2017). Moreover, food insecurity is not only related to food deprivation; when a household suffers from food insecurity it sometimes also has difficulties meeting other basic expenses, like expenses on housing and medicine, due to insufficient financial resources. Identifying food-insecure households enables governments to also learn more about financial welfare and distress in broader aspects of poverty, enabling policy makers to address these as well (PROOF, n.d-a). **Digital data collection** about participants in food-assistance programs can help make programs more effective, enabling them to reach eligible beneficiaries and offer them better food intake, and improve the activity of food-assistance NGOs. Digital innovation can also facilitate the monitoring of essential key indicators for measuring the effectiveness of food-assistance programs and their reporting (Giner & Placzek, 2022).

- In Israel, investment in consistent and systematic identification, monitoring, and measurement methods is essential considering the existing difficulty in identifying families and individuals who suffer from food insecurity, especially among families that are not already known by social services departments; lack of information about their geographic distribution; and the prevalence of multiple measurement methods by various organizations (National Insurance Institute, Ministry of Health, Central Bureau of Statistics, and Latet organization), making it harder to monitor changes and trends in food-insecurity prevalence in Israel. A system for methodical information collection will allow to evaluate the effectiveness of relevant programs in Israel, to identify food-insecurity characteristics and trends in its development (Or Sharvit & Brender, 2022).

## **Establishing long-term macro-strategies**

- There are theoretical and empirical evidence that hunger, food insecurity, undernourishment and health inequality originate in more structural macro-social levels than in the micro household and individual levels (Borras & Mohamed, 2020). In 2011, the UN argued that national strategies for coping with food insecurity must transition from focusing on the individual or household levels to other, more comprehensive macro aspects such as food production, oversight on food prices, food trade, money transfers, social and demographic factors, as well as governance and the quality of public institutions. These variables can have an improving effect on the state of national food security if they increase family income and prevent food insecurity by providing essential assets and services for financing and providing food (Awad, 2023).

- As many food security challenges are structural, stemming from economic and natural systems that are hard to change, it is necessary to adopt a long-term perspective, which requires a long-term commitment in terms of financing and support for the establishment of national institutions and systems. An OECD policy paper had examined the effect of social security programs on reducing food insecurity and had found that the programs with the most essential impact on food security are the ones that operate for decades, and not for a few years or months (Slater et al., 2014). This assertion is reinforced by the recommendation to add a fifth dimension of **sustainability**, to the four pillars of food security. This dimension supports a comprehensive and integrative approach to food security, and the establishment of objectives based on social, economic and environmental sustainability (Clapp et al., 2022).
- Due to the existence of wide-spread impacts, it is recommended to establish a national plan with a small number of clear and achievable objectives of food security, refraining from loading up social protection program with goals and expectations, and focusing on the “do no harm” principle (Slater et al., 2014).

## Developing a comprehensive social policy

- Government financial assistance: in developed countries, the food insecurity problem does not stem from insufficient food, but from lack of access to food for socioeconomically disadvantaged people (Rajesh et al., 2022). Major societal problems like food insecurity are claimed to be solvable only with extensive, coordinated, society-wide action, led by the national government of each country, and not by nonprofit organizations, community institutions, or civil society (Berg & Gibson, 2022). As personal income, food prices, and economic inequality are the main factors determining the ability of people to access food, the future effectiveness of national government programs in reducing the prevalence of food insecurity will mainly depend on the extent to which interventions successfully increase the income of low-income households and/or address economic issues such as food prices, housing costs, and others among the most disadvantaged populations (Deaton & Scholz, 2022; PROOF, n.d-b; Rajesh et al., 2022; Zereyesus et al., 2022). Government efforts to expand investment in social protection in high-income countries can have long-term impacts, such as reducing healthcare expenditure and other expenses that result from the harms of food insecurity (Loopstra, 2018). In comparison, a study about community-level interventions, such as food banks and other food programs, has shown only limited impact (Loopstra, 2018). Recommendations for improving programs that address food insecurity in general and among children in particular in **the US**, for instance, include increasing support for national programs and tax benefits, developing additional benefits to support low-income individuals and families with young children, and implementing universal financial assistance for households with children

(Fernald & Gosliner, 2019). In **Canada** as well, more generous financial assistance for low-income households with children has been found to lower the risk of such families facing food insecurity (PROOF, n.d-a).

