Siddharth Maruvada North Carolina School of Science and Mathematics Durham, NC, USA Ethiopia - Malnutrition, disability, and food insecurity

Ethiopia: Supplemental immediate assistance program can help improve food insecurity issues amongst the population with disability

Introduction

"Close to a billion people – one-eighth of the world's population – still live in hunger. Each year 2 million children die through malnutrition. This is happening at a time when doctors in Britain are warning of the spread of obesity. We are eating too much while others starve." - These words by Jonathan Sacks hold true till date across the globe. While part of the world is diligently working on research and innovations, there are people around the world who worry about where their next meal is going to come from. Despite the efforts made in recent years, food insecurity continues to be an issue in many parts of the world.

How big is the problem of food insecurity affecting people worldwide?

How is it an even bigger problem for people in developing countries and especially for people in marginalized communities - disabled people?

What measures should be prioritized to address the problem of food insecurity faced by people with disabilities in developing countries?

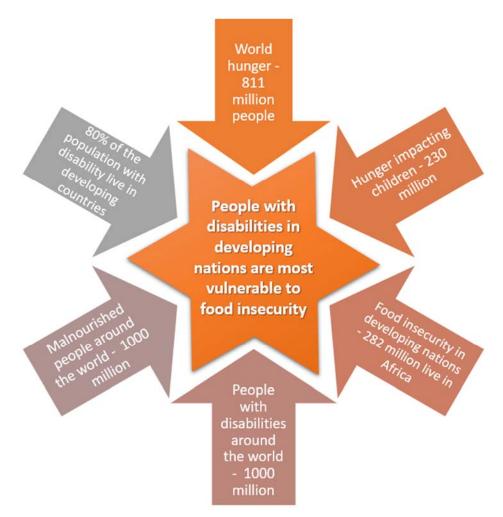
The current proposal aims to answer these concerning questions focusing on food insecurity issues of individuals with disabilities in the developing nation of Ethiopia and how sustainable solutions such as immediate food assistance programs can aid in ensuring that this vulnerable population has access to healthy and nutritious food.

How big is the problem of food insecurity affecting people worldwide?

Food insecurity or lack of access to healthy food results in malnutrition and nutrition deficiencies and contributes to chronic problems like disability and developmental delay. Malnutrition and disability are interrelated as malnutrition in any of the life stages whether it is maternal malnutrition, child malnutrition or adult and later life malnutrition, may result in disability. Going in the other direction, disability places an individual at risk of food insecurity and malnutrition due to inability to access healthy food, which may result in even poorer health leading to a vicious cycle of disability, malnutrition and worsening health conditions. (For the purpose of this paper, the term 'disability' includes disability caused by malnutrition as well as other reasons such as disability caused by birth or by an accident). The primary focus of this paper is on food insecurity as it relates to people with disability that is at an elevated risk. United Nations International Children's Emergency Fund (UNICEF) reports that about one-tenth (up to 811 million people) of the world population remained undernourished in 2020 out of which 230 million were children [27]. Of the current world population of approximately 7.9 billion, around 1 billion people are malnourished [12] and an estimated number of over 1 billion people experience or live with disabilities [6]. The problem of food insecurity and malnutrition persists more in developing nations and people with disabilities living in those nations are affected the most. About 80% of people living with a disability live in developing countries that lack access to not only nutritious food but also miss out on education [1]. According to the Food and Agricultural Organization (FAO), the vast majority of food insecure people live in developing nations - about 418 million live in Asia, 282 million live in Africa, and 60 million live in Latin America and the Caribbean [20].

Figure 1 below shows a snapshot of these numbers and highlights the complexity of the issue of food insecurity impacting people with disabilities who live in developing nations.

Figure 1: Food insecurity in numbers for people with disabilities in developing countries



How is food insecurity an even bigger problem for people in developing countries and especially for people in marginalized communities - disabled people?

Food insecurity (malnutrition) and disability are interrelated and form two major global public health problems. Food insecurity negatively impacts health and diet quality, and these effects are greater for people with disabilities, especially the ones living in developing countries. Low- and middle-income countries have higher disability prevalence compared to high income countries primarily because of lack of proper access to healthcare, inadequate access to healthy food, water and proper sanitation. Disability is both a cause and consequence of poverty in those developing countries. As shown in Figure 1, the problem of food insecurity among disabled populations is extreme in developing countries. One such developing country is Ethiopia. The issues of food affordability, availability, quality and safety, and natural resources and resilience across a set of 113 countries was studied by the Global Food Security Index (GFSI). Performance of countries based on their 2021 food security score was measured. One of the lowest performing countries was Ethiopia, which ranked 108 out of 113 index countries [11]. Hence Ethiopia was selected as the developing nation to further look into the food insecurity issues, especially for people with disability.

