

Sustainable Food Systems & Health

Resource Sheet

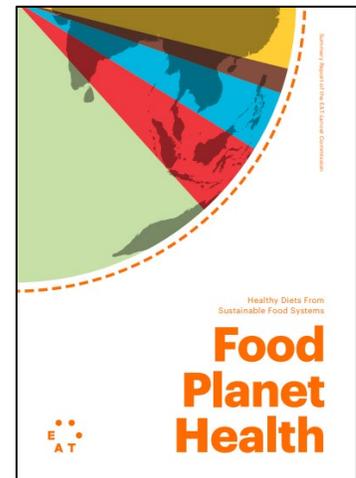
2019

Overview

This resource sheet was curated by the Global Health Education and Learning Incubator at Harvard University (GHELI) to support an upcoming Forum at Harvard T.H. Chan School of Public Health, “[Feeding 10 Billion by 2050: Creating a Sustainable and Healthy Food Future.](#)” It is also a companion to the recent *EAT-Lancet* Commission on Food, Planet, Health. The multidisciplinary materials—from fact sheets and data interactives, to reports and short videos—are suitable for policy makers, educators, and students wanting to understand the complex intersection of increasing global population, changing epidemiological patterns, climate change, and the Sustainable Development Goals (SDGs).

The Forum event is described as follows:

What does a sustainable and healthy future mean when it comes to food production, consumption and resulting environmental impacts? With nearly a billion people globally going hungry and nearly two billion eating the wrong food, the answer is pressing – especially as we look to a future that needs to sustainably feed “10 billion by 2050.” This Forum will explore how to avert dire consequences for human and planetary health through best practices and new technologies. Key questions will be how to amplify nutritious food production, prevent waste and secure supplies, while protecting our environment in the process. The discussion will include the “[planetary health diet](#)” recently proposed by an international commission that emphasizes plant-based eating for better health and for minimal ecological impact.



The [Forum at Harvard T.H. Chan School of Public Health](#) is a live webcasting series that provides decisionmakers with a global platform to discuss policy choices and scientific controversies across the world.

The [Global Health Education and Learning Incubator at Harvard University](#) supports interdisciplinary education about world health through the production, curation, and dissemination of educational public goods.

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Selected Resources – At a Glance

REPORTS AND BOOKS	
	Book. Fan S, Yosef S, Pandya-Lorch R (eds). Agriculture for Improved Nutrition: Seizing the Momentum. International Food Policy Research Institute 2019. http://www.ifpri.org/publication/agriculture-improved-nutrition-seizing-momentum .
*	Report. Swinburn B et al. The Global Syndemic of Obesity, Undernutrition, and Climate Change: The Lancet Commission Report. The Lancet 2019. DOI: https://doi.org/10.1016/S0140-6736(18)32822-8 .
*	Report. Willett W et al. Food in the Anthropocene: The EAT–Lancet Commission on Healthy Diets from Sustainable Food Systems. The Lancet 2019. DOI: https://doi.org/10.1016/S0140-6736(18)31788-4 .
*	Report. Global Nutrition Policy Review 2016-2017: Country Progress in Creating Enabling Policy Environments for Promoting Healthy Diets and Nutrition. World Health Organization 2018. https://www.who.int/nutrition/publications/policies/global_nut_policyreview_2016-2017/en .
*	Report. The State of Food and Agriculture 2018: Migration, Agriculture and Rural Development. Food and Agriculture Organization of the United Nations 2018. http://www.fao.org/state-of-food-agriculture/en .
*	Report. The State of Food Security and Nutrition in the World 2018: Building Climate Resilience for Food Security and Nutrition. Food and Agriculture Organization of the United Nations, International Fund for Agricultural Development, United Nations Children’s Fund, World Food Programme, World Health Organization 2018. http://www.fao.org/state-of-food-security-nutrition/en .
*	Report. 2018 Global Food Policy Report. International Food Policy Research Institute 2018. http://www.ifpri.org/publication/2018-global-food-policy-report .
*	Report. 2018 Global Nutrition Report: Shining a Light to Spur Action on Nutrition. Development Initiatives Poverty Research Ltd. 2018. https://globalnutritionreport.org/reports/global-nutrition-report-2018 .
*	Report. World Food Assistance 2018: Preventing Food Crises. World Food Programme 2018. https://sway.com/23MSsaF62HSSoEXC .
	Report. World Resources Report: Creating a Sustainable Food Future: A Menu of Solutions to Feed Nearly 10 Billion People by 2050. World Resources Institute, The World Bank, United Nations Environment Programme, United Nations Development Programme 2018. https://www.wri.org/publication/creating-sustainable-food-future .
*	Report. The Future of Food and Agriculture: Trends and Challenges. Food and Agriculture Organization of the United Nations 2017. http://www.fao.org/publications/fofa/en .
	Report. Future of Food: Shaping the Global Food System to Deliver Improved Nutrition and Health. The World Bank Group 2016. https://openknowledge.worldbank.org/handle/10986/24104 .
	Report. Plates, Pyramids, Planet – Development in National Health and Sustainable Dietary Guidelines: A State of Play Assessment. Food and Agriculture Organization of the United Nations, The Food Climate Research Network at The University of Oxford 2016. http://www.fao.org/sustainable-food-value-chains/library/details/en/c/415611 .
*	Report. Achieving Zero Hunger: The Critical Role of Investments in Social Protection and Agriculture, Second Edition. Food and Agriculture Organization of the United Nations 2015. http://www.fao.org/publications/card/en/c/91014696-3723-4df5-b729-2b4e55b22e8f .
ARTICLES AND BRIEFS	
	Briefs. EAT-Lancet Commission Briefs. EAT 2019. https://eatforum.org/eat-lancet-commission .
	Brief. EAT-Lancet Commission Report: Summary Brief for Businesses. World Business Council for Sustainable Development 2019. https://static1.squarespace.com/static/5a2e5406aeb6251a3820c292/t/5c6c0a03c83025d4db4f0236/1550584323543/EAT-Lancet+Commission-Summary+FINAL.pdf .
*	Article. Ayala A, Meier BM. A Human Rights Approach to the Health Implications of Food and Nutrition Insecurity. Public Health Reviews 2017; 38(10). DOI: https://doi.org/10.1186/s40985-017-0056-5 .