- Extensive welfare policy: food insecurity is a symptom of extreme material deprivation and social exclusion, and it reflects uneven distribution of material and social resources in the populations of developing countries. Therefore, material resources alone, like social benefits or food provision, are not always sufficient to protect vulnerable groups from food insecurity. Rather it requires a wide-spread societal policy that spans across various fields, including education, employment, and mental health (Garratt, 2020). Policy measures specified as essential to preventing food insecurity in industrialized countries: (1) extensive change in welfare policy, including assistance in finding employment to provide job security, raising the minimum wage, ensuring healthcare services and provision of free, high-quality prescription medication, and ensuring high-quality, available, and affordable childcare, education, and transportation for all; (2) anchoring an Assets Empowerment Agenda in comprehensive legislation to help low-income individuals go from renting to owning, in order to develop middle-class wealth; (3) when the previous two stages are insufficient, ensuring a robust government safety net for struggling residents, providing money, food subsidies, food provision, and housing assistance (Berg & Gibson, 2022). Urban food programs should also provide a roadmap for future growth and should be based on a comprehensive approach that integrates infrastructure and transportation improvement, promotion of health and community participation, ensuring affordable housing, help in integration into the job market, and more (Filippini et al., 2019).
- Improving employment opportunities: a study comparing food insecurity in 139 countries found that adults who work in countries with a higher minimum wage, or with collective labor agreements, tend to be less food insecure (Reeves et al., 2021b). It is therefore recommended that countries act to establish better employment standards, to support collective labor agreements, take measures to eliminate racism in the job market and promote employment opportunities for minority groups as part of their strategy for reducing food insecurity (PROOF, n.d-b).
- Emotional support: addressing household food insecurity requires interventions that are aimed at promoting both emotional wellbeing and food security. Parents' mental health, which affects the mental health of their children, must be considered. Such programs can include promotion of social inclusion, empowerment and strengthening self-image, reducing stigmatization and feelings of social isolation, helping individuals take advantage of benefits to which they are eligible and overcome bureaucracy to receive assistance from food programs, respecting people's dignity when it comes to choosing their own food, and developing programs to enhance participants' ability to access affordable food (such as community kitchens and gardens) (Pryor et al., 2023).

- Developing a comprehensive urban policy: it is recommended to develop urban policies that explicitly address food insecurity in the broader context of urban poverty and intra-urban inequality, considering the multiple dimensions of urban poverty, from income and income-generating activities, through provision of adequate housing and infrastructure, to the impacts of urban planning on access to affordable and nutritious food (Tacoli, 2019).

In Israel, developing a comprehensive social policy is essential to address the existing challenges that result from the proliferation of governmental and non-governmental entities involved in providing nutrition assistance. This proliferation creates gaps and difficulties in cooperation, in the absence of an integrative authority. The Israeli National Council for Food Security operates without authority or budgets and is therefore incapable of acting significantly to reduce food insecurity (Or Sharvit & Brender, 2022). In light of extensive professional and scholarly knowledge (some of which has been presented herein), which is constantly being updated, it is essential to appoint a professional entity with academia and field experts, to collect best practices from academic literature and establish evidence-based practices and policies that will prove effective in reducing food insecurity.

## **Investment in vulnerable populations**

- Interventions aimed at directly increasing access to food should focus on particularly vulnerable groups such as women and children, adolescents, senior citizens, immigrants, and poor workers. A geographic focus can also help support areas or clusters in which the most vulnerable groups live (Freudenreich et al., 2020).
- Free meals for children and adolescents: To reduce food insecurity among children and adolescents, the government should find a way to provide free school meals that meet nutrition guidelines for all public-education children aged 3-18. This will ensure that all school children have access to at least one meal a day, families will no longer have to fill out forms to allow their children to be eligible for the meal, and schools will no longer have to fill out forms to register for free or subsidized lunch programs (Tsiaras, 2022).
- Developing response programs for students: in light of the high rates of food-insecure college and university students, academic literature suggests that the extent of food insecurity in higher-education institutions should be examined. This could be achieved through student consultation centers or health centers. As student needs differ across different countries and campuses, a community-based participatory approach is essential, promoting student participation in planning, designing, and implementing relevant programs, interventions, and policies. It is recommended to integrate comprehensive in-campus programs to map the basic needs of students and to enhance support services for students in need as part of health centers, consultation



centers, support groups, and staff training. It is also recommended to financially support students with a reasonable student allowance and campus support, to ensure equal opportunity in academic education. This sometimes requires reform in the student loan service – offering flexible repayment arrangements, extending student eligibility for government food-assistance services, and ensuring the availability of healthy and affordable food and drink to promote welfare and health. Finally, it is recommended to put effort into raising awareness of the existence of programs for food-insecure students, into making them more accessible, and into normalizing them as part of campus culture to alleviate the inconvenience and concerns of stigma that accompany participation (Hagedorn-Hatfield et al., 2022; Nikolaus et al., 2020).