Why Ethiopia?

Ethiopia is located in Eastern Africa and is the tenth largest country in Africa and second most populous nation after Nigeria with about 115 million people. The largest city and capital of Ethiopia is Addis Ababa, which has an estimated population of 3.6 million [9]. The country is a Federal Democratic Republic and is divided into 9 regional states - Tigray, Afar, Amhara, Oromia, Somali, Benishangul-Gumuz, Southern Nations, Nationalities and Peoples Region, Gambella and Harari – and two administrative councils - Addis Ababa and Dire Dawa. The boundaries of these states are based on ethnic majorities in the population. Approximately 85% of the Ethiopian population lives in rural areas. A typical household in Ethiopia includes one to six persons, half of whom are children under age 10. The basic Ethiopian household structure is traditionally large, and the average Ethiopian joint family usually consists of three generations - the eldest couple, their sons, sons' wives and any unmarried daughters, and the grandchildren from their married sons. However, many people also live-in nuclear families, particularly in cities. There are two seasons in Ethiopia; the dry season prevails longer from October until May with short rains in March than the wet season from June until the end of September. The country is agrarian, and the economy depends on rain-fed agriculture. Around 72% of the total population of Ethiopia is employed in the agriculture sector [17]. About 67% of the small family farms in Ethiopia live below the national poverty line [17]. The longer dry seasons and dependency on rain for agriculture, deeply affects the livelihood of people in rural areas. For example, the recent severe drought conditions in the eastern Horn of Africa have badly impacted southeast Ethiopia [7].

State of food insecurity in Ethiopia

Ethiopia is one of the poorest countries in Africa with a per capita national gross income of \$890. It has one of the fastest growing economies in the region with an average growth of 10% per year, making it one of the fastest growing countries in the world [21]. Although Ethiopia has seen high economic growth between 2010 and 2020 which resulted in positive trends in poverty reduction in both urban and rural areas, yet important vulnerabilities like food security and lack of education prevail [21]. In 2021, about 20.5% of the Ethiopian population was food insecure [10]. Food insecurity severely impacts people with higher nutritional needs, such as children and pregnant women. Not having access to nutritious food can have a long-term detrimental impact, such as disability. Malnutrition affects a child's physical development. Around 40% of children in Ethiopia are estimated to have been stunted (too short for their age) and only 45% children get to eat three times a day [19]. Approximately 28% of child deaths in Ethiopia are associated with under-nutrition. Lack of nutritious diet leads to health issues like anemia. Around 57% of children under the age of five and 27% of women aged 15 - 49 years remain anemic [15]. Prolonged prevalence of health conditions leads to disability.

Factors contributing to food insecurity in Ethiopia

Ethiopia has experienced a food deficit since at least 1980. Some of the reasons contributing to this issue include poverty, the fragile natural resource base, poor performance of Ethiopian agriculture, weak institutions and unhelpful or inconsistent government policies [5]. The heavy reliance on agriculture has left families vulnerable to hunger. Natural calamities such as recent droughts, flash floods, conflict and displacement, have adversely affected the Ethiopian population, leaving nearly 8 million people hungry, including 4.2 million children [19]. Unpredictable weather patterns and climate change largely affects these populations that are dependent on agriculture for livelihood.

State of disability in Ethiopia

The problem of food insecurity gets even worse in people with disabilities. About 17.6% of people in Ethiopia are estimated to live with some form of disability and 95% of all persons with disabilities are estimated to live in poverty [13]. The prevalence of severe disability is around 1% among children under 18 and increases to 13% among people aged 60 years and above. Around 30% of all disabled people are children and youth under the age of 25 [16]. Many of these people with disabilities either depend on

family or friends for livelihood or generate meager income through begging and providing housemaid services [13].

Factors contributing to disability in Ethiopia

The state of people with disabilities in Ethiopia is severe and is a result of multiple contributing factors like diversified pre- and post-natal disabling factors such as infectious diseases, harmful cultural practices, lack of proper childcare and management, civil war, absence of early primary and secondary preventive actions, and periodic droughts and subsequent famines [2]. The low technological base of agriculture limited rural infrastructure and off-farm employment has been compounded by neglect and inappropriate policies over many years. Other factors contributing to disability include lack of health and sanitation facilities, different forms of accidents and injuries, congenital malformation, psychological dysfunctions, and birth related incidents. Limited access to healthy and nutritious food is thus a major contributor to disability in Ethiopia [3].