	Article. Tilman D, Clark M. Global Diets Link Environmental Sustainability and Human Health. Nature 2014; 515: 518-522. https://www.nature.com/articles/nature13959 .
DATA PUBLICATIONS, PORTALS, AND INTERACTIVES	
*	Data Portal. CountrySTAT: Food and Agriculture Data Network. Food and Agriculture Organization of the United Nations. http://www.fao.org/economic/ess/countrystat/en .
*	Data Portal. FAOSTAT: Food and Agriculture Organization of the United Nations Statistics Division. Food and Agriculture Organization of the United Nations. http://faostat3.fao.org/home/E .
*	Data Portal. Global SDG Indicators Database. United Nations Statistics Division 2019. https://unstats.un.org/sdgs/indicators/database .
*	Data Interactive. Counting the Beans: The True Cost of a Plate of Food Around the World. World Food Programme 2018. https://cdn.wfp.org/2018/plate-of-food .
*	Data Portal. Global Food Security Index. The Economist Intelligence Unit 2018. https://foodsecurityindex.eiu.com .
COUNTRY PROFILES AND FACT SHEETS	
*	Country Profiles & Fact Sheets. Country, Region, and Global Nutrition Profiles. 2018 Global Nutrition Report. Development Initiatives Poverty Research Ltd. 2018. https://globalnutritionreport.org/nutrition-profiles .
*	Country Profiles. FAO Country Profiles. Food and Agriculture Organization of the United Nations. http://www.fao.org/countryprofiles/en .
*	Country Profiles. Global Food Security Index 2018: Country Profiles. The Economic Intelligence Unit 2018. https://foodsecurityindex.eiu.com/Country .
TOPIC PORTALS AND ORGANIZATIONS	
	Organization. Champions 12.3. https://champions123.org .
	Organization. EAT. https://eatforum.org .
	Topic Portal. Food. World Resources Institute. https://www.wri.org/our-work/topics/food .
	Topic Portal. FReSH (Food Reform for Sustainability and Health). World Business Council for Sustainable Development. https://www.wbcsd.org/Programs/Food-Land-Water/Food-Land-Use/FReSH .
	Topic Portal. Plant-Forward Global 50. EAT Foundation, The Culinary Institute of America. https://www.plantforward50.com .
	Topic Portal. Sustainable Food and Agriculture. Food and Agriculture Organization of the United Nations. http://www.fao.org/sustainability/en .
NEWS, MULTIMEDIA, AND INFOGRAPHICS	
	News. Anthony A. How Diet Became the Latest Front in the Culture Wars. The Guardian 2019; Mar 17. https://www.theguardian.com/environment/2019/mar/17/how-diet-latest-front-culture-wars-eat-less-meat-lancet .
	Video. Marketing Made the Avocado. Could It Help Us Eat Less Meat? Grist 2019. https://youtu.be/q5JBd7Rzall .
	Blog. Voegelé J. 4 Priorities in the Race to Build a Sustainable Global Food System. World Economic Forum 2019; Jan 18. https://www.weforum.org/agenda/2019/01/four-priorities-to-help-fix-the-global-food-system .
	Infographics. Ranganathan J et al. How to Sustainably Feed 10 Billion People by 2050, in 21 Charts. World Resources Institute 2018. https://www.wri.org/blog/2018/12/how-sustainably-feed-10-billion-people-2050-21-charts .
*	Infographic. How Can Governments Support Healthy Food Preferences? Infographic. The Lancet 2015. http://www.thelancet.com/infographics/obesity-food-policy .

	<p>News. Foley J et al. A Five-Step Plan to Feed the World. The National Geographic Magazine 2014. https://www.nationalgeographic.com/foodfeatures/feeding-9-billion.</p>
TEACHING MATERIAL	
	<p>Online Learning. Webinar: How Better Language Can Boost Sales of Plant-based Menu Items. World Resources Institute 2019. https://www.wri.org/events/2019/03/webinar-how-better-language-can-boost-sales-plant-based.</p>
	<p>Guide. Global Food Waste Management: An Implementation Guide for Cities. World Biogas Association, C40 Cities Food, Water and Waste Programme 2018. http://www.worldbiogasassociation.org/food-waste-management-report.</p>
*	<p>Teaching Pack. Teaching Pack: Food Security in Marginalized Communities. Global Health Education and Learning Incubator at Harvard University 2018. http://repository.gheli.harvard.edu/repository/collection/teaching-pack-food-security.</p>
*	<p>Country Cases. Innovative Markets for Sustainable Agriculture How Innovations in Market Institutions Encourage Sustainable Agriculture in Developing Countries. Food and Agriculture Organization of the United Nations, Institut National de la Recherche Agronomique 2016. http://www.fao.org/sustainable-food-value-chains/library/details/en/c/430196.</p>
*	<p>Online Learning. Sustainable Consumption: Reworking the Western Diet. TED Studies 2013. https://www.ted.com/read/ted-studies/sustainable-consumption.</p>

*indicates resource listed in GHELI's online Repository

Annotated Bibliography

REPORTS AND BOOKS

Agriculture for Improved Nutrition: Seizing the Momentum

Book. Fan S, Yosef S, Pandya-Lorch R (eds). *Agriculture for Improved Nutrition: Seizing the Momentum*. International Food Policy Research Institute 2019. <http://www.ifpri.org/publication/agriculture-improved-nutrition-seizing-momentum>.

This book published by the International Food Policy Research Institute explores ways in which agriculture’s potential can fully be tapped to not only be a source of food, but also be a more wholesome source of nutrition. The past decade has brought new ideas, research, and initiatives focused on redesigning agricultural food systems. Fields such as biodiversity, biofortification, and nutritional ecology are burgeoning as people are exploring their effects on diets, and how they can be modified to suit human needs.

The Global Syndemic of Obesity, Undernutrition, and Climate Change: The Lancet Commission Report

Report. Swinburn B et al. *The Global Syndemic of Obesity, Undernutrition, and Climate Change: The Lancet Commission Report*. The Lancet 2019. DOI: [https://doi.org/10.1016/S0140-6736\(18\)32822-8](https://doi.org/10.1016/S0140-6736(18)32822-8).