- In Israel, it is essential to develop additional responses for children and adolescents, senior citizens, families that are unknown to social services departments, and among the Arab population, foreign workers and “status-less” individuals, to assist all those who suffer from food insecurity and to adapt responses to the unique needs and characteristics of each population (Or Sharvit & Brender, 2022). Additionally, in light of the importance of the pregnancy period and the first few years of life to baby development and function, it is essential to develop in Israel a program to address food insecurity among mothers and babies, like the WIC program.

## **Collaborative approach**

### **Inclusion and participation by participants in food-insecurity programs**

- Developing and strengthening community leadership: the involvement of community members as active participants in their own interventions is extremely powerful and is considered a valuable strategy as a driver of community action, community development, sustainability improvement, and beneficial impact of assistance programs and interventions. The community-based participatory approach emphasizes the importance of community partnerships that share leadership and collaboration in planning, implementing, and evaluating evidence-based interventions, and acting with creativity and cultural sensitivity. This type of intervention requires deliberate involvement of the community and of stakeholders like universities, research institutes, and academia. However, such interventions are time-consuming, harder to implement, and difficult to convince stakeholders and funding authorities (Doustmohammadian et al., 2022).
- Enhancing collective effectiveness and community entrepreneurship: people's perception of their collective effectiveness affects their participation in developing initiatives, and it is therefore necessary to invest in enhancing it (Katre & Raddatz, 2023). Encouraging involvement by excluded individuals requires a commitment to social equality, and investment in community strengthening to foster and promote community participation

in planning and decision making in local food systems. Social innovations and initiatives play a key role in providing individuals and the community with opportunities to change the food system. Encouraging innovative initiatives, which are suited to community needs and priorities, from within the communities themselves, helps excluded individuals to improve their life circumstances, and develops agency and local expertise (location-based knowledge) pertaining to local food systems. Social innovation enables participation by all community members and expansion of voluntarism (Katre & Raddatz, 2023). A multidimensional approach is required to create wide-scale changes in policy, while also creating a local financial safety net and working to strengthen and establish communities according to their own needs and resources, to create a social infrastructure, reduce social isolation and exclusion, and increase community capital, cohesion, and resilience. Efforts should be made to help people identify, connect with, utilize and enhance community-based resources (Blake, 2019).

- Strengthening collaboration and autonomy: according to the UN's High-Level Panel of Experts (HLPE) on food security and nutrition, all food-insecure individuals and populations should be ensured dignity and independent and autonomous agency independent of external control, capacity to make their own decisions about the types of food they eat, how that food is produced, processed and distributed, and ability to engage in processes that shape food system policies, thus enabling even the most vulnerable and excluded individuals to influence decision-making and policy-shaping processes to reduce food insecurity in their close vicinity (HLPE, 2020). The HLPE also recommends adding a sixth dimension to the pillars of food security (access, availability, utilization, stability, and sustainability) – **Food Agency**, meaning the capacity of individuals and communities to make their own decisions regarding the food systems that affect their food security (Clapp et al., 2022). For that purpose, more opportunities for service recipients' participation in decision making is necessary, to integrate local knowledge with expert and professional knowledge, adopt a flat structure instead of a hierarchic decision-making structure, and allot time for establishing a consensus. In this way, active consumers can experience social inclusion and a sense of community, which are important in fostering food security (Katre & Raddatz, 2023). An international review on reducing socioeconomic gaps between minority populations and majority groups had indicated that deepening partnerships with the population and addressing its unique needs helps develop custom local solutions, by collaborative work for change and development while strengthening local leadership, and by more successful implementation of socioeconomic development programs (Or Sharvit & Aizik, 2022).

