THE DIETS TOOLKIT: AN NDCs & NBSAPs GUIDE FOR HEALTHY AND SUSTAINABLE DIETS

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Purpose of this guide

This NDCs and NBSAPs Guide for Healthy and Sustainable Diets is designed to help decisionmakers identify policy measures relevant to their national priorities and contexts. The practical and easy-to-use policy guide does not intend to prescribe solutions but instead to present a menu of policy measures for transitioning to sustainable and healthy diets as a starting point for decisionmakers to further develop and integrate in Nationally Determined Contributions (NDCs) and National Biodiversity Strategies and Action Plans (NBSAPs) and their implementation. Ultimately, by using the Guide, it is the hope that planners and decisionmakers can design and implement projects, programs, and interventions towards sustainable and healthy diets as part of NDCs and NBSAPs thus unlocking the critical levers for agriculture and food systems transformation. By outlining targeted guidance on sustainable and healthy diets, the Guide intends to complement existing tools such as the Food Forward NDCs & NBSAPs and Boosting Biodiversity Action Through Agroecology.

SETTING THE SCENE

What are healthy and sustainable diets?

Healthy and sustainable diets vary considerably across populations and geographies. Food choices and food-related behaviours are deeply linked to social and cultural norms, including expressions of identity, gender, and religion.[1] Diets are also influenced by the availability of different foods, which can be significantly influenced by socioeconomic factors. A diet may be sustainable, healthy, economically accessible, and culturally acceptable in one region but not in another.[2] For example, the Intergovernmental Panel on Climate Change (IPCC) has identified reducing meat and dairy consumption and shifting toward more plant-based diets as a necessary pathway to meet global climate goals.[3] While such shift will likely yield sustainability benefits in some high-income countries, it may not be appropriate in low-income countries where undernutrition is high or where the environment cannot immediately support alternative agriculture.[4] No single definition of a healthy and sustainable diet is universally applicable, and policies including dietary guidelines should be tailored to reflect regional variations in food systems and cultural preferences.

Definitions of healthy and sustainable diets

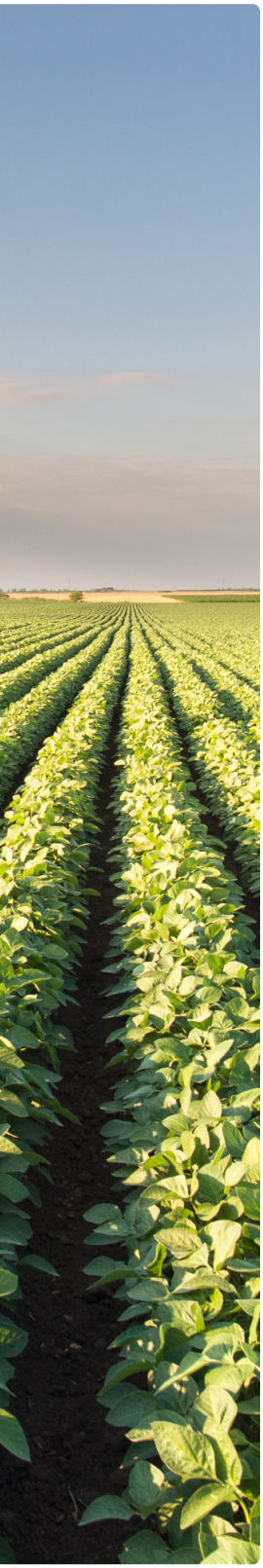
"Sustainable Healthy Diets are dietary patterns that promote all dimensions of individuals' health and wellbeing; have low environmental pressure and impact; are accessible, affordable, safe and equitable; and are culturally acceptable." They aim to "achieve optimal growth and development of all individuals and support functioning and physical, mental, and social wellbeing at all life stages for present and future generations; contribute to preventing all forms of malnutrition; reduce the risk of diet-related NCDs; and support the preservation of biodiversity and planetary health." [5]

UN Food and Agriculture Organization (FAO) & World Health Organization (WHO)

"The planetary health diet (PHD) represents a dietary pattern that supports optimal health outcomes and can be applied globally for different populations and different contexts, while also supporting cultural and regional variation. The PHD is rich in plants: whole grains, fruits, vegetables, nuts, and legumes comprise a large proportion of foods consumed, with only moderate or small amounts of fish, dairy, and meat recommended. The PHD is based entirely on the direct effects of different diets on human health, not on environmental criteria. The diet's name arose from the evidence suggesting that its adoption would reduce the environmental impacts and nutritional deficiencies of most current diets."

The 2025 EAT–Lancet Commission Report on Healthy, Sustainable, and Just Food Systems

Why are healthy and sustainable diets important for food systems transformation?



Global dietary patterns have changed significantly over the past fifty years, shaped by a combination of agricultural intensification, population increases, poverty and migration toward urban centres.[6] These shifts and the lifestyle changes they generate are influencing the way food is produced, processed, and consumed worldwide, and are having a profound impact on human health. The overconsumption of animal-based foods, refined carbohydrates and saturated fat in many higher-income countries are contributing to an increase in overnutrition and diet-related diseases,[7] while in many lower-income countries, a large majority of the population cannot afford or access sufficient food to meet their dietary needs, and nutrient deficiencies are common. At the same time, the interrelated crises of climate change, biodiversity loss and pollution continue to worsen.[8] The common denominator across all these crises is our global food system – both a cause and casualty of the decline of human and planetary health.

Current agricultural production practices continue to drive environmental degradation. The conversion of forests and other carbon and biodiversity-rich ecosystems into agricultural land drives habitat destruction, which has in recent decades driven an unprecedented decline in biodiversity.[9] Unsustainable food systems have directly and indirectly driven 70% of all biodiversity loss and threaten the majority of species at risk of extinction.[10] At the same time, an overreliance on fossil-fuel based agricultural methods along the length of the food chain – through production, processing and packaging – are estimated to account for 15% of total global fossil fuel use.[11] Research shows that even if all non-food GHG emissions were net zero between 2020 to 2100, emissions from food systems would still cause an overshoot of the 1.5°C limit between 2051 and 2063.[12]

Global food systems are also contributing directly and indirectly to inequality, poverty, and poor human health. The increasing domination of food value chains by large agribusinesses and corporations marginalizes and reduces the agency of small producers and vulnerable groups, including women, Indigenous Peoples, and migrant workers. Many in these groups lack access to land, credit, and markets, exacerbating food insecurity and poverty.[13] Up to 720 million people or 9% of the global population is affected by hunger, an estimated 2.3 billion people experience food insecurity, and roughly 2.6 billion people cannot afford a healthy diet.[14] At the same time, a growing number of people worldwide is affected by non-communicable diseases – including more than 800 million adults with type 2 diabetes[15] and 890 million adults with obesity[16] – for which unhealthy diets represent a leading key risk factor. Furthermore, agricultural production methods are exacerbating other health crises: the contamination of soil and water from fertilizer run-off can limit the nutritional content of food and present food safety risks;[17] while fossil-fuel intensive production systems directly intensify local air pollution.[18]

There is an urgent need for a fundamental overhaul of how we produce, process, distribute, and consume food globally, with shifts to sustainable and healthy diets playing a critical role in achieving this. It requires a departure from industrialized, high-emissions agriculture toward a more sustainable, resilient, and equitable operating system that enhances, rather than depletes the environment and provides healthy and nutritious food for all. Recent IPCC Assessment Reports highlight the necessity of overhauling food systems including diets not only for climate objectives, but also for their broader ecological, health, economic, social, and cultural benefits. And the latest nexus report by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) on the interlinkages between biodiversity, water, food, and health identifies the promotion and adoption of sustainable healthy diets as one of the most effective measures to achieve positive impacts for biodiversity conservation, climate change mitigation, food security, and human health.[19]

Healthy and sustainable diets can be a key lever for advancing environmental sustainability, social equity, and climate resilience. As the 2025 EAT–Lancet Commission Report on healthy, sustainable, and just food systems found, across all regions of the world, diets consistently lack sufficient fruits, vegetables, nuts, legumes, and whole grains. In many places, the analysis also finds that diets contain excess meat, dairy, animal fats, sugar, and excessively processed foods. Building on existing data, the 2025 Report has strengthened evidence of the benefits of the Planetary Health Diet, which sets out recommendations for healthy diets that ensure nutritional adequacy, support optimal health outcomes, and can be adapted to different contexts and cultures. It emphasises a plant-rich diet, with optional, moderate amounts of animal-source foods and limited added sugars, saturated fats, and salt. There is also good evidence that adoption of diets in line with the Planetary Health Diet would lower the environmental impacts of most current diets.[20] By reducing the intensity of agricultural production, healthy and sustainable diets can relieve pressure on agricultural lands and contribute positively to ecosystem maintenance and enhancement. By prioritising locally and sustainably produced foods, they can support the inclusion and livelihoods of small producers, as well as increase the availability of healthy and nutritious foods for low-income and vulnerable communities. In turn, this can help to tackle food insecurity, malnutrition, and food-related illness.

The transformation of agriculture and food systems for human and planetary health is possible only if all policy levers across food production, distribution, and consumption are pulled including measures that support shifting to healthy and sustainable diets. However, there is no 'one-size-fits-all' solution – the transformation requires supporting a range of transitions along different pathways, and tackling numerous different challenges along the way. Promoting the consumption of healthy and diverse foods – alongside sustainable agricultural and other food production practices that maintain or enhance nature and natural ecosystems such as agroecological practices – underpin this transformation. Sustainable production and consumption patterns can be achieved over time through a combination of innovation in food-production practices, social-movement advocacy, policy, and cultural change at varying scales.

What is the role of healthy and sustainable diets in the global climate and biodiversity policy agenda?

Action on agriculture and food systems, including access to healthy and sustainable diets, has become an integral part of global climate and biodiversity policy frameworks. The Global Stocktake decision, in the adaptation section, explicitly calls for the "implementation of integrated, multi-sectoral solutions, such as land use management, sustainable agriculture, resilient food systems" and for "climate-resilient food and agricultural production and supply and distribution of food, as well as increasing sustainable and regenerative production and equitable access to adequate food and nutrition for all." The United Arab Emirates Framework for Global Climate Resilience, adopted to operationalise the Global Goal on Adaptation under the Paris Agreement, sets a target for "attaining climate-resilient food and agricultural production and supply and distribution of food, as well as increasing sustainable and regenerative production and equitable access to adequate food and nutrition for all."[21]

Similarly, the Kunming-Montreal Global Biodiversity Framework (GBF) makes an explicit link between our global food systems and biodiversity loss.[22] Specifically, Target 10 ("Enhance biodiversity and sustainability in agriculture, aquaculture, fisheries, and forestry") and Target 16 ("Enable sustainable consumption choices to reduce waste and overconsumption") of the GBF explicitly recognise the role of agriculture and healthy and sustainable food consumption in biodiversity conservation and restoration.

How are healthy and sustainable diets considered in NDCs and NBSAPs?