GHELI repository link: <http://repository.gheli.harvard.edu/repository/12891>

This *Lancet* Commission report, which follows from two earlier *Lancet* Series on obesity, examines the growing global prevalence of obesity within a wide context of common underlying societal and political drivers for malnutrition and climate change. The commission identifies malnutrition (in all its forms, including obesity, undernutrition, and other dietary risks) as the leading cause of poor health globally. It also notes that the health effects of climate change will compound the health challenges of malnutrition and that these three pandemics—obesity, undernutrition, and climate change—represent a “global syndemic” that affects most people across the world. The commission urges holistic new thinking and action—about business models, food systems, civil society involvement, and national and international governance—toward the goal of reorienting human systems to achieve better human and planetary health.

Food in the Anthropocene: The EAT–Lancet Commission on Healthy Diets from Sustainable Food Systems

Report. Willett W et al. *Food in the Anthropocene: The EAT–Lancet Commission on Healthy Diets from Sustainable Food Systems*. The Lancet 2019. DOI: [https://doi.org/10.1016/S0140-6736\(18\)31788-4](https://doi.org/10.1016/S0140-6736(18)31788-4).

GHELI repository link: <http://repository.gheli.harvard.edu/repository/12892>

This report from the EAT–Lancet Commission on Healthy Diets from Sustainable Food Systems addresses the need to feed a growing global population with a healthy diet while also improving sustainable food systems that minimize damage to the planet. The commission describes a “universal healthy reference diet”—which relies on increased consumption of plant-based foods and decreased consumption of unhealthy foods, including red meat, sugar, and refined grains—in order to provide major health benefits, such as reducing the incidence of diet-related obesity and lowering mortality from diet-related noncommunicable diseases like coronary heart disease, stroke, and diabetes. The commission also integrates global targets for sustainable food systems and aims to provide scientific boundaries to reduce environmental degradation caused by food production, which is among the largest drivers of climate change, biodiversity loss, freshwater use, interference with global nitrogen and phosphorus cycles, land-system change, and chemical pollution. The report includes five strategies to achieve a “Great Food Transformation,” including seeking national and international commitment to shifting toward healthy diets; reorienting agricultural priorities to emphasize the production of healthy food over large quantities of food; sustainably intensifying food production to generate high-quality outputs that are more environmentally sustainable; strengthening and coordinating governance of land and oceans; and reducing food loss and waste by at least half, in line with global sustainable development goals (SDGs). This commission report is accompanied by a [summary report](#) as well as a [series](#) of briefing documents for key stakeholders, including cities/urban planners, farmers, food service professionals, health care providers, policymakers, and the general public.

Global Nutrition Policy Review 2016-2017: Country Progress in Creating Enabling Policy Environments for Promoting Healthy Diets and Nutrition

Report. Global Nutrition Policy Review 2016-2017: Country Progress in Creating Enabling Policy Environments for Promoting Healthy Diets and Nutrition. World Health Organization 2018.

https://www.who.int/nutrition/publications/policies/global_nut_policyreview_2016-2017/en.

GHELI repository link: <http://repository.gheli.harvard.edu/repository/12799>

This report from the World Health Organization (WHO) provides a comprehensive exploration of health policy implementation and action around nutrition in the WHO Member States. It uses survey data on child nutrition, school health, promotion of healthy diets, vitamin and mineral nutrition, and prevention and management of disease to review the current policy environment for nutrition action and policies, strategies, and plans aimed at realizing global nutrition targets by 2025. More than half of the 167 countries reporting included all the global nutrition targets in their national policies. Broadly, the global community has strengthened coordination and taken increasing action on stunting, overweight, obesity, and breastfeeding, but has stagnated in areas like school health and nutrition. The report also discusses progress since the first Global Nutrition Policy Review in 2009-2010, highlighting six areas requiring continued action: sustainable resilient food systems, universal coverage of nutrition actions, social protection and nutrition education, trade and investment, and governance and accountability.

The State of Food and Agriculture 2018: Migration, Agriculture and Rural Development

Report. The State of Food and Agriculture 2018: Migration, Agriculture and Rural Development. Food and Agriculture Organization of the United Nations 2018. <http://www.fao.org/state-of-food-agriculture/en>.

GHELI repository link: <http://repository.gheli.harvard.edu/repository/12727>

This report from the Food and Agriculture Organization of the United Nations (FAO) explores the connections between internal and international migratory flows and economic development, demographic change, and natural-resource pressure. It provides contextual background about migration trends and patterns, describes the drivers and determinants of rural migration, articulates the impacts of migration on agriculture and rural communities in general, and offers a comprehensive policy approach to rural migration and economic development transformation. The latest in an annual series of reports, the report includes data graphics, examples, short essays, key messages, and a statistical annex, which illustrate and document aspects of rural migration. It is accompanied by a digital version and an “in brief” summary of the report.

The State of Food Security and Nutrition in the World 2018: Building Climate Resilience for Food Security and Nutrition

Report. The State of Food Security and Nutrition in the World 2018: Building Climate Resilience for Food Security and Nutrition. Food and Agriculture Organization of the United Nations, International Fund for Agricultural Development, United Nations Children’s Fund, World Food Programme, World Health Organization 2018. <http://www.fao.org/state-of-food-security-nutrition/en>.

GHELI repository link: <http://repository.gheli.harvard.edu/repository/11687>

This annual United Nations (UN) report indicates that global hunger is on the rise again, after steadily declining for over a decade. The report is jointly published by the Food and Agriculture Organization of the United Nations (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). The report points out that persistent conflict, adverse climate events, and regional economic slowdowns have driven the resurgence of hunger and many forms of undernourishment that affect nearly 821 million people worldwide. In particular, the report highlights the importance of investing in the resilience and adaptive capacity of food systems, people’s livelihoods, and nutrition in response to climate variability and extremes—a primary driver of the surge in global hunger. The report is accompanied by a [fact sheet](#) and an [executive summary](#), and figures from the [digital report](#) can be downloaded as PDFs.

2018 Global Food Policy Report

Report. 2018 Global Food Policy Report. International Food Policy Research Institute 2018.

<http://www.ifpri.org/publication/2018-global-food-policy-report>.

GHELI repository link: <http://repository.gheli.harvard.edu/repository/11613>

This report from the International Food Policy Research Institute examines the global state of food policy in 2017, outlining major developments made and progress achieved. This year’s report focuses on the impacts of greater global

integration—including the movement of goods, investment, people, and knowledge—and the threat of current anti-globalization pressures.

The report examines several timely topics related to global food security and sustainability, including the roles of trade and investment in improving food security and food systems; the impacts of migration; the potential of greater data availability to improve agriculture and food security; and the ways policy and regulation—from national farm-support policies to global governance structures—can address food security and nutrition at the local, regional, and global levels. It includes data tables and visualizations for several key food policy indicators, including country-level data on hunger, agricultural spending and research investment, and projections for future agricultural production and consumption. It is accompanied by a [synopsis](#), downloadable data tables, and a series of food policy indicator infographics.

2018 Global Nutrition Report: Shining a Light to Spur Action on Nutrition

Report. 2018 Global Nutrition Report: Shining a Light to Spur Action on Nutrition. Development Initiatives Poverty Research Ltd. 2018. <https://globalnutritionreport.org/reports/global-nutrition-report-2018>.

GHELI repository link: <http://repository.gheli.harvard.edu/repository/10926>

This report from Development Initiatives Poverty Research Ltd. and produced and disseminated by the International Food Policy Research Institute (IFPRI) documents the status of the world's nutrition and progress made to meet global nutrition targets established by the World Health Assembly. The 2018 report explores areas that are critical for addressing the burden of malnutrition across the globe, including the need to improve the prevalence data on micronutrient deficiencies, the importance of a new approach to addressing malnutrition during crises, and the value of building upon the emerging focus on malnutrition among adolescents. The report also analyzes new and emerging data on the state of diets around the world to highlight the importance of diet as a cause of and solution to the global burden of nutrition. It also discusses government financial commitments to nutrition initiatives.

World Food Assistance 2018: Preventing Food Crises

Report. World Food Assistance 2018: Preventing Food Crises. World Food Programme 2018.

<https://sway.com/23MSsaF62HSSoEXC>.

GHELI repository link: <http://repository.gheli.harvard.edu/repository/12479>

This report from the United Nations World Food Programme (WFP) examines the various causes of food crises around the world and recommends short- and long-term solutions. It explores the drivers of food crisis, including short-term events—like conflicts and natural disasters—and long-term influencers like poverty and food insecurity, acknowledging that there is not yet enough evidence on the efficacy of specific interventions and investments to conclusively prioritize action and resource allocation. The WFP seeks to improve this knowledge base by analyzing the links between food assistance expenditures in 152 countries and a range of other factors.

World Resources Report: Creating a Sustainable Food Future: A Menu of Solutions to Feed Nearly 10 Billion People by 2050

Report. World Resources Report: Creating a Sustainable Food Future: A Menu of Solutions to Feed Nearly 10 Billion People by 2050. World Resources Institute, The World Bank, United Nations Environment Programme, United Nations Development Programme 2018. <https://www.wri.org/publication/creating-sustainable-food-future>.

This report published by the World Resources Institute outlines ways in which food sustainability is possible, which will be necessary to feed nearly 10 billion people which are expected to inhabit the Earth by 2050. The report is broken down into five “courses”: reducing growth in demand for food and other agricultural products; increasing food production without expanding agricultural land; protecting and restoring natural ecosystems and limiting agricultural land-shifting; increasing fish supply to raise productivity and performance of aquaculture; and reducing greenhouse gas emissions from agricultural production.

The Future of Food and Agriculture: Trends and Challenges

Report. The Future of Food and Agriculture: Trends and Challenges. Food and Agriculture Organization of the United Nations 2017. <http://www.fao.org/publications/fofa/en>.

GHELI repository link: <http://repository.gheli.harvard.edu/repository/11500>

This report from the Food and Agriculture Organization of the United Nations (FAO) calls for major transformations in agricultural systems and in how we manage our natural resources. The report outlines 15 trends and 10 challenges that agriculture and food systems are facing now, and provides insights into the actions that will be needed to eradicate hunger and malnutrition. Of particular relevance to global health are sections about population dynamics, urbanization, and aging, climate change, conflicts, crises and natural disasters, poverty, inequality and food insecurity, nutrition and health, governance for food and nutrition security, and development finance. Useful materials for educators include a downloadable 50 page [executive summary](#), as well as a downloadable [animation](#), [infographic](#), [audio](#), and [presentation](#).

Future of Food: Shaping the Global Food System to Deliver Improved Nutrition and Health

Report. Future of Food: Shaping the Global Food System to Deliver Improved Nutrition and Health. The World Bank Group 2016. <https://openknowledge.worldbank.org/handle/10986/24104>.

This report published by the World Bank Group emphasizes that malnutrition is more than deficiency of food. In fact, the world is suffering from a triple burden of malnutrition: energy deficiencies which come from hunger, micronutrient deficiencies which starve the body from essential vitamins and nutrients, and excessive net energy intake and unhealthy diets which lead to overweight and obesity. This report suggests ways in which to restructure the global food system in order to make sure that people's nutritional needs are being met all over the world.

Plates, Pyramids, Planet – Development in National Health and Sustainable Dietary Guidelines: A State of Play Assessment

Report. Plates, Pyramids, Planet – Development in National Health and Sustainable Dietary Guidelines: A State of Play Assessment. Food and Agriculture Organization of the United Nations, The Food Climate Research Network at The University of Oxford 2016. <http://www.fao.org/sustainable-food-value-chains/library/details/en/c/415611>.

While current food systems are failing to produce food with low environmental impacts, they are also failing to provide adequate nourishment to people globally. The authors of this report found that dietary guidelines are key contributors to coherent food policy. However, not all countries have food-based dietary guidelines (FBDGs). Out of a total of 215 possible countries who could have FBDGs, only 83 have them at all, and only four of them include sustainability in their FBDGs: Brazil, Sweden, Qatar, and Germany. This report emphasizes that food systems and people's health can have a mutually beneficial relationship, if dietary guidelines are developed to include suggestions that are good for people's well-being and also that of the environment.

Achieving Zero Hunger: The Critical Role of Investments in Social Protection and Agriculture, Second Edition

Report. Achieving Zero Hunger: The Critical Role of Investments in Social Protection and Agriculture, Second Edition. Food and Agriculture Organization of the United Nations 2015. <http://www.fao.org/publications/card/en/c/91014696-3723-4df5-b729-2b4e55b22e8f>.

GHELI repository link: <http://repository.gheli.harvard.edu/repository/12149>

This report by the Food and Agriculture Organization of the United Nations (FAO), in partnership with the International Fund for Agricultural Development and the World Food Programme, estimates the necessary public and private costs to achieve zero hunger by 2030, a key objective in the Sustainable Development Goals related to hunger and poverty. To achieve global elimination of chronic dietary energy deficits, the report calls for a combined approach of social protection and targeted pro-poor investments and concludes that an additional \$160 for each person living in extreme poverty will end chronic hunger.

ARTICLES AND BRIEFS

EAT-Lancet Commission Briefs

Briefs. EAT-Lancet Commission Briefs. EAT 2019. <https://eatforum.org/eat-lancet-commission>.

To accompany the EAT-Lancet Commission, the EAT forum has developed a Summary Report and 6 discipline-specific summary briefs on key findings. The report summary depicts gaps in the current dietary patterns and more optimal

patterns for the welfare of the planet through infographics, outlines five strategies for a “Great Food Transformation”, and conveys conclusions field experts and researchers have come to about the future of food, agriculture, and our environment. The briefs share key findings for healthcare professionals, food service professionals, cities, farmers, policymakers, and the general public.

EAT-Lancet Commission Report: Summary Brief for Businesses

Brief. EAT-Lancet Commission Report: Summary Brief for Businesses. World Business Council for Sustainable Development 2019.

<https://static1.squarespace.com/static/5a2e5406aeb6251a3820c292/t/5c6c0a03c83025d4db4f0236/1550584323543/EAT-Lancet+Commission-Summary+FINAL.pdf>.

This brief accompanies the independent EAT-Lancet Commission Report, *Our Food in the Anthropocene: Healthy Diets from Sustainable Food Systems*, and summarizes different approaches business can take to improve nutrition globally while also tackling major challenges facing populations around the globe like human rights, biodiversity, and climate mitigation. In addition to providing key information about food systems and nutrition, concrete business solutions and leadership actions are summarized. Strategies highlighted include the production of healthy and sustainable food products through improved food labelling and transparent marketing strategies, adopting a greater focus on sustainability by decreasing greenhouse gas emissions and increasing water use efficiency, reducing food waste by implementing protocols and building business capacities, and establishing collaborative partnerships across the value chain.

A Human Rights Approach to the Health Implications of Food and Nutrition Insecurity

Article. Ayala A, Meier BM. A Human Rights Approach to the Health Implications of Food and Nutrition Insecurity. *Public Health Reviews* 2017; 38(10). DOI: <https://doi.org/10.1186/s40985-017-0056-5>.

GHELI repository link: <http://repository.gheli.harvard.edu/repository/12277>

This open-access article in *Public Health Reviews* summarizes human rights documents and scholarship on the rights to health and to food in an analytical interpretation of government obligations to ensure food security as a human right. The article discusses food and nutrition security as a health determinant, the ways in which food insecurity is related to malnutrition, the role of gender and maternal health in food insecurity risks globally, the role of factors such as climate change, urbanization, humanitarian emergencies and disasters, the food industry and globalization of unhealthy diets, and national laws in a human rights approach to food and nutritional health.

Global Diets Link Environmental Sustainability and Human Health

Article. Tilman D, Clark M. Global Diets Link Environmental Sustainability and Human Health. *Nature* 2014; 515: 518-522.

<https://www.nature.com/articles/nature13959>.

This article in *Nature* describes the ways in which changing dietary patterns around the world are impacting the environment as well as population health outcomes. The authors describe how urbanization and improved economic opportunity are driving increases in unhealthy diets rich in refined sugar, fats, oils and meats, and the ways in which these diets are contributing to both higher levels of type II diabetes, coronary heart disease, and other non-communicable diseases globally, as well as increases in greenhouse gas emissions. Three alternative diets (Mediterranean, pescatarian, and vegetarian) are highlighted as promising approaches to both improve population health and also address the environmental challenges associated with current dietary patterns.

DATA PUBLICATIONS, PORTALS, AND INTERACTIVES

CountrySTAT: Food and Agriculture Data Network

Data Portal. CountrySTAT: Food and Agriculture Data Network. Food and Agriculture Organization of the United Nations. <http://www.fao.org/economic/ess/countrystat/en>.

GHELI repository link: <http://repository.gheli.harvard.edu/repository/11271>

This data portal, offered by the Food and Agriculture Organization (FAO) of the United Nations, is a web-based information technology system for food and agriculture statistics at the national and subnational levels. The site centralizes and integrates data coming from various sources, allowing it to be harmonized according to international

standards while ensuring data quality and reliability. This supports analysis, informed policy-making, and monitoring with the goal of eradicating extreme poverty and hunger.

Through national and regional collaborations, FAO forms partnerships with statistical offices and the ministries of agriculture, fisheries, forestry, and others to introduce the CountrySTAT system and build national capacity to use it. In each country, the national government makes a substantial contribution to ensure its deployment and continued training and maintenance.

FAOSTAT: Food and Agriculture Organization of the United Nations Statistics Division

Data Portal. FAOSTAT: Food and Agriculture Organization of the United Nations Statistics Division. Food and Agriculture Organization of the United Nations. <http://faostat3.fao.org/home/E>.

GHELI repository link: <http://repository.gheli.harvard.edu/repository/11270>

This data portal is maintained by the United Nations Statistics Division of the Food and Agriculture Organization (FAOSTAT). Browse, download, compare, search, and analyze data across several data domains including production, trade, emissions, food security, agri-environmental indicators, food balances, prices, inputs, population, investment, forestry, R&D indicators, and emergency response.

Global SDG Indicators Database

Data Portal. Global SDG Indicators Database. United Nations Statistics Division 2019.

<https://unstats.un.org/sdgs/indicators/database>.