## Forming coalitions and collaborations among stakeholders

- Collaborations between assistance programs and various sectors: significantly reducing food insecurity requires collective action to maximize resources and drive change in systems. Collaborations between programs and interventions facilitates the establishment of operating principles for the achievement of shared goals and the reduction of duplicate services. As such, it is recommended to work in coordination with various sectors, like intersectoral work groups, relevant donors, local and national departments and ministries, non-governmental organizations, and international organizations like UNICEF, ILO, FAO, WFP, Action Against Hunger, Concern Worldwide, and others (Slater et al., 2014).
- Promoting interdisciplinary work in a coalition model: coalition building for fighting food insecurity should draw on a range of stakeholders and organizations who can support those experiencing food insecurity and should take into account the diverse perspectives of members in the communities that are vulnerable to food insecurity. This effort requires an entity to coordinate between the elements, which should be equipped with the resources and long-term funding source to support ongoing programs and new pilot solutions that drive change (Popkin et al., 2019). It is also recommended to take an interdisciplinary approach in which organizations from various sectors work together in a coalition, which will simultaneously influence the actions of government and non-governmental organizations and the community, thus addressing food insecurity in all levels of the food system, and achieving better outcomes (Rogers et al., 2018).
- Creating a shared vision for food-assistance services: a joint charter for all food-assistance services is a policy tool implemented in several countries, used to establish a shared vision and common objectives for improving service quality and increasing recipient satisfaction. This tool also helps aggregate the variety of services that make up the food-relief sector, to create collective commitment and momentum for improving outcomes at the service-recipient level. In **Australia**, the joint development of a charter had served as a critical basis for building relationships and trust within the food-relief sector, which then allowed joint planning for future implementation of the charter. The charter specifies joint goals for improving the food-relief sector (food quality, professional standards, client outcomes, workforce, etc.) and defines guidelines for their achievement. The principle of service integration and coordination requires focusing on systems instead of services. Increasing the coordination between and integration of different types of agencies, resources, activity times, service types, and geographic coverage areas, can lead to a better service experience for service recipients, and better relationships between distributors, direct food suppliers, and social initiatives in the community (Pettman, et al., 2022).

- Supporting a food policy council: to better coordinate between food-system elements, it is recommended to support a food policy council with members from the private and public sectors. A council is an integrative entity with authority to coordinate between different programs and responses, to oversee, collect data, and submit recommendations to policy makers. Such a council can enhance the effectiveness of grassroots initiatives – community initiatives and initiatives by civil-society organizations – as well as the effectiveness of institutional and government initiatives. Such councils are also mentioned in the context of urban initiatives; a review of 32 cities that have developed food policies to promote food security had found that food-policy councils are in place in all of them, out of the view that inclusion of and coordination between stakeholders will facilitate in producing the greatest positive impact on the food system, optimally utilizing the tools and leverages the city has to offer (Filippini et al., 2019). As aforesaid, in Israel, the National Council for Food Security operates without the necessary authorities and resources to address food insecurity. It is recommended to anchor the Council's authority and activities in the field, to aggregate the ever-evolving knowledge, to coordinate and create collaborations between the government, public entities, social organizations, research institutions, and private entities, to grant it authority to develop responses and to oversee their implementation, and to rely on its recommendations in times of routine and emergency in order to outline a comprehensive food-security policy and implement evidence-based programs (Or Sharvit & Brender, 2022).

**In conclusion**, to promote policies and develop the best responses for households coping with food insecurity, it is recommended to enshrine the “right to food” in legislation and to develop monitoring mechanisms to guarantee its implementation. It is also recommended to invest in uniform and consistent methods for identification, monitoring, and measurement. Countries are advised to develop long-term macro-strategies and formulate comprehensive national social policies that extend to all areas related to food insecurity, including education, employment, mental health, housing, welfare, transportation, food prices, and more. It is also recommended to increase investment in targeted interventions for vulnerable groups such as women and children, adolescents, senior citizens, etc. For instance, providing free meals to children aged 3-18 will ensure prevention of food insecurity among children, and developing responses for food-insecure students will help students of low socioeconomic status gain an academic education and equal opportunities in the workforce. Countries are also advised to promote a collaborative approach that will strengthen local leadership and collective community effectiveness and will encourage active participation and agency by service recipients, who will be able to participate in decision-making processes, make choices regarding the services they use, and implement active participation in food citizenship”. Forming interdisciplinary coalitions and collaborations between sectors, programs

and stakeholders, and creating a shared vision and cooperation between policy, academia and practice are critical steps in formulating trust-based relationships in the food-assistance sector. Increasing the coordination between and integration of various agencies, resources, activity times, service types, and geographic coverage areas, can provide better outcomes for service recipients and create better relationships between distributors, direct food suppliers, and social initiatives in the community. It is recommended to support a national council for food security to coordinate, evaluate, collect data, develop responses and oversee their implementation, provide professional recommendations to policymakers in times of routine and emergency, and promote a national policy in the field.

## Other related Myers JDC Brookdale publications

Or Sharvit, Z. & Brender, D. (2022). *Food insecurity in Israel: Review of Characteristics, Responses and Challenges*. RR-894-22

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# Annex A: Glossary of Terms






The following is a general glossary of terms. Please note that other definitions exist.