More and more countries are acknowledging food systems transformation as a crucial part of climate action. The COP28 UAE Declaration on Sustainable Agriculture, Resilient Food Systems, and Climate Action calls for accelerated action on food systems, agriculture, and climate, urging governments to align and integrate related actions within national strategies, including Nationally Determined Contributions and National Biodiversity Strategies and Actions Plans . The NDCs instituted by the Paris Agreement help countries to identify their vulnerabilities to climate change risks, their long-term adaptation needs, and measures and strategies for mitigation and adaptation. They offer a platform for bringing together all climate-related national policy priorities, mapping overlaps across sectors and planning implementation to contribute not only to the Paris Agreement climate targets but also to other global goals such as the Global Biodiversity Framework targets and Sustainable Development Goals. They also serve as a framework for holding countries to account in terms of their commitments. NBSAPs provide national-level strategic direction on the protection and management of biodiversity within a country to contribute to global biodiversity targets under GBF.

What are NDCs and NBSAPs?

Nationally Determined Contributions (NDCs), established under the Paris Agreement, are the frameworks in which each country outlines and communicates their post-2020 climate actions. NDCs set the dual purpose of establishing both targets and an action plan to cut emissions and adapt to climate impacts. NDCs are submitted by parties to the United Nations Framework Convention on Climate Change (UNFCCC), and must provide information necessary to facilitate clarity, transparency and understanding (ICTU), which includes quantifiable information on baselines, timeframes for implementation, planning processes, and other methodological approaches. Parties are required to submit new NDCs every five years, increasing their ambition with each round. In addition to NDCs, least developed and developing countries also submit National Adaptation Plans (NAPs) – established in 2010 under the Cancún Adaptation Framework. NAPs are national frameworks that identify a country's medium- and long-term adaptation needs and develop strategies to address these vulnerabilities. Whereas the adaptation components of a country's NDC establish its global commitment to adapt to climate change impacts, NAPs serve as domestic planning documents to evaluate and address the country's adaptation needs.

National Biodiversity Strategies and Action Plans (NBSAPs) – NBSAPs provide national-level strategic direction on the protection and management of biodiversity within a country and are the main tool guiding the Global Biodiversity Framework (GBF) at national level. Each party to the Convention on Biological Diversity (CBD) is expected to review or update its NBSAP to align it with the GBF. Parties were expected to submit their revised and updated NBSAPs ahead of the 16th meeting of the COP in the fourth quarter of 2024. However, only 18% of member states had submitted their revised NBSAPs before the deadline.

Yet, to date, few countries have developed policy measures and targets for shifting to sustainable and healthy diets. A 2024 analysis found that of 146 updated NDCs, 94% included at least one measure related to food systems, but only 7%, or 10 NDCs, included some measure for sustainable and healthy diets.[23] Similarly, across 64 and National Biodiversity Strategies and Action Plans (NBSAPs) and National Targets assessed in 2024, less than half (47%) mentioned measures related to sustainable consumption or healthy diets and approximately 20% included measures for increasing access to sustainable and healthy foods.[24] Formulation of future rounds of NDCs, due every five years, and the ongoing updates of NBSAPs are key moments for countries to raise their ambition and integrate healthy and sustainable diets into their climate and biodiversity planning and implementation.

5 steps to integrate policy measures for healthy and sustainable diets in NDCs and NBSAPs

Step	Description	For NDCs	For NBSAPs
1. Assess the link between food consumption and environmental change within the national context	Assess and categorise **national-level food system** — Assess **interactions** between **food consumption**, including imported food and environmental change	Focus on interaction between **climate change** and food consumption in the national context	Focus on interaction between **nature loss** and food consumption in the national context
2. Identify priority policy options to promote sustainable and healthy diets within the national context	Consult relevant public and private sector stakeholders using a **multi-stakeholder** approach — Assess **benefits** and **trade-offs** of different policy options	Map potential impacts of policy options on national-level climate-change **mitigation** and **adaptation** strategies	Define contributions of different policy options to achievement of **GBF Targets** in the national context
3. Integrate priority policy options within national climate and biodiversity plans	Clearly define national-level goals and measures for **operationalisation** — Outline **benefits** and **trade-offs** of priority policy options	Follow guidance on information to include to facilitate clarity, transparency, and **understanding** of the **NDC**	Set clear national targets for sustainable and healthy diets using **GBF guidance**
4. Implement priority policy options as part of ambitious climate and biodiversity plans	Follow **whole-of-society approach** and ensure meaningful stakeholder engagement — Adopt **national roadmaps** with regulatory actions, investable projects, and finance mobilisation strategy — Set up robust **Monitoring**, **Reporting**, and **Verification** systems	Define **monitoring indicators** that satisfy Enhanced Transparency Framework requirements[25] [26]	Identify indicators from GBF **monitoring framework** in order to measure contributions to national targets[27]
5. Report progress on implementation	Systematically **measure** and **collect data** on policy implementation and effects	Report progress in **Biennial Transparency Report** following ETF guidelines[28] [29]	Report progress in **national reports** using guidance and templates from CBD and GBF monitoring framework[30]

STEP 1

Assess the link between food consumption and environmental change within the national context

Food consumption patterns vary across countries and subnational regions and are specific to local contexts. These dietary patterns interact with food systems, not only as an outcome of existing food systems but also as a driver of food systems change. Food systems, through diets, give rise not only to nutrition and health, but also to other dimensions of sustainability, including environmental, economic, cultural, and social-equity outcomes, which, in turn, link back to food-system drivers.[31] These outcomes include land, water, and ecosystem degradation; greenhouse gas emissions; biodiversity losses; hunger, micro-nutrient deficiencies, obesity, and diet-related diseases; and enduring livelihood stresses faced by farmers worldwide.

As such, when it comes to planning national policies for climate, biodiversity, health, and nutrition, it's important for decisionmakers to first assess these linkages and understand the direct and indirect drivers of existing food-consumption patterns and their outcomes, including on climate and biodiversity, in order to identify key leverage points for change and policy intervention. This can be conducted within a broader food-systems impact assessment, using tools such as the FAO's True Cost Accounting . Only then can decisionmakers effectively leverage measures for healthy and sustainable diets in order to achieve climate and biodiversity goals.

ADDITIONAL RESOURCES TO USE

RESOURCE	USE CASE
WWF Great Food Puzzle	Assess and categorise national food system type
FAO System of Environmental-Economic Accounting for Agriculture, Forestry and Fisheries (SEEA AFF)	Analyse relationship between food and environmental change
World Bank Detox Development: Repurposing Environmentally Harmful Subsidies	Understand scale and impact of subsidies
FAO True cost accounting applications for agrifood systems policymakers	Understand the true impacts of food systems

STEP 2

Identify priority policy options to promote sustainable and healthy diets within national contexts

Many different policy responses can contribute to promoting sustainable and healthy diets across different national contexts (the next chapter of this Guide presents 10 such policy options). This step includes gathering relevant policy documents and identifying relevant policy options to be reviewed for their transformative potential and contribution to national climate and biodiversity targets. Findings from Step 1 can guide the choice of policy options. It is important that both Steps 1 and 2 are embedded in a multistakeholder consultative process for the development of NDCs and NBSAPs, along with updates and implementation – including the establishment of a coordination team tasked with conducting and providing strategic direction to the assessment and selection of policy options, outlining their potential impacts and trade-offs in order to ensure that they build on measures implemented as part of the previous NDCs and NBSAPs, and thereby enhance their ambition and implementation.

It is equally important that the multistakeholder consultation includes the voices of a diverse range of public- and private-sector stakeholders, including Indigenous peoples and local communities, to ensure that policies are grounded in local realities while contributing to both national and global climate and biodiversity goals.

The table below details potential stakeholder groups to include in these consultations:

Government ministries, departments, and agencies	Relevant actors involved in public climate, biodiversity, health, agriculture, food security, environment, education, and finance planning and budgeting, facilitating coordinated action, collecting, and storing relevant data, and mainstreaming adaptation priorities into agriculture and land-use sector programmes and strategies.
Research agencies, centres, and academic institutions	Relevant public or non-public actors involved in generating data and scientific evidence related to climate, biodiversity, and health, other socio-economic related impacts, and risks and trade-offs of food systems, as well as interpreting this data for policymaking.
Civil society and non-profit organisations	Relevant non-governmental actors involved in the implementation of climate, biodiversity, health, and food-system-related projects and capacity-building initiatives, particularly farmer organisations, Indigenous peoples and local communities, and women and youth organisations.
Private sector	Relevant private-sector actors that operate at the intersection of climate, biodiversity, health, and food systems, including producers, manufacturers, retailers, and others interested in climate-resilient and sustainable food products and services.
Intergovernmental, multilateral, and bilateral development partners	Relevant intergovernmental, multilateral, or bilateral organisations involved in supporting NDC and NBSAP processes through coordination of capacity building, technology transfer, and finance provision.

There is a wide range of interactive resources that policymakers can consult to identify suitable priority policy options (see table below for a select few).

ADDITIONAL RESOURCES TO USE

RESOURCE	USE CASE
ProVeg International Future Fit Farming: Policy solutions for diverse, resilient agricultural systems	Identify feasible on-farm solutions for diversifying production and enhancing economic viability
WWF Great Food Puzzle	Identify potential solutions with the highest impact potential, based on national food-systems type
WWF & Climate Focus Food Forward NDCs & NBSAPs	Identify measures for agriculture and food-system transformation for integration into NDCs and NBSAPs
WWF Policy, Plates and Planet. Actions to catalyze urban food system transformation	Identify policy measures at the national and local levels for urban food-system transformation
UNEP Sustainable Consumption and Production: a Handbook for Policymakers	Identify policies that support the transition toward sustainable consumption and production
ONE PLANET NETWORK Policy brief: Integrating biodiversity into sustainable production and consumption activities – the way forward for policymakers	For NBSAPs: Identify recommended essential measures and policy instruments for enhancing biodiversity conservation through sustainable consumption
Boosting Biodiversity Action Through Agroecology	Integrate agroecology and food systems into the development and implementation of NBSAPs, in alignment with the Kunming-Montreal Global Biodiversity Framework

STEP 3

Integrate priority policy options within national climate and biodiversity plans

Policy options for healthy and sustainable diets need to be part of a broader framework for the transformation of food systems towards global climate and biodiversity goals. These policies, as identified in Step 2 above, need to contribute to delivering national mitigation targets aligned with the Paris Agreement targets, as well as building climate-resilient food systems, as envisaged in the first Global Stocktake decision and the UAE Framework for Global Climate Resilience, and support progress towards GBF Target 16 ("Sustainable consumption choices to reduce waste and overconsumption") and Target 10 ("Enhance biodiversity and sustainability in agriculture, aquaculture, fisheries, and forestry"), among others. In integrating selected policy options in NDCs and NBSAPs, policymakers can use the SMART framework (See figure 1) and develop targets and actions that are specific, measurable, achievable, relevant, and time-bound (SMART).