GHELI repository link: <http://repository.gheli.harvard.edu/repository/11621>

This online database, offered by the United Nations Statistics Division, provides the most up-to-date data compiled through the U.N. System about the world's implementation of the 2030 Agenda for Sustainable Development, as documented in the 2018 [Sustainable Development Goals Report](#). At the heart of the 2030 Agenda are 17 Sustainable Development Goals (SDGs) to address global challenges through sustainable economic, social, and environmental progress; progress is measured through numerous indicators that compose a global indicator framework. Users can explore the data by region or by indicator, compare current progress with historical results, and download findings into a spreadsheet. A related [metadata repository](#) provides the specific definition, rationale, methodology, and data sources for each indicator for which data are available, and allows users to browse by keyword, SDG, and target.

Counting the Beans: The True Cost of a Plate of Food Around the World

Data Interactive. Counting the Beans: The True Cost of a Plate of Food Around the World. World Food Programme 2018.

<https://cdn.wfp.org/2018/plate-of-food>.

GHELI repository link: <http://repository.gheli.harvard.edu/repository/12726>

This interactive from the World Food Programme (WFP) highlights the glaring disparity in food affordability around the world. It shares the cost of a meal relative to daily income, called “purchasing power,” showing that simple ingredients for a stew costs 0.6 percent of a daily income for an individual in New York, United States, as compared to 201 percent of a daily income in South Sudan. The disparities in access to food and cost of food illustrated by this data are a result of many factors, including natural disasters, climate extremes, and weak markets. However, the World Food Programme finds that the most glaring cause of hunger is war conflict. Users can learn more about each country's context, and also a view a global ranking of food affordability. Beyond providing data, this interactive serves as a reminder that hunger remains a major challenge in many countries.

Global Food Security Index

Data Portal. Global Food Security Index. The Economist Intelligence Unit 2018. <https://foodsecurityindex.eiu.com>.

GHELI repository link: <http://repository.gheli.harvard.edu/repository/12481>

This data portal from *The Economist Intelligence Unit* provides up-to-date data related to the core issues of food security—affordability, availability, and quality—in 113 countries. The index is constructed from 28 indicators and is designed to be a dynamic quantitative and qualitative benchmarking model that measures the drivers of food security. The index also includes an adjustment factor on natural resources and resilience that assesses a country's exposure to the impacts of climate change, its vulnerability to natural resource risks, and its effectiveness in adapting to these risks. Users can explore an [interactive map](#) to view global and regional trends in food security; they can also access individual country profiles which provide national data on each indicator, ranking information against global and regional

averages, and a summary of major strengths and challenges facing the country. The portal also includes related resources and publications, including [Global Food Security Index 2018: Building Food Security in the Face of Rising Food Security Risks](#), a report which synthesizes many of the key findings of the index research.

COUNTRY PROFILES AND FACT SHEETS

Global Nutrition Report: Fact Sheets & Country Profiles

Country Profiles & Fact Sheets. Country, Region, and Global Nutrition Profiles. 2018 Global Nutrition Report. Development Initiatives Poverty Research Ltd. 2018. <https://globalnutritionreport.org/nutrition-profiles>.

GHELI repository link: <http://repository.gheli.harvard.edu/repository/11223>

This web portal, offered by the Development Initiatives Poverty Research Ltd. and produced and disseminated by the International Food Policy Research Institute (IFPRI), provides global, regional, and country profiles that accompany the [2018 Global Nutrition Report](#), which documents the status of the world's nutrition and progress made to meet global nutrition targets established by the World Health Assembly. The global [fact sheet](#) facilitates comparison of national-level data with the global situation. Regional and country profiles include information on child, adolescent, and adult nutritional status, in addition to intervention coverage, food supply, economics, and demography. A companion [technical note](#) is also available.

FAO Country Profiles

Country Profiles. FAO Country Profiles. Food and Agriculture Organization of the United Nations.

<http://www.fao.org/countryprofiles/en>.

GHELI repository link: <http://repository.gheli.harvard.edu/repository/11565>

This web portal from the Food and Agriculture Organization of the United Nations (FAO) provides access to a collection of country-specific profile pages, each of which compiles information about agriculture, water and aquaculture, food security, and more from across the entire FAO site. Linked resources on each country page include publications, news articles, briefs, infographics, and data tools. Each country profile page also contains key statistics and a Country leaflet, covering important information about the FAO's involvement in that country and surrounding regions.

Global Food Security Index 2018: Country Profiles

Country Profiles. Global Food Security Index 2018: Country Profiles. The Economic Intelligence Unit 2018.

<https://foodsecurityindex.eiu.com/Country>.

GHELI repository link: <http://repository.gheli.harvard.edu/repository/12829>

These country profiles from The Economist Intelligence Unit assesses a country's food security across the dimensions of availability, and quality. The profiles are based on the [Global Food Security Index](#), which provides up-to-date data related to the core issues of food security in 113 countries. The index is constructed from 28 indicators and is designed to be a dynamic quantitative and qualitative benchmarking model that measures the drivers of food security. The index also includes an adjustment factor on natural resources and resilience that assesses a country's exposure to the impacts of climate change, its vulnerability to natural resource risks, and its effectiveness in adapting to these risks. The portal also includes related resources and publications, including [Global Food Security Index 2018: Building Food Security in the Face of Rising Food Security Risks](#), a report which synthesizes many of the key findings of the index research.

TOPIC PORTALS AND ORGANIZATIONS

Champions 12.3

Organization. Champions 12.3. <https://champions123.org>.

Champions 12.3 is a coalition inspiring action and accelerating progress on Sustainable Development Goal (SDG) Target 12.3, which calls for halving per capita global food waste at retail and consumer levels as well as reducing food loss along the production and supply chain. The multi-stakeholder coalition includes representatives from governments, businesses, research organizations, farmer groups, and civil society. In particular, the coalition monitors and evaluates progress towards SDG 12.3, leverages relationships to increase financing for promising approaches, and identify "windows of opportunity" for policy action.

EAT

Organization. EAT. <https://eatforum.org>.

EAT is a science-based non-profit dedicated to transforming the global food system, founded by the Stordalen Foundation, Stockholm Resilience Centre, and the Wellcome Trust. The organization envisions a fair and sustainable global food system for healthy people and planet that leaves no one behind. Their diverse, multi-stakeholder [initiatives](#) center around actions for cities and business, youth, and chefs. EAT is also a partner of recent EAT-Lancet Commission.

World Resources Institute: Food

Topic Portal. Food. World Resources Institute. <https://www.wri.org/our-work/topics/food>.

This web portal from the World Resource Institute (WRI) pulls together the organization's work towards securing a sustainable food future in one place. Through analyses, partnerships, and strategies, WRI focuses on solutions towards sustainably feeding a growing population by 2050. Notable work has included a "[five-course menu of solutions](#)" for tackling food production and consumption problems; the [Better Buying Lab](#), which incubates strategies for encouraging consumers to adopt sustainable consumption patterns; and the [Cool Food Pledge](#), which helps dining facilities put more climate-friendly foods on their menus.

FReSH (Food Reform for Sustainability and Health)

Topic Portal. FReSH (Food Reform for Sustainability and Health). World Business Council for Sustainable Development. <https://www.wbcsd.org/Programs/Food-Land-Water/Food-Land-Use/FReSH>.

FReSH (Food Reform for Sustainability and Health) is an initiative from the World Business Council for Sustainable Development (WBCSD) in partnership with the EAT Forum that is dedicated to creating business solutions for food system transformation. The initiative curates three-day dialogues between science, business, and civil society; fosters action towards nutrition-secure supply chains; and motivates action against food loss and waste across 25 WBCSD member companies and beyond.

Plant-Forward Global 50

Topic Portal. Plant-Forward Global 50. EAT Forum, The Culinary Institute of America. <https://www.plantforward50.com>.

The Plant-Forward Global 50 highlights 50 chefs from across the world who are advancing plant-forward food choices. In addition to detailed profiles of these trailblazing chefs, the platform shares [recipes](#) and recommended [cookbooks](#) for plant-based eating. The initiative is a collaboration between the EAT Forum and the Culinary Institute of America.

FAO: Sustainable Food and Agriculture

Topic Portal. Sustainable Food and Agriculture. Food and Agriculture Organization of the United Nations.

<http://www.fao.org/sustainability/en>.

This web portal from the Food and Agriculture Organization of the United Nations focuses on the connection between agriculture and the complex nexus of growing global population, increasingly scarce natural resources, climate change, and nutrition. The portal includes [resources](#) for decisionmakers and other stakeholders working on sustainable food and agriculture in the context of the global Sustainable Development Goals.

NEWS, MULTIMEDIA, AND INFOGRAPHICS

How Diet Became the Latest Front in the Culture Wars

News. Anthony A. How Diet Became the Latest Front in the Culture Wars. The Guardian 2019; Mar 17.

<https://www.theguardian.com/environment/2019/mar/17/how-diet-latest-front-culture-wars-eat-less-meat-lancet>.

This news article in *The Guardian* discusses a current, contentious topic: the role meat plays in our diets. While some have criticized the narrative that the world needs to shift to a more plant-based diet, many scientists agree that climate change cannot be addressed without recognizing the role that food plays in it. 37 senior scientists from around the world researched the relationship between food and the environment and published "Food in the Anthropocene: the Eat-Lancet Commission on health diets from sustainable food systems." This academic report published by *The Lancet* argues that addressing environmental problems also consists of tackling problems caused by the current food system, in which meats are produced inefficiently and a major proportion of food is wasted. It calls upon society at large to shift

the way it consumes food. Critics of the report, however, point to potential nutritional deficiencies, concerns about funding sources, and neglect of local differences.

Marketing Made the Avocado

Video. Marketing Made the Avocado. Could It Help Us Eat Less Meat? Grist 2019. <https://youtu.be/q5JBd7Rzall>. What's in a name? This video from Grist uses the avocado, once called an alligator pear, as an example to justify how word choice can have a major effect on which foods people eat, ultimately influencing the life and death of ecosystems. A study at Stanford University showed that “health-focused names”—which are designed to focus on specific aspects of food to make it sound more appealing—were more popular with students eating at a university dining hall than food descriptions that were more generic. These findings could potentially be extrapolated to use word choice to shift people away from heavy meat consumption.

4 Priorities in the Race to Build a Sustainable Global Food System

Blog. Voegele J. 4 Priorities in the Race to Build a Sustainable Global Food System. World Economic Forum 2019; Jan 18. <https://www.weforum.org/agenda/2019/01/four-priorities-to-help-fix-the-global-food-system>.

As the world's population is expected to increase to 10 billion by 2050, finding feasible ways to provide nutritious and sufficient food to all still remains a challenge. This post from the *World Economic Forum* highlights four areas of action that policy makers and leaders can address to turn this challenge into an opportunity for sustainable solutions: leveraging technology innovation, empowering food research drivers and networks, unlocking finance for small and medium enterprises, and restructuring agricultural support to deliver public goods. Whether it's sparking innovations in the genetics of agricultural crops, incentivizing research and investment from public and private sectors, or creating agriculture policies to find economically efficient ways to support farmers, a collective and interdisciplinary approach is needed to address this global issue.

How to Sustainably Feed 10 Billion People by 2050, in 21 Charts

Infographics. Ranganathan J et al. How to Sustainably Feed 10 Billion People by 2050, in 21 Charts. World Resources Institute 2018. <https://www.wri.org/blog/2018/12/how-sustainably-feed-10-billion-people-2050-21-charts>.

This set of infographics published by the World Resources Institute have maps, graphs, and visuals which suggest ways to create a sustainable food future, including incorporating shifts in diets, improving soil and water management, and conserving forests and aquaculture.

How Can Governments Support Healthy Food Preferences?

Infographic. How Can Governments Support Healthy Food Preferences? Infographic. The Lancet 2015.

<http://www.thelancet.com/infographics/obesity-food-policy>.

GHELI repository link: <http://repository.gheli.harvard.edu/repository/11406>

This infographic illustrates how governments can support health food preferences. The food system is an interconnected network of producers, industry, and institutions. But at its heart is the individual. Policy can affect all parts of the network, influencing a cultural shift towards healthier food preferences. The infographic accompanies *The Lancet Series: Obesity 2015* which explores how food environments can facilitate unhealthy eating, exploiting people's biological, psychological, social, and economic vulnerabilities.

A Five-Step Plan to Feed the World

News. Foley J et al. A Five-Step Plan to Feed the World. *The National Geographic Magazine* 2014.

<https://www.nationalgeographic.com/foodfeatures/feeding-9-billion>.

This interactive news article published by *National Geographic Magazine* emphasizes agriculture's contribution to global warming, not to be overshadowed or underestimated when discussing other factors such as greenhouse gas emissions and pollution. The author of the article streamlines a progressive approach to addressing the world's food dilemma in five simple steps: Avoiding deforestation, using the land we have more wisely and increasing its yields, using resources such as water and irrigation systems more efficiently, shifting towards more plant-friendly and sustainable diets, and reducing food waste.

TEACHING MATERIAL

How Better Language Can Boost Sales of Plant-based Menu Items

Online Learning. Webinar: How Better Language Can Boost Sales of Plant-based Menu Items. World Resources Institute 2019. <https://www.wri.org/events/2019/03/webinar-how-better-language-can-boost-sales-plant-based>.

Language and rhetoric are not only powerful tools in conveying messages in writing, but are also useful in shaping the mind of individuals in how they look at food. This webinar from the World Resources Institute is hosted by field experts who researched how various descriptions of plant-based foods appealed differently to American and British populations. They found that names that highlight the “provenance, flavor, and look and feel” of the dishes were the ones that made populations more apt to trying the food, which can be used to make vegetarian options more appealing—a groundbreaking strategy which could help reshape food consumption and therefore broader food systems.

Global Food Waste Management: An Implementation Guide for Cities

Guide. Global Food Waste Management: An Implementation Guide for Cities. World Biogas Association, C40 Cities Food, Water and Waste Programme 2018. <http://www.worldbiogasassociation.org/food-waste-management-report>.

This report published by the World Biogas Association reveals sources and impact of food waste. The report makes the case that poor management of food waste is detrimental to the health of our planet and also inflicts socioeconomic damages to society, while also affecting people’s overall health and well-being. The research in this report aims to guide policy and decision makers in cities to improve management of food waste in cities and towns all over the world. The publication presents specific cases of various cities that have actively been working to reduce food waste, to exemplify how to practically deliver plans for sustainable urban food waste management.

Teaching Pack: Food Security in Marginalized Communities

Teaching Pack. Teaching Pack: Food Security in Marginalized Communities. Global Health Education and Learning Incubator at Harvard University 2018. <http://repository.gheli.harvard.edu/repository/collection/teaching-pack-food-security>.

GHELI repository link: <http://repository.gheli.harvard.edu/repository/collection/teaching-pack-food-security>

This teaching pack on food security, developed by the Global Health Education and Learning Incubator at Harvard University, is designed to help undergraduate and graduate students consider food security as it relates to multi-sectoral health risks and responses, and common inequities that can compromise health due to social and economic discrimination and conflict. The pack includes an instructor’s note, four lesson plans (which offer an introduction to food security, explore food-related health risks due to historical and contemporary conflict and discrimination in Native American tribal communities in the United States as well as among communities in Ukraine, and draw comparisons between those two populations to identify potential solutions), an annotated bibliography, and glossary of terms.

Innovative Markets for Sustainable Agriculture: How Innovations in Market Institutions Encourage Sustainable Agriculture in Developing Countries

Country Cases. Innovative Markets for Sustainable Agriculture How Innovations in Market Institutions Encourage Sustainable Agriculture in Developing Countries. Food and Agriculture Organization of the United Nations, Institut National de la Recherche Agronomique 2016. <http://www.fao.org/sustainable-food-value-chains/library/details/en/c/430196>.

GHELI repository link: <http://repository.gheli.harvard.edu/repository/12564>

This case collection, a collaborative publication between the Food and Agriculture Organization of the United Nations (FAO) and Institut National de la Recherche Agronomique (INRA), describes the approaches that private sector and civil society actors are taking in partnership with the public sector to build market reforms that are promoting sustainable production practices in developing countries. The case studies examine markets in 15 countries: Indonesia, Namibia, Nigeria, Colombia, Ecuador, India, Iran, the Philippines, Thailand, Trinidad, Uganda, Benin, Bolivia, and Tanzania. Each chapter describes a small-scale market innovation and its consequences, along with specialized recommendations for further improvement. The publication emphasizes that the initiatives rely upon social values—such as food sovereignty,

promotion of youth and rural development, and farmer and community livelihoods—to adapt sustainable practices to local contexts, while also creating new market channels for food products. The case collection underscores the benefits of private sector, civil society, and public sector partnerships: new rules to assure sustainability of products; new organizational structures that allow stakeholders to take on multiple roles in the food system; new forms of market exchange; and new technologies for sustainable agriculture.

Sustainable Consumption: Reworking the Western Diet

Online Learning. Sustainable Consumption: Reworking the Western Diet. TED Studies 2013.

<https://www.ted.com/read/ted-studies/sustainable-consumption>.

GHELI repository link: <http://repository.gheli.harvard.edu/repository/10860>

In this educational series from TED Studies, speakers examine how the Western diet—processed, high in refined sugars, and heavy in corn, soy, meat, and dairy—is making us and the environment sick. Speakers discuss the characteristics and impacts of this type of diet, and explore ways in which individuals, institutions, and communities can adopt a healthier, more sustainable approach to food.

TED Studies are created in collaboration with Wiley, and contain curated collections of TED Talk videos along with educational materials, designed for students, educators, and self-guided learners. Topics span across disciplines and topics within science and medicine, social science, humanities, and more. Abbreviated versions of each TED Study are freely available to the public online; the full curricula, which contain special modules and questions, assignments, key terms, and recommended reading, are available for licensing by academic institutions, ministries of education, and media companies.

Videos include:

- [How Food Shapes Our Cities](#) (Carolyn Steel, 2009) – 15:40
- [A Garden in My Apartment](#) (Britta Riley, 2011) – 7:52
- [A Guerilla Gardener in South Central LA](#) (Ron Finley, 2013) – 10:45
- [What's Wrong with School Lunches](#) (Ann Cooper, 2008) – 19:42
- [What's Wrong with What We Eat](#) (Mark Bittman, 2008) – 20:08
- [Why I'm a Weekday Vegetarian](#) (Graham Hill, 2010) – 5:45
- [A Foie Gras Parable](#) (Dan Barber, 2008) – 20:24
- [Why Not Eat Insects?](#) (Marcel Dicke, 2010) – 16:34