Food insecurity and disability in Ethiopia

While food insecurity and disability are commonly researched socio-economic problems, little is known about the nexus between food security and people with disability. Given the complexity in defining the varying conditions of disability, it becomes challenging to find the relationship between severity of food insecurity and disability. A few studies have been conducted to understand the impact of disability on food insecurity for people living in Ethiopia. One study conducted on people living in Ethiopia with severe mental disorders (SMD) reported more than double the level of severe food insecurity compared to the general population (32.5% vs. 15.9%) [22]. Another study found out that 32.5% of people with SMD were food insecure and more than clinical symptom severity, factors directly related to causing the food insecurity were poor social support, lower income, negative discrimination and functional impairment [23]. Another study about food security status of people with disabilities (PWD) in Selassie Kebele, Hawassa Town, Southern Ethiopia found that the main challenges that PWDs face was attitudinal. Other challenges identified were socio-cultural factors, policy related challenges, and economic constraints [8].

What measures should be prioritized to remove/reduce the problem of food insecurity among disabled population in Ethiopia?

Ethiopia has adapted and aligned with the 2030 Agenda for Sustainable Development and the Sustainable Development Goals (SDGs), a comprehensive plan of action to build a global partnership for sustainable development to improve human lives.

Ethiopian government support for people with disabilities

In order to create equal opportunities, the Government of Ethiopia has adopted and implemented a number of laws, policies, and standards for people with disabilities. There are many governmental, international, and social organizations that are actively trying to help people with disabilities in Ethiopia. For example, the Ministry of Labor and Social Affairs (MoLSA), a governmental organ, provides social and vocational rehabilitation of people with disabilities. The Ethiopian government has also ratified certain international standards such as International Labor Organization (ILO) Convention concerning Discrimination in Respect of Employment and Occupation, ILO Convention concerning Vocational Rehabilitation and Employment (Disabled Persons) and United Nations Convention on the Rights of Persons with Disabilities.

Despite these efforts from the government, unemployment, lack of education and food insecurity continue to be major problems for people with disabilities in Ethiopia. This is primarily because there is a major gap between implementing these policies and standards and the day-to-day life of people with a disability³. This vulnerable population lacks information on specific interventions, service utilization, and legislation the government offers to them. There are only a small number of inaccessible rehabilitation facilities in the country and there is a dire need to improve primary care and maternal and childcare

facilities [14]. Concerns regarding inclusive education and special needs education remain and disability continues to influence food access and insecurity.

With many such tangible problems, it is evident that people with disabilities need the most help in the efforts to alleviate food insecurity, as also depicted in Figure 1. It is the collective responsibility of the government, social workers, and the public to help protect this vulnerable sector from food insecurity. While there is no immediate fix to this problem, continuous efforts need to be made both short and long term to fight food insecurity for everyone including people with disability. Initiatives taken by the Ethiopian government should continue but there is an urgent need to provide immediate help to the people who need additional support due to disability.

A priority program should focus on assisting food insecure people with disability or people who are at risk for disability due to lack of healthy food, with immediate access to healthy food and nutrition education. Such a program should build on the model of the Supplemental Nutrition Assistance Program (SNAP) in the United States (US). SNAP is one of the largest public benefit programs that provides lowincome households with monthly funds so they can purchase healthy food and move towards selfsufficiency. In the US, SNAP is designed to provide important nutritional support for low wage working families, low-income seniors and people with disabilities living on fixed incomes, and other individuals and households with low incomes. Currently, in the US, more than two-thirds of SNAP participants are families with children; a third are in households with seniors or people with disabilities. In the year 2020, about 26% of people who participated in the program had some sort of disability and were able to benefit from it. It is estimated that nearly 100% of eligible children, 85% of eligible adults younger than age 60 and about 50% of eligible adults 60 years and older, participate in the program [18]. Families, seniors, people with disabilities as well as active or veterans military, who participate in the SNAP program, receive monthly funds through a benefits card that can be used to purchase groceries. Effortless, recurring and sustained access to monthly income to eligible low-income people to purchase food, makes SNAP a highly effective program. The ease of access to healthy and nutritious food plays a critical role in reducing hunger, malnutrition, and poverty. While direct benefits of SNAP include immediate access to food, it is also known to have other indirect benefits like fewer total health care costs, and health gains for low-income individuals.