A	
Acute food insecurity	Acute food insecurity is any manifestation of food insecurity at a specific point in time that is of a severity that threatens lives, livelihoods or both, regardless of the causes, context or duration. These acute states are highly susceptible to change and can manifest in a population within a short amount of time, as a result of sudden changes or shocks that negatively impact the determinants of food insecurity and undernourishment (IPC, 2019).
C	
Campus food pantry	Free food provision for students. This response is intended as short-term assistance in cases where students run out of food. Food pantries are often limited to non-perishable food items with a low dietary quality. This response is not intended to address chronic hunger among students (Hagedorn-Hatfield et al., 2022).
Chronic food insecurity	Food insecurity that persists over time, largely due to structural causes, including seasonal food insecurity that occurs during periods with non-exceptional conditions. The FAO defines this condition as undernourishment (FAO et al., 2021).
F	
Food bank	In the US and in the UK, the term usually refers to large warehouse distribution centers that receive large food donations and distribute food to smaller or local organizations. In Canada, Europe, and Australia, food banks are locations where food-insecure individuals can go and obtain a few days' supply of food once every few weeks (Long et al., 2020).
Food crisis	Occurs when rates of acute food insecurity and undernourishment rise sharply at local or national levels, raising the need for emergency food assistance. This definition distinguishes a food crisis from chronic food insecurity, although food crises are far more likely among populations already suffering from prolonged food insecurity and undernourishment. A food crisis is usually set off by a shock or combination of shocks that affect one or more of the pillars of food security: food availability, food access, food utilization or food stability (FSIN, 2022).
Food deserts	Geographic regions where residents' access to nutritious, fresh or diverse food is restricted or even nonexistent, due to absence or scarcity of food outlets within reasonable travelling distance (FAO et al., 2023).










Food insecurity	The lack of secure access to sufficient amounts of safe and nutritious food for normal human growth and development and an active and healthy life. For people to be food secure, food must be both consistently available and accessible in sufficient quantities and diversity, and households must be able to utilize (store, cook, prepare and share) the food in a way that has a positive nutritional impact (FSIN, 2022).
M	
Malnutrition	Malnutrition is a consequence of inadequate nutrient intake and/or absorption, and/or illness or disease. It is an umbrella term that covers various conditions including undernourishment and overweight, obesity and diet-related noncommunicable diseases (NCDs) such as heart disease, stroke, diabetes, and cancer (FSIN, 2022).
Moderate food insecurity	A situation in which people face uncertainties about their ability to obtain food and have been forced to reduce, at times during the year, the quality and/or quantity of food they consume due to lack of money or other resources. A lack of consistent access to food, which diminishes dietary quality, disrupts normal eating patterns, and can have negative consequences for nutrition, health and well-being (FAO et al., 2021).
S	
Severe food insecurity	A situation in which people have run out of food, experienced hunger and, at the most extreme, gone for days without eating, putting their health and well-being at grave risk (FAO et al., 2021).
Social support	A policy of social support for low-income households is the manner in which governments act to increase household income and access to service in various ways, including: rent assistance, education subsidies, healthcare expenditure assistance, and financial support programs through local welfare departments.
T	
Transitory food insecurity	A short-term or temporary inability to meet food intake requirements related to sporadic crises, indicating a capacity to recover (FSIN, 2022).
U	
Undernourishment	Undernourishment is often manifested in wasting (low weight-for-height ratio), constipation and micronutrient deficiency (for example vitamin A or iron deficiency). Undernourishment has immediate and long-term effects, including stunted growth in children and increased susceptibility to diseases and infections, and it causes 45% of all deaths among children under five (FSIN, 2022).
Universal benefits	Benefits provided to the entire eligible population according to eligibility characteristics, like child benefits, given to all families with children under 18 years of age; old-age benefits, given to senior citizens over the age of eligibility; maternity benefits, given to working mothers; and more.






## Annex B: Summary of reviewed responses for reducing food insecurity, divided by the four pillars of food security: availability, access, utilization, and stability over time (FAO, 2008)

**Dimension 1: Food availability.** Responses and programs that seek to promote a reliable supply of adequate food, availability of food, and quality and diversity of available food at affordable prices.






Target population: general population	Strategy: legislation and tax benefits	
<b>Objective: encouraging organizations to donate food to food banks and prevent food waste.</b>	 European Union	<ul style="list-style-type: none"> <li>European Directive EU 2018/851 on waste – provision of incentives to organizations that donate food and organizations that distribute food, to facilitate food donation and collection of unsold food products, and redistribution to nonprofit organizations.</li> </ul>
	 Italy	<ul style="list-style-type: none"> <li>The <i>Gadda</i> waste-reduction law (166/2016) – provision of incentives to private companies for donating surplus food to the needy.</li> </ul>
	 Canada	<ul style="list-style-type: none"> <li>Tax benefits for farmers for donating agricultural produce that would have otherwise gone to waste.</li> </ul>
	 France	<ul style="list-style-type: none"> <li>Food donations grant a tax reduction of 60% of donation value.</li> <li>Destruction of edible food is illegal, and large stores and food and drink industries are obligated to offer a partnership to food assistance associations.</li> </ul>
	 Japan	<ul style="list-style-type: none"> <li>Support for stakeholders that donate food products to food banks by assisting them in shipping and delivery costs and through mechanisms that encourage donation of food products to food banks.</li> </ul>



