

For best results view
in FULL SCREEN:



Food Systems and Diets:

A Handbook of Essential Policies



Global Panel
on Agriculture
and Food Systems
for Nutrition





There is growing demand for high-quality evidence to support the implementation of cost-effective policy solutions to improve people's health and wellbeing.

This handbook offers a summary of the evidence and concrete policy recommendations for countries seeking to provide healthy diets to secure better health and nutrition, and social and economic prosperity for all.



Contents

Foreword

How to use
this handbook

Food systems
and diets

Homepage

Foreword

Poor quality diets are now the leading cause of ill health and death in low- and middle-income countries.

Malnutrition in all its forms, underpinned by poor quality diets, currently affects every country in the world. It comes in many guises: stunting, wasting, deficiencies of essential vitamins and minerals, as well as overweight and obesity.

Future changes in climate, increased competition for natural resources, and population growth, particularly in urban areas, will put further pressure on our food systems and our ability to produce the foods needed for high-quality diets.

Unless policymakers act decisively to accelerate efforts which improve diets and food systems, all countries will pay a heavy price in terms of mortality, physical health, mental wellbeing, economic losses, degradation of the environment, and the continuing problem of malnutrition.

The Global Panel on Agriculture and Food Systems for Nutrition provides recommendations on how food systems can be repositioned to deliver safer, affordable and accessible healthy diets for all.

Since its inception in 2013, the Panel has produced evidence-based briefs covering all aspects of the food system, which have been brought together in this handbook.

We hope that policymakers and those connected with civil society organisations and the private sector will find this handbook helpful in preparing strategies that will transform food systems in ways that promote greater diversity, availability and affordability of healthy diets, as they strive to secure health, social and economic prosperity.



Sir John Beddington and H.E. John Kufuor,
*Co-Chairs of the Global Panel on Agriculture
and Food Systems for Nutrition*



Contents

Foreword

How to use
this handbook

Food systems
and diets

Homepage

How to use this handbook



1

Go to the homepage and click on the different elements of the diagram to explore a topic.



2

This will direct you to key information on specific aspects of the food system to help you improve nutrition and diets in your region.



3

Use the navigation tabs to move between Evidence, Key Facts, Policy Recommendations and Policy Examples within the topic. You can also download the full report.



4

When you have finished exploring the topic, use the button in the bottom right-hand corner to return to the homepage and select a new topic.

All the information provided in this handbook is underpinned by evidence, which is cited separately within each of the briefs.

Before moving to the homepage, would you like to learn more about food systems and diets?

Contents

Foreword

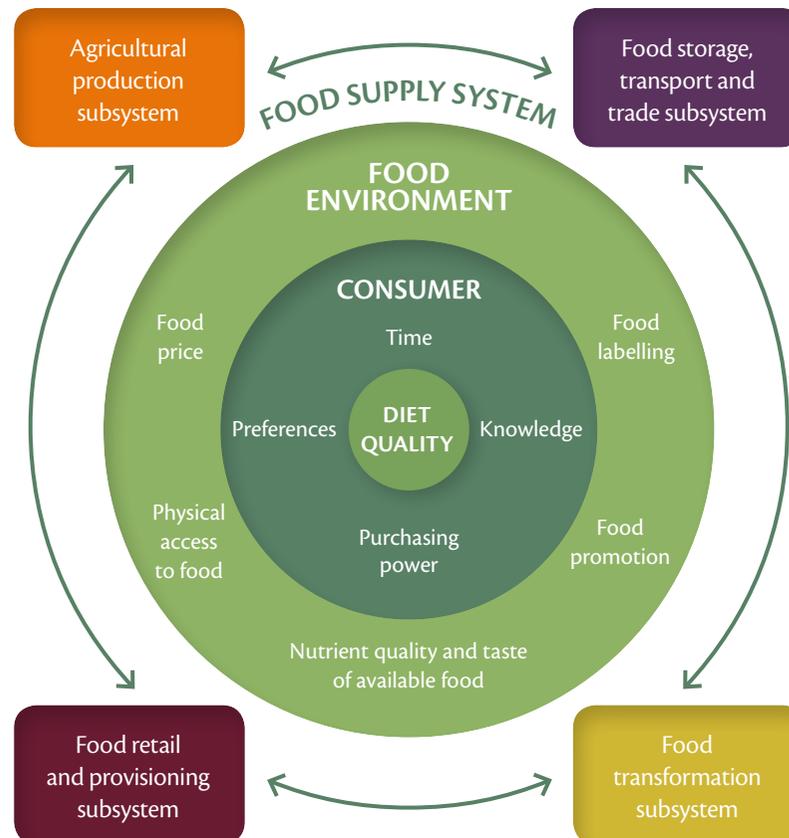
How to use
this handbook

**Food systems
and diets**

Homepage

Food systems and diets

Food systems comprise the growing, harvesting, packing, processing, transforming, transporting, marketing, consuming and disposing of food.



Food systems include the inputs needed and outputs generated at each step. A food system operates within, and is influenced by, social, political, economic and natural environments.

Consumers are central to food systems. The quality of an individual's diet is influenced by consumer purchasing power, knowledge, preferences (including values, beliefs, social norms) and time.

In turn, food systems influence the diet quality of consumers by shaping the 'food environment' that provides the food options from which people make purchasing decisions.

Underpinning these food environments are food supply systems. Often referred to as the 'food supply chain' or 'food value chain' they are made up of four interlinked and interacting subsystems covering everything from agricultural production to retail.

From a policy perspective, the Global Panel argues that the distinction between promoting 'healthy diets', rather than promoting nutrition per se is important, as healthy diets underpin the solution to malnutrition in all its forms.

A healthy or high-quality diet is one that includes a diversity of foods that are safe and provide levels of energy appropriate to age, sex, disease status and physical activity, as well as essential micronutrients.

For best results view
in FULL SCREEN:



Global Panel
on Agriculture
and Food Systems
for Nutrition

Contents

[Foreword](#)

[How to use
this handbook](#)

[Food systems
and diets](#)

[Homepage](#)

Delivering healthy diets

Click on your policy area

Entry points for policymakers

Choose and click on your topic

KEY

- Agricultural production subsystem
- Food storage, transport and trade subsystem
- Food retail and provisioning subsystem
- Food transformation subsystem



Evidence

Consider the use of biofortified crops

Evidence

Among the diverse policy opportunities in agriculture and food systems to improve diet quality and nutrition, biofortification offers a potential win-win. It can improve the nutrient quality of crops while also delivering high yields and good agronomic performance.

They are also relatively easy to incorporate into national programmes for improving food production and nutrition security and complement good agronomic practices, such as soil management.

When combined with interventions that promote dietary diversification, commercial fortification through food processing and targeted supplementation to specific population groups, biofortified crops can contribute to resolving nutrient deficiencies at a significant scale.

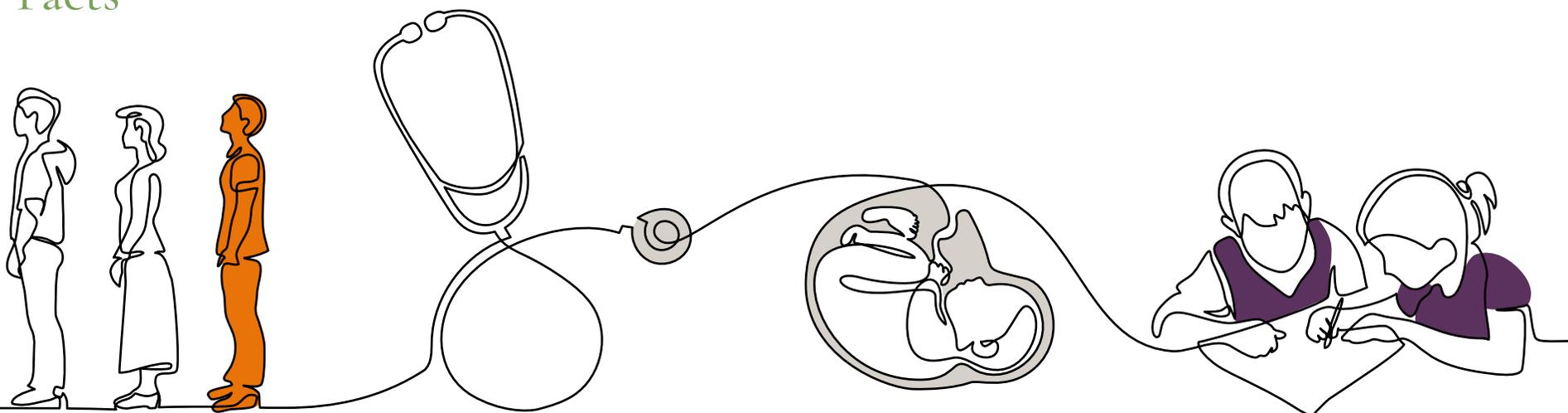
Biofortification should always be regarded as one component of a suite of complementary strategies to reduce micronutrient deficiencies. They should not be seen as an alternative to other nutrition-enhancing agricultural and food-related interventions, such as increasing the production, availability or affordability of nutrient-dense foods like vegetables, fruit, milk, fish and meat, or intervening in food systems to preserve nutrient levels, fortify foods or encourage consumer demand and consumption.



 Key Facts

Consider the use of biofortified crops

Key Facts



Roughly one third of the world's population suffers deficiencies of vitamins (particularly A and C) and minerals (such as zinc, iodine and iron).

Micronutrient deficiencies are also associated with the growing problems of overweight and obesity, and with non-communicable diseases.

Mandatory fortification of wheat flour with folic acid has helped reduce widespread birth defects in many countries, while salt iodisation has proven to be effective globally in addressing the world's most prevalent cause of brain damage.

Iron biofortified millet has been shown to improve the iron status of school-aged children.



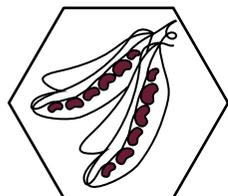
Consider the use of biofortified crops

Policy Recommendations



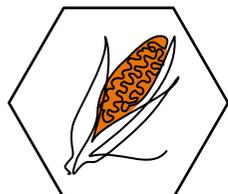
Consider the use of biofortified crops

Policy Examples



High-iron bean varieties

In Rwanda, Uganda and the Democratic Republic of Congo beans with higher iron content than traditional varieties have improved iron status in women.



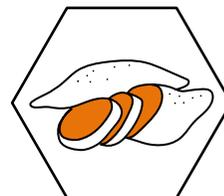
Orange maize

Varieties of maize with high betacarotene levels grown in Zambia since 2012 maintain similar yields to traditional varieties and have a positive nutritional impact.



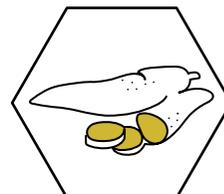
Rice

Rice biofortified with zinc has a 30% higher zinc content than local varieties, matures faster, and is less likely to lose zinc during the polishing process.



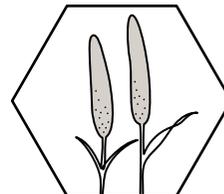
Orange flesh sweet potato

Since 2009, eight African countries have grown orange flesh sweet potato which have good consumer acceptability and improve the vitamin A status of consumers.



Yellow cassava

Yellow cassava with high betacarotene levels was released in 2013 in Nigeria, where 100 million Nigerians eat cassava daily. Consuming yellow cassava has been shown to improve vitamin A status in children.



Biofortified pearl millet

Biofortified pearl millet, with higher iron content, has provided a significant amount of iron to Indian girls.

For best results view
in FULL SCREEN:



Global Panel
on Agriculture
and Food Systems
for Nutrition

Return to the homepage
to explore a new brief:



Create climate-smart food systems

Evidence

While evidence of effective climate change actions is growing, there is ample evidence of how diets and food systems are adversely affected by weather-related shocks and other dimensions of climate change. There is also growing evidence that higher levels of carbon dioxide in the atmosphere may reduce the nutrient content and quality of various staple crops. Nutrient-rich foods are particularly susceptible to droughts, pests, diseases, and temperature fluctuations.

The shift in agricultural productivity to high-value commodities is resulting in increased incomes, which in turn can lead to diversified food choices, but may also be increasing greenhouse gas emissions.

Solutions lie in the diversification of agricultural and non-farm production systems, the mitigation of climate-related stresses on crop and livestock quality,

greater resource use efficiency (including greater efficiency in post-harvest storage, processing and transportation), and the protection of nutrient quality in the face of supply and price shocks.

Nutrition-sensitive food systems have the potential to be climate-smart. Climate-smart actions which support nutrition entail a focus on diverse, high-quality and healthy diets.





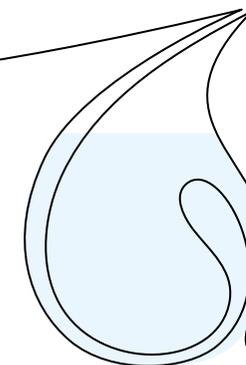
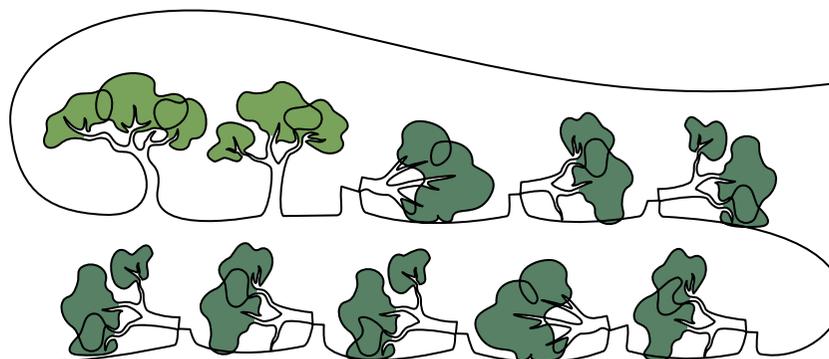
 Key Facts

Create climate-smart food systems

Key Facts

By 2100, it is anticipated that up to 40% of the world's land surface will have to adapt to novel or partially altered climates.

Climate change is expected to lead to a 2% fall in crop and livestock output per decade through to 2050.



Food systems are responsible for up to 29% of total greenhouse gas emissions.

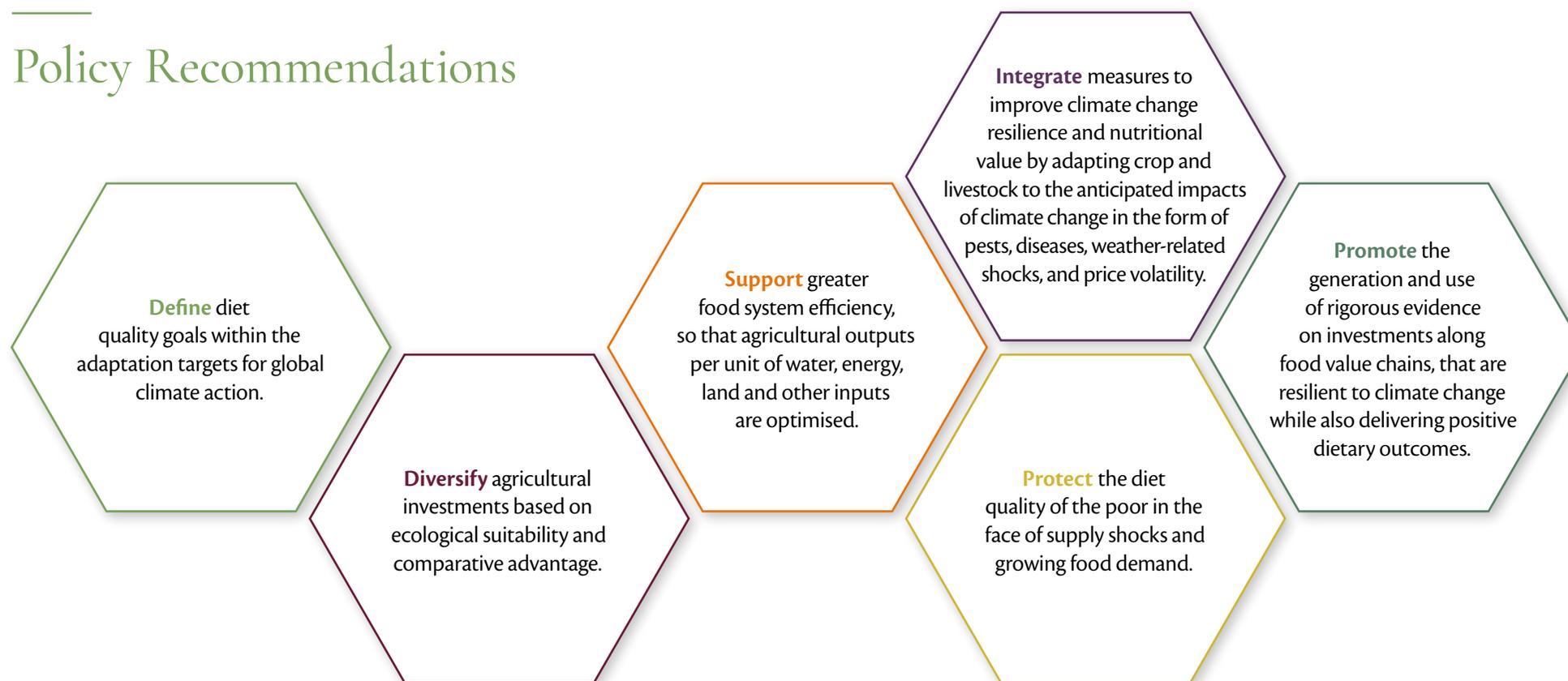
Agriculture is responsible for an estimated 80% of global deforestation.