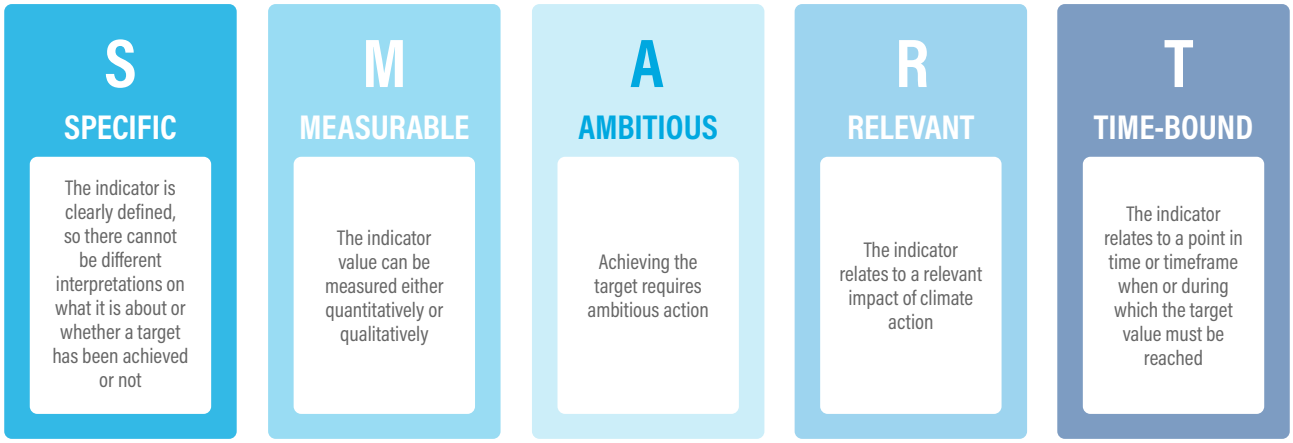


Figure 1. The SMART Framework

Setting SMART targets helps policymakers to track their achievements, revise their strategies when they fall short, and more effectively seek international funding. Clear and measurable targets and actions that are integrated into NDCs, NBSAPs, and national policies enhance the ability of governments to meet climate, forest, and biodiversity goals. In integrating policy options and actions in their countries' NDCs, policymakers should also follow the UNFCCC guidance for NDC communication that defines which information to include in order to facilitate the clarity, transparency, and understanding of the NDC. When developing their NBSAPs, policymakers should set clear, quantitative national targets for sustainable and healthy diets using guidance material under the GBF. See next table.

ADDITIONAL RESOURCES TO USE

RESOURCE	USE CASE
Guidance for NDC communication	For NDCs: Identify necessary information in order to facilitate, clarity, transparency, and understanding when communicating priority policy options as part of the NDC
Kunming-Montreal Global Biodiversity Framework: 2030 Targets (with Guidance Notes)	For NBSAPs: Set national targets under the GBF (guidance is available for each target)

STEP 4

Implement priority policy options as part of ambitious climate and biodiversity plans

This step entails the inclusion of identified policy options in national roadmaps for implementing and investing in transformative food-system actions as part of NDCs and NBSAPs. Developing such roadmaps for implementation involves consultation with all key stakeholders using a whole-of-society approach that considers synergies and trade-offs across sectors and regions both horizontally and vertically. Implementation roadmaps can set out binding legislation, targets, milestones, and priority actions for specific sectors, sub-sectors, and stakeholders in agriculture and food systems which can serve as a key resource for programme and project development and finance mobilisation. Relevant stakeholders can use the roadmap to prioritise the development or investment in programmes and projects that hold the greatest potential to advance healthy and sustainable diets and contribute to NDCs and NBSAPs, as well as broader food-system transformation.

ADDITIONAL RESOURCES TO USE

RESOURCE	USE CASE
UNEP Sustainable Consumption and Production: a Handbook for Policymakers	Implement policies that support the transition toward sustainable consumption and production
World Bank Detox Development: Repurposing Environmentally Harmful Subsidies	Reform or repurpose environmentally harmful subsidies
One Planet Network Policy brief: Integrating biodiversity into sustainable production and consumption activities – the way forward for policymakers	For NBSAPs: Implement recommended essential measures and policy instruments for enhancing biodiversity conservation through sustainable consumption in practice
OECD Identifying and assessing subsidies and other incentives harmful to biodiversity	For NBSAPs: Identify and assess subsidies and other incentives that are harmful to biodiversity at the national level
UNDP BIOFIN The Nature of Subsidies: A step-by-step guide to repurpose subsidies harmful to biodiversity and improve their impacts on people and nature	For NBSAPs: Assess and redesign subsidies that are harmful to biodiversity
The Paulson Institute, The Nature Conservancy, & Cornell Atkinson Center for Sustainability Financing Nature: Closing the Global Biodiversity Financing Gap	For NBSAPs: Unleash finance for biodiversity conservation

STEP 5 Report progress on implementation

Countries must transparently track their progress in implementing their national climate and biodiversity plans against relevant monitoring frameworks. Robust progress tracking helps governments assess the effectiveness of priority policy measures for healthy and sustainable diets and their contribution to NDCs and NBSAPs, thereby enabling governments to make necessary and timely policy adjustments.

In order to track and report their progress on these policy measures, governments need to systematically measure and collect data on their implementation and outcomes to assess the benefits and trade-offs. Countries can then include the data in their national reporting under the Paris Agreement and the GBF in accordance with relevant guidelines. For their Biennial Transparency Reports under the Paris Agreement, countries should follow the modalities, procedures, and guidelines of the Enhanced Transparency Framework . For national reports on biodiversity conservation, countries should use relevant guidance and templates from the CBD and the GBF monitoring framework.

ADDITIONAL RESOURCES TO USE

RESOURCE	USE CASE
Modalities, procedures, and guidelines for Biennial Transparency Report	For NDCs: Report progress of implementation in Biennial Transparency Report in line with modalities, procedures, and guidelines under the Enhanced Transparency Framework
Guidance and templates for national reports	For NBSAPs: Report progress of implementation in national reports using relevant guidance and templates from CBD and GBF monitoring framework
UNEP Sustainable Consumption and Production: a Handbook for Policymakers	Monitor and evaluate policies that support the transition toward sustainable consumption and production

10 policy options to enable a shift to healthy and sustainable diets

This section outlines a multifaceted set of 10 policy options that can enable a shift toward healthy and sustainable diets. The policy options seek to **expand access to healthy** and **sustainable foods, increase consumers' ability to make informed food choices**, and **leverage financial instruments** in order to **enable change at scale.** This guide outlines a menu of policy options under three action areas, which can be effective only when adapted to national contexts and food system characteristics and implemented in conjunction with broader transformative actions in agriculture and food systems.

Action Area 1

Shaping food environments to expand access to healthy and sustainable foods

Sustainable public food procurement

Description

Sustainable public food procurement (SPFP) means that food for public institutions such as schools, hospitals, universities, prisons, or social services is sourced in accordance with broad sustainability principles.[32] Well-designed SPFP schemes:[33] [34]

- Include comprehensive procurement criteria that take climate, biodiversity, social, and nutrition and health goals into account when making purchasing decisions (e.g. animal welfare; organic and agroecological food production; fair trade; support for small and medium enterprises and smallholder and family farmers).
- Prioritise local and small suppliers including organisations employing disabled or disadvantaged workers.
- Avoid purchasing foods whose production is associated with significant harm to human health or the environment, high water and energy use, or waste.
- Source products that comply with relevant national and international standards for human rights.
- Avoid food loss and waste by redistributing surplus food to disadvantaged communities in socially acceptable ways.
- Provide user-friendly and coherent guidelines to decision-makers in order to support sustainable tender processes.

Context and Relevance

Given the significant scale of public food procurement and purchasing power involved, public buyers are in a strong position to leverage SPFP to shape food production and consumption patterns at scale.[35] SPFP can support sustainable food production by creating structural demand for foods that are produced sustainably, and can foster rural and local development by providing stable markets and reliable income for smallholder and local producers. Finally, SPFP can improve public access to healthy and sustainable foods, especially for vulnerable populations. In sum, SPFP can support livelihoods, protect biodiversity, promote animal welfare, minimise pollution and resource depletion, mitigate climate change, and deliver nutritious food.[36] Countries formally acknowledged the transformative potential of SPFP by identifying it as a key action area for food-system transformation at the 2021 United Nations Food Systems Summit.[37]

Enabling Conditions

SPFP requires coordination across multiple domains and levels of government.[38] National-level policies and guidelines, whether mandatory or voluntary, can help procurers on the ground to make informed SPFP decisions. For example, clear procurement criteria or dietary guidelines that take both human health and the environment into account can help procurers to identify priority foods and suitable suppliers.[39] At the same time, such policies and guidelines need to consider local needs and priorities, and provide sufficient latitude to local or institutional decision-makers, so that they can develop their own context-specific policies and tender requirements.[40] Designing SPFP should include market engagement and stakeholder dialogues in order to explore and identify potential new processes, challenges, and solutions, along with contractual arrangements for the provision of healthier and more sustainable foods, and to ensure systemic and integrated solutions.[41]

Moreover, for those involved in implementing SPFP schemes on the ground, financial and technical assistance needs to be effective.[42] For instance, public-sector employees who are involved in food-procurement decisions should receive regular training on sustainable purchasing practices,[43] while investment should consistently flow into building and expanding supply-chain infrastructure for producing, procuring, and processing sustainable foods.[44]

Challenges

SPFP is often hindered by decision fragmentation and weak coordination across governmental departments, as well as by misalignment between policies at different levels of government.[45] Public procurers often do not have sufficient institutional capacity, infrastructure, or expertise to make sustainable food-purchasing decisions. The relatively high prices of sustainable and healthy foods deter institutional buyers from purchasing these foods, compared to less expensive options that are ultra-processed or supplied by industrial agriculture.[46]

Relevant Stakeholders

Among food-system stakeholders, the groups below play a crucial role in designing and implementing public-procurement measures for sustainable and healthy diets.[47]

STAKEHOLDER	ROLE
National, subnational, and local governments	Typically lead the design and implementation of SPFP by providing a policy framework, as well as financial and technical resources
Institutional decision-makers, caterers, and food service workers	Responsible for applying sustainability criteria in practice in day-to-day procurement decisions in institutions such as schools, hospitals, or public agencies
Food producers (particularly smallholder, family, and Indigenous farmers), suppliers, and service providers	Align supply chains with sustainability goals.

Tools and Resources

- **Sustainable Public Meal Toolkit:** More than fifty tools provide policymakers, procurers, or caterers with evidence-based advice on how to set up strategies and activities for SPFP.
- **Methodology for Assessment Procurement Systems (MAPS):** Using the international MAPS standard, policymakers can conduct or initiative a detailed assessment of the sustainability of different public-procurement schemes.
- **Policy guidance note** on strengthening sector policies for better food security and nutrition results: Public food procurement.
- **The Good Food Purchasing Programme:** Provides a set of tools, technical support, and resources for public institutions in order to help them shift towards procurement models that prioritise local economies, nutrition, a valued workforce, environmental issues, and animal welfare.
- **WHO's action** framework for developing and implementing public food procurement and service policies for a healthy diet.
- **Innovative Criteria and Models for Procurement of Sustainable and Healthy School Meals:** Provides guidance and recommendations for cities to develop and implement sustainable food procurement.

Case-study Examples

The city of **Milan**, Italy, prioritises procuring local and seasonal ingredients for its green school-canteen programme, while reducing meat purchases and food waste. By 2021, the programme achieved a 43% decrease in CO2 emissions associated with meals served in the city's school canteens, compared to 2015.[48]

Brazil's National School Feeding Program (PNAE) requires states, municipalities, and federal agencies to spend at least 30% of procurement budgets on sourcing food directly from local family farmers, agrarian reform settlers, and Afro-Brazilian and Indigenous communities. The policy prioritises the procurement of unprocessed or minimally processed items, preferably from organic or agroecological production, and restricts purchases of ultra-processed foods. PNAE has an annual budget of more than R$ 5 billion to purchase food for almost 40 million students and could potentially channel more than USD 300 million into local food value chains.[49]

In 2007, the city of **Copenhagen** set the goal of procuring 90% of food for public catering from organic sources by 2015. Although organic produce tends to be more expensive than non-organic produce, the city managed to keep meal prices stable, mostly by focusing on procuring seasonal and local plant-based foods. The target was successfully achieved in 2016, with an 88% average ratio of organic food across the city's approximately 900 kitchens and 20,000 daily meals.[50] In 2019, Copenhagen adopted a new food strategy that established the goal of reducing the carbon footprint of public food services by 25% by 2025, compared to 2018. By the end of 2022, the city had already achieved a 15% decrease, primarily due to the reduced procurement of ruminant meat.[51]

ACTION AREA 1

School meal programmes

Description

School meal programmes (SMPs) that promote healthy and sustainable diets are a win-win solution for people and the planet: they can improve nutritional, educational, and environmental outcomes in both the short and long term.[52] [53] [54] Policymakers can follow the steps below to design and implement successful SMPs that encourage healthy and sustainable eating habits among students:[55]

- Needs assessment: Understand the greatest needs and areas for impact (e.g. food insecurity, unhealthy dietary habits, and limited nutrition knowledge), the performance of existing policies and programmes, and opportunities for partnerships and collaboration.
- Programme design: Informed by the outcomes of the needs assessment, tailor the SMP to address specific gaps and priorities.
- Programme planning: Establish the details of SMP consistency, as well as scheduling and coverage, food procurement, preparation and serving logistics, budgetary and workforce needs, and emergency response protocols, among other things.
- Stakeholder engagement: Engage a diverse group of stakeholders with different roles and responsibilities.
- Menu planning: Consider relevant national, local, and institutional dietary guidelines.
- Monitoring and evaluation: Define indicators and data collection and management protocols in order to evaluate SMP effectiveness and document the lessons learned.

For greater long-term effectiveness, SMPs can be complemented with practical learning activities such as gardening, cooking, and visiting local farms.[56] [57]

Context and Relevance

Given that SMPs reach 408 million children worldwide, they can have massive benefits for nutrition, education, and the environment.[58] SMPs help to combat undernutrition and nutrient deficiencies and prevent obesity, and diet-related non-communicable diseases.[59] In this regard, SMPs can have a particularly positive impact on children from low-income and marginalised communities, who have limited access to nutritious food and experience higher rates of malnutrition and obesity.[60]

SMPs can also help students understand the environmental and socioeconomic impacts of their food consumption choices and enable them to make sustainable choices, especially since schools are the prime setting for teaching children and adolescents sustainable practices.[61]

In addition to improving students' nutrition, SMPs that promote healthy and sustainable eating can increase school enrolment and

educational performance, thus contributing to long-term benefits for children, their families, and communities. If SMPs source foods seasonally from local and/or agroecological producers, they can also contribute to conserving ecosystems and strengthening farmers' livelihoods at the local level.[62] [63] [64] School meal programmes also bring significant economic benefits. Globally, in the long-term, school meal programmes could save $120-$200 billion (including $7-$13 billion in low-income countries), as well as a reduction in costs associated with climate change of $18-$70 billion (including $1-$5 billion in low-income countries).[65] The savings are greatest when meal compositions are in line with the recommendations for healthy and sustainable dietary patterns.

Enabling Conditions

In order to promote healthy and sustainable eating habits in SMPs, kitchen and serving staff need to be trained in the preparation and provision of relevant meals. Introducing menu changes gradually and carefully considering seasoning, naming, and the aesthetics of food options all help to increase the acceptance of menu changes among students.[66]

School curricula that integrate food literacy and environmental education (e.g. through interactive measures such as cooking or gardening) help to increase students' acceptance of menu changes and equip students with the necessary knowledge and skills for developing and maintaining healthy and sustainable eating habits, while helping to strengthen young people's influence and engagement, empowering them to become advocates for sustainable food systems.[67] [68] On the other hand, teachers need to be educated about sustainable development, so they can educate students effectively about the associated health and environmental benefits of foods, as well as the basics of a healthy and sustainable diet and lifestyle.[69]

Finally, supporting seasonal, local, and agroecological food production, and including smallholder farmers in procurement schemes, helps to ensure that SMPs can source high-quality foods and foster local sustainable development.[70] In summary, school meal programmes can positively influence the dietary preferences of young people, promote the adoption of sustainable food production practices, diversify diets, and stimulate crop diversity, along with other positive social and economic-development outcomes.

Challenges

Improving health, educational, and environmental outcomes at the societal level through SMPs requires consistent and adequate financial, technical, and logistical resources. At the same time, local authorities in developing countries and low-income communities often lack sufficient resources to sustain and scale SMPs. Instead, they often rely on external fundings from philanthropists or organisations such as the World Bank or the UN World Food Programme.[71] Furthermore, the integration of environmental issues in education curricula remains insufficient, undermining the potential effectiveness of SMPs for raising awareness of environmental issues and sustainable diets among students, teachers, and their communities.[72]

Relevant Stakeholders

Among food-system stakeholders, the groups below play a crucial role in designing and implementing SMPs that promote healthy and sustainable eating.[73]

STAKEHOLDER	ROLE
Government agencies (in the fields of education, health, or social protection)	▪ Usually lead planning and implementation at the national or subnational level ▪ Main providers of funding for SMPs
SMP managers and catering personnel	▪ Day-to-day operations and meal-service provision
Teachers and school staff	▪ Support implementation of SMPs ▪ Educate students about nutrition, environmental issues, and healthy and sustainable diets
Civil-society organisations	▪ Potential partners in implementation ▪ May deliver complementary programmes or resources
Students, parents, and their communities	▪ Vital sources of feedback ▪ Ensure that SMPs accommodate the needs and priorities of school communities

Tools and Resources

- **The Global FoodBanking Network, Developing a School Feeding Program:** This guide outlines the steps for designing a successful SMP. It identifies best practices that help SMPs address child hunger and malnutrition while sustainably using local resources and reducing food waste.
- **SABER-School Feeding (SABER-SF) by the World Bank and the World Food Programme:** The manual can be used to establish or strengthen SMPs, while helping policymakers to assess existing SMP frameworks and identify opportunities for developing and improving response plans.
- **School Menu Planner (SMP) PLUS** by the World Food Programme: This user-friendly online platform assists with the design of nutritious, cost-effective menus that take local traditions and produce into account. By automating the menu-creation process, the tool helps schools to save time and financial resources, while improving the nutritional quality of meals.

Case-study Examples

Since 2021, eight **Portuguese** municipalities have participated in ProVeg Portugal's public-food programme. As part of the initiative, the municipalities started regularly substituting conventional meat-based meals with vegetable-based options, with the frequency ranging from monthly to weekly, depending on the municipality. Canteen staff were trained to prepare palatable and nutritious plant-based options, while students and educators were offered educational sessions about sustainable diets and plant-based meals. The introduction of plant-based meals has contributed to a measurable reduction in each school's ecological footprint, supporting both environmental sustainability and healthy dietary habits. Based on the implementation of the programme in two municipalities, a study found that an average plant-based meal generates a 92% lower ecological impact than the average meat-based meal.[74]

Kenya is a recognised leader in SMPs in Africa. The government aims to achieve universal coverage of its SMP for over 10 million children by 2030. At the same time, Kenya's SMP emphasises climate-smart food production practices (e.g. low-emissions and drought-resistant crops; clean cooking) and local procurement schemes.[75]

School meal programmes

Description

Nudging interventions involve targeting consumers' unconscious food-consumption decisions.[76] Rather than restricting food choices for consumers, nudges alter the way that the choice is made.[77] They involve, for example, changing the placement of food items in schools, canteens, workplaces, hospitals, or grocery stores.

Placement can greatly impact the consumption choices of consumers. Pinpointing and using prime locations to display healthy food (e.g. checkout aisles or end-of-aisle displays) and making sure that healthy items are accessible at eye level can increase the uptake of these items.[78] Changing the layout and design of menus, buffets, and cafeteria spaces can increase the consumption of nutritious and sustainable dishes by increasing their visibility.[79] Specific measures include:[80] [81]

- Redesigning menus to make healthy options more prominent and appealing.
- Changing default food options (e.g. make plant-based proteins, rather than meat, the default option or make salad or green vegetables, rather than fries, the default side order)
- Placing healthy foods such as fruits at bottleneck points such as cash registers (potentially replacing the unhealthy snacks usually placed there)
- Increasing the visibility and convenience of healthy foods (e.g. placing the salad bar next to the cash register)

ACTION AREA 1

Context and Relevance

Nudging interventions softly and voluntarily shift consumers towards healthier choices while avoiding the backlash that can be triggered by simply restricting consumer choices.[82] Nudges lead to higher acceptance of healthy food choices than outright bans of unhealthy foods from public cafeterias.[83]

Nudging interventions are more effective than strategies such as nutrition labels or awareness campaigns that rely on information to shift diets.[84] Interventions such as altering the placement of food items generally cost very little while leading to significant increases in the nutritional value of meals.[85] [86] [87]

Enabling conditions

Research has found that nudging interventions tend to be more effective when they are combined with complementary measures.[88] Such measures include:[89]

- **Product**: increased stocking and offering of diverse and high-quality healthy foods.
- **Pricing**: discounts, specials, coupons, vouchers, or differential pricing for healthy foods; payment option manipulation (e.g. restricting cashless payments to healthy foods).
- **Promotion**: educational, or awareness-raising activities, ranging from tasting sessions and cooking demonstrations to nutritional labelling and the distribution of flyers.

Challenges

Food placement in public food-service facilities operates at a limited scale since it restricts the direct impact of the intervention to the food-service setting. Spill-over effects and their sustainability are unclear since the broader socioeconomic and political factors that encourage unhealthy and unsustainable food consumption habits generally remain unchanged.[90] [91] In addition, nudging may lead to unintended negative side effects. For example, consumers might compensate for healthier food choices at the cafeteria by consuming more unhealthy snacks (the 'rebound effect'). Similarly, consumers may over-consume foods with a healthy default side option (the 'halo effect').[92] Finally, interventions in public canteens rely on goodwill by catering managers and staff. They may not be willing to scale up interventions such as menu changes if these lead to significant and sustained losses of revenue.[93]

Relevant Stakeholders

Among stakeholders in food systems, the groups below play a crucial role in designing and implementing measures to promote sustainable and healthy food choices through food placement and other nudging interventions.[94]

STAKEHOLDER	ROLE
Public institutions and administrative authorities	Initiate relevant nudging interventions
Research organisations and academic institutions	Advise on effective interventions, drawing on insights from behavioral science
Food-service providers (e.g. caterers or kitchen and serving staff)	Implement nudging in practice, for example, by altering the placement of food items. Food-service providers can plan and implement nudging interventions more effectively if they receive appropriate training beforehand.

Tools and Resources

Policymakers and catering professionals can use the resources below to design, implement, and evaluate nudging interventions.

- OECD, **Tools and Ethics for Applied Behavioural Insights: The Basic Toolkit:** Step-wise manual for policymakers analysing a policy problem, building response strategies, and developing informed and innovative interventions that leverage insights from behavioural science.
- **FAO e-Learning Courses on Nutrition-Sensitive Agriculture and Food Systems:** These online courses assist professionals from all food and agriculture-related fields in the design, implementation, monitoring, and evaluation of nutrition-sensitive programmes and policies.
- **Smarter Lunchrooms** Project: This website by nutrition psychologist Brian Wansink provides concrete guidance on how to design smarter lunchrooms, especially in schools. The guidance is easily accessible, quick, and illustrated with several intelligible visualisations.

Case-study Examples

> **Meatless Mondays** is a global campaign that encourages people to avoid eating meat on Mondays on the grounds of health and the environment. Signatories to the campaign, which include food-service companies, health-care providers, schools, businesses, and university campuses across 40 countries, promote vegetarian options on Mondays to their customers. While meat is still available, meatless dishes constitute the default option on Mondays.[95]

> A study at supermarkets found that customers purchased more healthy food items and fewer unhealthy ones in supermarket checkout aisles that were stocked with more healthy items compared to standard checkout aisles. Similar interventions in public food-service facilities promise an increase in healthy food-consumption choices.[96]

ACTION AREA 1

Upskilling trainings for kitchen and catering staff

Description

Kitchen and catering staff are at the forefront of providing food in organisations and public institutions such as schools, day-care centres, hospitals, retirement and nursing homes, universities, and canteens in companies and government agencies. Public policies can build the capacity of these frontline workers to plan, prepare, and evaluate high-quality healthy and nutritious meals.[97] [98]

Interactive trainings can equip food-service providers with actionable knowledge on relevant topics, including:[99] [100]

- The basics of a healthy and sustainable diet
- Diverse, local, and traditional foods
- Dietary requirements due to health or medical reasons (e.g. in hospitals or nursing homes)
- Cooking methods that preserve nutritional content
- Allergen management and labelling
- Preparation of creative and appealing plant-based meals
- Communication of information about different meal options, their composition and allergens, and healthy and sustainable choices to consumers
- Food safety
- Feedback management

In addition, nutrition education needs to be integrated into curricula in vocational schools and training institutions in order to ensure proper professional training of food-service providers.[101]

Context and Relevance

Meal planning and the ways in which food is prepared are crucial to nutritional value and the healthiness of a diet in terms of safety, variety, balance, and proportions.[102] At the same time, consumers make a large and increasing share of their food choices at food-service facilities in their workplace or school.

Making these choices healthier and more sustainable through the selection and preparation of food requires engaging workers in the food-service industry.[103] Skilled and knowledgeable kitchen and serving staff are needed in order to ensure consistent high-quality catering.[104]

Enabling Conditions

Policymakers can help food-service providers to evaluate their options and ensure that meals are aligned with adequate standards and practices, by adopting national, local, or institutional dietary and food-safety guidelines.[105] Decisionmakers can also adapt policy frameworks related to food procurement in order to move the focus of the purchasing decisions from price to food quality, diversity, sustainability, and cultural acceptability.[106] Sustainable food procurement not only helps meal providers access high-quality foods, but also offers an opportunity to link local food producers, including smallholders and family farmers, to structured demand, increase their incomes, promote social and economic inclusion, and reduce poverty.[107] Finally, policymakers can allocate resources to invest in the logistical and technological infrastructure necessary to prepare healthy and nutritious meals (e.g. storage, cooling, and cooking facilities).[108]

Challenges

In general, a significant amount of time and financial resources must be invested at the outset to train kitchen and serving staff in new dishes and menus, the use of unfamiliar ingredients, and new cooking techniques. However, these employees are often faced with time constraints, budget limitations, and inadequate equipment, which makes it difficult to prepare sustainable meals with high nutritional quality. Standardised processes for preparing meals in canteen kitchens are challenging to adapt without compromising the timely delivery of high-quality food. In addition, the dietary habits of consumers, especially children and young people, can complicate changes to meal plans and lead to increased food waste.[109]

Relevant Stakeholders

A variety of stakeholders with different professional qualifications and responsibilities in procuring, storing, and preparing food is required to provide healthy and sustainable meals.[110] Staff members with more experience or adequate vocational training can instruct colleagues with less experience or without relevant qualifications.[111] Overall, strong leadership is needed to encourage buy-in among staff and adopt new practices.[112]

Among food-system stakeholders, the groups below play a crucial role in training staff in providing healthy and sustainable meals.

STAKEHOLDER	ROLE
Catering managers	Plan and procure menus
Kitchen and serving staff	Prepare and serve meals to consumers
Nutritionists	In hospitals or nursing homes, ensure that dietary restrictions and the needs of different patients due to health or medical reasons are reflected in meal plans

Tools and Resources

- Guidance such as the **DGE Quality Standards** by the German Nutrition Society provide catering professionals with practical and concrete suggestions for developing and implementing healthy and sustainable catering services for different consumers in a variety of settings.

Case-study Examples

> In 2019, the **OPTIMAT** study explored the feasibility of providing more sustainable school meals in Swedish schools. Together with municipal meal planners, researchers developed a more plant-based school-food menu that was 40% lower in GHG emissions, nutritionally adequate, 11% cheaper, but similar in composition to existing options. Kitchen staff in participating schools were trained to prepare and serve the new menu with some flexibility in order to adjust food options to students' preferences. The intervention highlighted the importance of educational activities to train kitchen staff in sustainable cooking and promote inspiration and motivation.[113] [114]

> The **SchoolFood4Change** project has provided training for urban food enablers and chef trainers and designed and launched multiplication training in project partner countries and cities. The training sessions have been both face-to-face and online. The training was designed to reach as many cooks and canteen staff as possible, as well as teachers, parents, and municipal staff. In order to support the training activities (training of trainers and multiplication training), the School Menu Design Handbook, videos for the online training, and the guide for the Canteen Days were developed.

Incentives for dietary diversity in social-protection programmes

Description

Dietary diversity is a qualitative measure of food consumption that reflects household access to a variety of foods and is also a proxy for the nutrient adequacy of individual and population-wide diets. It entails regular consumption of fruits, vegetables, legumes, plant-based protein, along with small quantities of animal-sourced protein, vegetable oils, nuts, andr seeds, and is crucial for ensuring adequate nutrition and physical and mental health.[115] [116] [117] [118] Minimum Dietary Diversity entails consumption of at least five out of 10 defined food groups in the previous 24 hours. The 10 food groups are defined as: grains, white roots and tubers, and plantains; pulses (beans, peas, and lentils); nuts and seeds; milk and milk products; meat, poultry, and fish; eggs; dark green leafy vegetables; other vitamin A-rich fruits and vegetables; other vegetables; and other fruits.[119] The more food groups are consumed, the more diverse the diet is.

Dietary diversity enhances food security and health outcomes while promoting agricultural practices that protect biodiversity and mitigate

climate change and build resilience. For instance, diverse cropping systems that support diverse diets can also improve soil health and reduce reliance on chemical fertilisers, which in turn supports environmental health by minimising pollution and conserving water resources.

Social-protection programmes can promote dietary diversity through transfers of cash, food, or productive assets. Cash transfers enable households to purchase nutrient-rich foods or fresh produce that would otherwise be unaffordable. Food transfers provide beneficiaries directly with nutritious foods, for example, through food vouchers or school feeding programmes. In some countries, the transfer of productive assets such as livestock or agricultural input boosts smallholder producers' access to diverse foods at the household level, both directly and indirectly.[120] When such social-transfer programmes are combined with other social-protection measures such as social insurance, job creation and broader livelihood responses, the outcomes enable broader food-system transformation.

Effective social-protection measures are context and group specific. They prioritise nutritionally vulnerable populations such as low-income households, young children, pregnant and lactating women, the elderly, and people with chronic illnesses or disabilities. In particular, women are important beneficiaries of cash or food transfers, since they tend to be the decision-makers regarding health and nutrition at the household level.[121]

Context and Relevance

Nutritionally vulnerable groups without adequate social support often cope with resource constraints by skipping meals or relying on cheap, less nutritious foods.[122] Social-protection measures such as cash or food transfers can address the immediate and underlying causes of malnutrition by improving access to nutritious foods, health, and social services such as sanitation or education.[123] [124] Providing vulnerable populations – especially women and children under the age of three – with access to diverse healthy and sustainable foods can break the cycle of poverty and malnutrition that traps many families for generations.[125] Minimum Dietary Diversity is now adopted as an indicator under SDG 2 ('Zero Hunger').[126]

Enabling Conditions

Promoting a diverse diet through social-protection programmes depends on strong social systems that can be expanded and adapted in order to respond to pressing challenges.[127] Moreover, nutrition-sensitive social-protection programmes require adequate and sustained public investment in the provision of services, logistical systems, and technical expertise.[128]

Integrating nutrition education into relevant programmes equips consumers with the necessary knowledge to make informed food choices. Furthermore, households require basic equipment to store and prepare nutritious foods. Providing consumers with knowledge and technology ensures that improved socio-economic access to nutritious foods can in fact lead to healthier eating habits.[129]

Supporting the production of diverse healthy and sustainable foods by local, smallholder, family, or Indigenous producers helps to secure an adequate food supply for social-protection programmes. In addition, support for producers strengthens their livelihoods and food security.[130] Finally, integrating social interaction into social-protection programmes can help to address the underlying factors that reduce dietary diversity (e.g. social isolation; mental-health issues).[131] [132]

Challenges

Globally, an estimated two billion people are not or only inadequately covered by social-protection systems.[133] Many countries do not have the essential infrastructure, such as social registries, digital delivery systems, and management information systems, to identify and serve those in need.[134] Where they do exist, social-protection programmes – like global food production – generally tend to overly rely on a small number of staple crops and species while neglecting other nutritious and sustainable options such as plant-based proteins and underutilised local crops.[135] At the same time, the high prices of nutrient-rich foods, as well as transferring amounts that do not reflect the actual cost of nutritious foods, can undermine the effectiveness of cash transfers.[136]

Relevant Stakeholders

Among food-system stakeholders, the groups below play a crucial role in improving dietary diversity through social-protection programmes.[137] [138]

STAKEHOLDER	ROLE
Policymakers (from different levels and departments of government)	Develop, fund, and implement relevant programmes
Civil society organisations and research institutions	Help ensure policies and programmes that reflect the local context and benefit the communities and populations that they target
Nutrition and environmental scientists, Indigenous and local community leaders	Provide input on interventions that align with nutrition standards, local dietary habits, and planetary boundaries

Tools and Resources

- FAO, **Nutrition and Social Protection:** Includes a conceptual framework that helps professionals working in social-protection services and nutrition to understand how social protection can enhance dietary diversity.
- **Household Dietary Diversity Score (HDDS)**: Helps users to conduct a rapid assessment of access to diverse foods among households.
- **Minimum Dietary Diversity for Women (MDD-W) indicator**: The MDD-W indicator helps to assess and monitor women's access to diverse foods and nutrients.
- UN FAO's **"guidelines for measuring household and individual dietary diversity"** provides a dietary diversity-assessment tool to inform policymaking.

Case-study Examples

In **Sweden**, national school meal guidelines promoted 'eco-smart' meals that align with environmental goals. The government offers practical tips to reduce waste, with schools reporting waste data biennially in order to monitor progress.[139]

In **Romania**, the school meal programme distributed educational material giving information about healthy eating habits, agriculture, supply chains, and local products, as well as organic production, sustainable production, ways to combat food waste.[140]

WWF's Future 50 Foods is a collection of diverse plant-based foods from around the world that can boost the nutritional value of our meals while reducing the environmental impact of our food supply.

Action Area 2

Enabling consumers to make informed food choices

Food-based dietary guidelines

Description

National dietary guidelines are important instruments for encouraging healthier and more sustainable food choices. In addition to providing dietary advice to citizens, they guide official health and nutrition policymaking.[141] However, in the past, most dietary guidelines focused mostly on improving consumers' nutrition and overall health by providing a set of recommendations in terms of foods, food groups, and dietary patterns in order to provide the required nutrients to promote overall health and prevent chronic diseases.[142] As the recognition of the potential and need for dietary guidelines to support food-system transformation has grown, some countries have included sustainability considerations in their new or revised dietary guidelines.[143]

Despite this recognition, many food-based dietary guidelines (FBDG) fail to adequately integrate sustainability considerations or support diverse plant-based dietary choices.[144] The food systems-based dietary guidelines (FSBDGs) methodology developed by the FAO can support decisionmakers to catalyse a holistic food-systems approach towards sustainability and to influence policies beyond the scope of consumer education – moving from a FBDG to a FSBDG.[145] FAO defines FSBDGs as "… context-specific multilevel recommendations that enable governments to outline what constitutes a healthy diet from sustainable food systems, align food-related policies and programmes and support the population to adopt healthier and more sustainable dietary patterns and practices that favour, among other outcomes, environmental sustainability and socio-economic equity…" [146]

Context and Relevance

Evidence shows that diets that prioritise foods with low environmental impacts are consistent with good nutrition and health. The 2025 EAT-Lancet Commission Report suggests that shifting to global diets could prevent up to 15 million premature deaths a year and lead to a 15% reduction in agricultural emissions.[147] FBDGs have huge potential to promote relevant dietary habits, thus delivering both environmental and health benefits. Data suggest that aligning dietary habits with existing FBDGs could reduce GHG emissions by approximately 13% and premature mortality by 15%.[148] [149] Their positive climate impact could even be tripled, by strengthening how FBDGs take environmental sustainability into account.[150]

In addition, FBDGs can help tackle poverty and under- and malnutrition, while also improving the resilience of food systems and livelihoods against climate shocks, especially in low- and middle-income countries.[151] It is therefore important to ensure that FBDGs promote sustainable healthy

food choices by giving recommendations to eat fewer animal-based products and fostering plant-based diets and plant-based alternatives in food groups.[152] FBDGs that encourage balanced food choices are also more inclusive in that they consider ethical, ecological, religious, and economic aspects, all of which play crucial roles in people's everyday lives and accommodate local variations in food culture, ecological context, and individual age and gender.[153] [154]

As such, when it comes to developing FSBDGs and aligning current FBDGs with the FSBDG definition, it is important to consider and integrate them into:[155]

1. The need for more inclusive food-group classifications that accommodate plant-based protein sources.
2. Clearer recommendations for limiting the consumption of animal-sourced foods (ASF) for health and environmental reasons.
3. Guidance on obtaining essential macro- and micronutrients from plant-based sources.
4. The inclusion of healthy plant-based alternatives to ASF within dietary recommendations.
5. Comprehensive advice on well-planned vegetarian and vegan diets.

Addressing these gaps is crucial to ensuring that FBDGs remain relevant to a broad spectrum of dietary preferences, including those motivated by ecological, ethical, religious, and cultural factors.

Enabling Conditions

Evidence suggests that FBDGs that effectively influence dietary habits are:[156]

- Spearheaded and supported by public policymakers and experts from different sectors of government, research, and academia.
- Suitable for the public, while adaptable to the needs of specific groups such as vulnerable populations, healthcare professionals, consumer groups, and food businesses.
- Ambitious but achievable, meaning that they take cultural traditions and current consumption patterns into account, while promoting clear, incremental changes.
- Supported by comprehensive educational outreach that helps FSBDG users understand the nutritional basics and the links between human health and environmental sustainability.
- Linked to policies and programmes that support sustainable and equitable food production and improve the affordability and availability of nutritious foods (e.g. school meal programmes, sustainable public-food procurement, and food subsidies and taxes).

Challenges

Across countries, most dietary guidelines do not explicitly incorporate environmental considerations, although many of them do promote the consumption of vegetable, fruits, legumes and whole grains that tend to have relatively small environmental footprints.[157] Nonetheless, dietary guidelines in most countries do not consider the full spectrum of plant-based diets and do not provide consumers with sufficient information to make healthy and sustainable food choices.[158] In many cases, FBDGs are insufficiently or not aligned with other policies that influence food production and consumption. Policymakers often lack resources and the capacities to develop FBDGs and monitor and evaluate their impact.[159] For example, assessing the socioeconomic and environmental dimensions of sustainable diets, as well as identifying sustainable and appropriate food alternatives, especially in developing regions, requires considerable resources and additional interdisciplinary research.[160] Many consumers, especially in low-income or rural households, do not have sufficient access to healthy and sustainable foods to follow national FBDGs. Recommendations to reduce intake of specific foods may also trigger an industry backlash.[161]

Relevant Stakeholders

Among food-system stakeholders, the groups below play a crucial role in developing FBDGs.[162] Engaging relevant stakeholders through consultation processes and a multistakeholder approach increases the support of FBDGs, potentially strengthening their effectiveness.[163]

STAKEHOLDER	ROLE
National health, food, or nutrition government agencies	Lead development of FBDGs
Experts in nutrition, public health and sustainability, healthcare professionals, community, and consumer organisations, sometimes including food-industry representatives	Inform FBDGs with scientific evidence and their needs

Tools and Resources

- FAO, **Food systems-based dietary guidelines: an overview:** Helps policymakers revise, implement, and evaluate dietary guidelines in order to incorporate socioeconomic and environmental sustainability.
- Ahmed, Downs, & Fanzo, **Advancing an Integrative Framework to Evaluate Sustainability in National Dietary Guidelines:** Provides a scoring tool to assess and modify national dietary guidelines based on broad sustainability and health considerations.
- **Sustainability Assessment of Foods and Diets (SAFAD):** Can be used to assess the environmental and social impacts of more than 1,800 foods and quantify the environmental footprint of different diets. It also allows users to model mitigation scenarios. Although the tool currently only provides data for nine European countries (France, Germany, Greece, Hungary, Ireland, Italy, Poland, Spain, and Sweden), it may still offer useful lessons for other contexts.
- **The 2025 EAT-Lancet Commission on healthy, sustainable, and just food systems:** The Commission presents new evidence-based insights on nutrition and human health within safe and just planetary boundaries. New to this Commission are updates to the planetary health diet, the measurement and assessment of the impact that food systems have in driving transgressions of planetary boundaries, an exploration of multi-dimensional and underlying issues of food justice, new research and extensive modelling insights, and transformative and action-based recommendations and roadmaps.

Case-study Examples

In 2024, **Mexico** updated its national dietary guidelines to incorporate robust considerations of environmental, economic, and social sustainability. Impact assessments show that diets following the new guidelines could reduce GHG emissions by 34% and diet costs by 21%, compared to the average Mexican diet.[164] In order to increase their effectiveness, the updated guidelines promote a healthy and sustainable 'food plate' with familiar, plant-based foods. These have a low environmental impact and are accessible and culturally relevant to Mexico's population.[165]

In 2021, **Denmark** published its new official national dietary guidelines which, for the first time ever, encouraged consumers to eat healthier foods with a lower climate footprint. The updated guidelines was jointly developed by different government agencies, research organisations, consumer organisations, non-governmental organisations, and representatives of the food and retail industries. Building on its new national FBDG, in 2023, Denmark introduced an Action Plan for Plant-Based Foods, a multi-sectoral strategy that uses public funding, procurement, and research to accelerate the shift towards healthier, more sustainable eating.[166] [167]

ACTION AREA 2

Food literacy and awareness campaigns

Description

Food literacy – the understanding that food choices affect human and planetary health – is a multifaceted concept that can help to shape local food systems. As a combination of nutrition knowledge, culinary skill, food-system awareness, and behavioural change, it is an important tool for building the resilience of individuals and communities.[168] Food literacy may include the knowledge and capacity to grow, harvest, store, process, and cook food, and the knowledge to identify edible plants and animals, as well as their nutritional value, within a particular region, whether it be on the land or in water.[169] Schools and educational settings are particularly well suited to implementing such educational measures. The implementation of programmes that support the development of food literacy from early childhood can effectively contribute to healthy and more sustainable eating habits later in life.[170]

Relevant measures include:[171]

- Health and nutrition counselling during regular medical check-ups (especially for pregnant women, children, the elderly, and people with chronic illnesses).
- Education around breastfeeding and improved complementary feeding of children under two years of age.
- Hands-on, actionable demonstrations of food preparation and cooking methods that preserve nutrient value (e.g. with a focus on small children, food taboos, or household hierarchies in food distribution).
- Educational and information campaigns via traditional or new media (e.g, five-a-day campaign about daily consumption of fruits and vegetables)
- Effective measures to increase awareness are tailored to the target population and the socioeconomic context. In particular, they recognise and are adapted to the different roles and responsibilities of different genders and family members in household food management.[172]

Context and Relevance

Equipping individuals – particularly at an early age – to make decisions to support personal health and a sustainable food system is an important strategy to promote food-system transformation.[173] The diets and eating habits of individuals are shaped by their interaction with food environments and the socioeconomic, cultural, and structural factors that underpin food systems. In current food systems, the availability and affordability of unhealthy and unsustainable products perpetuate poor food habits, which are often hard to break. As such, promoting healthy and sustainable food habits are more effective when they are culturally appropriate, co-designed with communities, and respectful of local food traditions and knowledge systems. Furthermore, they need to be combined with strategies that change the food environment in order to improve the availability, affordability, and desirability of healthy and sustainable foods.[174]

Enabling Conditions

Awareness programmes are more effective when implemented as part of larger consumer education and literacy efforts that also include food standards and food labelling, and take other factors that are equally important for healthy lifestyles into account.[175] Dietary guidelines that are based on sound nutritional, environmental, and socioeconomic criteria can orient consumers in making healthy food choices.[176] Information and food-literacy campaigns work well when all population groups, including vulnerable groups such as low-income households, have physical and economic access to healthy and sustainable food environments that encompass the availability and accessibility of food outlets (e.g. supermarkets, markets, restaurants), the types of food offered, pricing, marketing, and the infrastructure that influences dietary choices and nutrition outcomes.[177]

Integrating nutrition education into agriculture projects is also important to improve nutritional quality in households. Policymakers can also strengthen healthcare systems, develop and implement nutrition-sensitive programmes for food storage, processing and fortification, micronutrient supplementation, and social protection, and ensure proper training of providers of educational, food, and healthcare services, by establishing relevant education curricula in universities and learning institutions and providing capacity-building in nutrition.[178]

Challenges

Different population groups have varying levels of awareness about health and environmental issues, as well as different preferences for healthy and sustainable foods, and will be faced with different barriers to making healthy and sustainable food consumption choices.[179] For example, for many consumers around the world, the high prices of nutritious foods are one of the main barriers that restrict access to healthy food choices.[180]

Moreover, the scientific evidence that information and education alone can improve diets at the population level is sparse. Some studies have found that awareness-raising measures do not necessarily translate into action, although they can raise the profile of an issue, create greater consumer engagement in health and sustainability issues, prompt product reformulation, and form the basis of food and nutrition policy programmes.[181] [182] [183] As such, food-literacy and awareness programmes must be part of a broader suite of strategies to support agroecological food production, and to increase the availability and affordability of healthy and sustainable food options.

ACTION AREA 2

Relevant Stakeholders

Among food-systems stakeholders the groups below play a crucial role in effective nutrition education.[184]

STAKEHOLDER	ROLE
Public health authorities (national, subnational, municipal)	Initiate relevant measures
Personnel in education, food, and healthcare facilities (e.g. local healthcare providers, educators, and agricultural extension experts)	Facilitate effective health and nutrition education on the ground
Civil-society and private-sector organisations working in food, health, and nutrition	Design and implement on-the-ground programmes and projects
Public and private funders	Allocate funding to nutrition- and diet-related educational initiatives

Tools and Resources

- **FAO e-Learning Courses on Nutrition-Sensitive Agriculture and Food Systems**: Online courses for assisting professionals from all food- and agriculture-related fields in the design, implementation, monitoring, and evaluation of nutrition-sensitive programmes and policies.
- The Global Alliance for Improved Nutrition, Save the Children, and the Youth Leaders for Nutrition **Youth Leaders for Nutrition Advocacy toolkit** helps young people to design, develop, and implement an advocacy strategy for improving adolescent nutrition.
- UNICEF's **advocacy packages for food environment policies** supports the design, implementation, enforcement, and evaluation of UNICEF's priority food-environment policies for the prevention of childhood obesity that can also be used by policymakers and other decisionmakers.

Case-study Examples

In 2022, the **United Arab Emirates** launched Food for Life, an awareness campaign in cooperation with Emirates Nature-WWF and FAO. The campaign aims to educate and engage consumers on healthy and sustainable food choices through interactive and informative content, as well as community activities.[185]

Since the 1990s, several countries have launched **'5-a-day' campaigns**. These aim to increase consumers' intake of fruits and vegetables to five portions – or 400 grams – per day, in line with WHO recommendations. Campaigns have been found to be highly cost-effective, while leading to moderate increases in fruit and vegetable intake. For example, the 'Go for 2&5' campaign in Western Australia increased fruit-and-vegetable intakeby an average of 64 grams per person per day. In the United Kingdom, the 5-a-day campaign resulted in a sustained increase of about half a portion (40 grams) per adult per day from 2003-2014, while decreasing diet-related GHG emissions by 3.3 kilograms per adult per month.[186]

Action Area 3

Leveraging financial instruments to enable change

Subsidies for healthy and sustainable foods

Description

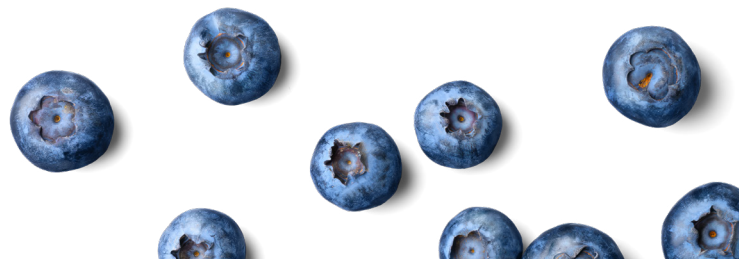
The production of healthy foods such as fruits, vegetables, legumes, whole grains, nuts, and seeds tends to be associated with relatively lower productivity compared to the production of ultra-processed or energy-dense foods. In addition, the production of fruits, vegetables, legumes or nuts is far less subsidised than the production of meat, dairy, and commodity crops such as corn, soya, and wheat, which are predominantly used for animal feed.[187] [188] As a result, healthy foods, i.e., foods that are rich in nutrients and have low energy density, are often more expensive than less healthy and sustainable options.[189] The same goes for more sustainably produced food, such as organic or other production systems with positive impacts on climate and biodiversity.

Subsidies that make healthy sustainable foods more affordable can target items such as fruits, vegetables, or low-fat snacks that are offered in grocery stores, cafeterias, vending machines, farmers' markets, or restaurants. Sustained price reductions that target fruit and vegetables and other healthier food options could lead to substantial changes in purchase and consumption patterns, with significant health and environmental benefits.[190] Subsidies for farmers and producers can lower the cost of healthy foods at the production level, thus reducing the price of healthy and sustainable food options and making them more competitive and affordable.[191] [192]

Context and Relevance

The high prices of healthy foods represent a key barrier to the adoption of healthy dietary habits. In 2024, more than a quarter of the global population – 2.6 billion people – was unable to afford a healthy diet.[193] The challenge is particularly acute for low-income communities with poor access to health care. As a result, these communities tend to show higher levels of malnutrition.[194] [195] Subsidies that increase economic access to nutritious foods for all can reduce disparities between different income groups.[196] [197]

In addition, such subsidies can improve public health by mitigating the health risks associated with poor dietary quality. These risks include premature mortality and non-communicable diseases such as diabetes, hypertension, or cancer.[198] [199] Subsidies can reduce the hidden socioeconomic and environmental costs associated with the production and consumption of unhealthy and unsustainable foods.[200]



ACTION AREA 3

Enabling Conditions

National dietary guidelines that take both health and environmental outcomes into account, along with local dietary needs, can help policymakers to identify foods for subsidisation.[201] However, sufficient financial resources to sustain subsidy implementation are key to subsidy effectiveness, since subsidy removal can lead to quick decline in the consumption of previously subsidised foods and a return to unhealthy dietary habits.[202] Repurposing harmful agricultural subsidies to support nature-positive production and healthy and sustainable consumption can address this, particularly if there is long-term commitment and support for producers and consumers.[203]

Challenges

Sustained spending on new subsidies is difficult without adjustments to existing subsidy schemes and trade policies. Producer subsidies and protectionist trade policies such as import tariffs often incentivise the large-scale production of staples such as rice, corn, or poultry over fruits and vegetables, thus increasing the relative price of healthy foods. Established subsidies and trade policies, however, tend to be politically difficult to modify or abolish.[204] [205] Even when healthy and sustainable foods are affordable, consumers often show a disconnect between their environmental awareness and personal behaviour, and are sometimes unwilling to reduce their consumption of unhealthy and unsustainable foods.[206]

Relevant Stakeholders

Among food-system stakeholders, the groups below play a crucial role in implementing subsidies for healthy and sustainable foods. Building a multisectoral coalition of health organisations, producer representatives, and community leaders, among others, helps to overcome political opposition to subsidy reform.[207]

STAKEHOLDER	ROLE
Governments	Reduce the price of healthy and sustainable foods by redirecting public support and private investment toward nutritious foods and reducing taxes on nutritious foods[208]
Government agencies, non-governmental organisations, private companies in retail or health care	Support implementation of relevant subsidy schemes[209]

Tools and Resources

- World Health Organization, **Fiscal policies to promote healthy diets: WHO guideline:** Provides policymakers with practical and evidence-based recommendations for developing or strengthening fiscal policies in order to promote healthy diets. Fiscal policies discussed in the guideline include food subsidies that lower the price of foods at retail level.
- Nutrient profile models by WHO: WHO's nutrient-profile models help policymakers to classify foods and beverages based on their nutritional composition and identify items for subsidisation (or taxation). Context-specific models are available for the Eastern Mediterranean, Africa, North and South America, Southeast Asia, the Western Pacific, and Europe.
- **Food Price Monitoring and Analysis (FPMA)** by FAO: Lets developing country governments monitor international and domestic prices of food staples.

Case-study Examples

> **Discovery Health**, South Africa's largest health insurer, offers members of its Vitality programme a 10% rebate on purchases of 6,000 healthy foods such as fruits, vegetables, whole grains, and non-fat dairy at participating supermarkets. (Programme members are eligible for a 25% rebate after completing an online health-risk assessment.) The programme has increased fruit and vegetable consumption among participating households by 8.5%, while reducing the consumption of unhealthy foods by 7.2%.[210]

> In the United Kingdom, the **Healthy Start scheme** helps pregnant women and families with children under the age of four to buy healthy foods. Beneficiaries receive a prepaid card that can be used in local stores to buy fruits, vegetables, pulses, plain liquid cow milk, and infant-formula milks, as well as to collect free vitamin supplements.[211] As of April 2024, about 366,000 people were enrolled in the scheme across England, Wales, and Northern Ireland (62% of the eligible population).[212]

Reforming and repurposing of harmful subsidies

Description

When part of a coherent policy package, reforming subsidies can offer many opportunities to optimise the use of scarce public resources while avoiding the socio-economic and environmental costs of unsustainable food systems. Reforms can be difficult and can have unintended consequences unless planned and implemented based on national and local contexts and priorities, thereby ensuring protection for vulnerable households while also contributing to national sustainable economic-development goals.[213]

Subsidy reform requires a re-evaluation of public-spending programmes and repurposing subsidies that are ineffective, inefficient, or counterproductive. This includes decoupling producer support such as price-incentive measures from specific crops or livestock and incorporating conditions to improve productivity and reduce the negative environmental impacts of food production. For example, in high-income countries, where the consumption of dairy and meat products is the highest, commodities such as beef, milk and rice receive the most subsidies, despite their negative impacts on climate and environment.[214] These subsidies can be redirected towards better practices and business models, including practices such as agroecology, agroforestry, and crop diversification, as well as small-scale and diversified farming operations increasing the production of healthier and more nutritious foods such as fruits and vegetables. A reformed policy package should also include effective compensation and social protection, along with prudent reinvestment strategies for reform revenues and well-designed consultation and communication strategies. Ideally, reforms to harmful subsidies should promote a just transition toward a green economy by centring equity concerns, prioritising vulnerable groups, and delivering positive sustainable development outcomes.[215]

Context and Relevance

Subsidies that have the potential to harm ecosystems and contribute to biodiversity loss and greenhouse gas emissions remain a persistent and significant feature of public spending, globally, outnumbering subsidies dedicated to the provision of ecosystem services by a factor of more than 200 to 1.[216] Every year, at least $540 billion in subsidy support is given to the agricultural sector, globally. Of this support, 87% results in food products and practices that distort food prices, hurt people's health, and degrade the environment.[217] Incentives in the form of subsidies can directly promote the expansion of production, increasing the pressure on available land resources and encouraging encroachment into forests and other natural ecosystems. These incentives may also reward farmers for practices that exhaust the soil in the long run and threaten the long-term health and vitality of farming communities.[218] They can also encourage unfair competition and distort market dynamics, which may reduce the incentives for engaging in more environmentally friendly practices.