**Dimension 2: Access to food. Responses and programs that seek to enable physical and economical access for the purchase of affordable food.**

Target population: vulnerable populations	Strategy: increasing households' income using universal benefits	
Objective: reducing poverty and consequently reducing food insecurity	 Canada	<ul style="list-style-type: none"> <li>▪ <b>Senior citizens:</b> universal pension for citizens <b>65 years old and over</b> combined with an income supplement for those who earn a low income.</li> <li>▪ <b>Children:</b> a universal child-care benefits program – Canada Child Benefit – CA\$100 for <b>children under six years of age</b>.</li> </ul>
Target population: vulnerable populations	Strategy: direct food provision in public institutions	
Objective: directly reducing food insecurity among vulnerable populations	 USA	<ul style="list-style-type: none"> <li>▪ <b>Children:</b> national program – National school Lunch Program for provision of subsidized lunch meals to eligible pupils in schools; regional program – Summer Food Service Program (SFSP) for provision of meals in <b>low-income neighborhoods</b> during school breaks.</li> <li>▪ <b>Students:</b> food pantries in colleges and universities.</li> </ul>
	 Australia, Victoria	<b>Children:</b> School Breakfast Club Program – provision of subsidized breakfast meals to eligible pupils in primary schools in <b>areas of low socioeconomic status</b> .
	 France	<b>Children:</b> in-school meals program for eligible pupils – Programme d'alimentation scolaire; a breakfast provision program for eligible pupils – Dispositif petits déjeuners à l'école; and a social pricing program (subsidized food) in school canteens for all students – Tarification sociale des cantines scolaires.
	 UK	<b>Children:</b> in-school meals program for provision of free meals to eligible pupils – Free School Meals (FSM); Universal Infant Free School Meals Scheme – provision of free meals to all children aged 5-9, without eligibility tests; Holiday Clubs – summer holiday clubs in schools or community centers that also provide breakfast or lunch without eligibility terms.
	 Finland	<b>Children:</b> free catering for school pupils – Everybody Eats!
	 USA, Vermont	<b>Children:</b> a local initiative of universal free meals for all school pupils in order to eliminate food insecurity among State children; supplementary programs for pupils who arrive late; summer holiday meal programs; and provision of food for adolescent and young adults who are disconnected from the school system.
	 USA, Oregon	<b>Students:</b> the local Mealbux program at Oregon State University provides students with the means to purchase meals throughout the semester without relying on donations from other students.
	 USA, Baltimore	<b>Children:</b> a "fresh menu for kids" initiative in which nine food providers created healthy child menus in line with school nutritional requirements and offered them in smaller sizes and at subsidized prices.




Target population: vulnerable populations	Strategy: direct food-voucher assistance – provision of food vouchers for store purchase to vulnerable populations (government assistance)	
<b>Objective: directly reducing food insecurity among vulnerable populations</b>	 USA	<ul style="list-style-type: none"> <li>▪ <b>Low-income individuals:</b> Supplement Nutrition Assistance Program (SNAP) – financial assistance for low-income individuals through food vouchers. Additionally, eligibility for participation in other assistance programs.</li> <li>▪ <b>Mothers, infants and children:</b> the Women, Infants, and Children Program (WIC) provides vouchers for low-income pregnant and postpartum women, and to parents of infants and children under five, to purchase nutritious food. The program also provides education for healthy and adequate nutrition, breastfeeding support, and referrals for welfare and healthcare services.</li> <li>▪ <b>Students:</b> provision of food vouchers or food scholarships to eligible students.</li> </ul>
	 South Korea	<ul style="list-style-type: none"> <li>▪ <b>Low-income individuals:</b> the Food Voucher Assistance Program provides food vouchers for low-income individuals. Limited to certain types of food and to local produce.</li> <li>▪ <b>Mothers, infants and children:</b> Organic Food Assistance Programme (OFAP) for pregnant women – provision of organic-food boxes to pregnant women and new mothers. The women can choose food items online from among a steady supply.</li> </ul>
	 UK	<p><b>Mothers, infants, and children:</b> Healthy Start Voucher Scheme – provision of food vouchers for healthy food and vitamins – to low-income families with young children and to pregnant women.</p>
	 Chile	<p><b>Students:</b> Food Scholarship for Higher Education (FSHE), provision of an electronic voucher (EBT card) for the purchase of healthy meals online or in participating chains.</p>
	 Australia	<p><b>Young homeless people:</b> provision of vouchers for healthy meals within the Café Meals Project for young homeless people.</p>