Agriculture accounts for 70% of the world's fresh water use.



Create climate-smart food systems

Policy Recommendations



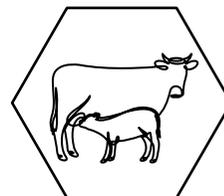
Create climate-smart food systems

Policy Examples



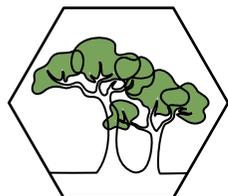
Developing tolerant strains

Researchers have been actively developing and promoting the use of drought tolerant strains of staple crops such as wheat and maize, salt tolerant and faster maturing variants of rice, heat tolerant strains of livestock, and pest-resistant legumes.



East African Dairy Development Programme

The use of improved feed supported and implemented by the East African Dairy Development programme of Heifer International has improved milk quality and supply (among 179,000 smallholder producers in Uganda, Rwanda and Kenya), whilst reducing greenhouse gas emissions.



Humbo Assisted Natural Regeneration Project

The Humbo Assisted Natural Regeneration Project in Ethiopia is an Assisted Natural Regeneration Project focusing on restoring almost 3,000 hectares of biodiverse forest. According to the World Bank, this has resulted in income generation for smallholders who now sell agroforestry products, such as honey and wild fruits.



Adaptation for Smallholder Agriculture Programme

The Adaptation for Smallholder Agriculture Programme in Bolivia has used indigenous knowledge related to climate change adaptation to support the introduction of varieties that can be grown at higher altitudes if necessary.

For best results view
in FULL SCREEN:



Global Panel
on Agriculture
and Food Systems
for Nutrition

Return to the homepage
to explore a new brief:



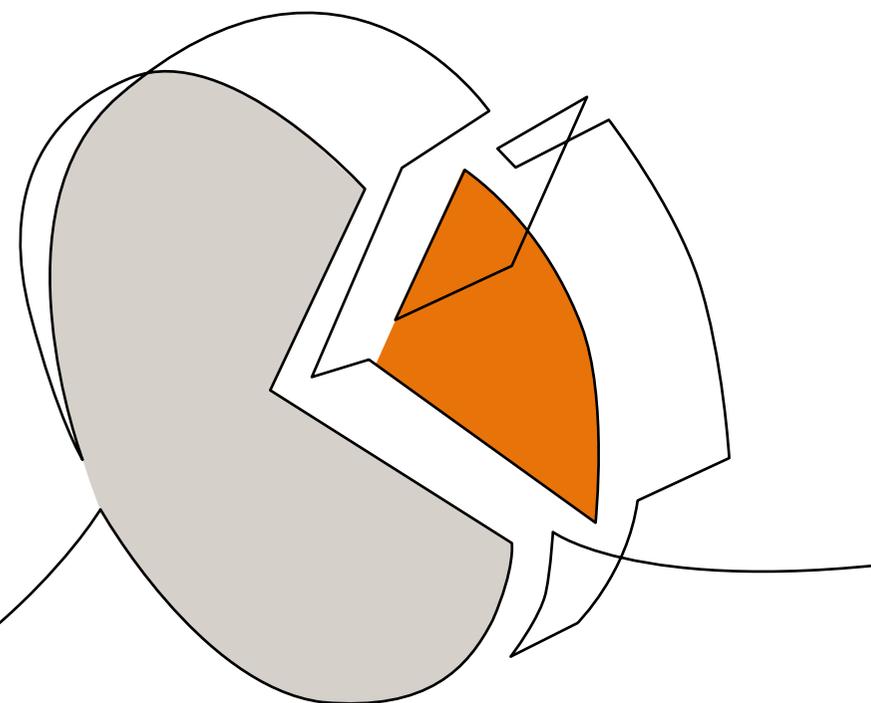
Improve data and metrics

Evidence

Existing tools for measuring the outcomes of agricultural and other food policy interventions relevant to nutrition capture only some elements of food systems, such as agricultural output, total food supply, and food prices. These provide a partial assessment of actual food and nutrition needs of vulnerable populations, dietary quality, or the drivers of food choices. Consequently, decision makers only have fragmented evidence on which policies and interventions work best to enhance food value chains for nutrition.

Since good evidence lies at the core of effective policy action, it is difficult for governments to intervene effectively when needs are poorly understood and impacts inadequately measured.

New metrics are therefore needed to measure diet quality and sufficiency, as well as food system efficiency and sustainability, and the processes that link various points across food system domains.





 Key Facts

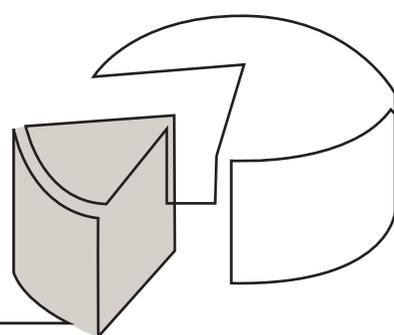
Improve data and metrics

Key Facts

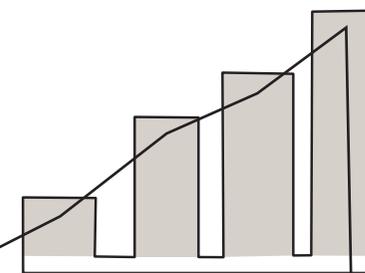
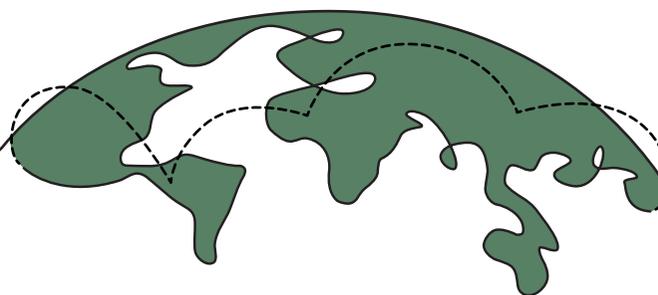
Few countries are currently using empirical data to measure the nutritional impact of national agricultural and food policies, and other interventions with sufficient detail.

While imports and exports of agricultural commodities and many food products are tracked and reported at national level, patterns of consumer demand, and how these are affected by prices and convenience, are poorly monitored.

There is little data on how the private sector is influencing diets and diet quality through food processing, fortification, marketing and pricing.



A modelling exercise to assess global food demand by 2050 acknowledged that the use of a metric of food energy supply per capita “captures only one dimension of human diet” and “does not fully address shifts in diet preferences with income growth.” (Keating et al 2015)

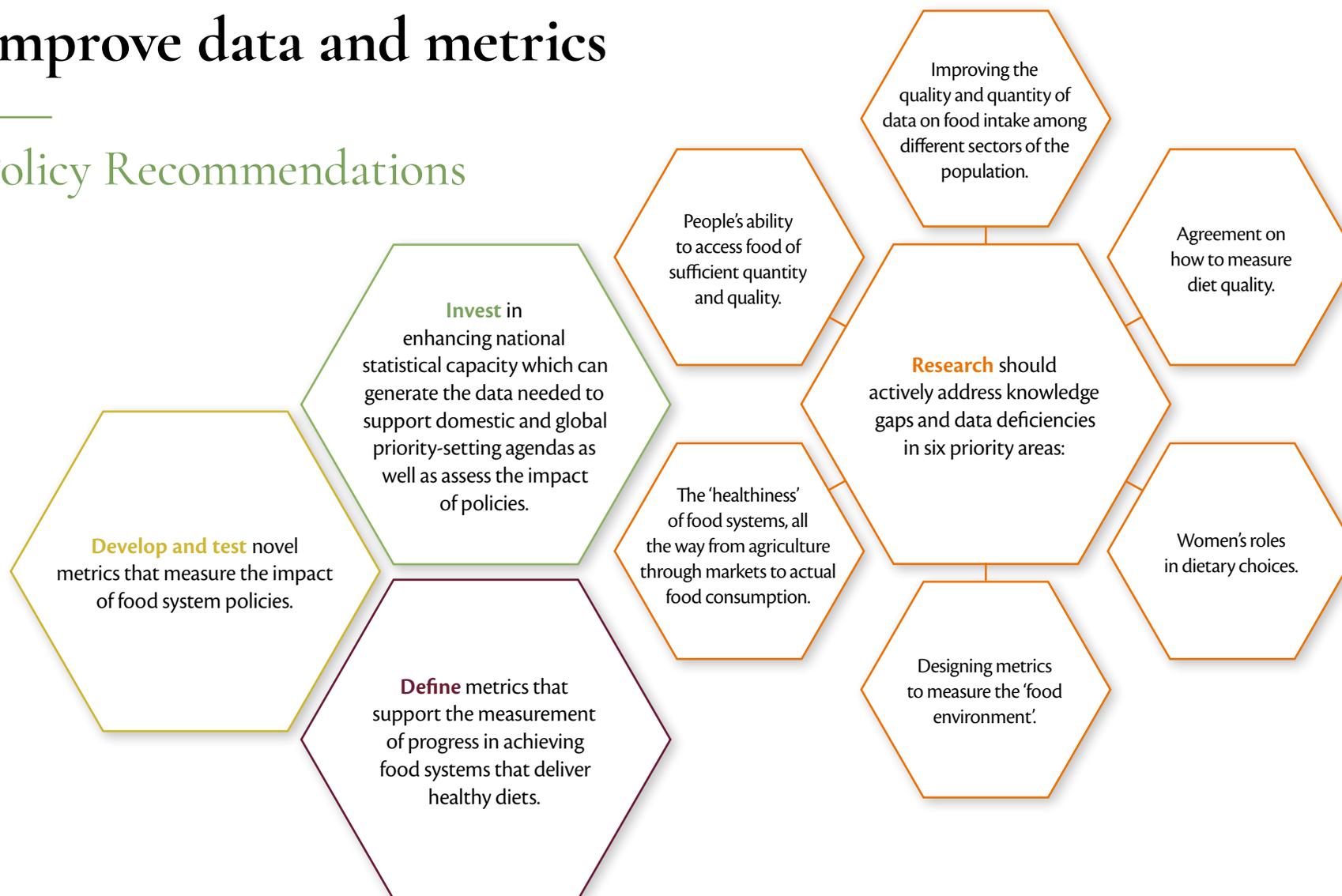


Long-standing assumptions about dietary patterns in rural Africa are being challenged. In East and Southern Africa, rural middle-class households now purchase between 60–83% of their food. About three-quarters of this total comes in the form of processed foods which are primarily local in origin.



Improve data and metrics

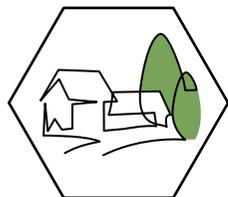
Policy Recommendations





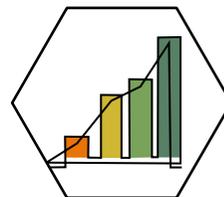
Improve data and metrics

Policy Examples



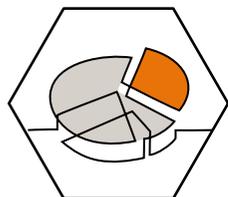
Household-level metrics

The Center for Integrated Modelling of Sustainable Agriculture and Nutrition Security (CIMSANS), a collaboration with researchers, academia, and industry partners, is developing a set of household-level metrics to capture seven linked facets of the food system: dietary adequacy, environmental sustainability, affordability and accessibility, cultural appropriateness, resilience, food safety, and waste/loss minimisation.



Food Insecurity Experience Scale

The Food and Agriculture Organization of the United Nations (FAO) recently launched a Food Insecurity Experience Scale (FIES), to be used annually to monitor the prevalence of food insecurity in over 140 countries. The FIES is an adaptation of a metric first used in the 1990s to measure household perceptions of, and responses to, hunger and food insecurity.



Sustainable Diets and Food Systems Initiative

Bioversity's initiative on indicators of Sustainable Diets and Food Systems aims to generate metrics to support decision making related to food system policies. Several indicators have been suggested covering a range of dimensions, including the environmental impact of the foods produced, dietary diversity, income and health.



Food Environment Policy Index

The Food Environment Policy Index is an initiative that seeks to rank policies relating to the food environment. Designed to assess the healthiness of food environments, it captures the extent of government implementation against international best practice.

For best results view
in FULL SCREEN:



Global Panel
on Agriculture
and Food Systems
for Nutrition

Return to the homepage
to explore a new brief:



Provide healthier school meals

Evidence

Evidence from around the world on locally-sourced school meals reveals a multiple-win opportunity for policymakers with important benefits for school achievement, employment and national economic growth.

Providing nutritionally balanced school meals with complementary nutrition education and health measures can deliver improved school performance, nutrition literacy as well as lay the foundations for productive employment and higher incomes in later life. The procurement of food for schools from local farming communities supports farming households and livelihoods, and promotes sustainable local markets for diverse, nutritious foods.

Combined interventions can also unleash a chain of beneficial impacts that break the cycle of poverty: better child nutrition supports better education, which supports

improved dietary and health choices by mothers, which in turn leads to better birth outcomes and enhanced educational success for the next generation.

The feedback loop between education and nutrition has long been recognised, but the use of schools as a primary vehicle for policy action on nutrition has not always been widely accepted. While the United Nations' Millennium Development Goals Hunger Task Force argued that governments should provide "balanced school meals with locally produced foods", the evidence of cost-effectiveness continues to accumulate.





 Key Facts

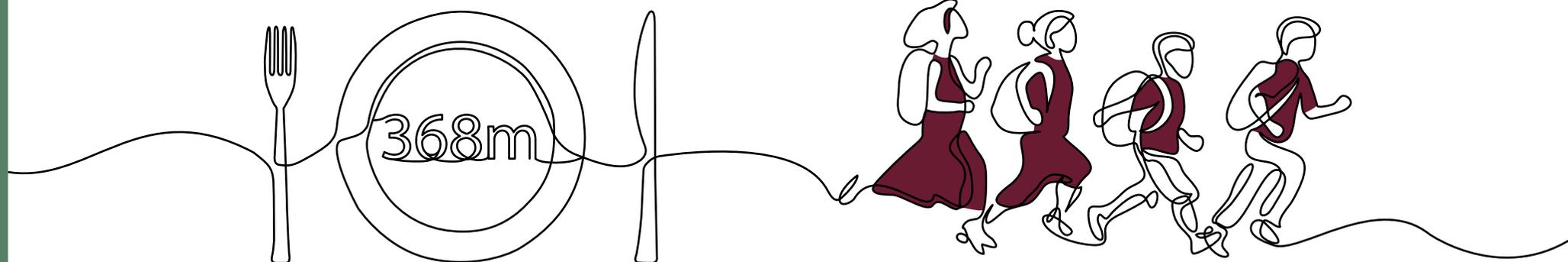
Provide healthier school meals

Key Facts

Most countries in the world are already providing school meals of various kinds: in 2013 at least 368 million children were fed daily in schools, which represented an annual investment of roughly US\$75 billion with most funding coming from government budgets (2013).