Under Target 18 of the Kunming-Montreal Global Biodiversity Framework, countries have committed to reducing harmful incentives by at least USD 500 billion per year by 2030, and reforming subsidies for agriculture and food production in ways that are fair, effective, and equitable.[219] Repurposing ineffective and unsustainable agricultural subsidies could lead to significant fiscal savings, greater food security, and local food sovereignty, while contributing to more resilient, sustainable, and equitable food production and consumption.[220]

Enabling Conditions

Measures to protect and support vulnerable groups directly impacted by subsidy reform can help to facilitate just subsidy reform. These include sound strategies for reinvesting reform revenues, along with social protection and compensatory assistance programmes for groups that stand to lose financial support in the short term. Such measures can include technical assistance or extension programmes on more sustainable commodity production and consumption models, increased access to sustainable credit for farmers, and direct payments for the conservation of ecosystems services.[221] In general, timing, sequencing, and coordinating reforms and public acceptance through effective communication and transparency are a prerequisite for successful reform.[222]

Challenges

Challenges to subsidy reform include:[223]

- Transition barriers such as capacity and financial constraints, socioeconomic risks and uncertainty, and the under-pricing of public goods such as air, soil, or biodiversity that prevent producers from changing their practices or adopting new technologies.
- Opposition from influential political-interest groups, sectors, value chains, workers, geographic regions, or income groups that may be disproportionately affected or lose out.
- Potential adverse effects on employment, food prices, competitiveness, the income of vulnerable groups, and the availability of high-quality inputs (e.g. high-yield seed varieties).

Relevant Stakeholders

Among food-system stakeholders, the groups below play a crucial role in repurposing harmful subsidies.[224]

STAKEHOLDER	ROLE
Governments	Lead subsidy reform
Producer organisations, community-based organisations, research institutions	Support successful reform through meaningful inclusion in consultative processes

Tools and Resources

Many resources help policymakers initiate and implement reform processes. Helpful resources include:

- OECD, **Identifying and assessing subsidies and other incentives harmful to biodiversity:** Overview of good practices and national-level guidance for identifying and assessing incentives, including subsidies, that are harmful to biodiversity
- UNEP report *A multi-billion-dollar opportunity: Repurposing agricultural support to transform food systems:* Provides a step-by-step guide for repurposing agricultural subsidies.
- UNDP BIOFIN, **The Nature of Subsidies: A step-by-step guide to repurpose subsidies harmful to biodiversity and improve their impacts on people and nature**: provides a step-by-step guide to assessing and redesigning subsidies that are harmful to biodiversity.
- WWF report **Turning Harm into Opportunity: Repurposing Agricultural Subsidies that Destroy Forests and Non-Forest Natural Ecosystems:** Presents a framework for assessing the feasibility and impacts of redirecting environmentally harmful agricultural subsidies to forest conservation, land, and forest restoration, and sustainable land-use practices.
- The World Bank report *Detox Development: Repurposing Environmentally Harmful Subsidies:* Examines how subsidy reform can help to safeguard the world's foundational natural assets – clean air, land, and oceans.

Case-study Examples

In **England**, the government is replacing area-based farm payments with 'Environmental Land Management' schemes that reward environmental stewardship and animal welfare.[225] With an annual average budget of GBP 2.4 billion (2024–2025), the voluntary schemes had enrolled over half of English farms by April 2025.[226] While impacts are still emerging, fears of sharp declines in farm income and land prices have not materialised.[227]

In **Brazil**, public subsidised credit for commercial farmers potentially contributes to nature loss by supporting agricultural expansion in areas with high deforestation and conversion risk. However, since 2023, Brazil's National Bank for Economic and Social Development (BNDES) has been using satellite monitoring data to prevent approving credit for farmers involved in illegal deforestation.[228] As a result, BNDES has denied loan applications totalling more than BRL 800 million that was destined for rural properties with evidence of illegal deforestation.[229] Continuing reforms to the scope and conditions of public subsidised credit could support an even wider uptake of sustainable agricultural practices by smallholders and medium-scale farmers.[230]

ACTION AREA 3

Aligning food prices with public-health and sustainability goals

Description

Today's food environments are dominated by products high in saturated fat, salt, and sugar, together with a strong emphasis on animal-based foods. By contrast, the core components of healthy and sustainable diets – vegetables, fruit, legumes and legume-based products, whole grains, nuts, and seeds – are often under-represented, less visible, and more expensive.

A combined approach of taxing unhealthy, unsustainable foods and reducing taxes on healthy, sustainable foods creates a price gap that encourages better dietary choices, benefiting both human health and the environment.

- **Taxes on unhealthy foods:** Increasing the price of products that are high in harmful nutrients (e.g. sugar, saturated fat, salt) or have a high environmental footprint (e.g. processed red meat, sugar-sweetened beverages) makes them less attractive to consumers. This discourages consumption while also incentivising manufacturers to reformulate products (e.g. lowering sugar content). Revenue raised from these taxes can be earmarked to fund subsidies for healthy foods.

- **Subsidies and tax reductions for healthy foods:** Lowering the cost of fruits, vegetables, legumes, and whole grains makes them more affordable and accessible, particularly for lower-income households, where price strongly influences food purchasing. This encourages greater consumption of nutritious, climate-friendly foods.

This dual strategy sends a clear and consistent economic signal: healthy, sustainable choices are rewarded, while unhealthy, unsustainable ones carry a penalty. Evidence suggests that combining taxes and subsidies is more effective than implementing either measure alone, leading to greater improvements in diet quality and potentially reducing health inequalities.

In practice, taxes on unhealthy foods can be applied to specific products (e.g. sugar-sweetened beverages, processed red meat) or to nutrients (e.g. sugar, saturated fat). On the other hand, tax reductions often take the form of eliminating or significantly lowering value-added tax (VAT) on healthy categories. For example, some countries apply reduced VAT rates (5–7%) to healthy foods while taxing less healthy foods at the standard rate (19–21%). The Netherlands has gone further by considering a 0% VAT on fruits and vegetables.

A tax on those unhealthy foods can be applied to specific food products (e.g. sugar-sweetened beverages) or nutrients (e.g. sugar), or as a simple flat tax (e.g. 10-30%) on packaged foods that exceed specific thresholds for salt, sugar and saturated fats or are used in fast food and quick serve chain restaurants or other food service establishments.[231] The tax can be levied as an excise tax, a value-added or goods and services tax, an import tax, or as a sales tax. It can be based on volume, nutritional content, or a combination of both, and can be tiered (e.g. different tax rates for products that include a different amount of sugar or salt per 100 grams).[232]

ACTION AREA 3

Context and Relevance

A tax on unhealthy foods is a crucial public-health measure. The overconsumption of products high in saturated fats, salt, and sugar is a major driver of non-communicable diseases, such as obesity and type 2 diabetes, which place a significant burden on national healthcare systems.[233] While some ultra-processed foods (have this unhealthy nutrient profile and therefore contribute to these health issues, taxing all processed foods would be counterproductive. Many processed foods, such as whole-wheat bread and fortified soya milk, are healthy and sustainable foods and contribute to a balanced diet. Families also rely on affordable, processed foods such as canned legumes for food security. The policy should therefore focus on the unhealthy nutrients themselves, not on the processing.[234]

Enabling Conditions

Taxes on unhealthy foods can be particularly effective in promoting healthy diets when complemented by fiscal measures that increase the supply, affordability, and accessibility of healthy and nutritious foods, even those that are processed. This benefits the food security of vulnerable and low-income populations that mostly rely on processed foods for their diet.[235] [236] [237] Tax revenue can be used to subsidise the production of healthy foods, support the establishment of markets for fresh foods, along with improved supermarkets and shops in poor and underserved neighbourhoods, or provide vouchers for fresh foods to low-income households.[238] [239] Moreover, clear science-based definitions of the specific nutrients, as well as thresholds for taxation, are essential for transparency and determining the appropriate taxation model. Such models also help other countries to adopt similar taxation schemes.

A successful implementation of this policy requires several conditions, including a strong commitment from national governments to prioritise public health. Education campaigns are also needed to inform the public about the tax's purpose and its benefits for health and the environment in order to avoid a consumers backlash. Ideally, this tax should be part of a broader strategy that includes nutrition education, clear food labeling, and restrictions on the marketing of unhealthy foods.

Other accompanying measures that increase the effectiveness of taxes on unhealthy foods include:[240] [241] [242]

- Regulatory actions to improve nutritiousness of processed foods and food served at food-service establishments,
- Nutrition education through dietary guidelines and food labelling.
- Restrictions on the marketing of unhealthy foods, particularly marketing directed at children.
- Public education about the economic and human costs of diet-related diseases and the long-term health and economic benefits of healthy foods.
- The Development and promotion of innovative technologies and practices for food processing and packaging that prolong the shelf life of perishable fresh and healthy foods, without reducing nutritional value or taste.

ACTION AREA 3

Challenges

While fiscal policies such as taxes and subsidies are promising tools to shift consumption patterns, their design and implementation can face several challenges:

- **Policy design and effectiveness:** Setting tax thresholds for nutrients (e.g. sugar, saturated fat) or product categories is complex. Poorly designed measures risk creating loopholes in which minor product reformulations allow manufacturers to avoid taxation without delivering meaningful health or sustainability benefits.
- **Industry lobbying and political resistance:** The food-and-beverage industry often invests heavily in lobbying and public campaigns to weaken, delay, or repeal fiscal measures. This can result in watered-down policies that fail to deliver their intended impact.
- **Equity and access concerns:** Taxes might disproportionately affect low-income households, particularly in areas where affordable, healthy alternatives are scarce. Without parallel investment in improving access to fresh, nutritious foods, some populations risk paying more without changing their consumption.
- **Public perception and acceptance:** Taxes on food can be politically sensitive and are sometimes framed as government overreach or 'nanny state' policies. Without clear communication on the public health and environmental benefits – as well as the visible reinvestment of tax revenues into subsidies or health initiatives – public support can be limited.

Relevant Stakeholders

Among food-system stakeholders , the groups below play a crucial role in implementing taxes on unsustainable and unhealthy foods.

STAKEHOLDER	ROLE
Governments (national, subnational, or local, depending on fiscal jurisdiction)	Lead the development and implementation of taxes on foods that are high in fat, salt or sugar (HFSS)
Food manufacturers	Adapt product formulas
Food retailers	Adapt selection in supermarkets and shops
Local stakeholders (especially community-based organisations)	Support design, implementation, monitoring, and evaluation of complementary measures in order to improve access to nutritious and minimally processed foods

Tools and Resources

- **FAO e-Learning Courses on Nutrition-Sensitive Agriculture and Food Systems:** Online courses for assisting professionals from all food and agriculture-related fields in the design, implementation, monitoring, and evaluation of nutrition-sensitive programmes and policies.

Case-study Examples

Over 130 jurisdictions worldwide have adopted taxes on **sugar-sweetened beverages**.[243] For example, in 2014, Mexico introduced a tax of 1 peso per litre, which led to a price increase of about 11-12 % for sugar-added drinks. By 2016, purchases of sugar-sweetened beverages were 37% lower compared to 2013.[244] [245] The United Kingdom adopted a tiered levy on soft drinks that taxes producers based on a drink's sugar concentration. The tax led to widespread reformulation of products to reduce sugar levels, reduced availability of high-sugar drinks in supermarkets, and decreased sugar consumption among children and adults.[246] [247]

In 2011, **Hungary** introduced a 4% tax on packaged foods and drinks with high levels of sugar and salt. As a result, the consumption of the taxed products decreased while the consumption of healthier alternatives increased. In addition, food manufacturers changed their formulas to make products healthier. The introduction of the tax was accompanied by educational campaigns, while the resulting tax revenue was earmarked for public-health spending.[248]

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