Programs like SNAP work effectively in developed countries like the US where the federal government can afford funds to pay for such benefits. However, for developing countries like Ethiopia, it will require some efforts to implement public benefit programs like SNAP, mainly because many developing nations do not have the resources to adequately finance their own economic and social development and may not be able to afford to pay monthly funds to their citizens experiencing hunger and malnutrition. With such economic limitations, providing funds for free meals to 8 million people who are estimated to need food assistance in Ethiopia [19], could be challenging. The features from US SNAP that should be implemented in a food assistance program in Ethiopia is that the food supply must be free, effortless, and sustained, for eligible participants. The food assistance program built on the SNAP model in Ethiopia will need to start small. Food insecurity is a deep-rooted issue and addressing it requires more than just giving away free meals. Using the model of SNAP to provide immediate food assistance, it is important to make the program sustainable. Long term efforts focused on eradicating the root cause of hunger and poverty need to be put in place. The following focus on (A) formalizing government responsibility (B) implementing a network of specific services. (C) empowering people with disabilities through access to information and education.

A. Formalize the government of Ethiopia's responsibility to establish services by drawing on support from international organizations that work towards the cause such as the U.N. Food and Agriculture Organization (FAO), the International Fund for Agricultural Development (IFAD), the United

Nations Children's Fund (UNICEF), the World Food Programme (WFP), and the World Health Organization (WHO), would be the first step of implementation of this program.

UNICEF has been working with government of Ethiopia for over 60 years and has one of the largest global presence with more than 400 UNICEF staff working in eight different states of Ethiopia [25]. Furthermore, Ethiopia is one of the many countries that is included in UNICEF's sustainable development goals (SDG) through which UNICEF is committed to every aspect of a child's wellbeing [4]. With no poverty, zero hunger and good health and wellbeing as the top three SDGs of UNICEF [24], it should be less of a challenge to obtain funding to support SNAP program in Ethiopia as it aligns with the SDGs.

WFP's Food Assistance for Assets (FFA) program already works with the most vulnerable and food insecure population by providing cash, vouchers or food transfers [28]. SNAP would be a long term and permanent establishments of such efforts by WFP.

With support from Ethiopian government, SNAP can become part of the Zero Hunger Challenge launched by the United Nations Secretary General in 2012. As the name suggests, the Zero Hunger Challenge aims to end hunger and malnutrition (thereby preventing disability caused by malnutrition) and ensure access to safe and nutritious food by all people [26]. Partnering with agencies in such global challenges will have a definite source of funding for food supply.

By joining forces with such agencies that are available to provide financial support and with the involvement of Ethiopian government, the SNAP program can be more effective and reach more people.

- B. **Establish network of services** With assistance from such organizations and participating donor countries, a modified SNAP program network should be established in Ethiopia. This network will have an umbrella organization and established satellites (food stores and retailers) that will either provide food directly or food vouchers, to eligible families, towards getting healthy food from participating stores. For the 12 provinces in Ethiopia, the establishment of at least two satellite stores/retailers per province will maximize community outreach, focusing on the population that are not self-sufficient, such as children and people with disabilities. Because young children and people with disabilities likely cannot travel to get food from the participating stores, this group of people should receive more feasible access to meals, delivered to them directly by authorized food stores and retailers. The delivery services should create an employment opportunity for those that are poor but not disabled.
- C. Empowering people with disabilities through access to information and education People with disabilities or people helping them must be made aware of the specialized programs, benefits, reservation in employment and education that the government provides to them so they can benefit from those opportunities and offerings. The Government of Ethiopia has a number of programs, policies and standards in place pertaining to people with disabilities, including their right to productive and decent work like Constitution of the Federal Democratic Republic of Ethiopia, Proclamation concerning the Rights to Employment for Persons with Disabilities, No. 568/2008, The Federal Civil Servant Proclamation No. 515/2007, Labour Proclamation, No. 377/2003, amended by Labour Proclamation No. 494/2006, Proclamation on Definition of Powers of Duties of the Executive Organs of the Federal Democratic Republic of Ethiopia, No. 691/2010, Building Proclamation, No. 624/2009, Proclamation No. 676/2010 on the Ratification of the "UN Convention on the Rights of Persons with Disabilities" (UN CRPD) by Ethiopia, Framework Document 2009, Growth and Transformation Plan (GTP) 2010-2015 and National Plan of Action of Persons with Disabilities [13]. However, for the eligible participants to take complete advantage of these programs, they need to be aware of the benefits that the government has put in place to support them so they can take complete advantage of the eligible programs. This awareness

can be brought to them in couple of ways. For example, they can be made aware through publicity of those programs on television or through printed flyers in bigger cities. People with disabilities residing in more rural parts of the country, can be made aware by having government employees or representatives communicating verbally through residence visits or in a group setting. For a program like SNAP, for instance, once this distinctly abled population is made aware that the government is providing free food or weekly/monthly vouchers to obtain nutritious food from a given registered satellite or retail store, then the eligible participants can either get themselves registered or their care takers can get them enrolled. Every eligible registered participant gets access to free and nutritious food.

This design may encounter couple of challenges though. Firstly, clear definition of the term "Disability" should be put in place and a distinction should be evident between those who are unable to support themselves as a result of physical or mental disability and the ones who are disabled to some extent but are able to work and support themselves. This distinction should be verified at the time of enrollment. Another challenge that can come across with this model is if one qualifies under disability benefits in one year but over the course of time is able to prevail over the disability. To overcome this challenge, the eligibility should be verified annually. There are possibilities of fraud in the distribution of funds and hence a strict monitoring and verification must be established by the government.

Having emplaced such programs will not only provide healthy and nutritious food to those in need but also create job opportunities. Providing training to work at the distribution counters or restock food supply may empower some of the less disabled people to work at these SNAP centers to support themselves. Such opportunities will promote confidence and independence in them. Encouraging people with disability to be the change for the change they want to see may be an important strategy to raising confidence and self-awareness in people who are distinctly abled.

This proposal has been designed to provide opportunities for people with disabilities in the developing nation of Ethiopia. There are multiple efforts made at the global, national, and local levels to help fight the problem of food insecurity for those who cannot afford food, either due to poverty or disability. While those efforts seem to be helping some, there is still more to do. At some point it becomes everyone's responsibility to contribute. Working in tandem with a quote by Mother Teresa, "If you cannot feed a hundred people, then feed just one."

Works Cited

- 1. "5 Facts about Living with a Disability in the Developing World." Global Citizen, https://www.globalcitizen.org/en/content/disability-in-the-developing-world/.
- 2. Belay, M.A. and Gebeyaw, M., 2020. An investigation on perceptions and practice of health professionals towards health services for persons with disabilities. Journal of Pedagogical Sociology and Psychology, 2(1), page 1-10.
- 3. Chala, M.B., Mekonnen, S., Andargie, G., Kebede, Y., Yitayal, M., Alemu, K., Awoke, T., Wubeshet, M., Azmeraw, T., Birku, M. and Tariku, A., 2017. Prevalence of disability and associated factors in Dabat Health and Demographic Surveillance System site, northwest Ethiopia. BMC public health, 17(1), page 1-8.
- 4. "Child well-being.", UNICEF Data: Monitoring the situation of children and women, https://data.unicef.org/sdgs/country/eth/
- 5. Devereux, S. and Sussex, I., 2000. Food insecurity in Ethiopia. Brighton, UK: Institute for Development Studies, page 7.
- 6. "Disability and Health." World Health Organization, World Health Organization, https://www.who.int/en/news-room/fact-sheets/detail/disability-and-health.
- 7. "East Africa Regional Food Security & Nutrition Update (November 2021) Ethiopia." ReliefWeb, <a href="https://reliefweb.int/report/ethiopia/east-africa-regional-food-security-nutrition-update-november-2021#:actevt=Highlights%20%3A and%20refugees%20(11.5%20million) &text=Highl%20te
 - $\frac{2021\#:\sim:text=Highlights\%20\%3A,and\%20refugees\%20(11.5\%20million).\&text=High\%20food\%20inflation\%20expected\%20in\%20Southern\%20Somalia\%20through\%20the\%20next\%20GU\%20harvests.$
- 8. Endale, F. and Tolossa, D., 2017. Food Security Status of People with Disabilities in Selassie Kebele, Hawassa Town, Southern Ethiopia. Ethiopian Journal of the Social Sciences and Humanities, 13(1), page 105-134.
- 9. "Ethiopia Population 2022." Ethiopia Population 2022 (Demographics, Maps, Graphs), https://worldpopulationreview.com/countries/ethiopia-population.
- 10. Galal, S., 2021. "Food Insecurity in Ethiopia 2021." Statista, <a href="https://www.statista.com/statistics/1236832/number-of-people-facing-food-insecurity-in-ethiopia/#:~:text=Overall%2C%20the%20prevalence%20of%20food,incremented%20by%20roughly%2051.4%20%.
- 11. "Global Food Security Index (GFSI)." The Economist Newspaper, https://impact.economist.com/sustainability/project/food-security-index/Index.
- 12. Groce, N., Challenger, E., Berman-Bieler, R., Farkas, A., Yilmaz, N., Schultink, W., Clark, D., Kaplan, C. and Kerac, M., 2014. Malnutrition and disability: unexplored opportunities for collaboration. Pediatrics and international child health, 34(4), page 308-314.
- 13. Inclusion of People with Disabilities in Ethiopia. https://www.ilo.org/wcmsp5/groups/public/----ed-emp/---ifp-skills/documents/publication/wcms 112299.pdf.
- 14. Maulik, P.K. and Darmstadt, G.L., 2007. Childhood disability in low-and middle-income countries: overview of screening, prevention, services, legislation, and epidemiology. Pediatrics, 120(Supplement_1), page S1-S55.
- 15. "Nutrition." UNICEF Global, https://www.unicef.org/ethiopia/nutrition#:~:text=Ethiopia%20has%20seen%20a%20steady,cent%20to%2010%20per%20cent.
- 16. "Situation and Access to Services for Homeless and People with Disabilities Addis Ababa." 2018. UNICEF Global, https://www.unicef.org/ethiopia/media/3016/file/3.Situation%20and%20access%20to%20services%20of%20persons%20with%20disabilities%20in%20Addis%20Ababa%20Briefing%20Note.pd