Participation in school-based meals in low- and middle-income countries is linked to improved dietary habits and a reduced likelihood of deficiencies of important vitamins and minerals.

School feeding programmes can help offset food insecurity at home. During a severe drought in India, children who were participating in the Midday Meals scheme had lower stunting prevalence compared to children who did not participate in the scheme.



School meals integrated with complementary initiatives can have positive impacts on micronutrient status, dietary adequacy, and even obesity prevention.

Studies across 32 African countries showed absolute enrolment by girls increased by 28% during the year after school meals were made available.

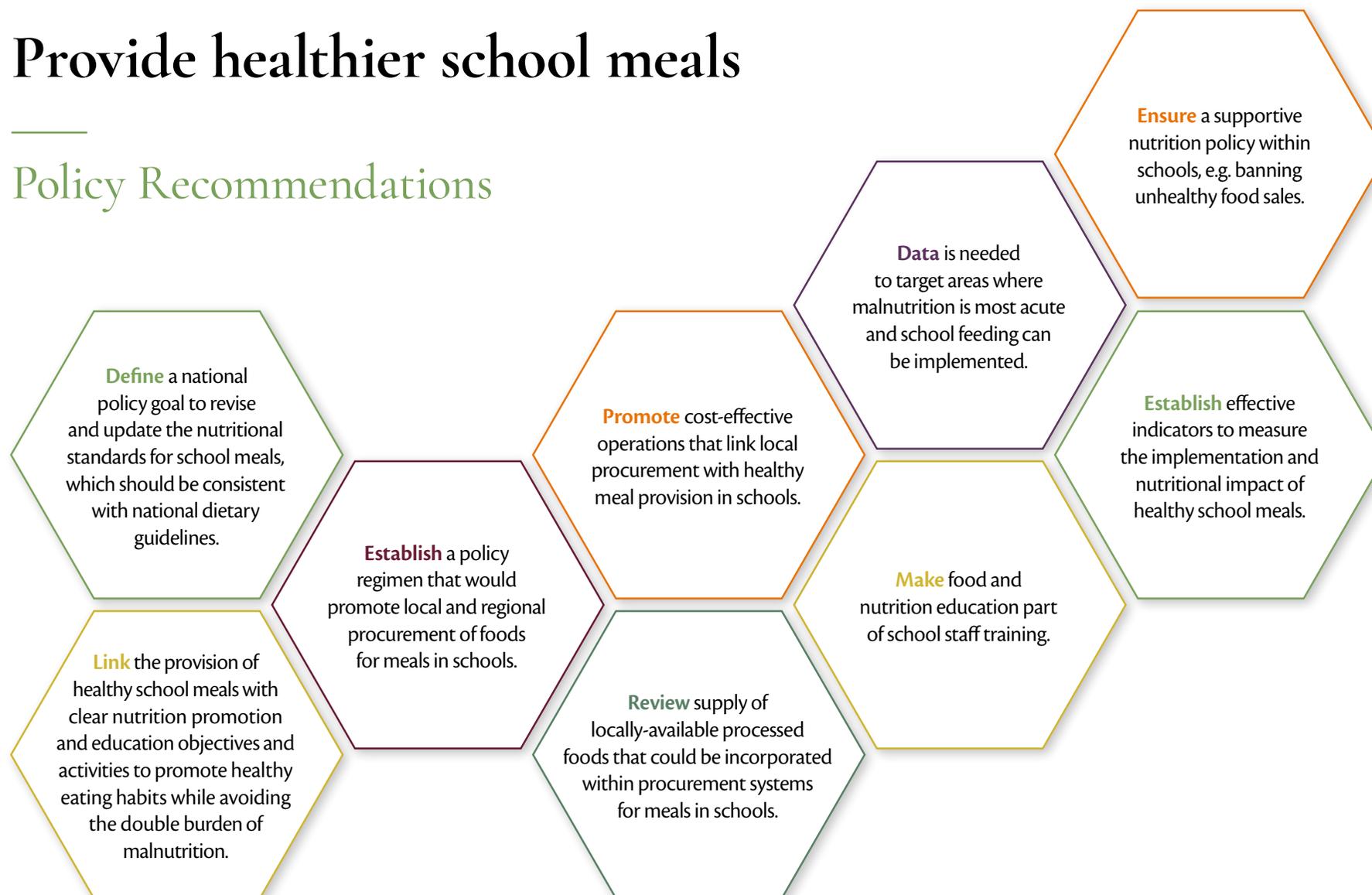
A simulation analysis from Kenya suggests that the annual income of farmers would see a net increase of around US\$50 per year if schools were to purchase maize from them.

In Malawi, over 95% of school feeding programmes procure locally produced fortified flour.



Provide healthier school meals

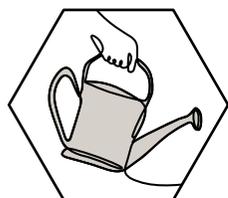
Policy Recommendations





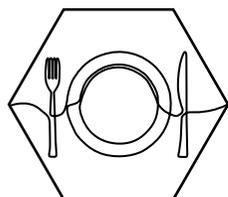
Provide healthier school meals

Policy Examples



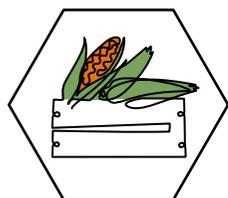
The United States

The Agricultural Act passed in 2014 included provisions to improve meals in schools by increasing the use of local and regionally produced foods, coupled with hands-on learning activities such as school gardening, farm visits, culinary classes, and the integration of nutrition-related education into classroom curricula.



India

Almost 100 million children across 265,000 schools currently have free access to a balanced and nutritious midday meal. An Indian Supreme Court Order of 2001 required the government to provide meals in all primary schools “with a minimum content of 300 calories and 8–12 grams of protein”, and many of the schools are procuring local produce.



Ghana

The government started supporting food procurement for schools from local farmers in 2005. That initiative now involves 4,000 schools serving over 1.6 million children.

For best results view
in FULL SCREEN:



Global Panel
on Agriculture
and Food Systems
for Nutrition

Return to the homepage
to explore a new brief:



Evidence

Manage food price volatility

Evidence

In most contexts, food prices are determined by market factors. They fluctuate by season and year, responding to supply-demand interactions. Prices for staple foods, such as rice, maize and wheat, are also influenced by government intervention.

Variability in food prices is a feature of most food systems; variability reflects producer and market responsiveness to consumer demand and underlying conditions of supply.

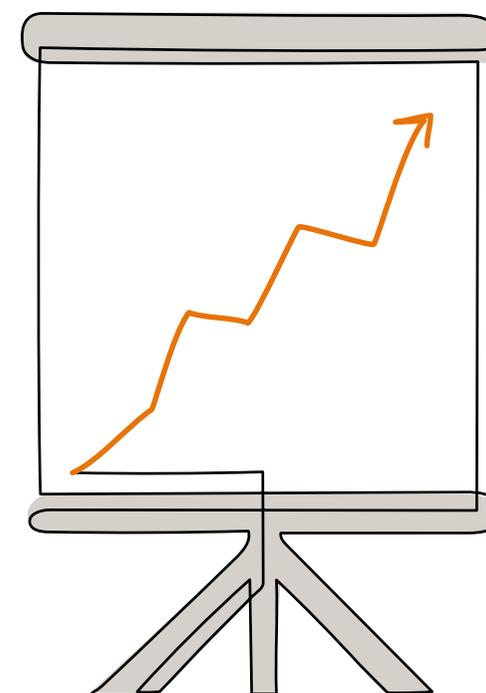
Volatility is measured by the extent to which prices rise or fall outside of expected ranges, and how fast they do so. Analysts predict that such food price volatility is “likely to persist and continue to challenge the ability of consumers, producers and governments to cope with the consequences.”

Rapid changes in food prices make it hard for farmers to take decisions about investments in production because of uncertainty about future prices. They also make it difficult for traders to determine appropriate stock levels and set prices, and for consumers to make choices about which foods to buy, and when. For smallholders, rising food prices can act as an incentive to increase production and generate more income, but higher prices are also a threat because many poor producers are net food buyers meaning they spend more on food than they make by selling it.

Nutrient-rich foods are typically more costly relative to staple grains and are the first to be cut from budgets when prices rise. As a result, rapid and unexpected increases in food prices tend to have a greater effect on nutrient consumption in poorer households.

Short-term policy responses to price volatility have included the creation of publicly-held food reserves which can be released when prices soar, establishment of price controls on staple grains, and expansion of social safety nets that aim to help provide healthy diets.

Longer-term measures have been aimed at increasing agricultural production, improving market efficiency, expanding regional trade, and improving labour productivity and wages.



 Key Facts

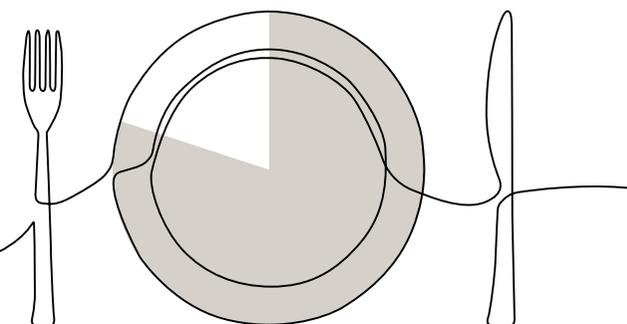
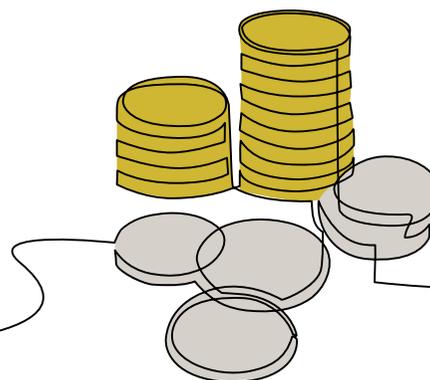
Manage food price volatility

Key Facts

In 2008, an additional 40 million people were pushed into hunger by the global rise in cereal prices.

Households in low-income countries spend as much as 75% of their total income on food.

More than 80% of people in the world today live in net food-importing countries.



The food price crises throughout Indonesia in the second half of the 1990s resulted in reduced nutrient consumption, with green leafy vegetable intakes falling by 30%.

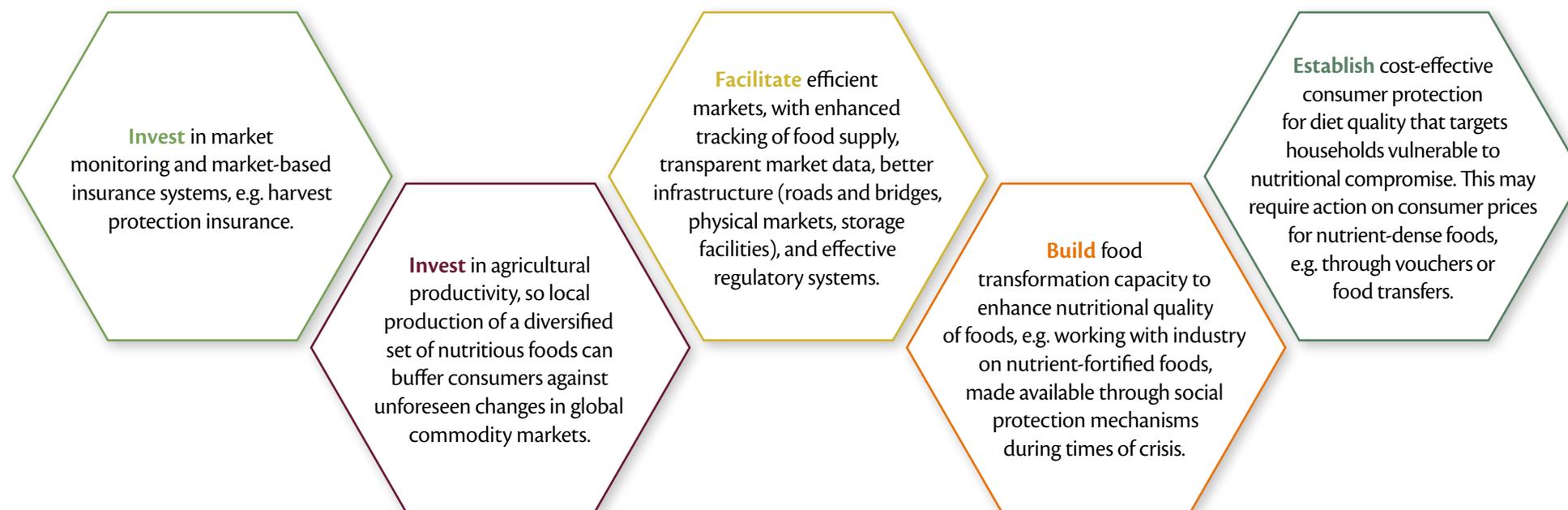
This means that unpredictable or volatile food prices can impact them much more severely than households which spend relatively less on food. During the 2007–8 price crisis in Latin America, households' energy intake fell by an average of 8% across seven countries. Ecuador and Panama recorded falls in total energy intake of around 15%.

A nutritious diet can be unaffordable during 'normal' periods. In 2007, before food prices spiked, the per capita cost of a nutritious diet ranged from US\$0.71 per day in Tanzania to US\$1.27 in Ethiopia, where many citizens were living on less than US\$1 per day.



Manage food price volatility

Policy Recommendations



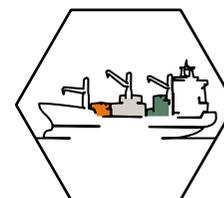
Manage food price volatility

Policy Examples



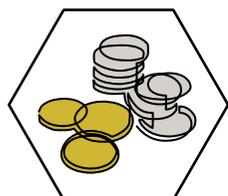
Boosting local agricultural production

Many countries have used agricultural input subsidies, e.g. fertilisers subsidies and expanded access to credit to boost national production. Senegal and Burkina Faso have promoted diversification of agriculture to shift diets towards more locally produced foods that are less affected by global markets.



Avoid trade-distorting embargoes

Many countries have introduced bans and restrictions on food exports in response to a price shock, although this can be counter-productive. For example, India banned grain exports just as Bangladesh, experiencing flood-related harvest losses, searched for imports.



Shaping agricultural markets and trade

Investments in market infrastructure are also essential, and should include rural roads, public sector storage, information systems, etc. Sri Lanka, Malawi and Malaysia have established fixed and maximum prices for certain staples.



Improve consumers' purchasing power

Many countries have used cash transfers in response to the food price peaks, including China, Haiti, Mozambique and Costa Rica. Madagascar doubled the number of children receiving free meals through schools in 2007.

For best results view
in FULL SCREEN:



Global Panel
on Agriculture
and Food Systems
for Nutrition

Return to the homepage
to explore a new brief:



Evidence

Implement food safety regulations

Evidence

Millions of people unknowingly eat food that is unsafe, containing harmful microorganisms, toxins and chemicals. These foods can cause illness and death through food poisoning, and have longer-term impacts, for example causing cancer or impairing child growth.