Target population: vulnerable populations	Strategy: direct food assistance – provision of meals through food banks (civil-society organizations)	
<b>Objective: directly reducing food insecurity among vulnerable populations and preventing food waste</b>	 USA	The Feeding America chain includes about 200 food banks and works with some 60,000 partners and meal-provision programs. It collects donations from large food producers, farmers, government agencies and other organizations, and organizes the shipping and storage of food donations to food bank branches that distribute it to those in need.
	 UK	The two main charity bank organizations are Trussell Trust and Independent Food Aid Network (IFAN). They rely on private food donations from individuals or local or national food factories as their main source of supply.
	 Italy	Food assistance in Italy is provided through 21 regional food banks that are members of the Italian food-bank fund <i>Fondazione Banco Alimentare Onlus (FBAO)</i> , which directs and coordinates their activities. The regional food banks make and coordinate connections with food producers and large and small retailers, for collecting and storing food surplus. Some 8,000 nonprofit organizations receive provisions from their local food bank based on a permanent agreement that allows them to meet requirements of food safety and hygiene. Food assistance methods include distribution of food packages, distribution of prepared meals that are served by mobile units or permanent soup kitchens, provision of food and drink to the homeless, and sometimes also provision of clothing and other material assistance. A significant part of the salvaged food collected by the regional food banks comes from <i>Colletta Alimentare Food Collection</i> .
	 Ireland	The Food Cloud virtual cloud connects the food industry, umbrella organizations and nonprofit organizations to provide immediate and urgent assistance to the needy.
	 Belgium, Ghent	The municipal Ghent CPSW program – redistribution of surplus food from retailers and other sources to social organizations, in an attempt to reach those who are vulnerable to food insecurity, improve access to food, and reduce food waste.




Target population: general population	Strategy: subsidy of meals and agricultural produce	
Objective: increasing financial access and capability to purchase affordable food	 Brazil, Belo Horizonte	<ul style="list-style-type: none"> <li>Operating a popular cafeteria-style restaurant that is open to all and serves more than 20,000 nutritious meals every day at subsidized prices.</li> <li>The <i>Abastecer</i> program – select grocery stores that are permitted to sell vegetables at prices lower than market value.</li> </ul>
	 USA, Baltimore	Community Supported Agriculture and Health (CSA) – encourages workers in administrative and professional unions to purchase CSA products as part of their employee health program and receive a monetary refund.



Target population: general population	Strategy: establishing food markets and accessible food outlets	
Objective: increasing access to healthy food and agricultural produce	 Canada, Montreal	Municipal initiative – designated events to increase access to markets, like <i>Cultiver Montreal</i> .
	 Australia	An initiative implemented in eight local councils with a low socioeconomic status, aimed at addressing food insecurity in local contexts – Food for All (VicHealth) – improving the access of people to diverse food, specifically to fruits and vegetables, improving public transportation to food stores, and lowering the cost of living.
	 Italy, Turin	Municipal initiative – support for shortening food chains – a product basket of local agricultural produce sold directly to consumers in urban stores.

Target population: vulnerable population	Strategy: government support for programs that encourage increased purchase of fruits, vegetables, and agricultural produce	
Objective: increased intake of healthy food and agricultural produce	 USA	<b>low-income individuals and those suffering from chronic diseases:</b> Gus Schumacher's Nutrition Incentive Program (GusNIP) – financial support for projects that distribute financial incentives to low-income consumers with an elevated risk of chronic illness, in return for them increasing their purchase of fresh fruits and vegetables.
	Strategy: direct provision of vegetables, fruits, and fresh agricultural produce	
	 USA	<b>Children from low-income households:</b> Fresh Fruit and Vegetable Program – provision of diverse fruits and vegetables to primary school children from low-income families; Farm to School Initiative – a supplemental program that integrates fresh and local produce in school lunch menus.
	 European Union	<b>Children:</b> EU School Fruit, Vegetables and Milk Scheme in EU constituents' schools – free provision of milk, fruits, and vegetables to millions of children, from nursery to secondary school.

**Dimension 3: Food utilization.** Responses and programs that seek to instill knowledge and skills for the intake and preparation of healthy meals.







