

THE STATE OF FOOD AND AGRICULTURE 2013

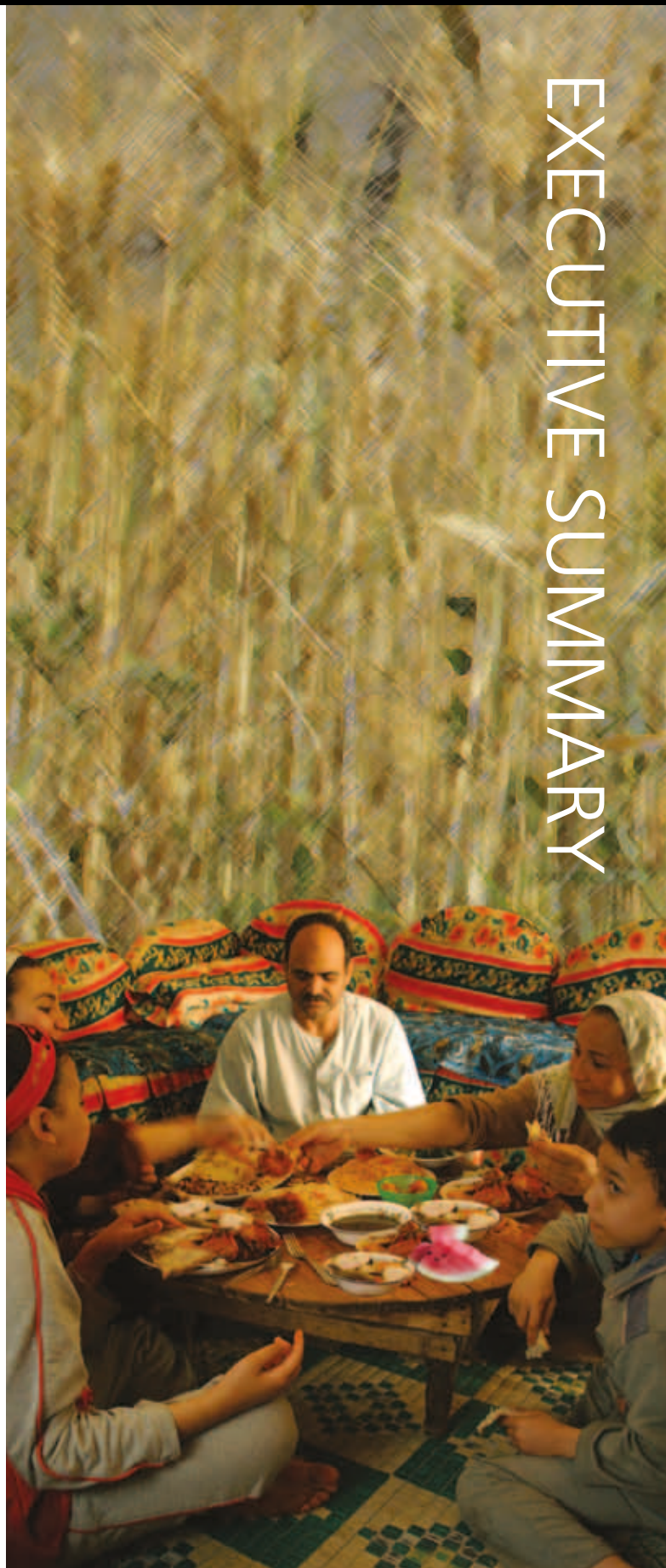
FOOD SYSTEMS FOR BETTER NUTRITION

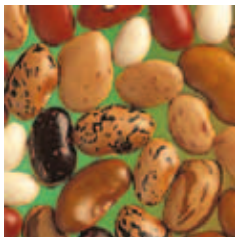
Malnutrition in all its forms – undernutrition, micronutrient deficiencies, and overweight and obesity – imposes unacceptably high economic and social costs on countries at all income levels. *The State of Food and Agriculture 2013: Food systems for better nutrition* argues that improving nutrition and reducing these costs must begin with food and agriculture. The traditional role of agriculture in producing food and generating income is fundamental, but agriculture and the entire food system – from inputs and production, through processing, storage, transport and retailing, to consumption – can contribute much more to the eradication of malnutrition.

Malnutrition imposes high costs on society

FAO's most recent estimates indicate that 12.5 percent of the world's population (868 million people) are undernourished in terms of energy intake, yet these figures represent only a fraction of the global burden of malnutrition. An estimated 26 percent of the world's children are stunted, 2 billion people suffer from one or more micronutrient deficiencies and 1.4 billion people are overweight, of whom 500 million are obese. Most countries are burdened by multiple types of malnutrition, which may coexist within the same country, household or individual.

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The social cost of malnutrition, measured by the “disability-adjusted life years” lost to child and maternal malnutrition and to overweight and obesity, are very high. Beyond the social cost, the cost to the global economy caused by malnutrition, as a result of lost productivity and direct health care costs, could account for as much as 5 percent of global gross domestic product (GDP), equivalent to US\$3.5 trillion per year or US\$500 per person. The costs of undernutrition and micronutrient deficiencies are estimated at 2–3 percent of global GDP, equivalent to US\$1.4–2.1 trillion per year. Although no global estimates of the economic costs of overweight and obesity exist, the cumulative cost of all non-communicable diseases, for which overweight and obesity are leading risk factors, were estimated to be about US\$1.4 trillion in 2010.

Child and maternal malnutrition – in particular child underweight, child micronutrient deficiencies and poor breastfeeding practices – impose by far the largest nutrition-related health burden at the global level, responsible for almost twice the social costs of adult overweight and obesity. The social burden due to child and maternal malnutrition has declined almost by half during the last two decades, while that due to overweight and obesity has almost doubled, yet the former remains by far the greater problem, especially in low-income countries. Undernutrition and micronutrient deficiencies must therefore continue to be the highest nutrition priority for the global community in the immediate future. The challenge for policy-makers is how to address these problems while at the same time avoiding or reversing the emergence of overweight and obesity. This challenge is significant, but the returns are high: investing in the reduction of micronutrient deficiencies, for example, would result in better health, fewer child deaths and increased future earnings, with a benefit-to-cost ratio of almost 13 to 1.

Addressing malnutrition requires integrated action across sectors

The immediate causes of malnutrition are complex and multidimensional. They include inadequate availability of and access to safe, diverse, nutritious food; lack of access to clean water, sanitation and health care; and inappropriate child feeding and adult dietary choices. The root causes of malnutrition are even more complex and

encompass the broader economic, social, political, cultural and physical environment. Addressing malnutrition, therefore, requires integrated action and complementary interventions in agriculture and the food system in general, public health and education, as well as in broader policy domains. Because the necessary interventions cut across the portfolios of several government institutions, high-level political support is required to motivate the necessary coordination across sectors.

Better nutrition depends on every aspect of the food system

Food systems encompass all the people, institutions and processes by which agricultural products are produced, processed and brought to consumers. They also include the public officials, civil society organizations, researchers and development practitioners who design the policies, regulations, programmes and projects that shape food and agriculture.

Every aspect of the food system influences the availability and accessibility of diverse, nutritious foods and thus the ability of consumers to choose healthy diets. But the linkages from the food system to nutritional outcomes are often indirect – mediated through incomes, prices, knowledge and other factors. What is more, food system policies and interventions are rarely designed with nutrition as their primary objective, so impacts can be difficult to trace and researchers sometimes conclude that food system interventions are ineffective in reducing malnutrition. In contrast, medical interventions such as vitamin supplements can address specific nutrient deficiencies and their impacts are more easily observed, but they cannot fully substitute for the broader nutritional benefits offered by a well-functioning food system. Every aspect of the food system must align to support good nutrition; any single intervention in isolation is therefore unlikely to have a significant impact within such a complex system. Interventions that consider food systems as a whole are more likely to achieve positive nutritional outcomes.

Nutrition transition is driven by food system transformation

Economic and social development lead to the gradual transformation of agriculture, characterized

by rising labour productivity, declining shares of population working in agriculture and rising urbanization. New modes of transportation, leisure, employment and work within the home cause people to lead more sedentary lifestyles and to demand more convenient foods. These changes in activity and dietary patterns are part of a “nutrition transition” in which households and countries may simultaneously face the emerging challenge of overweight, obesity and related non-communicable diseases while continuing to deal with undernutrition and micronutrient deficiencies. The complexity and rapidly changing nature of both the malnutrition situation and food systems in individual countries mean that policies and interventions need to be context-specific.

Agricultural productivity growth contributes to nutrition but must do more

Agricultural productivity growth contributes to better nutrition through raising incomes, especially in countries where the sector accounts for a large share of the economy and employment, and by reducing the cost of food for all consumers. It is, however, important to realize that the impact of agricultural growth is slow and may not be sufficient to cause a rapid reduction in malnutrition.

Maintaining the momentum of growth in agricultural productivity will remain crucial in the coming decades as production of basic staple foods needs to increase by 60 percent if it is to meet expected demand growth. Beyond staple foods, healthy diets are diverse, containing a balanced and adequate combination of energy, fat and protein, as well as micronutrients. Agricultural research and development priorities must be made more nutrition-sensitive, with a stronger focus on nutrient-dense foods such as fruits, vegetables, legumes and animal-source foods. Greater efforts must be directed towards interventions that diversify smallholder production, such as integrated farming systems. Efforts to raise the micronutrient content of staples directly through biofortification are particularly promising. Agricultural interventions are generally more effective when combined with nutrition education and implemented with sensitivity to gender roles.

Supply chains offer risks and opportunities for better nutrition

Traditional and modern food systems coexist and evolve as economies grow and urbanization increases. Modern supply chains entail vertical integration of storage, distribution and retailing and offer efficiency gains that can yield lower prices for consumers and higher incomes for farmers. They typically carry a wide variety of nutritious foods year-round, but also sell more highly processed packaged foods, which

can contribute to overweight and obesity when consumed in excess. Modern food processing and distribution also offer new opportunities for the use of fortified foods, which can make important contributions to nutrition.

Although supermarkets are spreading rapidly in low-income countries, most poor consumers in rural and urban areas still purchase most of their food through traditional food distribution networks. These traditional outlets are the primary channel for nutrient-rich foods such as fruits, vegetables and livestock products, although they increasingly carry processed and packaged foods. The use of traditional retail outlets for distributing fortified foods such as iodized salt is another proven strategy for improving nutritional outcomes.

Improved sanitation, food handling, and storage technologies in traditional food systems could boost efficiency and improve the safety and nutritional quality of foods. Reducing food and nutrient losses and waste throughout food systems could make important contributions to better nutrition and relieve pressure on productive resources.

Consumer choices determine nutritional outcomes and sustainability

Making systems more nutrition-enhancing so that food is available, accessible, diverse and nutritious is key, but so is the need to help consumers make healthy dietary choices. Promoting behaviour change through nutrition education and information campaigns within a supportive environment that also addresses household sanitation and appropriate complementary foods has proved effective. Even in locations where undernutrition and micronutrient deficiencies persist as the primary problems, a forward-looking approach that can prevent a rise in overweight and obesity is necessary, especially in the long run. Behaviour change can also reduce waste and contribute to the sustainable use of resources.

Institutional and policy environment for nutrition

Progress has been made: in some countries malnutrition has been significantly reduced over recent decades. But progress has been uneven and there is a pressing need to make better use of the food system for better nutrition. The complexity of malnutrition and its underlying causes means that a multistakeholder and multisectoral approach will be most effective.

Such an approach requires better governance, based on sound data, a common vision and political leadership to be able to plan, coordinate and foster the necessary collaboration across and within sectors.

FOOD SYSTEM INTERVENTIONS FOR BETTER NUTRITION

Policy environment and development priorities

FOOD SYSTEM ELEMENTS	NUTRITION OPPORTUNITIES	POLICY TOOLS
Production “up to the farm gate” (R&D, inputs, production, farm management)	• Sustainable intensification of production • Nutrition-promoting farming systems, agronomic practices and crops - Micronutrient fertilizers - Biofortified crops - Integrated farming systems, including fisheries and forestry - Crop and livestock diversification • Stability for food security and nutrition - Grain reserves and storage - Crop and livestock insurance • Nutrition education - School and home gardens • Nutrient preserving on-farm storage	• Food and agricultural policies to promote availability, affordability, diversity and quality • Nutrition-oriented agricultural research on crops, livestock and production systems • Promotion of school and home gardens
Post-harvest supply chain “from the farm gate to retailer” (marketing, storage, trade, processing, retailing)	• Nutrient-preserving processing, packaging, transport and storage • Reduced waste and increased technical and economic efficiency • Food fortification • Reformulation for better nutrition (e.g. elimination of trans fats) • Food safety	• Regulation and taxation to promote efficiency, safety, quality, diversity • Research and promotion of innovation in product formulation, processing and transport
Consumers (advertising, labelling, education, safety nets)	• Nutrition information and health claims • Product labelling • Consumer education • Social protection for food security and nutrition - General food assistance programmes and subsidies - Targeted food assistance (prenatal, children, elderly, etc.)	• Food assistance programmes • Food price incentives • Nutrition regulations • Nutrition education and information campaigns
AVAILABLE, ACCESSIBLE, DIVERSE, NUTRITIOUS FOODS		

Health, food safety, education, sanitation and infrastructure

Gender roles and environmental sustainability

Economic, social, cultural and physical environment

Key messages of the report

- **Malnutrition in all its forms imposes unacceptably high costs on society in human and economic terms.** The costs associated with undernutrition and micronutrient deficiencies are higher than those associated with overweight and obesity, although the latter are rising rapidly even in low- and middle-income countries.
- **Addressing malnutrition requires a multisectoral approach that includes complementary interventions in food systems, public health and education.** This approach also facilitates the pursuit of multiple objectives, including better nutrition, gender equality and environmental sustainability.
- **Within a multisectoral approach, food systems offer many opportunities for interventions leading to improved diets and better nutrition.** Some of these interventions have the primary purpose of enhancing nutrition. Other interventions in food systems, and in the general economic, social or political environment, may affect nutrition even though this is not their primary objective.
- **Agricultural production and productivity growth remain essential for better nutrition, but more can be done.** Agricultural research must continue to enhance productivity, while paying greater attention to nutrient-dense foods such as fruits, vegetables, legumes and animal products and to more sustainable production systems. Production interventions are more effective when they are sensitive to gender roles and combined with nutrition education.
- **Both traditional and modern supply chains offer risks and opportunities for achieving better nutrition and more sustainable food systems.** Improvements in traditional supply chains can help reduce losses, lower prices and increase diversity of choice for lower-income households. The growth of modern retailing and food processing can facilitate the use of fortification to combat malnutrition, but the increased availability of highly-processed, packaged goods may contribute to overweight and obesity.
- **Consumers ultimately determine what they eat and therefore what the food system produces.** But governments, international organizations, the private sector and civil society can all help consumers make healthier decisions, reduce waste and contribute to the sustainable use of resources, by providing clear, accurate information and ensuring access to diverse and nutritious foods.
- **Better governance of food systems at all levels, facilitated by high-level political support, is needed to build a common vision, to support evidence-based policies, and to promote effective coordination and collaboration through integrated, multisectoral action.**





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FURTHER INFORMATION

The State of Food and Agriculture, FAO's major annual flagship publication, aims at bringing to a wider audience balanced science-based assessments of important issues in the field of food and agriculture. Each edition of the report contains a comprehensive, yet easily accessible, overview of a selected topic of major relevance for rural and agricultural development and for global food security.

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