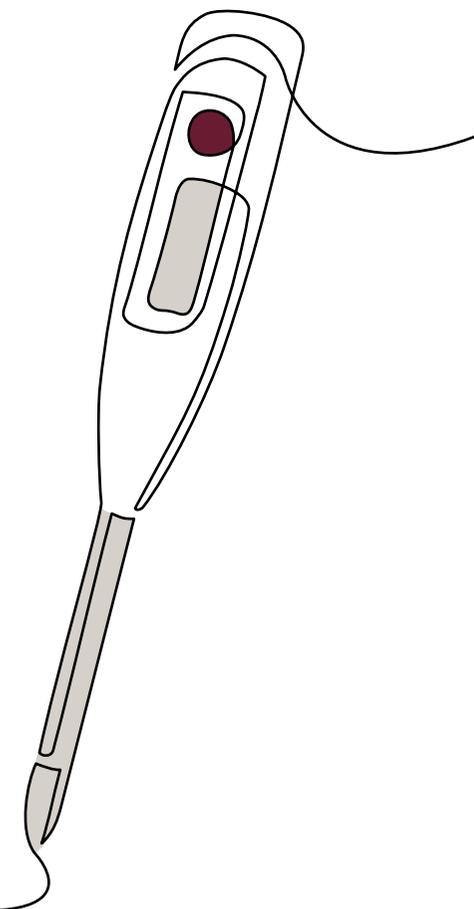
Food safety has traditionally been seen as a public health or medical matter, but is increasingly recognised as an important issue for agriculture and food systems. Food safety affects trade, rural incomes and purchasing power, worker productivity, and consumer confidence.

Some food safety hazards originate during production and storage, for example arsenic-contaminated groundwater leading to high levels of arsenic in rice, inappropriate pesticide and herbicide use leaving chemical residues on crops, or harmful mycotoxins from moulds on maize, groundnuts and sorghum.

Other hazards can be introduced during transportation, processing or retail. For example, through poor sanitary facilities of food handlers, insects or rodents spreading pathogens, or through contaminated water being used in washing foods such as fruits and vegetables.

Low-income consumers who lack knowledge, expertise and equipment, or rely on informal food markets, are particularly vulnerable.

Food safety policy, regulation and surveillance are therefore fundamental challenges for governments which seek to enhance the dietary quality and nutrition of their citizens.



 Key Facts

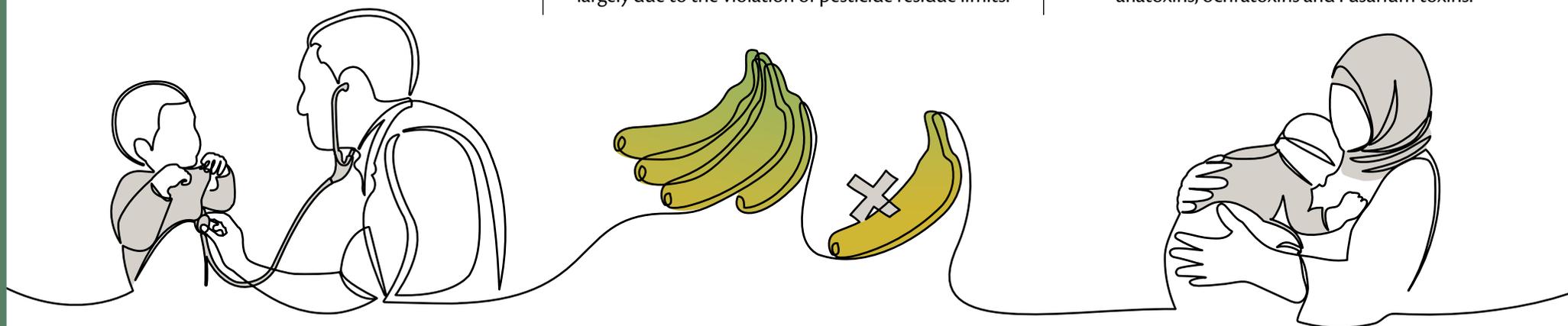
Implement food safety regulations

Key Facts

In 2010, there were 600 million cases of foodborne illnesses globally and 420,000 deaths.

Between 2008 and 2013, fruit and vegetables alone represented about 20% of all EU food export refusals, largely due to the violation of pesticide residue limits.

There are a range of foodborne mycotoxins, of which the most dangerous are aflatoxins, ochratoxins and Fusarium toxins.



40% of the foodborne disease burden is among children under 5 years of age.

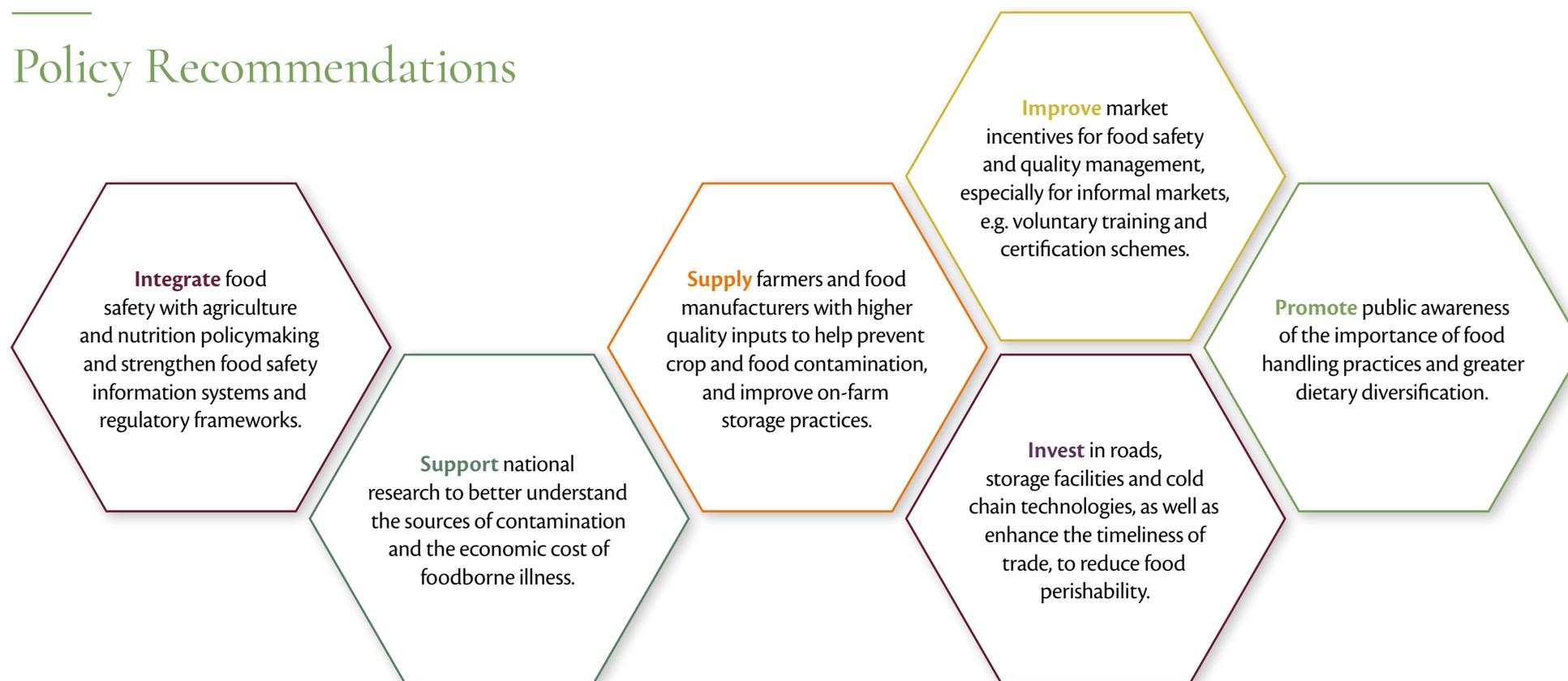
Aflatoxin contamination was a contributing factor to the decline in West Africa's share of the groundnut market, from 77% in the 1960s to 4% in 2010, resulting in a loss of around US\$1.6 billion.

High levels of aflatoxin in humans have been shown to be associated with maternal anaemia, low birth weight babies and child stunting, as well as potentially fatal aflatoxicosis and liver cancer.



Implement food safety regulations

Policy Recommendations



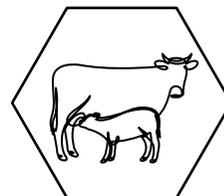
Implement food safety regulations

Policy Examples



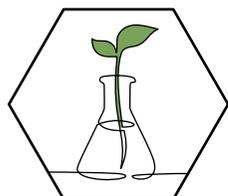
Revised food safety laws

In 2011, the government of Vietnam revised food safety laws to address the safety of street food for both vendors and consumers. It committed to providing training on hygiene and food safety.



Training and certification

In Kenya, a scheme to give small-scale milk vendors access to training and certification resulted in benefits for farmers, vendors and consumers, as well as the national economy.



Better aflatoxin control

A project to test better aflatoxin control in farmers' fields in Nigeria combines technical innovation (biological control) with incentives for adoption (farmers groups and creating premium markets).



Partnership for Aflatoxin Control

Partnership for Aflatoxin Control in Africa was established to coordinate aflatoxin mitigation across the health, agriculture and trade sectors, and to provide information management systems and laboratory testing facilities.

For best results view
in FULL SCREEN:



Global Panel
on Agriculture
and Food Systems
for Nutrition

Return to the homepage
to explore a new brief:



The economic advantages of healthy diets

Evidence

Poor diets carry a significant economic burden for individuals and for entire economies. A 2013 assessment suggested that undernutrition, micronutrient deficiencies, and overweight at today's levels cost the global economy up to US\$3.5 trillion. This level of economic burden acts as a major impediment to government efforts to reduce poverty and to achieve important targets such as the Sustainable Development Goals (SDGs).

At the national level, costs arise from four main pathways:

1. Mortality. Up to 45% of all preventable child deaths are attributable to undernutrition. Severely undernourished children are up to nine times more likely to die than well-nourished children. Maternal mortality (linked to severe anaemia) and reduced adult life expectancy (linked to obesity and

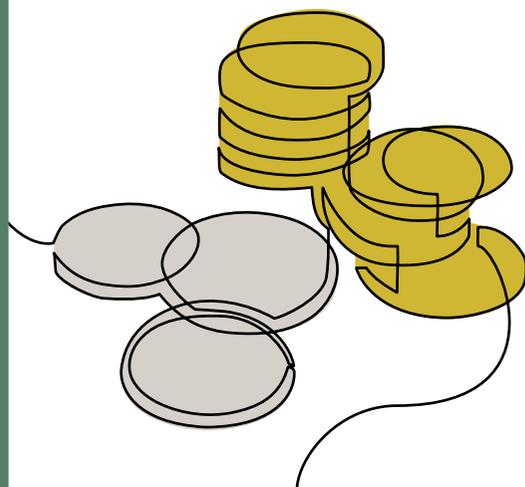
related health complications) are also linked with increased mortality.

2. Ill health. Treatment costs are borne by families as well as by health and insurance systems. For example, a full course of therapy to save the life of a severely wasted child costs between US\$100 and US\$200 per child. At the same time, the per capita healthcare costs of treating obesity in the United States alone has been shown to be over 80% higher for severely or morbidly obese adults than for adults with a healthy weight.

3. Impaired physical growth. Sub-optimal physical growth, often coupled with life-long susceptibility to illnesses, reduces economic gain through lowered labour productivity or absenteeism from work. The cost to low-income nations of productivity foregone due

to undernutrition has been estimated as 3 to 16% of GDP. Similarly, in high-income settings like the United States, job absenteeism linked to obesity causes lost output equivalent to US\$4.3 billion each year, costing employers US\$506 annually per obese worker.

4. Impaired cognitive development. Poor nutrition from birth, continuing through school and adolescence, impairs cognitive development, delays school-attendance and reduces attainment, resulting in lost employment and socialisation opportunities throughout life. For instance, in Guatemala it was shown that stunted six-year-old children carried the risk of losing the equivalent of four grades of schooling through impaired cognitive development.





 Key Facts

The economic advantages of healthy diets

Key Facts

Eliminating child nutrition could increase GNP by 11% in Africa and Asia.

For a typical African country, every dollar invested in reducing chronic undernutrition in children yields a US\$16 return.

If 15 African countries attained the 2025 World Health Assembly (WHA) target of a 40% reduction in chronic undernutrition, this could add US\$83 billion to national incomes.

Wasting causes economic losses in lost productivity amounting to US\$48 billion in India, US\$4.6 billion in Bangladesh, and more than US\$3 billion in Ethiopia and the Democratic Republic of Congo.

Public spending on diabetes in 2010 was around 12% of total health expenditure worldwide.

By 2030, if obesity trends continue, obesity-related medical costs in the United States alone could reach US\$66 billion a year, contributing to a global total of roughly US\$500 billion annually.

In England the added spending on medical and social care associated with malnutrition in 2011–12 was almost £20 billion, or more than 15% of total public expenditure.

Cross-country data suggests that a loss of 1% of potential attained height in adulthood reduces earnings by 2.4%.

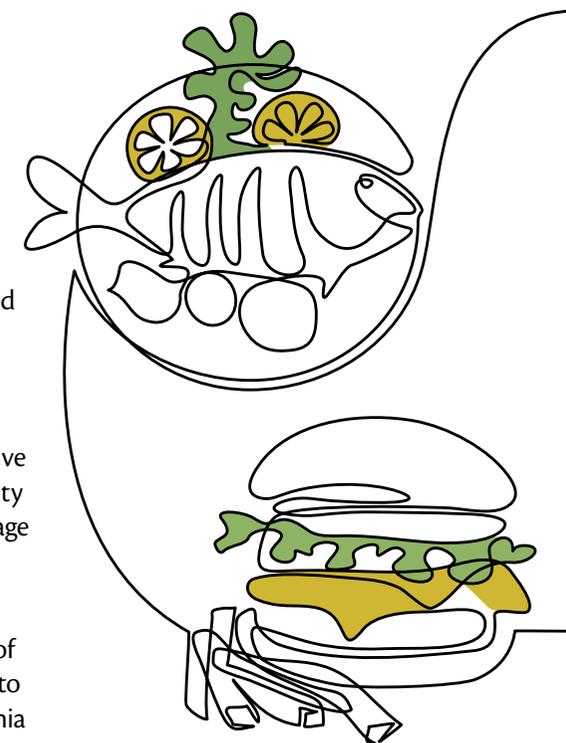
Stunted children receive almost 20% less in annual income than if they had not been stunted.

According to the United Nations Children's Fund (UNICEF), children who are undernourished "achieve less in school" and "are paid less when they enter the workforce."

Low vitamin A status among mothers and children across Africa can be associated with an annual loss of up to 1% of GNP.

The cumulative economic cost of cognitive impairment and lower labour productivity due to iron-deficiency anaemia is on average 4% of GDP for low-income countries.