Target population: general population	Strategy: food quality regulation and oversight	
	 France	<b>Children:</b> strict regulation over meal quality, and over integration of fruit, vegetables and agricultural produce in school meals.

Target population: general population	Strategy: cooking classes and workshops and educational classes for getting acquainted with and experiencing healthy food	
<b>Objective: increasing knowledge, improving skills, and instilling good nutritional habits</b>	 Australia	<ul style="list-style-type: none"> <li>Jamie Oliver's Ministry of Food – improving food utilization, knowledge and the skills required to achieve a healthy diet, plan meals and manage a budget.</li> <li><b>Adults:</b> Foodbank WA Food Sensations for Adults – increasing knowledge about healthy diet among adults and improving the skills required for purchasing and preparing healthy food.</li> <li><b>Children:</b> Stephanie Alexander Kitchen Garden Program – instructing school pupils on how to improve their nutrition and establish the school community's ability to grow, prepare, and consume healthier food.</li> </ul>
	 France	<b>Children:</b> The Taste Classes Scheme – under the joint aegis of the Ministry of National Education and the Ministry of Agriculture. Developing pupils' curiosity about food, preventing obesity and children's apprehension about certain types of food products.
	 London	<b>Children:</b> Increasing investment in nutrition education in schools – cooking classes and classes about agriculture and types of food.




Target population: general population	Strategy: instilling regular habits of healthier diet in the entire population	
<b>Objective: promoting intake of sustainable and healthy food</b>	 Belgium, Ghent	Thursday Veggie Day – encouraging the consumption of a vegetarian dish at least once a week.
	 Italy, Turin	<b>Children:</b> <i>Il menu l'ho fatto io</i> project, in which families engaged in developing a healthy and sustainable school menu.







**Dimension 4: Stability.** Responses and programs that seek to enable stability of availability of food, access to food, and food utilization over time.

**Activity level: national**

<b>Strategy: anchoring the right to food in legislation and developing national plans</b>	
 Switzerland	Anchoring the right to food in legislation – direct constitutional protection.
 Brazil	2017 – integrating the right to food in the federal constitution in 2010. National plan – Prato Para Todos.
 Australia	Establishing one of the most comprehensive constitutional frameworks in the world for ensuring food security.
 Canada	2019 – national food policy, Food Policy for Canada (FPC).
 Scotland	2021 – position statement about a human-rights approach to tackling food insecurity and publishing a national plan draft to help reduce food insecurity.
 Argentina	2022 – the Tarjeta Alimentar national program for eliminating hunger – described as a good practice for achieving the UN's Zero Hunger goal.

**Activity level: local (regional/district/urban/community)**

<b>Strategy: charters and strategies for food assistance and reducing poverty at the local level</b>	
 South Australia	2016 – South Australian Food Relief Charter. Collaboration between government, academia, and NGOs.
 Canada, Newfoundland and Labrador	2005-2014 – poverty reducing strategy.
<b>Strategy: establishing and implementing an urban food policy</b>	
 Italy, Milan	<ul style="list-style-type: none"> <li>▪ A food policy based on cooperation between public agencies, social organizations, research institutions and the private sector, in order to improve food system recycling throughout the city.</li> <li>▪ Initiatives pertaining to food reuse and recycling to prevent food waste.</li> <li>▪ Implementing initiatives to reduce the distance people must travel to purchase food in the city.</li> <li>▪ New methods that focus on sustainable food for all meals that are municipally and publicly funded (in schools, hospitals, prisons, etc).</li> </ul>

Strategy: improving the efficiency of food marketing and distribution in cities	
 USA, New York	<ul style="list-style-type: none"> <li>▪ Enlarging and developing food sale areas.</li> <li>▪ Holding farmers markets.</li> <li>▪ Training for food producers.</li> <li>▪ Creating an online resource center.</li> <li>▪ Developing an industrial space for food-production businesses.</li> </ul>
Strategy: allocating urban areas for independent production of food and enhancing urban agriculture	
 The Netherlands, Almere	Allocating urban areas for agricultural crops. in the Agromere Project. Services provided to encourage farmers include: technical assistance, tools, and financial support.
 USA, New York	The GreenThumb urban program supports more than 550 community gardens throughout the city, providing space, resources and training for residents so they can grow their own food.
 Spain, Madrid	Municipal initiative <i>Huertos Suadable</i> – establishment of urban community fruit and vegetable gardens – to produce food and increase employment.
 The Netherlands, Amsterdam	<b>Children:</b> cultivating community gardens in schools.
 Belgium, Ghent	<b>Senior citizens:</b> <i>Heiveld</i> urban garden project – promotes social employment and allows seniors to engage in small-scale agriculture together.