f

- 17. "Small Family Farms County Factsheet: Ethiopia", 2012. https://www.fao.org/3/i8911en/I8911EN.pdf
- 18. Swenor, B. K., Cahill, R. M., and Samuel, L. J., 2021. "Food Insecurity in the Disability Community: Disparities in Snap Access: Health Affairs Forefront." Health Affairs, <a href="https://www.healthaffairs.org/do/10.1377/forefront.20210513.420153/full/#:~:text=Households%20that%20include%20people%20with,increased%20risk%20of%20food%20insecurity.&text=SNAP%20is%20one%20of%20the,26%20%%20have%20a%20disability.
- 19. "The Facts: How We're Fighting Hunger in Ethiopia." 2020. Mercy Corps, https://www.mercycorps.org/blog/fighting-hunger-ethiopia#climate-change-hunger-ethiopia.
- 20. The State of Food Security and Nutrition in the World, 2021. https://www.fao.org/state-of-food-security-nutrition/en/.
- 21. "The World Bank in Ethiopia: Overview." World Bank, https://www.worldbank.org/en/country/ethiopia/overview#1.
- 22. Tirfessa, K., Lund, C., Medhin, G., Hailemichael, Y., Fekadu, A. and Hanlon, C., 2019. Food insecurity among people with severe mental disorder in a rural Ethiopian setting: a comparative, population-based study. Epidemiology and psychiatric sciences, 28(4), page 397-407.
- 23. Tirfessa, K., Lund, C., Medhin, G., Hailemichael, Y., Habtamu, K., Fekadu, A., and Hanlon, C., 2019. Food insecurity and work impairment in people with severe mental disorders in a rural district of Ethiopia: a cross-sectional survey. Soc Psychiatry Psychiatr Epidemiol 54, pages 1055–1066
- 24. "UNICEF and the sustainable development goals.", UNICEF, https://www.unicef.org/sdgs#sdg2
- 25. "UNICEF in Ethiopia.", UNICEF Ethiopia, https://www.unicef.org/ethiopia/about-unicef#:~:text=With%20a%20staff%20of%20more,the%20largest%20UNICEF%20programmes%20globally
- 26. "United Nations: Peace, dignity and equality on a healthy planet." United Nations, https://www.un.org/en/global-issues/food
- 27. "United Nations Statistics Division Goals." United Nations, https://unstats.un.org/sdgs/report/2021/goal-02/.
- 28. "World Food Programme Food Assistance for Assets (FFA).", WFP, https://docs.wfp.org/api/documents/WFP-0000072361/download/?_ga=2.40465697.2075179341.1660880762-1252173773.1660880762