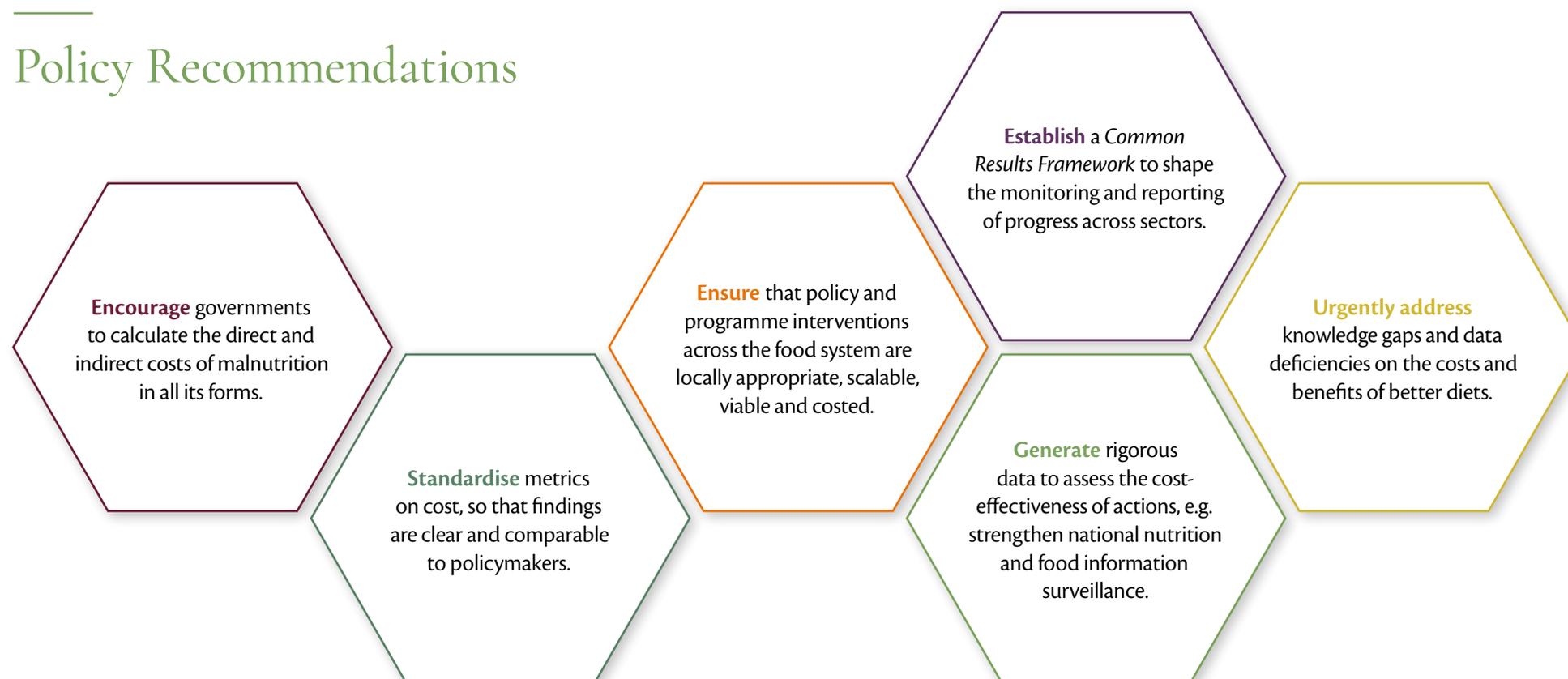
The World Bank estimates that the cost of providing evidence-based interventions to achieve WHA targets for stunting, anaemia in women, and exclusive breastfeeding, would amount to US\$7 billion per year. Far less than the cost of inaction.





The economic advantages of healthy diets

Policy Recommendations



The economic advantages of healthy diets

Policy Examples



Cost-effectiveness of micronutrient interventions

The FAO has calculated that an annual investment of US\$1.2 billion in improving the micronutrient supply globally, through a) supplementation, b) food fortification and/or c) biofortification of staple crops, would result in “better health, fewer deaths and increased future earnings” of up to US\$15.3 billion per year: a 13-to-1 benefit-to-cost ratio.



Cost of Hunger

The ‘Cost of Hunger’ analysis for 12 countries in Africa showed that halving the prevalence of child stunting by 2025 would lead to a decrease in medical treatments, lower repetition rates in the education system and an increase in productivity and savings. The average annual savings amounted to US\$3 million per year for Swaziland, to US\$133 million for Egypt and as high as US\$376 million in Ethiopia.



Returns on investment

The World Bank calculated that US\$7 billion per year, in addition to existing resource allocations over the next ten years, would allow the world to reach global WHA targets by 2025 for reducing stunting, anaemia in women, and increasing exclusive breastfeeding, while also better managing the impacts of wasting. This investment would result in 3.7 million child lives saved, more than 65 million fewer children being stunted, and 265 million fewer women suffering from anaemia compared to 2015.



Lower costs and more gains from less obesity in the USA

For obesity, a recent study on conditions in the United States projected that rising federal tax revenues combined with reduced public health spending on obesity-related treatment would exceed US\$20 billion per year by 2035.

For best results view
in FULL SCREEN:



Global Panel
on Agriculture
and Food Systems
for Nutrition

Return to the homepage
to explore a new brief:



Enhance consumer demand

Evidence

Today's food systems are not helping consumers make good food choices consistent with optimal nutrition outcomes. There is a need to inform, educate and enable consumers to make the right food and beverage choices that will lead to the consumption of healthy, high-quality diets and also encourage consumer activism towards health and nutrition as public goods.

Consumers are faced with constraints in the supply, access, price, information, diversity, safety and quality of foods that make up a healthy diet. Consequently, many consumers make food choices that are inconsistent with good health.

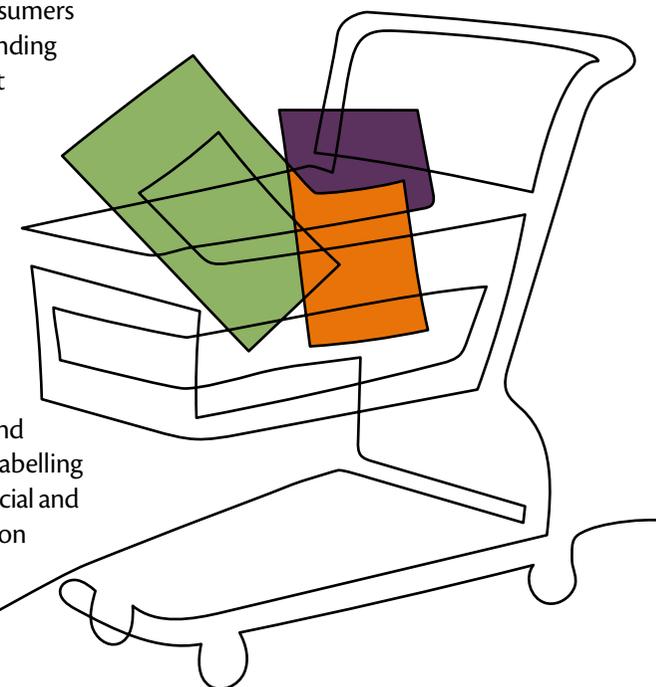
For many consumers in low- and middle-income countries, nutritious foods such as

fruits, vegetables, dairy and fish are simply unavailable or unaffordable. For example, eating five portions of fruit and vegetables per day would cost low-income households in Bangladesh, India, Pakistan and Zimbabwe 52% of their household income.

Policymakers have a role to play to educate, encourage and enable consumers

to improve dietary choices. Consumers also have a role to play by demanding food items that will create a shift in food producers towards healthier products.

Multi-sector interventions that could help consumers to demand healthier diets include: the introduction of Food Based Dietary Guidelines; better nutrition education and healthy eating campaigns, fruit and vegetable promotion; nutrition labelling to promote high-quality diets; social and behaviour change communication strategies; and providing income subsidies and social protection schemes.



 Key Facts

Enhance consumer demand

Key Facts

Eating 10 portions of fruit and vegetables a day has been shown to be associated with a 31% reduction in dying prematurely.



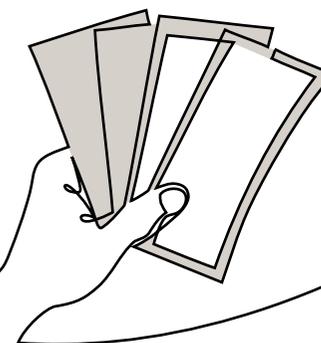
According to the World Health Organization (WHO), mass media campaigns are one of their 'Best Buys' for the prevention and control of Non-Communicable Diseases (NCDs).

Vegetable consumption has declined in several regions in the period 1990–2013, including South-East Asia, North America and Latin American countries.

Social and behaviour change communication (SBCC) is a fundamental component of successful nutrition interventions. It can shift attitudes and cultural norms to produce changes in nutrition behaviour.

Food Based Dietary Guidelines (FBDGs) provide an important framework for policy development, as well as an educational and communication tool to positively impact consumer behaviour.

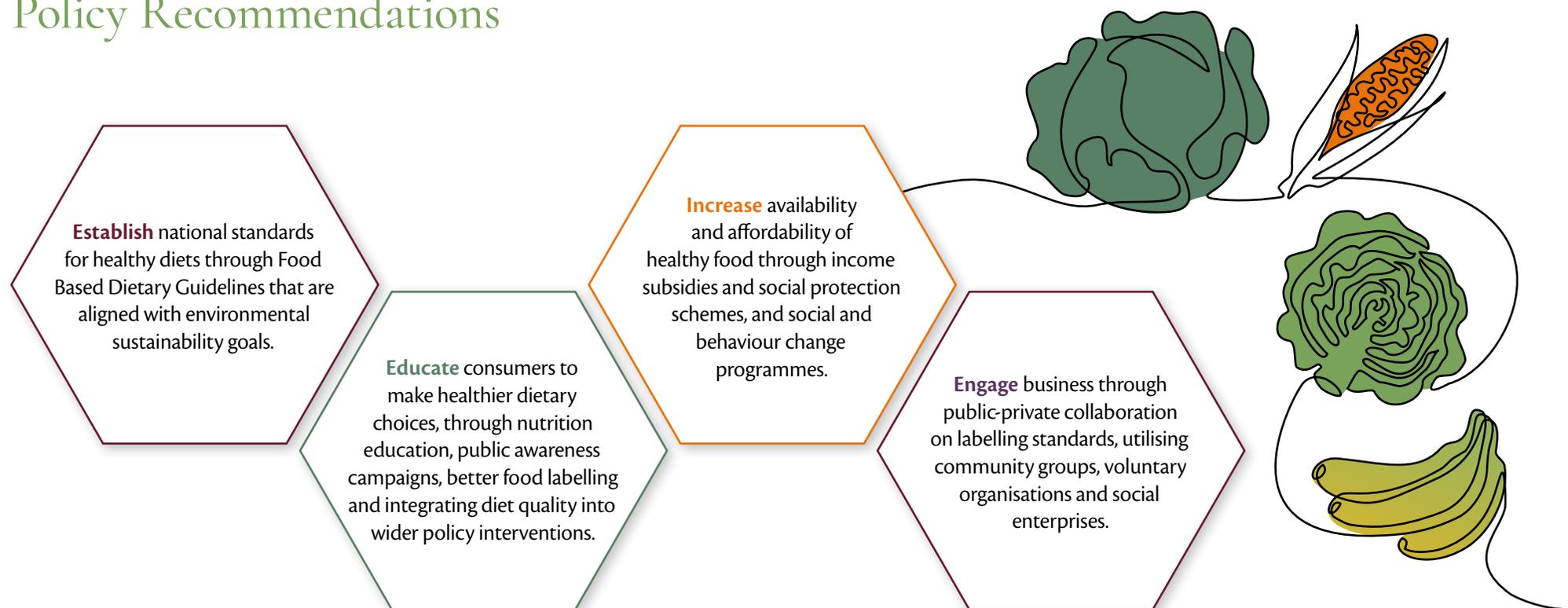
Evaluations of fresh food vouchers schemes in low-income areas have shown that they can increase dietary diversity and reduce acute malnutrition. Nutrition education is critical to leverage these benefits.





Enhance consumer demand

Policy Recommendations





Enhance consumer demand

Policy Examples

Towards Sustainable Nutrition Improvement Project

In Mozambique, the Towards Sustainable Nutrition Improvement Project increased the intake of vitamin A in children using an integrated, multi-sector approach. It combined: 1) increasing the availability of orange-fleshed sweet potato to local farmers; 2) developing learning sessions with childcare providers; and 3) linking farmers to traders and informing consumers about where they could purchase these potatoes. It also used a social behaviour change communication component with support from radio and television.

Front-of-package food labelling

Chile implemented legislation in 2012 to incorporate front-of-package food labelling by using a black octagon to warn consumers that the food products were high in sugar, sodium, fats and energy. This has led to an increased awareness of nutrition messages.

Alive and Thrive programme

The Alive and Thrive programme in Bangladesh, Ethiopia, and Vietnam used a multi-component approach combining data and communications to plan, assess, and evaluate the interventions. Over 4 years this approach led to an increase of between 8 and 44% in exclusive breastfeeding. In Bangladesh, there was a 32% increase in children consuming a diverse diet.

World Food Programme food vouchers

Families in northern Somalia can access a more balanced diet through World Food Programme food vouchers. Families receive US\$80 of vouchers each month to buy a variety of foods including rice, cooking oil and fresh meat. The scheme is very popular and has boosted the economy of local traders, as well as increasing the number of children presented for nutrition screening.

Let's Go Local campaign

The 2005 Federated States of Micronesia (FSM) Let's Go Local campaign brought together social and behavioural change, skills training, and investment to increase production of high beta-carotene crops. The campaign aimed to promote sustainable production and the consumption of nutritious local foods using a wide range of communications media. The evaluation found that the average household diets had significantly higher micronutrient intake and greater dietary diversity.

Sugar sweetened beverages

In Mexico, a media campaign in 2012 warned consumers about the effects of sugar sweetened beverages using images of the complications of diabetes (e.g. amputations and blindness). Combined with the introduction of a tax, this led to a decrease in the consumption of sugar sweetened beverages in the country.

5-a-day Corporation

The 5-a-day Corporation in Chile is a non-profit organisation that designed a campaign to promote the message "Eat at least two dishes of vegetables and three different coloured fruits every day". It has resulted in significant increases in fruit and vegetable consumption.

USAID Kore Lavi programme

The USAID Kore Lavi programme in Haiti provided vulnerable households with monthly electronic and paper food vouchers, which could be exchanged for locally produced foods, including fresh fruits and vegetables. More than 18,000 additional households gained access to locally produced nutritious foods.

For best results view
in FULL SCREEN:



Global Panel
on Agriculture
and Food Systems
for Nutrition

Return to the homepage
to explore a new brief:



Evidence

Reduce food loss and waste

Evidence

Loss and waste of nutritious foods needs to be an urgent ‘new’ priority for improving diets and nutrition. Both fundamentally affect the availability and affordability of foods which make up healthy diets.

Every year, approximately 1.3 billion metric tons of food produced for human consumption, one third of the total, never reaches the consumer’s plate or bowl.

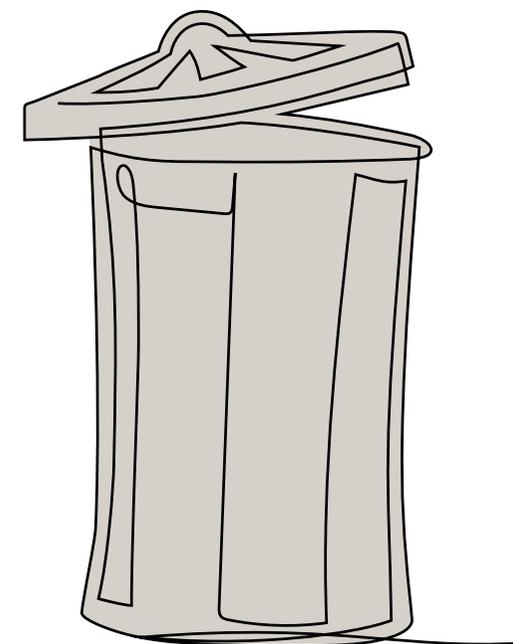
Food waste: refers to the discarding of food appropriate for human consumption downstream in the value chain, particularly at the retail and consumer levels, due to aesthetic quality, spoilage (actual or perceived) and consumer waste.

Food loss: refers to a decrease in quantity or quality (appearance, flavour, texture and nutritional value) of food intended for human consumption, e.g. inefficiencies in agricultural production, harvesting, post-harvest handling, transportation and storage of crops (notably pathogenic microorganisms), or during food transformation.

Addressing loss and waste in nutrient-rich foods presents a particular challenge. Foods such as fruits and vegetables, seeds and nuts,

dairy products, meat, fish and seafood are highly perishable and often prone to pests and disease, making them disproportionately susceptible to both loss and waste.

Reducing loss and waste in nutritious foods would yield substantial benefits far beyond addressing hunger and malnutrition, to encompass economies and the natural environment. The gains made would contribute to the efficiencies needed to address climate change. Eating more of the nutrient-rich food already being produced would unlock savings in water and energy consumption, land use, and resources used in industrial food fortification. And the scale and pace of food production would not need to increase at the rates currently required to feed an extra 1 billion people by 2030.





 Key Facts

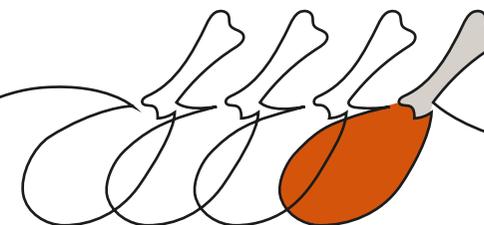
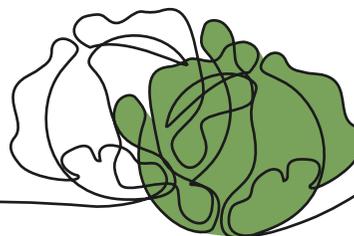
Reduce food loss and waste

Key Facts

Approximately 1.3 billion metric tons, or one third, of food available for human consumption never reaches the consumer's plate or bowl. This approximates to US\$940 billion in worldwide economic losses per year.

Each year more than half of all the fruits and vegetables produced globally are lost or wasted, as well as around 25% of all the meat produced – equivalent to 75 million cows.

In lower-income countries, over 40% of the losses of edible parts of foods occur in the post-harvest and processing parts of the food system, while in high-income countries, more than 40% of food waste occurs at retail and consumer levels.



Globally, over one third of the total fish and seafood harvested each year is lost or wasted. In high-income countries, much of this occurs at the consumer level, while in low-income countries substantial losses occur in the distribution/retail sectors.

Fruit and vegetables have the highest overall rates of loss and waste. Across most regions, significantly more than half of all the fruit and vegetables produced are lost and wasted – rising to more than 70% in the case of North Africa, West and Central Asia, and Latin America.

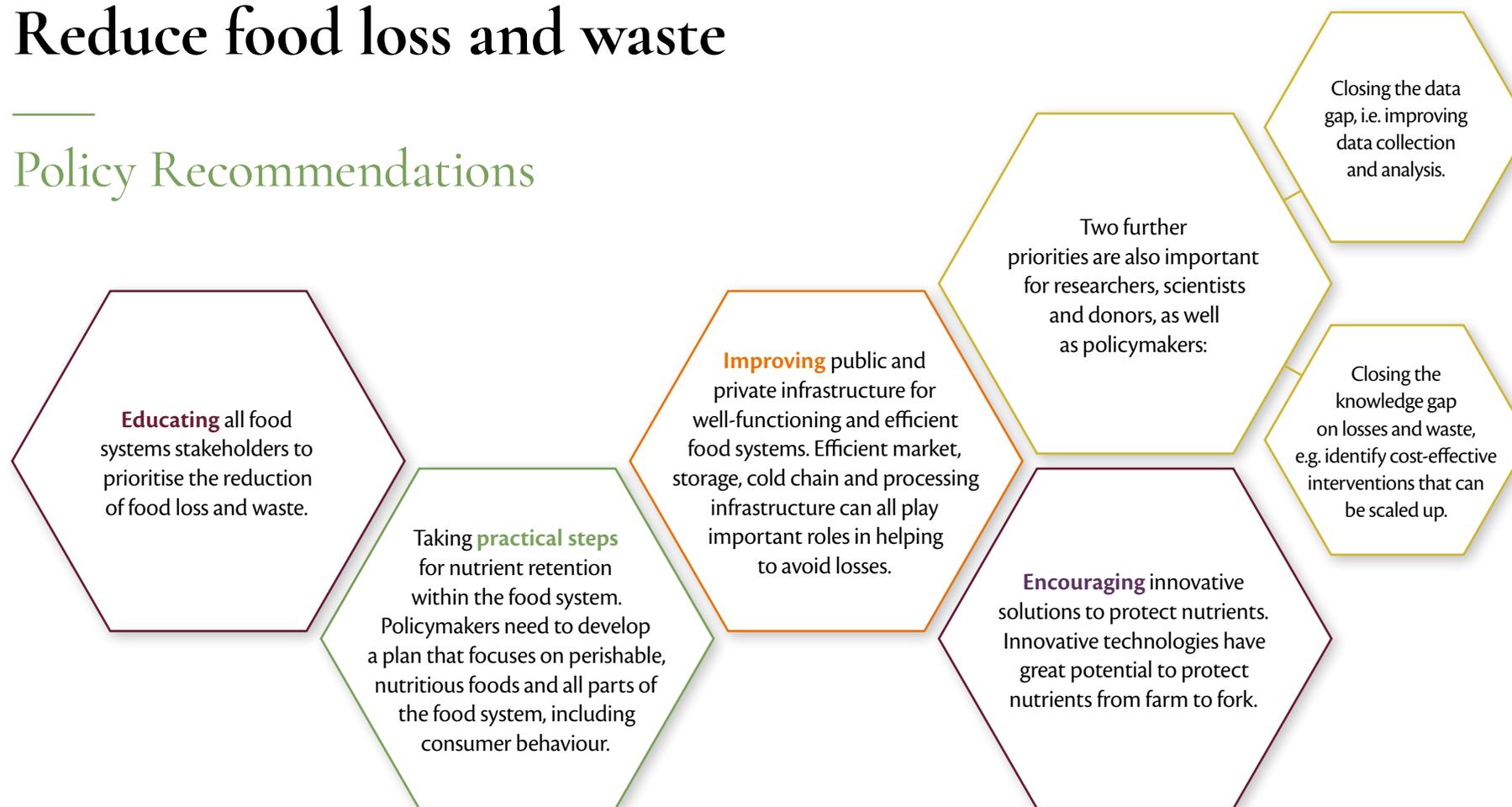
Eating more of the nutrient-rich food already being produced would unlock savings in water and energy consumption and land use. In addition, the scale and pace of food production would not need to increase at the rates currently required to meet the demand of an additional 1 billion people by 2030.

The average global amount of vitamin A produced in human-edible crops was found to be nearly 22% greater than that required to meet the totality of human needs. However, after loss and waste, the amount available for consumption was 11% less than that required.



Reduce food loss and waste

Policy Recommendations





Reduce food loss and waste

Policy Examples

Policy: National policies/ programmes to reduce food loss and waste

In Argentina, the Ministerial Resolution 392/2015 created the National Programme for Food Loss and Waste Reduction.

Policy: Improved infrastructure

The Market Infrastructure, Value Addition and Rural Finance (MIVARF) project, led by the Government of Tanzania, is investing in roads, packing houses and food processing centres, post-harvest technologies and agro-processing, nutrient-preserving storage/processing, and refrigerated transport.

Policy: Adapted cold chain developments

The Government of India established the National Centre for Cold Chain Development (NCCD) in 2012, to promote and develop integrated cold chains in India for perishable agriculture and horticulture produce.

Policy: Capacity building, education, training and extension services

The Postharvest Education Foundation (PEF) is a non-profit organisation training young people in lower-income countries on various aspects of post-harvest handling of perishable commodities including fruits, vegetables and root crops.

Policy: Food banks

Food for All Africa Programme – a food recovery organisation that operates West Africa's first food bank in Ghana – was established to rescue edible surplus food from stakeholders within the food value chain and supply to vulnerable beneficiaries.

Policy: Public/private coalitions

Champions 12.3 was created to bring together leaders from the public and private sectors in all parts of the world to promote the need to reduce food loss and waste.

Technology: Cold chain

Promethean Power Systems has created an accessible chilling technology which has thermal battery backup, allowing it to operate reliably in rural areas of India where electricity supply is intermittent.

ColdHubs was created as a 'plug and play' modular, solar-powered walk-in cold room for 24/7 off-grid storage and preservation of perishable foods in low- and middle-income countries (e.g. Nigeria).

Technology: Processing

Multi-flash innovative drying technology that has been developed in Brazil to obtain high-quality dried fruit and vegetables, reducing process time and operational costs.

Solar dryer technologies for rapid drying of fruits, vegetables, spices and fish. Solar dryers are relatively cheap, easy to build, do not require electricity or fuel and produce zero greenhouse gas emissions, but they

maintain quality and nutrient content better than traditional on-the-floor sun drying. They have been used in countries such as Bangladesh, India, and Rwanda.

Technology: Packaging

Nanotechnology – A Hexanal 'smart delivery' liner built with nano-particles derived from banana and coconut fibres that reduces fruit and vegetable losses has been used in India and Sri Lanka.

Mazzi (Kenya) is a milk transport bottle that helps to maximise the amount of milk that makes it to market successfully, resulting in less spoilage and spillage.

Technology: Information technology

'Reuter's Market Light Farmer' provides market prices via a mobile app.

For best results view
in FULL SCREEN:



Global Panel
on Agriculture
and Food Systems
for Nutrition

Return to the homepage
to explore a new brief:

Enhancing food environments

Evidence

Diet quality is influenced by the food environment – which is the space in which people acquire food. Food environments consist of the collective physical, economic, policy and socio-cultural surroundings, opportunities and conditions which create everyday prompts that shape people’s dietary preferences and choices.

Key dimensions of food environments include food availability, accessibility, affordability, desirability and convenience, as well as vendor and product properties, and promotional information. Food acquisition is thus the result of complex socio-ecological interactions between people and their wider environment.

Food environments are changing fast, particularly in low- and middle-income countries. For many consumers, traditional diets, comprised largely of

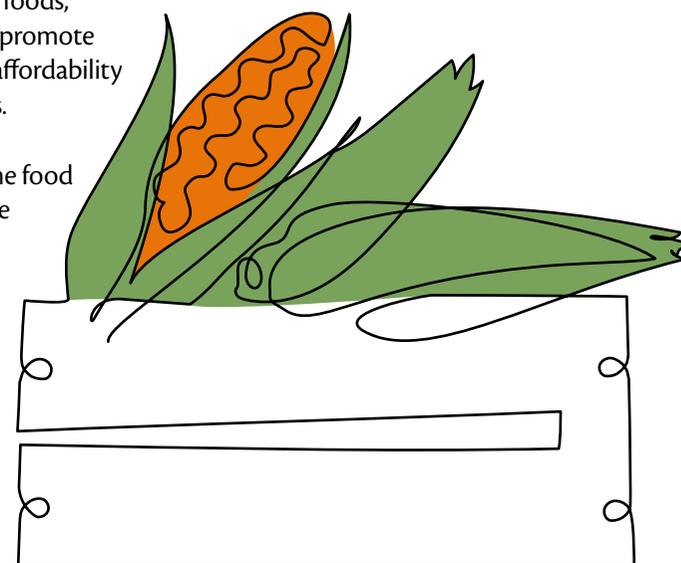
minimally-processed staple foods, are shifting. Diets globally are increasingly incorporating ultra-processed food products, i.e. foods high in fat, sugar, salt, and calories, which often have limited nutritional value.

Business as usual will result in growing problems of diet-related malnutrition. Changes in global, regional and national policies, investment patterns, technologies, and infrastructure are needed to ensure that food systems,

and hence the food environments in which people choose their foods, are transformed in ways that promote greater diversity, availability, affordability and safety of nutritious foods.

The key policy areas within the food environment where this can be achieved are:

- Economic instruments and fiscal measures
- Food advertising and product promotion
- Food transformation, reformulation and processing
- Food labelling
- Providing high-quality foods in public institutions
- Improving the supply of nutritious foods





 Key Facts

Enhancing food environments

Key Facts

In 2000, sales of ultra-processed foods and beverages in the upper-middle-income countries were one-third of those in the high-income countries. Just 15 years later, they accounted for more than half.

75% of world food sales are of processed foods, whose largest manufacturers control more than a third of the global market.

In East and Southern Africa, highly processed food accounts for more than one third of the purchased food market.

A study, which evaluated price changes between 1990 and 2012 in the USA, UK, Mexico, Brazil, South Korea and China, shows that fruit and vegetable prices increased by 2–3% per year, while the prices of many energy-dense processed foods decreased.

Foreign investments in the food sector have also been increasing rapidly in the developing world, rising from 54 billion USD in 1980 to 1,350 billion USD in 2012.

Fewer than 27% of countries had implemented taxes on sugar-sweetened beverages and foods high in fat, sugar and salt by 2015.

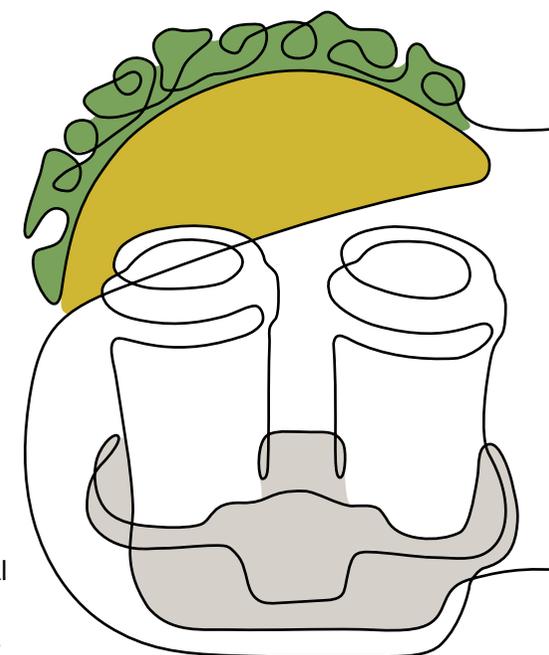
The amount that food and beverage companies invested in advertising accounted for 17% of all global media spending in 2012.

Despite WHO recommendations, only 8% of countries regulate the marketing of foods and beverages to children while only 36% of countries have implemented provisions of the International Code of Marketing of Breast-milk Substitutes.

Processing can help increase food availability, extend seasonality and make food safer to eat. Food fortification can add nutritional value, e.g. fortifying salt with iodine can reduce goitre and foetal brain damage. But processing can also lower the nutritional quality, for example producing trans-fats from soya oil.

Food labels can help consumers make informed decisions either by providing nutrient content, or by using interpretative labels (graphics, symbols or colours) related to the nutrient content.

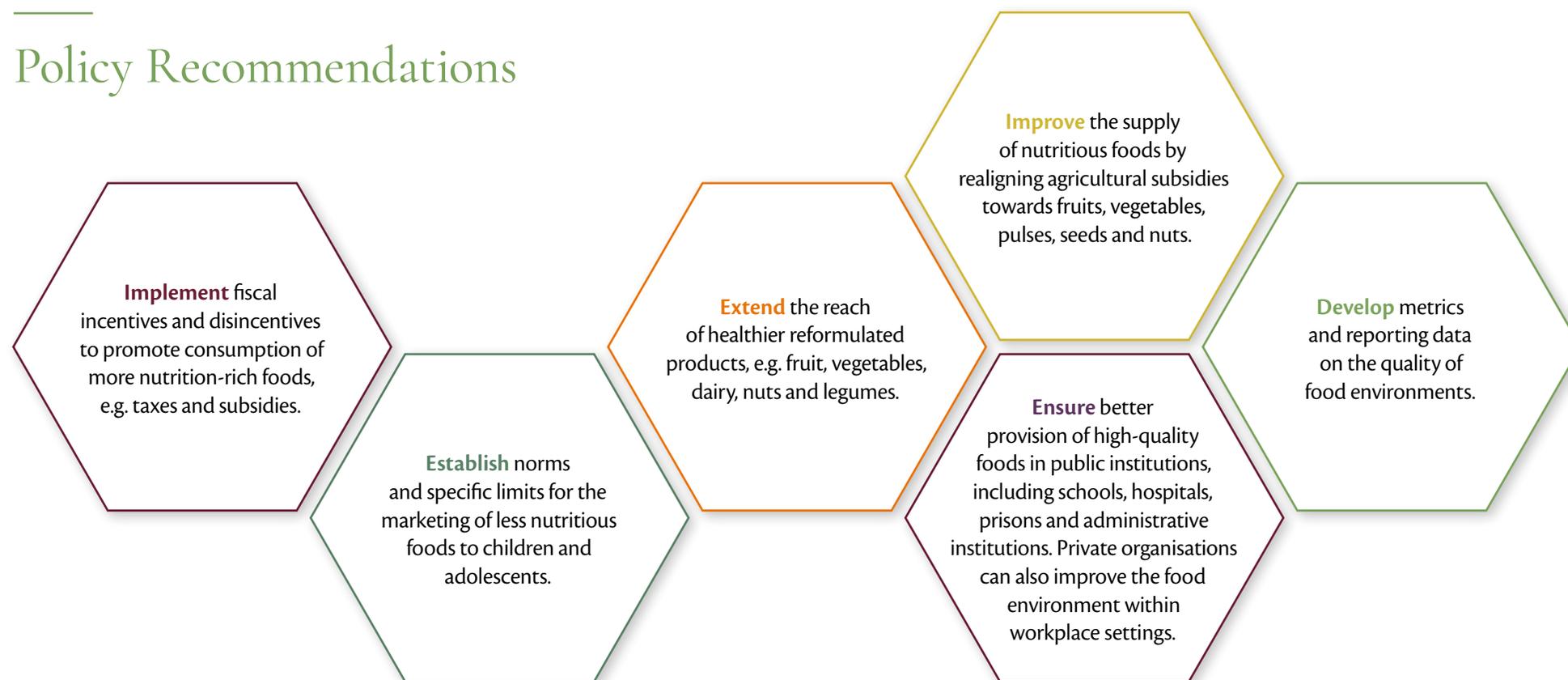
Global funding in public-sector agricultural research is still focused primarily on rice, wheat, maize and other grains. About 45% of private sector agricultural research investment is on maize, with little attention to nutritious crops such as fruits and vegetables, pulses, seeds and nuts.





Enhancing food environments

Policy Recommendations





Enhancing food environments

Policy Examples

In 2014, the Mexican government implemented two food taxes: (1) an excise tax on sugar-sweetened beverages and (2) a sales tax on several highly energy-dense foods. One year after implementing a 1 peso per litre excise tax (approximately a 10% price increase based on 2013 prices), purchases of sugar-sweetened beverages in stores reduced by 12%. This change was mainly observed among households of low-socioeconomic status.

In 2015, Chile adopted the most comprehensive marketing restriction law in the world to date (Law No. 20,606), where food companies are required to place front-of-package labels on foods and beverages that are high in sugar, salt, saturated fats and energy. The law prohibits the advertising and marketing of these target foods to children aged 14 and younger, nor within establishments of preschool, primary or high school education.

In Hungary, a “Public Health Product tax” (PHPT) was introduced in 2011 on the salt, sugar and caffeine content of ready-to-consume food products (e.g. soft drinks, energy drinks and pre-packaged sugar-sweetened foods). Since 2012 the income from the tax has flowed to the public health insurance fund, making up around 1% of the fund’s income. 16–28% of consumers of PHPT products changed their consumption habits in response to the introduction of the tax.

Chile, South Korea, Mexico, Denmark and Latvia have worked with the food industry to develop codes for “responsible” marketing to children. However, only 8% of countries have adopted regulations to marketing foods and beverages to children.

In South Korea, TV advertising of target food products to children under 18 years of age is prohibited during and after programmes shown between 5–7pm and during other children’s programmes. This regulation took effect in 2010 and has had a positive impact on the South Korean food environment by stimulating around 50% of food companies to reformulate their products.

The Senegalese government established a National Fortification Alliance (COSFAM) and made food fortification mandatory in 2009 in partnership with the Global Alliance for Improved Nutrition (GAIN). The country has been fortifying wheat flour with iron and folic acid, and vegetable oil with vitamin A, to address key micronutrient deficiencies in the population.

Following the establishment of a national working group on food fortification, the Ugandan government passed legislation in 2011 on the fortification of three staple foods. In 2012, this led to 10 food companies fortifying products; 95% of vegetable oil was fortified with provitamin A, and 40% of wheat flour was fortified with iron.

The Workplace Health Promotion Programme launched in Singapore in 2000 offers grants for workplaces to invest in obesity-related health promotion. 57% of workplaces now participate in this initiative.

For best results view
in FULL SCREEN:



Global Panel
on Agriculture
and Food Systems
for Nutrition

Return to the homepage
to explore a new brief:



Engage the private sector

Evidence

Some governments in low- and middle-income countries are stepping up efforts to improve diets, but there remain few successful examples where governments have harnessed the market power of the private sector. Diverse private sector actors (e.g. smallholder farmers, agribusiness, food and beverage manufacturers, food retailers, food service providers and industry and trade associations) shape global and local food systems in ways that have considerable potential to influence the availability, price, nutritional quality, desirability and demand for more healthy food choices. This is a huge missed opportunity which must be rectified.

Public sector actions alone will not be enough. The private sector also has a major role in shaping diets and food systems, mainly through food processing, product development, and product reformulation, as well as supporting commercial food

fortification and the informal food retail sector. Whilst the food industry has long been criticised for its part in making food environments unhealthier, it has also demonstrated considerable potential to make them healthier.

The food industry already does much to meet the nutritional needs of a rapidly growing global population, but it tends to focus on food products rather than enhancing diets and food systems per se. Policymakers need to be realistic about their own limits in influencing consumer behaviour. Similarly, they need to be pragmatic in persuading industry partners to play a more active role in improving diets. This includes the private sector in both formal and informal markets.

The key is to establish a common understanding where the right mix of policy regulations and incentives can be developed allowing the private sector to profit from a shift in the balance of their activities in favour of food products that are more nutritious, affordable and accessible.





 Key Facts

Engage the private sector

Key Facts

In Brazil the contribution of processed and ultra-processed products to dietary energy has risen from 20.3% in 1987 to 32.1% in 2009 in households located in urban areas.

A study in Kenya, which has the fastest supermarket growth in sub-Saharan Africa, found that the purchase of highly and ultra-processed foods from supermarkets significantly affected consumers' nutritional outcomes, leading to an increase in adult body mass index.

In South Africa, the agro-processing sector contributes about 10% of GDP. In India, it employs around 18% of the country's industrial work force.

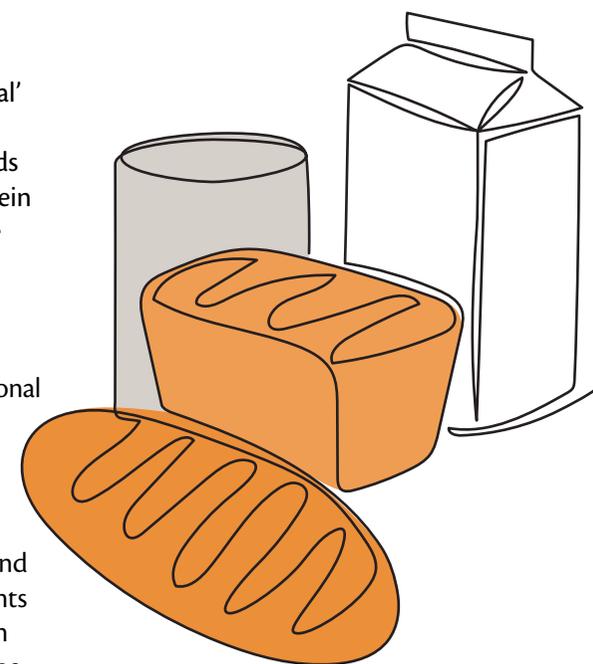
In Argentina in 2013, the government made mandatory maximum levels of sodium permitted in meat products, soups, seasoning mixes, bread and starch products, and tinned foods. Between 2011 and 2015, national average daily salt intake per person fell by 2 grams.

In Mexico, Central America and Southeast Asia, the supermarket share is 10%–50% of the retail market. In sub-Saharan Africa (outside South Africa) and South Asia, it is less than 1%.

In Kenya, Zambia and Nicaragua over 90% of all fruits and vegetables are purchased in traditional retail outlets. In Zambia and Kenya, modern supermarkets primarily supply to households in the top 20% of income distribution.

A review of 23 studies (mostly conducted in Africa) found that the daily energy intake from 'informal' street foods was 13%-50% in adults and 13%-40% in children. Street foods contribute significantly to daily protein intake, and often provide 50% of the recommended daily allowance.

Staple food fortification was recently ranked among the top three international development priorities by the Copenhagen Consensus Centre which calculated that the annual cost of increasing iodised salt access to reach 80% of the population of South Asia and sub-Saharan Africa would be just 5 cents per person treated, or US\$19 million in total. The benefits were calculated to be worth as much as US\$570 million in health-care savings and increased productivity.

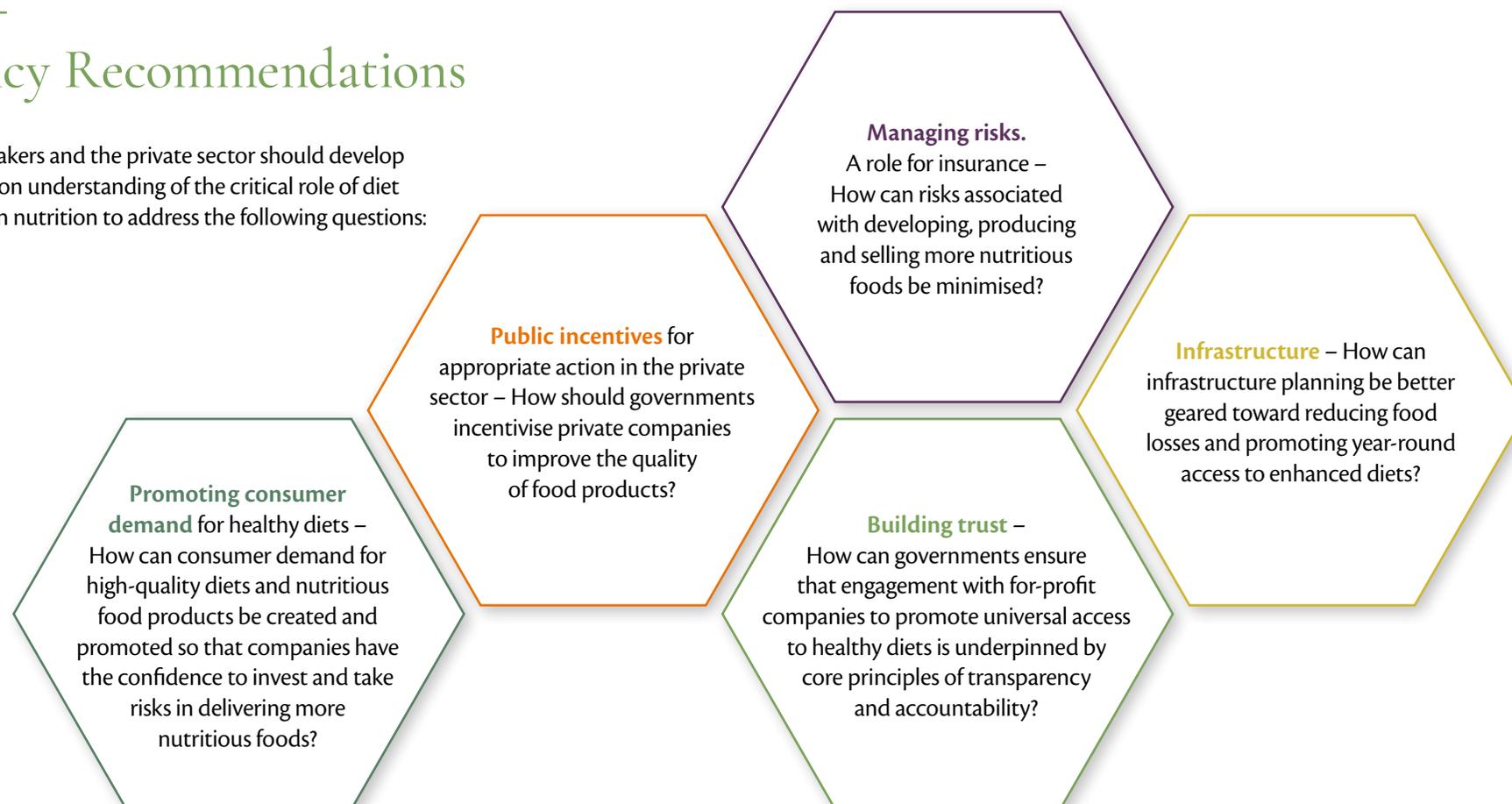




Engage the private sector

Policy Recommendations

Policymakers and the private sector should develop a common understanding of the critical role of diet quality in nutrition to address the following questions:





Engage the private sector

Policy Examples

Trinidad and Tobago Agri-business Association (TTABA) is a 'For Development Company' established in May 2006 by agri-business with government support. It promotes traditional Caribbean food habits and processes fruits and vegetables into frozen, cubed, packaged and branded products.

Azuri Health Ltd, for example, was established in Kenya in 2010, and is one of the largest suppliers of dried fruits (pineapples, passion fruit, mangoes, bananas and coconuts) in East Africa. It aims to provide alternative healthy snacks for the growing population and reduce post-harvest losses for farmers.

The Giang Fisheries Association started to produce organic catfish in Vietnam with the help of a PPP between the German Technical Cooperation Agency (GTZ), the non-governmental organisation

(NGO) Naturland and the private German fish-importing company Binca Fisch GmbH, leading to higher fish quality. It has also increased export opportunities, reduced rejection rates at international borders and expanded the market.

The Grameen Danone Foods Ltd (GDFL) in Bangladesh, a social enterprise established as a joint venture between Groupe Danone and Grameen Enterprises. It manufactures and distributes two fortified yogurt products to poor consumers, predominantly in rural areas. Both products are fortified with 30% of the recommended daily amount (RDA) of zinc, iodine, iron and vitamin A, and cost around US\$0.10.

The Scottish Food and Drink Federation (SFDF)'s Reformulation Programme is a free government service for food manufacturing SMEs in Scotland with

tailored advice to help them reduce the fat, sugars and salt content of their products. The service helps businesses with low product-development resource or reformulation experience. Between 2011 and 2014, the programme supported around 50 producers across Scotland which led to significant reductions in salt, saturated fat and caloric content of their products.

The Fortify West Africa (FWA) initiative is a public-private partnership which aims to reach 70% coverage of vitamin A fortified cooking oil and 70% coverage of wheat flour fortified with iron, zinc, folic acid and B vitamins in the region. As of 2011, approximately 55 million people in West Africa were consuming these fortified products.

Ying Bang Bao (YYB), a powdered complementary non-commercial food supplement (CFS) was developed and

distributed in China by Biomate, a private company with a nationwide distribution network in grocery stores. YYB contains nine nutrients based on those likely to be missing in a Chinese child's diet. It has been shown to reduce child anaemia and increase IQ.

The 'Makati Vendors Programme of the City', which was started in 1992, involves 760 Philippine street vendors, most of whom are women. They sell their cooked food, which is based on local products (rice and vegetables), in the vicinity of schools, bus stops and stations. The programme aims to provide the urban poor of Makati with an alternative source of income, and encourages cleanliness and hygiene at point of sale, whilst more likely to provide healthy alternatives to ultra-processed foods.

For best results view
in FULL SCREEN:



Global Panel
on Agriculture
and Food Systems
for Nutrition

Return to the homepage
to explore a new brief:



Putting diets at the heart of the SDGs

Evidence

The 17 Sustainable Development Goals (SDGs) were adopted by the 193 Member States of the UN General Assembly in 2015. There has been slow and uneven progress towards achieving these goals, in part due to a continued ‘siloed’ approach to policy-making, despite the UN’s emphasis on the need for cross-sectoral working. For SDGs to be successfully delivered, synergies need to be formed at all levels, from household to community to nation, and across multiple sectors.

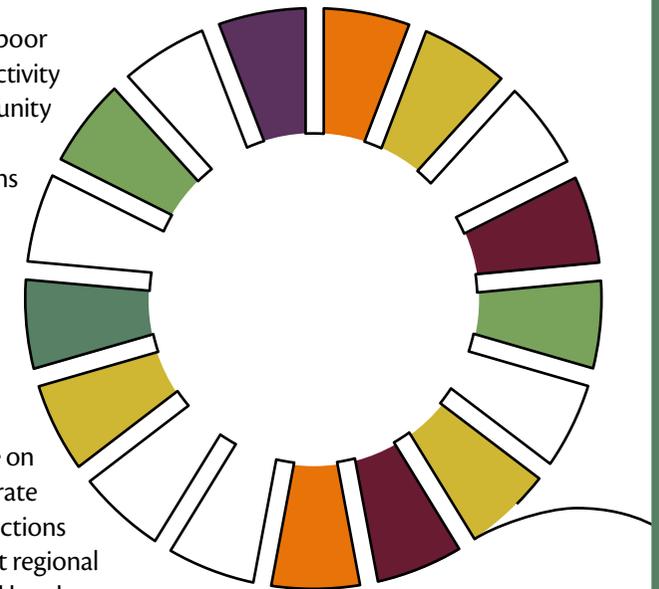
One critically important policy area that connects many of SDGs is the provision of healthy, high-quality diets. Invisible in terms of SDG language and not mentioned among the many targets, healthy diets are a foundation underpinning successful

progress toward targets in health, agriculture, inequality, poverty and sustainable consumption.

Failure to recognise the central role of high-quality diets in addressing

so many development challenges (e.g. low educational attainment, poor physical growth, low labour productivity and more), risks missing an opportunity for governments and partners to invest in the essential policy actions that cut across conventional silos and help them reach their SDGs.

Achieving high-quality diets for all is critically important in accelerating progress of at least 11 of the 17 SDGs, and not just for SDG 2. It can help release the brake on progress and help countries accelerate the delivery of their SDGs. These actions will require high-level leadership at regional and national levels to connect and break down traditional sector silos.





 Key Facts

Putting diets at the heart of the SDGs

Key Facts

Diet quality influences the following SDG targets:



Low-income groups are at high risk of malnutrition, but malnutrition also fuels greater poverty. A 1% loss in adult height due to childhood stunting is associated with a 1.4% loss in economic productivity and 20% reduction in income.



Delivering high-quality diets will engender a virtuous cycle of a healthier and more productive workforce, leading to increased prosperity, reduced hunger, and better food security.



Good nutrition reduces the risk of morbidity and mortality for a range of diseases. Six of the top nine risk factors for the global burden of disease are now related to diet.

Stunting places children in a lifetime of increased risks from NCDs and sub-optimal breastfeeding is responsible for almost 12% of total deaths.

Adults who are overweight or obese are at increased risk of NCDs with severe impacts on health and wellbeing, e.g. type 2 diabetes, stroke and cardiovascular disease.



Poor nutrition fundamentally impairs a person's ability to benefit from education. Stunting before the age of two years predicts poorer cognitive and educational outcomes in later childhood and adolescence.



Poor female nutrition early in life impacts learning potential and productivity, and increases reproductive and maternal health risks. Women in many low- and middle-income

countries typically eat a lower quantity and variety of nutritious foods than their male counterparts.



Malnutrition, in all its forms, carries huge direct and indirect costs. The cost to low-income nations of productivity foregone due to undernutrition has been estimated as 3 to 16% of GDP.



The effects of stunting can be passed on from one generation to another.



Limiting food waste, overconsumption and rises in overweight and obesity by influencing dietary choices could help reduce the pressure on food production. Each year, around one third of all food produced,

equivalent to 1.3 billion tons, worth around US\$1 trillion, is wasted.



The food system is responsible for up to one third of all human-caused greenhouse gas emissions, from manufacture of fertilizer to food storage and packaging.



Better informed consumer demand for high-quality, diverse, safe diets can be used to stimulate demand for food products linked to sustainable production. There is also a growing consensus on the need to price scarce resources, such as land and water. The global food system uses around 70% of fresh water.

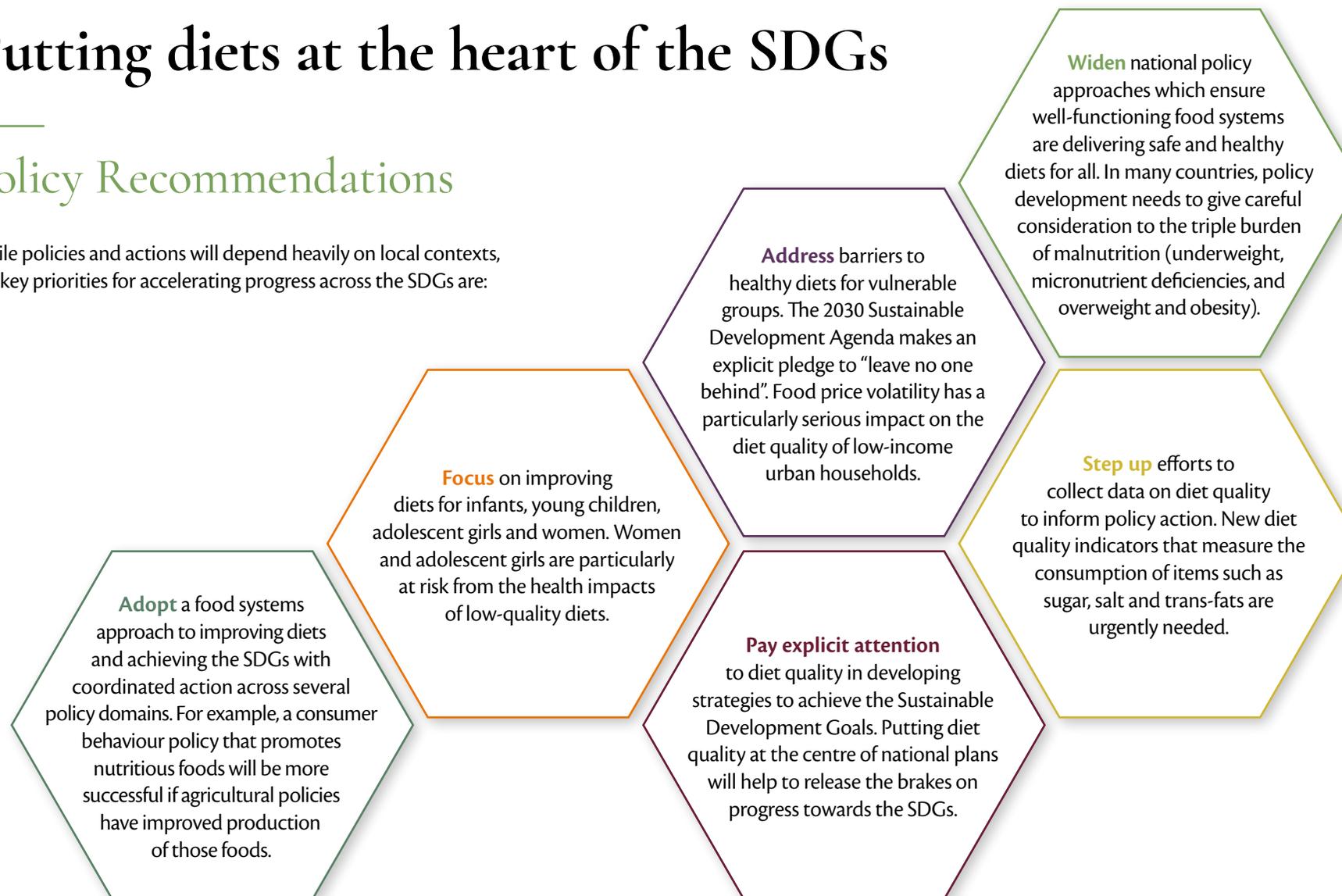




Putting diets at the heart of the SDGs

Policy Recommendations

While policies and actions will depend heavily on local contexts, the key priorities for accelerating progress across the SDGs are:



For best results view
in FULL SCREEN:



Global Panel
on Agriculture
and Food Systems
for Nutrition

Return to the homepage
to explore a new brief:



How can urbanisation influence the food system and diets?

Evidence

By 2050, there will be an additional 2.5 billion urban residents, primarily in Africa and Asia. In sub-Saharan Africa, almost 60% of people already live in cities that have populations between 300,000 to 500,000. Urbanisation presents a complex and dynamic demographic phenomenon which interacts strongly with globalisation, income growth, migration, climate change, population growth, income inequality, health and sustainability.

Urban diets are particularly challenging because they appear to be evolving at a faster pace than rural diets – due to changing social environments and poverty reduction. Urban diets are typically characterised by greater access to cheap calories via highly processed foods; a greater diversity of fresh foods such as legumes, vegetables and fruits; processed foods with beneficial nutrients; and animal-sourced foods.

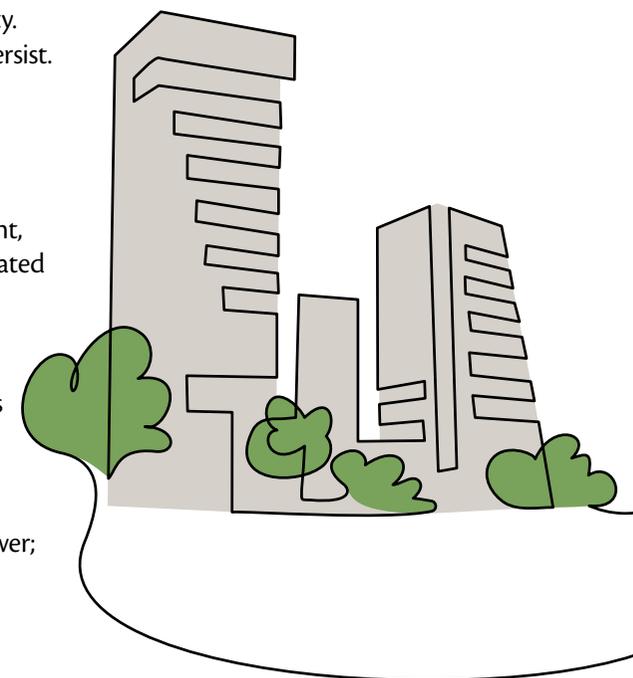
However, urban environments are also characterised by increasing rates of malnutrition. This runs counter to a commonly held belief that greater wealth in urban centres, relative to rural areas, leads to better nutrition. There is evidence showing that as the economies of developing countries grow and urbanisation accelerates, child stunting tends to decrease, but at a slower rate than the concurrent

rise in adult overweight and obesity. Also, micronutrient deficiencies persist.

As such, urban populations face a 'triple burden' of malnutrition, where stunting and micronutrient deficiencies coexist with overweight, obesity and the associated diet-related non-communicable diseases.

Policymakers and urban leaders have a wide range of opportunities to provide greater access to safe, affordable and nutritious foods, through influencing:

- urban consumer purchasing power;
- food transformation and retail marketing in the formal and informal sector;
- market and trade systems;
- urban food production; and
- food safety.





 Key Facts

How can urbanisation influence the food system and diets?

Key Facts

By 2050, there will be an additional 2.5 billion urban residents, with nearly 90% of the increase concentrated in Africa and Asia, equivalent to the entire world population as it was in 1950.

The proportion of stunted children living in cities has increased from 23% to 31%.

By 2020, up to 85% of the poor in Latin America are expected to live in towns and cities.

In Malawi, the rates of anaemia in women were higher in urban residents compared to those living in rural areas.

In China, deficiencies of micronutrients in children were found to be higher in rural areas than urban areas.

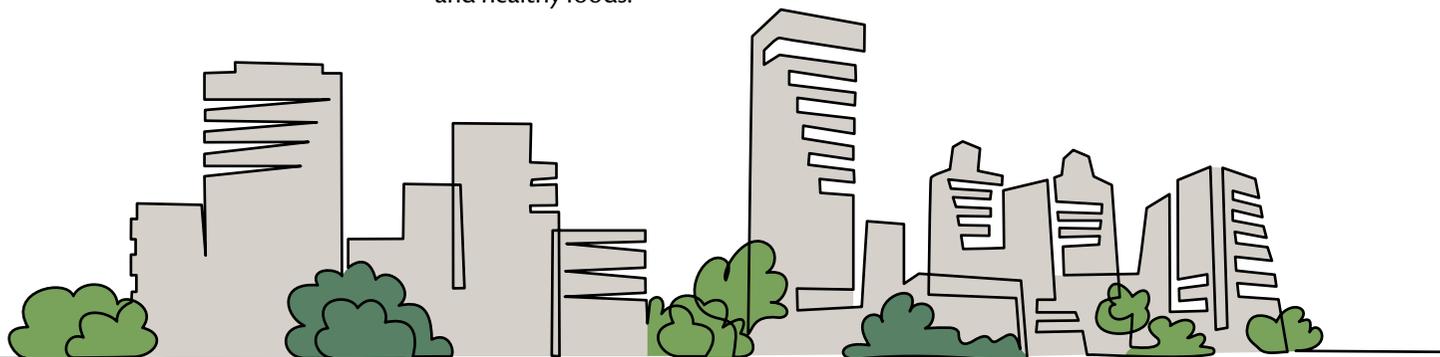
Urban areas have higher density of social media networks, commercial networks and information flows. This can be used to promote and market both unhealthy and healthy foods.

In Indian and Chinese cities, the prevalence of obesity is three to four times higher than in rural areas. In Africa, over a third of the urban population is now overweight or obese, with urban women almost three times more likely to be overweight or obese compared to their rural counterparts.

The urban poor frequently rely on informal 'street' foods, which can vary from 1% in Mozambique to 20% in Tanzania. In Nigeria, adolescents obtained 40 to 70% of their food from street vendors.

In a review of 23 studies the majority of which were conducted in sub-Saharan Africa, daily energy intake from street foods in adults ranged from 13% to 50% and in children from 13% to 40%.

Recent projections show that, by 2030, urban expansion will result in a 1.8%–2.4% loss of global croplands. About 80% of global cropland loss from urban expansion will take place in Asia and Africa.





How can urbanisation influence the food system and diets?

Recommendations – Priority areas for action

Governance:

City/Municipal government

policy makers at the local level should be the primary authority, developing an ‘urban food charter’ (embodying food system principles) as a plan for action.

National governments should promote the decentralisation and empower urban leaders, spread best practice to enhance diet quality and nutritional outcomes, aligned with legislative arrangements and capacity building.

Civil society organisations should facilitate and participate in cross-sector collaborations and act as a challenge function, holding all actors to account.

The business sector should view urban markets as an opportunity for higher profits, and a spur to industrial innovation.

Research:

Which governance processes directly affect the quality of urban diets?

How are urban consumer preferences changing across diverse urban settings?

What evidence exists on the most cost-effective interventions across food systems?

How do ‘hidden’ aspects of urban food systems affect demand, e.g. spatial layout, transport systems?

What role do food industry stakeholders have in shaping future urban food choices and higher quality diets?

How can big data on food purchases, prices, locations and food costs be better used to inform local policy?

Policy:

Policy priority: High-quality diets must be a policy priority for urban populations, to prevent a growing nutritional crisis in cities.

Local champions: Policymakers at a local level need to take a leading role in championing better diets and nutrition, and this requires them to be both mandated and empowered to act.

Urban opportunities: Different sectors can capitalise on the unique opportunities presented within urban food systems.

Wider policy: There is a need to connect with policy areas far beyond food environments and food systems.

Diversity: It is essential to address the needs of different urban population groups in the diverse urban environment.

Obesity: Policies need to be more focussed on addressing the specific challenges associated with rising rates of overweight and obesity.

Data: Experiences, data and information on improving urban diets needs to be collected, rigorously analysed and shared.

For best results view
in FULL SCREEN:



Global Panel
on Agriculture
and Food Systems
for Nutrition

Return to the homepage
to explore a new brief: