

Changing food systems: implications for DFID priorities

Based on the conclusions of the DFID K4D Learning Journey on Changing Food Systems

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Food market in the city of Douala, Cameroon.

PHOTO: UN WOMEN/RYAN BROWN (CC BY-NC-ND 2.0)

How food systems change over the coming decades will have profound implications for development goals and priorities. Changes in what we eat, population growth, and urbanisation – along with the implications of climate change and unsustainable use of resources – create both opportunities and risks. Growing demand for food is a significant opportunity for inclusive economic development and jobs. At the same time, unhealthy diets and environmental impacts pose systemic risks for health, human security, and stability. Realising the opportunities and mitigating the risks requires a food systems approach. A holistic view is needed of food consumption, distribution, and production within a clearer political economic understanding of incentives for change. Development priorities – such as health, jobs, food security, poverty alleviation, gender equality, and responding to climate change – all require transforming food systems to be healthier, more inclusive, and sustainable.

Contents

Key messages 2

1. Introduction 2

2. Why food systems matter for development 4

3. Key drivers of change in food systems 6

4. Food systems in different contexts 7

5. Opportunities and implications for DFID programmes 10

References 14

DFID CORE TEAM FOR THE LEARNING JOURNEY ON CHANGING FOOD SYSTEMS
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KEY MESSAGES

Integrated approaches for economic development, resilience and tackling poverty

- > Most development challenges (e.g. employment, poverty, gender, environment, nutrition) are interrelated with how food systems function at local, national, and global levels.
- > Food systems matter because the majority of people in developing countries are employed in the food and agriculture sectors, human health is profoundly influenced by what people eat, and the production and distribution of food is an important contributor to climate change.
- > Key indicators for food system outcomes - inclusive growth, human health, and environmental impact - are heading in the wrong direction (e.g. malnutrition, climate change, low-paid work), creating systemic risks that threaten development progress, peace, and security.
- > Historically, development programmes have compartmentalised interventions on nutrition, health, agriculture, environment, and climate, and not adequately considered the trade-offs and synergies across food systems.
- > Transforming food systems is key to tackling economic, social, and environmental issues, while creating economic opportunities for investment and job creation.
- > Country-level food system analysis on risks and opportunities is needed to underpin integrated and coordinated development interventions.
- > There are numerous ways in which DFID and other donors can integrate food systems thinking into their policy and programming to improve synergies and impact, as outlined in this Policy Brief.

1. Introduction

Food – the way it is produced, distributed, and consumed – is core to driving inclusive economic development and tackling poverty. Political and social stability depends on people having access to sufficient, secure, and affordable food. Yet, all too often, in pursuing development objectives food is taken for granted and treated in a fragmented way as issues of “nutrition”, “agriculture”, or “emergency relief”.

Urbanisation, changing diets, and free trade are trends creating very dynamic food systems, with significant restructuring occurring in low- and middle-income countries (LMICs) that will continue over the coming decades. These changes create both systemic risks and transformational opportunities that demand a deeper understanding of food systems and how to ensure their long-term resilience, inclusiveness, and sustainability. Within this context, the *DFID K4D Learning Journey on Changing Food Systems* (see **Box 1**) examined the trends behind, and the risks and opportunities of these changes, and the implications for DFID priorities.

Inclusive economic development in LMICs is highly interconnected with the food economy. The food and agriculture sectors remain the dominant areas of employment with large distributional effects through the informal food economy, which is growing rapidly with urbanisation. Growth in the agriculture sector

has a larger impact on poverty reduction than growth in other sectors. Conversely, poor nutrition and food quality undermines productive capabilities. The food and agriculture sectors also have a big impact on the environment and climate change, with negative implications for economic development.

Hence, food systems – from production to consumption – impact significantly on all of the Sustainable Development Goals (SDGs), as **Figure 2** shows, and underpin inclusive economic development. A food systems approach (see **Figure 1**) looks holistically at food consumption, distribution, and production; examines the outcomes of food systems in terms of economic, health, and environmental considerations; looks at the wider drivers of change; explores the incentives for how different actors behave; and seeks to understand the interactions with wider social and environmental systems. This is very different to the siloed approaches that have often characterised development interventions in health, nutrition, agriculture, or environment.

“Food system approaches are very different to the siloed approaches that have often characterised development interventions”

BOX 1

DFID K4D Learning Journey on Changing Food Systems

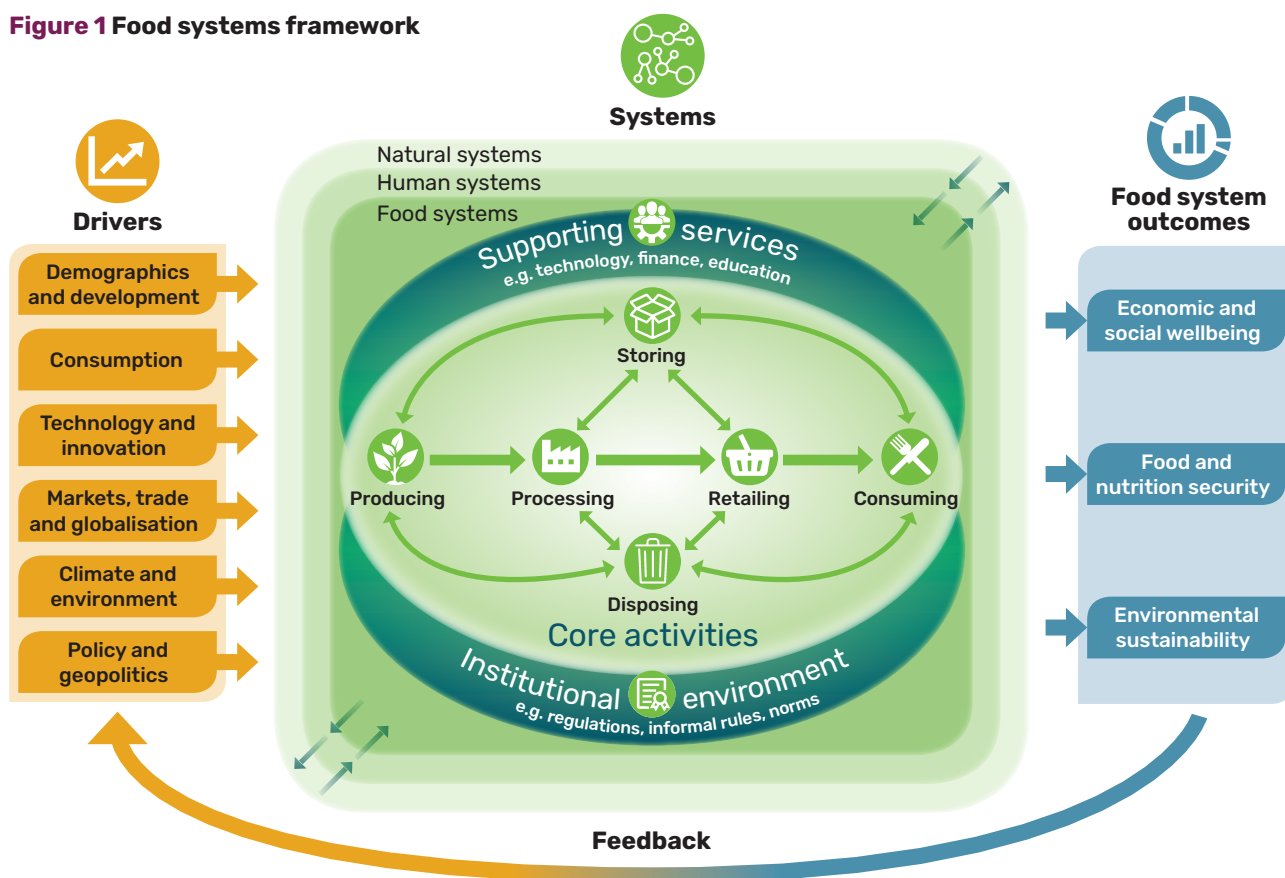
The Learning Journey ran from March 2018 to April 2019. It brought together external experts and DFID country and headquarters staff from across cadres to explore the longer-term implications of changing food systems for DFID’s development goals. The Learning Journey involved:

- > Two framing sessions on food systems held within the DFID 2017/18 Multi-Cadre Conferences on Leave No One Behind.
- > Production of three K4D reports on the priority areas of “nutrition and urbanisation”, “economic transformation and job creation”, and “protracted crises”.
- > Two round table forums to discuss the “nutrition and urbanisation”, and “protracted crises” themes.
- > DFID Staff participating in two international **Foresight4Food** workshops.
- > Support for the 2019 DFID Livelihoods Cadre conference on food systems (see **Box 4**).
- > In-country round table discussions in Ghana, Nigeria and Ethiopia, which included DFID country staff and DFID partners (see **Box 3**).
- > A series of planning, coordination, and wrap-up meetings with the core group of staff guiding the Learning Journey.

See **Box 5** for K4D Learning products and reports on food systems.

Learning Journey webpage: <https://www.foresight4food.net/k4d/>

Figure 1 Food systems framework



Source: Adapted from Woodhill and Hasnain, 2019.¹

¹Adapted from “A framework for understanding foresight and scenario analysis” [Working draft], by J. Woodhill and S. Hasnain, 2019, Foresight4Food Initiative (https://www.foresight4food.net/wp-content/uploads/2019/05/Foresight-Approach_May_2019.pdf). © 2019 Foresight4Food Initiative. Adapted with permission.

2. Why food systems matter for development

Employment: Food systems are by far the biggest employer in LMICs. This includes employment in agriculture, food processing, and food services. For example, recent data from West Africa show that 30% of all the jobs in manufacturing and industry and 31% of the jobs in the service sector are related to the food system. Off-farm employment in the food system counts on average for 22% of the total jobs in West Africa (Allen, Heinrigs, & Heo, 2018). As countries develop and urbanise, there is a shift in the employment share in food processing and services versus agriculture. For example, agriculture in low-income countries in eastern and southern Africa account for 91% of the total jobs in the food system, while just 6% work in food services, and 3% in food processing. In the food system in a middle-income country like Brazil, there is a shift away from agriculture, with 49% of jobs in agriculture, 26% in food services, and 25% in food processing (Townsend, Benfca, Prasann, & Lee, 2017).

Investment and markets: Food systems represent significant market opportunities as population, urbanisation, and incomes rise. Shifting demand for purchased food is creating new markets in both urban and rural regions, which are attractive for investment. On the supply side, the agricultural transition towards commercialisation also creates market opportunities. For example, in Ethiopia each US\$1 of output generated in agriculture stimulates a further US\$1.23 in economic activity in other parts of the economy. Of this growth, 40% comes from higher demand for inputs in agriculture and the use of agricultural outputs in other industries such as food processing; and 60% is from increased demand for goods and services resulting from higher agricultural incomes and the associated spending effects (Townsend et al., 2017). In Bangladesh, a 10% increase in farm incomes generated a 6% increase in off-farm incomes through strong forward and backward linkages (Townsend et al., 2017).

Private sector development: Food and agriculture sectors have diversified rapidly in LMICs. Micro, small and medium enterprises associated with food systems (e.g. processing, storage, transport, packaging, marketing, research) have rapidly developed, creating an important “off-farm” food systems economy. Typically, the farmer’s share in the total added value of the supply chain drops as off-farm entrepreneurial opportunities develop. Reardon (2015) estimated for Asia and Africa food supply chains about 40% of added value from farms, 40% from midstream food processing and services, and 20% from the downstream (retail and consumption). For example, the rise of intensive shrimp farming off Java, Indonesia, in islands with improved water conditions, created opportunities in feeding,

storage, and transportation industries on Java. Shrimp feed is sent by boat to these islands, and the harvested shrimp are shipped and trucked to export points and cities (Reardon, 2015). In Senegal, in the past decade, the millet supply chain has rapidly transformed with the emergence of processed and prepared millet products. This transformation has featured the development by small female-headed enterprises of branded, packaged millet and millet-cum-dairy products for the Dakar market (Badiane, 2016: in Reardon et al., 2018).

Healthier diets and nutrition: The food system is central to providing people with safe, nutritious diets and plays an instrumental role in reaching SDG 2 to end hunger and malnutrition in all its forms. Yet many food systems are presently failing to make nutritious foods more available and affordable, in particular to low-income consumers in developing countries. And the world is off track from reaching SDG 2 to end malnutrition in all its forms, as data from the Development Initiatives, 2018 Global Nutrition Report confirms. Malnutrition affects 1 in 3 people worldwide – with persistently high levels of undernutrition and rapidly increasing rates of overweight and obesity and associated non-communicable diseases in many LMICs. Poor quality diets have become the number one risk in the global disease burden (Global Panel on Agriculture and Food Systems for Nutrition, 2016). Malnutrition not only has a dramatic impact on people’s health, productivity and income, but also bears significant economic costs, estimated at US\$3.5 trillion per year globally according to the 2018 Global Nutrition Report (Development Initiatives, 2018). Enabling the consumption of healthy diets by strengthening food markets to increase the supply of affordable nutrient-diverse food is vital for preventing and reducing malnutrition.

Fighting poverty and inequality: The bulk of the world’s poorest and most vulnerable people depend on the food sector for their livelihoods, whether as farmers, farm labourers, street vendors, or employees in the informal food processing and distribution sector. Because of the very large number of people involved in the food sector, growth in this sector can have a disproportionate impact on poverty and inequality relative to other sectors, such as extractive industries where wealth tends to be captured by elites.

Gender: Opportunities and risks of changing food systems are not equal for men and women, yet food systems represent a critical opportunity for women’s economic empowerment. Most female employment within food systems is still in agriculture. However, women are

“Poor nutrition has a dramatic impact on people’s wellbeing, their productivity, and on public costs of health care”

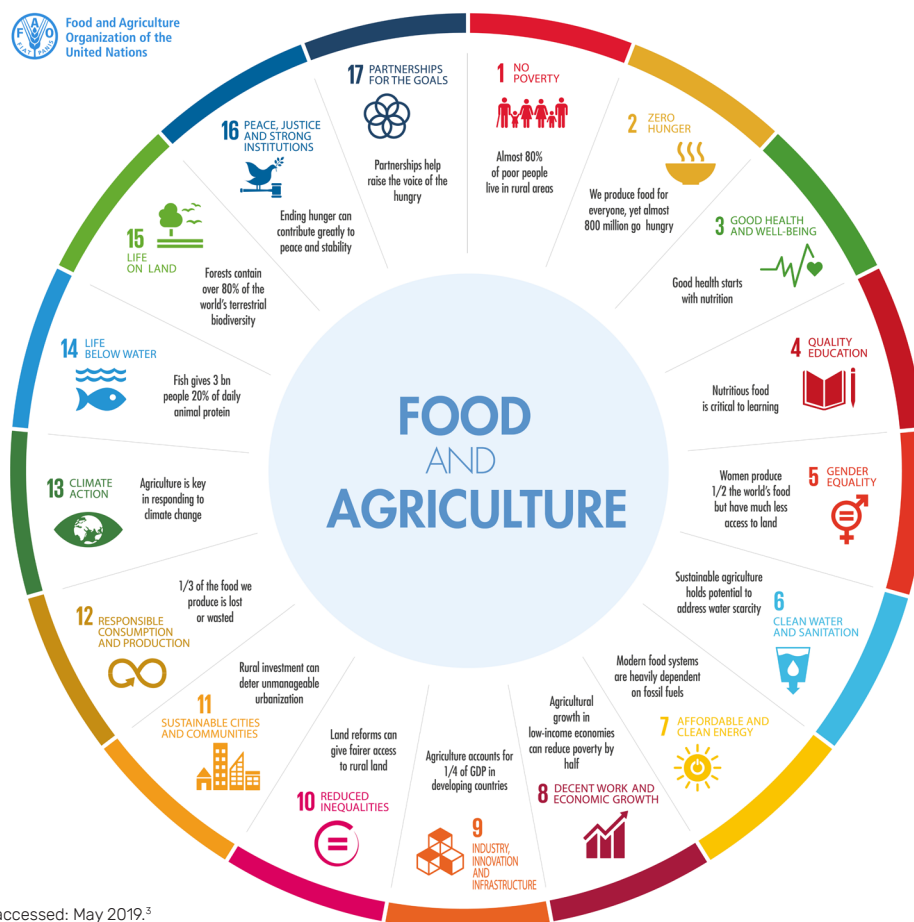
significantly less likely to be heads of agricultural production units than men; they have less access to higher-value land (in terms of equipment such as irrigation or land conditions), and usually have smaller farms (IPAR, 2015). Food system transition to commercialisation seems to create low-paid non-farm jobs for women, while they are pushed further aside on ownership of commercial farming activities (Dancer & Hossain, 2018). However, in more urban areas, non-farm food activities can be highly profitable sources of income for women. Yet, women rarely have access to the resources needed to develop their activities in relation to their potential and ambitions.

Peace and stability: Peace and stability depend on people being able to afford basic food needs; hence, pressures and shocks to food systems often have a direct link to protracted crises and conflicts. Food insecurity is not only a consequence of conflict, but can also fuel and drive conflicts, especially in the presence of unstable political regimes, a youth bulge, stunted economic development, slow or falling economic growth, and high inequality. According to the FAO (2018), 40% more of ongoing food crises are considered as protracted than

in 1990; approximately half a billion people are currently affected by protracted crises, mainly in sub-Saharan Africa and the Middle East. Almost 122 million, or 75%, of stunted children under the age of five live in countries affected by conflict (FAO, IFAD, UNICEF, WFP, & WHO, 2017). The majority of humanitarian assistance between 2005 and 2015 was directed at protracted crises, while food aid has profound impacts on local food markets. Furthermore, conflicts between pastoralists and farmers are increasingly a concern for stability and are a reason for low investment in food systems in those areas.²

Climate change: People and communities in LMICs who are vulnerable to extreme weather now will become more vulnerable in the future and less resilient to climate shocks (Wheeler & von Braun, 2013). Climate change will impact agriculture production severely, particularly in sub-Saharan Africa. A combination of climate change and rapid population growth increases water scarcity, outbreaks of pests and diseases, and greater variability of temperatures and rainfall (Jayne, Yeboah, & Henry, 2017). Extreme weather events are likely to become more frequent and increase uncertainties in the global food system. This could result in an increase in conflict over natural resources.

Figure 2 The importance of food systems for achieving the SDGs



Source: FAO, n.d. Date accessed: May 2019.³

² This issue was raised during the DFID K4D work sessions with DFID country offices in Ethiopia, Nigeria and Ghana.

³ From "Food and Agriculture at the Centre of the Sustainable Development Goals", infographic, by FAO, n.d. (http://www.fao.org/fileadmin/user_upload/codexalimentarius/photo-archive/Infographics/SDG-Wheel.jpg). © 2019 Food and Agriculture Organization of the United Nations (FAO). Reproduced under CC BY-NC-SA 3.0 IGO

3. Key drivers of change in food systems

Demographics and development: The global population is expected to reach 9.8 billion by 2050 (UN, 2017). Combined with urbanisation and the changing diets of a growing middle class, this has massive implications for food demand and supply. Africa will see the highest population rise – estimated to double (from 1.3 billion in 2017 to 2.5 billion in 2050) – with dramatic implications for a continent that already significantly depends on food imports. The growing wealth of Asian countries combined with an increased population of 1.2 billion between 2017 and 2050 will also have a significant influence on food demand with global implications, as there is limited scope for increased production in the region. The FAO (2017) shows that agricultural production needs to increase by 50% globally to match projected food demand by 2050. In sub-Saharan Africa and South Asia, agriculture output needs to more than double by 2050 to match a significant increase in demand. By 2050, it is estimated that 68% of the global population will live in urban areas (UN, 2017). India, China and Nigeria combined will account for 35% of the projected growth of the world’s urban population between 2018 and 2050. Sub-Saharan Africa and South Asia will experience a significant youth bulge over the coming decades with massive implications for the creation of employment opportunities (FAO, 2017). Between 2015 and 2050, in LMICs the number of people between 15 and 24 years of age is expected to rise from about 1 billion to 1.2 billion (FAO, 2017). Most of these young people are expected to live in sub-Saharan Africa and South Asia, particularly in rural areas, where jobs will likely be difficult to find.

Consumption: Associated with economic development, urbanisation, and food prices, there are profound changes in consumption patterns and diets. Higher incomes lead to much higher demand for animal proteins, while both richer and poor groups are consuming high proportions of energy-rich and nutrient-poor highly processed foods (fats, oils, and sugars). Also, in Africa, processed foods have penetrated both rural and urban markets. Tschirley, Reardon, Dolislager, and Snyder (2015) show that 56% of urban and 29% of rural household food expenditure (in value terms) went on processed foods. This could have dire longer-term consequences for both human health and environmental sustainability. The EAT-Lancet report (2019) shows that the transformation to healthy diets by 2050 will require substantial dietary shifts. This includes a more than doubling in the consumption of healthy foods such as fruits, vegetables, legumes, and nuts, and a greater than 50%

“Urbanisation has driven an elongation of food markets from rural to urban areas spurring a ‘quiet revolution’ of informal micro, small and medium enterprises”

reduction in global consumption of less healthy foods such as added sugars and red meat – primarily by reducing excessive consumption in wealthier countries. A shift to nutritious diets can also help significantly reduce food system associated greenhouse gas emissions and hence contribute positively to climate change mitigation, as shown not only by the EAT-Lancet report (2019), but also previously by the Global Panel on Agriculture and Food Systems for Nutrition (2016) foresight report.

Markets, trade, and globalisation: Urbanisation, changing consumption, and globalisation are dramatically restructuring national, regional, and global food markets. Domestically, urbanisation has driven an elongation of food markets from rural to urban areas spurring what Reardon et al. (2018) refers to as a ‘quiet revolution’ of informal micro, small and medium enterprises in the food and agriculture sectors with rural–urban trade volumes increasing up to 1,000%. International trade in agricultural products has been on the rise: between 2000 and 2015, the volumes of agricultural commodities traded on international markets increased by 127%.⁴ In particular, international trade in meat is booming. However, much of the food produced within developing countries is still consumed domestically, with almost all African countries and many Asian countries being net food importers. Regional trade is growing in some regions, while in others – such as South Asia and West Africa – regional food trade is limited. Supermarket penetration is growing globally, particularly in urban Asia, but also in some parts of sub-Saharan Africa. However, the supermarket revolution has not taken off as fast as initially anticipated, with the informal food market sector likely to remain critical to food supply for decades. Improved food safety standards in value chains and stricter regulations give opportunities to access high-end global markets for LMICs, although there is evidence that, in particular, small-scale farmers and small and medium-sized enterprises (SMEs) in the food system could be excluded due to high compliance costs (Jaffee, Henson, Unnevehr, Grace, & Cassou, 2019). Significantly, most investment in agriculture in LMICs is domestic followed at a distance by government investment. Overseas development

⁴ Data (2017) from Chatham House. Information retrieved from www.resource-trade.earth

assistance and private sector investment in agriculture in LMICs is by comparison small (FAO, 2017). Furthermore, domestic investors put more money into food crops for domestic markets.

Technology and innovation: Innovations in processing, storage, logistics and packaging, and digital technologies (e.g. mobile and digital platforms, big data, blockchain) will have a dramatic impact on food systems over the coming decades. Exactly how this will play out in informal food markets and for smaller-scale agricultural producers is an uncertainty. Technology has the potential to create more economically inclusive food systems; however, there are also high risks of concentration driven by the need for capital, expertise, and management-intensive operations. There is an emergence of novel foods such as algae, insects, seaweed, and meat substitutes, and how disruptive such development might be to food systems is largely unknown at this point.

Policy and geopolitics: Countries need to balance food self-sufficiency with participation and competitiveness in regional and global markets. Food price changes will differ depending on the uneven impact of climate change on agricultural production and the extent to which countries and regions adjust to the changing climate in terms of GDP, wages, and trade. Current major investors in overseas developing countries' food systems are Brazil, China and India. Increasing demand for water is likely to exacerbate cross-border resource management tensions. These complex dynamics create policy challenges and increase geopolitical tensions.

Climate and environment: Climate change is a key driver of change, particularly for LMICs. Food systems are a major contributor to climate change, biodiversity loss, pollution, soil degradation, and fresh water use. At the same time, in a negative cycle food systems are heavily impacted by these climatic and environmental changes. Food systems, from production to consumption, account for approximately 30% of greenhouse gas emissions. Agriculture alone contributes 17% directly to the share of the greenhouse gas emissions that cause climate change, and an additional 7–14% through land use changes (OECD, 2016). Other sectors (e.g. energy) are decarbonising more quickly, meaning that this percentage is likely to increase. Climate change will negatively affect agricultural productivity and create much greater vulnerability to extreme weather events and plant diseases. The worst of these effects will be in the

poorest and most highly populated regions of the world. Hence, food systems are part of the problem – and an important part of the solution.

4. Food systems in different contexts

A key insight from the Learning Journey was to recognise the different food system contexts in which DFID may operate. These include: (1) areas of protracted crises and conflict; (2) areas of rural poverty with limited market opportunity due to marginal natural resources and/or poor infrastructure; (3) areas of rural poverty where there is market potential but poor households lack the assets to access them; (4) areas of urban poverty; and (5) areas of commercial and export-oriented agriculture and food supply. These contexts are shaped by the degree of conflict, effectiveness of government, levels of poverty, climatic conditions, natural resources, levels of infrastructure, access to services, and access to markets. Very different interventions and policy directions are needed to optimise the food system outcomes in each specific context.

As illustrated in **Figure 1**, there are three interrelated outcomes to optimise from food systems:

- > **Economic and social wellbeing:** Food systems are a major source of jobs in LMICs and a big part of the economy, and bring export income; at the same time, food is a big expenditure for poor families, making food prices critical to wellbeing. Food is also a fundamental element of culture and how we socialise, and an important part of our happiness.
- > **Food and nutrition security:** Enabling healthy, safe, nutritious, and affordable diets for all requires getting both the demand and supply side of the food equation right.
- > **Environmental sustainability:** There is a clear need to make food system outcomes less damaging to the environment, focusing on its potential contribution to mitigating climate change and restoring biodiversity.




As illustrated in **Box 2**, these food system outcomes can be analysed in each context by looking at the key data and trends, and assessing what the systemic risks and transformational opportunities could be for each outcome. Critical to bring into the analysis are the issues of gender, resilience, and modern slavery (exploitation). **Table 1** provides a simplified global level example of such an analysis.

BOX 2

Scoping framework for country analysis of changing food systems

Based on the food systems model and different food systems contexts, the framework below provides a tool for analysing food systems issues at country level. For each of the different food systems contexts, data on trends can be collected in relation to the key food systems outcomes of health and nutrition, income and jobs, and climate and environment. This then enables systemic risks and transformational opportunities to be identified. Overall analysis of the framework can help to guide programming based on the contexts and issues around which there are the greatest risks and/or opportunities. **Table 1** provides a simplified global level example of such an analysis.



































Figure 3 Scoping framework to analyse changing food systems: used for insights from the Learning Journey on Changing Food Systems

Food system context	Food system outcomes*			Implications for programming and policy
	Health and nutrition 	Income and jobs 	Climate and environment 	
Areas of protracted crisis and conflict	Data and trends: Systemic risks: Opportunities:			
Rural poor with limited market opportunities	Data and trends: Systemic risks: Opportunities:			
Rural poor with viable market opportunities	Data and trends: Systemic risks: Opportunities:			
Urban poor	Data and trends: Systemic risks: Opportunities:			
Fully commercial and export-oriented food system suppliers	Data and trends: Systemic risks: Opportunities:			

*Have you addressed crosscutting themes (gender, resilience, exploitation)?

Source: Authors' own

Table 1 Illustration of how the scoping framework can be used with some insights from the *Learning Journey on Changing Food Systems*

Food system contexts	Description	Food systems issues and outcomes	Implications for DFID priorities
		 Health and nutrition  Income and jobs  Climate and environment	
People living in areas of protracted crisis and conflict	Nearly 25% of the world's population live in areas of protracted crisis and 93% of those in extreme poverty live in these areas. This also includes the 65 million people forcibly displaced.	<ul style="list-style-type: none">  High prevalence of food insecurity and poor nutrition.  Limited job and income-earning opportunities.  Often are in areas of limited agricultural potential.  Climate shocks have a significant impact on agriculture and could contribute to protracted crises.  Food economy is often linked to war economy.  Women's economic empowerment and gain of control over resources during crises are linked to better household food consumption and improved child nutrition. 	<ul style="list-style-type: none"> > This is an increasing focus for DFID, and taking a food systems approach to improve health, create greater resilience and self-reliance will become essential to contain costs of emergency relief and delivering on the SDGs. > Need to shift to more integrated approaches to development and humanitarian aid to create greater resilience. > Food is a primary need and integrating food aid supply and distribution into local market mechanisms can be a way of improving self-reliance and creating economic opportunities in fragile areas and refugee camps.
Rural poor with limited market opportunities and/or living in marginal areas	65% of the world's poor still live in rural areas, often in places that have marginal natural resources, poor infrastructure, and limited access to markets and employment.	<ul style="list-style-type: none">  Poor nutrition and child stunting remains endemic in many poor rural areas.  In marginal areas and for farmers on very small plots, it is often impossible to make a "living income" from farming.  Over 80% of smallholders (410 million farms) are <1ha, with limited opportunities for commercialisation; this represents over 2 billion people.  For people with limited other sources of income, food production for self-sufficiency or very localised markets remains critical to food and nutrition security.  Many of the marginal areas with high populations of poverty are also at high risk from climate change.  Many marginal areas see substantial outmigration, which has implications for gender roles.  Social protection, safety nets, and social services play a key role in building resilience and increasing incomes. 	<ul style="list-style-type: none"> > Tackling poverty and poor nutrition in these areas requires a complex mix of interventions that integrate social protection with education, and support to find alternative livelihoods as well as agricultural development. > For many smallholder farmers in marginal areas, commercialisation of farming will not be a viable option and alternatives need to be found. > Long-term strategies are needed to manage a transition out of agriculture for many. > Agricultural development needs to focus not just on commercialisation, but on semi-subsistence strategies that can improve nutrition and create greater resilience to climate change. > These are critical areas for DFID's attention to avoid people being left behind and potentially creating a source of social unrest and migration.
Rural poor with viable market opportunities	A significant number of rural poor live in areas where there is potential to gain income and employment in food systems, but they lack the financial and advisory services and infrastructure to capture these opportunities.	<ul style="list-style-type: none">  Urbanisation and growing food demand present an opportunity for small-scale producers and food system entrepreneurs to cater for emerging markets in urban areas – particularly the small and medium-sized cities that are set to emerge and dominate rural areas.  The shift in consumption patterns will also mean a shift in employment in food, with potentially fewer people working in agriculture and primary production, but more employed in wholesaling, processing, and vending.  Current food consumption patterns of rural poor are increasingly nutritionally unhealthy and unsafe.  Current food production is environmentally unsustainable and requires massive changes in food systems. 	<ul style="list-style-type: none"> > Focus for this group needs to be viable commercialisation with attention for opportunities across the entire food system. > Public investment is needed in infrastructure, education, food and agriculture research, and advisory services that can develop productive capabilities. > Investments directed towards added value creation in the agrifood sector are needed. > Access to financial services remains a critical constraint. > The food and agriculture sectors provide significant opportunities for women's economic empowerment, but focused policies, programmes, and investments are needed to realise this potential.
Urban poor	Rapid urbanisation is leading to a large number of poor urban households who depend on purchased food for their daily food intake, but lack access to affordable nutritious food.	<ul style="list-style-type: none">  The urban poor often live in "food deserts", areas in cities where people have very limited access to food – particularly healthy food.  Large urban poor populations still rely heavily on the informal economy for accessible and affordable food.  However, there are often issues with food safety and quality in informal food markets.  Middle-sized cities provide more opportunities to strengthen local food systems and create better enabling environments for improved urban nutrition through better sanitation infrastructure and increased access to nutritious foods.  The extreme poor and marginalised in urban areas spend a disproportionate amount of their income on food, making them vulnerable to food price rises.  Because they depend on purchased food, the urban poor are particularly vulnerable to food shocks created by climate change.  The urban poor are also becoming increasingly dependent on highly processed foods that have poor nutritional value. 	<ul style="list-style-type: none"> > Sustainable urbanisation is an important theme for DFID, which needs to include a full understanding of the environmental, health, and employment implications of how cities are fed. > There is a need to rethink the governance of city decision-making, and city councils have begun to recognise food system risks and opportunities. > City Region Food Systems are a new concept for better integration of food production with the city environment and peri-urban areas. > Tackling the health aspects of food quality and safety in urban food processing and marketing. > Enabling greater global commitment to the triple burden of undernutrition, obesity, and micronutrient deficiency in the urban context that encourages North-South and South-South collaboration and learning.
Fully commercial and export-oriented food system suppliers	Growth of a fully commercial agriculture and food sector including export is important for overall economic development and the creation of jobs, and contributes to a prosperity agenda. It can make positive contributions to the other food systems contexts in terms of government revenue and sector innovation.	<ul style="list-style-type: none">  Risk of foreign and domestic investment "land grabs" that displace people from their land and livelihood options with negative impact on income, food, and nutrition security.  Domestic food supply serves the urban elite and shifts to export-oriented cash crops. These City Region Food Systems have negative impacts on access to nutritional food.  Domestic food processing orients towards products of poor nutritional value with safety issues.  Poor working conditions and wages in the sector, in particular, impacts gender relations.  Poor enabling business environment constrains investment and economic development in the food and agriculture sectors.  Impact of commercial and export-oriented food system suppliers on environment and climate change.  Increasing dependence on food imports. 	<ul style="list-style-type: none"> > Understanding the implications of the commercial food sector in the wider food system in terms of nutrition and inclusive economic development. > This sector can contribute to the Prosperity Agenda. > All investments in food systems, in particular in fully commercial entities, should take into account inclusiveness, conflict sensitiveness, and climate-smart solutions. > This sector is often capital-intensive and may create fewer jobs. > The jobs created in the fully commercialised food economy should offer fair working conditions.

Source: Authors' own

5. Opportunities and implications for DFID programmes

Working on food systems requires long-term vision, multidisciplinary approaches and scenario thinking. Based on the conclusions of this Learning Journey, practical examples of areas that DFID could invest in and support to better integrate food systems into its programming are given below.

Economic development and investment:

- > Enterprises that create employment and economic activity by providing added value to farm produce and improved marketing and distribution of food products, which also are economically inclusive, contribute to healthier diets and climate mitigation and resilience.
- > Rural infrastructure and services (e.g. electrification and roads) that create the conditions for a value adding food economy and enable market access.
- > Industrial clusters and lead firm-SME linkages that improve efficiency in food value chains and knowledge transfers between actors.
- > Food quality and safety as a driver for creating more opportunities in local food systems for small- and medium-scale entrepreneurs.

“Food quality and safety is a driver for creating more opportunities in local food systems”

- > Upgrading informal and semi-formal food supply chains to improve economic efficiency and competitiveness, while enabling strong engagement of micro, small and medium enterprises.

Employment and decent jobs:

- > Focusing specifically on the economic development and employment opportunities of off-farm employment in the agrifood sector.
- > Providing access to the education and training needed for employment and entrepreneurship in the agrifood sector.
- > Given the largely informal nature of work in the agrifood sector, improving labour policies, fair working conditions, worker’s rights, and protecting against forced and child labour.
- > Improving occupational and health safety standards across value chains.



Yangon Fish Market, Myanmar.

PHOTO: ©DFID 2019

BOX 3

In-country sessions on food system change in Ghana, Nigeria and Ethiopia

In three DFID partner countries, work sessions brought together DFID staff and partners to map and discuss trends, risks, opportunities, and policy implications of food systems for their country. These sessions, facilitated by the K4D Learning Journey, brought together staff from across the domains of health, agriculture, economics, nutrition, and environment. It was recognised that to date there has been little consideration of development issues from an overall food systems approach. The opportunity for DFID and its partners to explore the issues was highly appreciated and generated ideas for follow-up.

DFID **Ghana** mapped actors in the food economy and looked at different scenarios for developing the food economy. The importance of Ghana’s agrifood sector to the economy is clear; however, currently the sector is underutilised and import-dependent for some key commodities. Improving food nutritional diversity and quality could be a driver for better opportunities in local food systems and increase opportunities for local sourcing. DFID could take a more integrated approach to investment decisions to assess impacts and implications for food systems. There is a need for a better understanding of “desirable” and “non-desirable” futures for small-scale farmers.

Nigeria has many opportunities for a transformation of its food system, driven by an increasing population and a strong urban demand for food. Innovation, new technologies, and a young, better-educated population could also increase the economic potential of the food system. However, participants concluded that these opportunities are often overwhelmed by major structural barriers, particularly poor governance. A focus on private sector actors as contributors to positive change in food systems – for example to embrace the concept of inclusiveness, create healthier food, and maintain sustainable supply chains – should be made.

In **Ethiopia**, the discussion focused on healthy, safe, and nutritious diets, and how food systems could serve displaced people. Overall, the production side often overshadows the role that the demand side has on food systems. With urbanisation and higher incomes, more emphasis should go to the demand side in development programmes. For example, production of nutritious food does not automatically lead to healthier nutritious diets for households, and more could be done to increase the awareness of businesses regarding the implications of poor nutrition for their workers. Fortifying food is one option to tackle malnutrition, but capacity to fortify food in Ethiopia is weak and regulations are lacking, resulting in some missed opportunities and false claims by the food industry. Food aid does not optimise use of local food markets and makes limited use of cash transfers. More evidence is needed on the impact of cash schemes on the nutrition of refugees and its impact on local markets. A deeper understanding of peace and security in relation to food systems is needed and how to react to localised shocks and conflicts.

Health and nutrition:

- > Linking promotion of healthy diets to production of more diverse and nutrient-rich food types to improve nutrition for rural and urban populations through national food systems strategies.
- > Improving rural–urban food linkages, particularly for fresh fruit and vegetables.
- > Tackling the health aspects of food quality and safety.
- > Balancing current policies on input subsidies for staples with new stimulation measures for nutrient-rich food supply and effective social protection mechanisms that incentivise good nutrition.
- > Enabling greater global commitment to the triple burden of undernutrition, obesity, and micronutrient deficiency that encourages North–South and South–South collaboration and learning.
- > By innovating on the cooking space to improve cooking heat and time, or reduce the amount of oil needed, the opportunities for street vendors can increase to allow for more variety in healthier products sold and less food waste.
- > Foods could be prepared to order, instead of in bulk and warmed up. This change also has the potential to improve food safety and reduce foodborne disease transmission.

Agricultural transition and leaving no-one behind:

- > Develop transition strategies – with the right policy mix – for the transformation of small-scale agriculture, recognising the difference between farmers who have commercial potential and those who will remain marginal and will ultimately need to find alternative livelihoods.
- > Long-term transition strategies should include semi-subsistence strategies that can improve nutrition and create greater resilience to climate change.
- > Given the lack of alternative employment opportunities, it is critical to understand the role of small-scale agriculture in providing food security and nutrition for a very large number of marginal farmers. This requires clarity in the role of policies for commercialisation, social protection, and food security, and how they interact.

- > Creating better understanding about what drives productivity growth for small-scale farming. Public investments are needed to develop productive capabilities through infrastructure, education, food and agriculture research, and advisory services.
- > Being more critical about the impact of commercialisation and market development programmes in terms of the scale of impact on small-scale agriculture and being clearer on the strategies for tackling those being left behind.
- > Assessing the the impact of emerging domestic “investor” farmers, who are often urban and rural elites able to access land and set up marketing channels, in terms of implications for sector transformation and the equity of land tenure and on-farm employment.

BOX 4

2019 DFID Livelihoods Cadre conference on changing food systems

The 2019 Livelihoods Cadre conference focused on changing food systems and brought together over 60 livelihoods advisers and DFID staff in Myanmar. The conference explored the changing economic structure of agrifood markets and the implications for decent jobs, mobility, and nutrition. It also assessed the implications for HMG Prosperity Agenda and opportunities for linkages between DFID programmes and the Department for International Trade, and the Foreign and Commonwealth Office. The event provided an opportunity for country offices to learn from each other’s experiences and collectively assess the implications of changing food systems for DFID priorities. Field trips in Myanmar looked at changes in a range of agricultural and fish value chains. Integrated into the week were sessions on power in the agrifood sector, nutrition, and private sector engagement “best buys” for development funding in the agriculture sector.

Humanitarian assistance and social protection:

- > Implementing more flexible systems for countries in protracted crises with a much better integration of development assistance and humanitarian aid to create greater resilience and preparedness for shocks, including drought and natural disasters. This requires an entire food systems approach.
- > Generating a deeper understanding of the interlinkages between food systems and conflict and security. Food system and peace and security experts should work collaboratively on decision-making for programming in situations of conflict. In particular, there is a need to ensure food is not used as a weapon or means of financing war.
- > Integrating social protection programmes with broader growth, investment plans, and employment policies, particularly related to agriculture programmes.
- > Integrating a gender and youth employment lens in the monitoring and evaluation systems of social protection programmes to better understand impacts.

Environment and climate change:

- > Understanding the overall impact of food systems on climate and environment and recognising that fundamental changes in food consumption and production will be needed to respond to climate change.
- > Better assessing the impact of climate change on food systems and the implications for poor and vulnerable groups.
- > Developing climate-smart food systems that integrate issues of production, urban food supply, and employment opportunities.
- > Better assessing the overall risks to food systems from environment and climate change, including drought, natural disasters, disease outbreaks, water scarcity, and soil degradation, and how to put in place measures to increase the resilience of overall food systems and vulnerable populations.

BOX 5

K4D Learning products and reports on food systems

Videos

- > K4D (Producer). (2018). *Food systems: Why they have to change – Tim Benton* [Online video]. Available from <https://youtu.be/Z4PK4Vp3bfk>
- > K4D (Producer). (2018). *Protracted Crises: Lessons learnt from pastoral areas – Adrian Cullis* [Online video]. Available from https://youtu.be/CxH7TRYdp_Q
- > K4D (Producer). (2018). *Reshaping food systems in an urbanised world – Shenggen Fan* [Online video]. Available from <https://youtu.be/fEfSulJt85Y>
- > K4D (Producer). (2018). *Getting food aid and humanitarian assistance to contribute to development – Simon Levine* [Online video]. Available from <https://youtu.be/M931BfKIVso>
- > K4D (Producer). (2018). *Strengthening resilience in food systems against conflicts and shocks – Rami Zurayk* [Online video]. Available from <https://youtu.be/oPW3GLQxQkk>
- > K4D (Producer). (2018). *Food systems approach in conflicts and protracted crises – Rami Zurayk* [Online video]. Available from <https://youtu.be/XV6tb7Esz8w>

Input reports

- > Quak, E. (2018). *Food systems in protracted crises: Strengthening resilience against shocks and conflicts* (K4D Helpdesk Report 447).
- > Tull, K. (2018). *Urban food systems and nutrition* (K4D Helpdesk Report 383).
- > Quak, E., & Woodhill, J. (2019). *Capturing the economic potential of food systems for the poor* (K4D Emerging Issues Report 22).

Output reports

- > K4D. (2018). *Urbanisation, nutrition and purchased food* (Output Report: Thematic Session on Nutrition and Urbanisation).
- > K4D. (2018). *Food systems in the context of protracted crises* (Output Report: Thematic Session on Protracted Crises).
- > K4D. (2018). *Creating economic opportunities for the agrifood sector in Ghana* (Output Report: Work Session DFID Ghana).
- > K4D. (2018). *Assessing the systemic risks and transformational opportunities of changing food systems in Nigeria* (Output Report: Work Session DFID Nigeria).
- > K4D. (2019). *Linking healthier and nutritious food with sustainable food systems in the context of Ethiopia* (Output Report: Work Session DFID Ethiopia).

Presentations

- > Quak, E., & Woodhill, J. (2019). *K4D DFID Learning Journey on Changing Food Systems: Conclusions and implications for DFID* (K4D PPT presentation).

Policy Briefs

- > Woodhill, J., & Quak, E. (2019). *Changing food systems: Implications for DFID priorities*. (Policy Brief for DFID cadres).

REFERENCES

Allen, T., Heinrigs, P., & Heo, I. (2018). *Agriculture, food and jobs in West Africa* (West African Papers No. 14). Paris: OECD Publishing. Retrieved from <https://doi.org/10.1787/dc152bc0-en>

Dancer, H., & Hossain, N. (2018). *Social difference and women's empowerment in the context of the commercialisation of African agriculture* (APRA Working Paper No. 08). Retrieved from <https://opendocs.ids.ac.uk/opendocs/bitstream/handle/123456789/13558/APRA%20W.P%20number%208.pdf?sequence=1&isAllowed=y>

Development Initiatives (2018). *2018 Global Nutrition Report: Shining a light to spur action on nutrition*. Bristol, UK: Development Initiatives. Retrieved from <https://globalnutritionreport.org/reports/global-nutrition-report-2018/>

EAT-Lancet. (2019). Food in the Anthropocene: The EAT-Lancet Commission on Healthy Diets from Sustainable Food Systems. *The Lancet*, 393(10170), 447–492. Retrieved from [https://doi.org/10.1016/S0140-6736\(18\)31788-4](https://doi.org/10.1016/S0140-6736(18)31788-4)

FAO. (n.d.). *Food and agriculture at the centre of the Sustainable Development Goals*. Infographic. Retrieved from http://www.fao.org/fileadmin/user_upload/codexalimentarius/photo-archive/Infographics/SDG-Wheel.jpg

FAO. (2017). *The future of food and agriculture – Trends and challenges*. Retrieved from Food and Agriculture Organization of the United Nations website: <http://www.fao.org/3/a-i6583e.pdf>

FAO. (2018). *The impact of disasters and crises on agriculture and food security 2017*. Retrieved from Food and Agriculture Organization of the United Nations website: <http://www.fao.org/emergencies/resources/documents/resources-detail/en/c/1106859/>

FAO, IFAD, UNICEF, WFP, & WHO. (2017). *The state of food security and nutrition in the world 2017. Building resilience for peace and food security*. Retrieved from Food and Agriculture Organization of the United Nations, website: <http://www.fao.org/3/a-i7695e.pdf>

Global Panel on Agriculture and Food Systems for Nutrition (2016). *Food systems and diets: Facing the challenges of the 21st century*. London, UK. Retrieved from Global Panel website <https://www.glopan.org/foresight/>

IPAR. (2015). *Emploi et migration des jeunes en Afrique de l'Ouest – Rapport final Sénégal*. Retrieved from Initiative Prospective Agricole et Rurale website: <http://www.ipar.sn>

Jaffee, S., Henson, S., Unnevehr, L., Grace, D., & Cassou, E. (2019). *The safe food imperative: Accelerating progress in low- and middle-income countries* (Agriculture and Food Series). Retrieved from World Bank website: <https://openknowledge.worldbank.org/bitstream/handle/10986/30568/9781464813450.pdf?sequence=6&isAllowed=y>

Jayne, T. S., Yeboah, F. K., & Henry, C. (2017). *The future of work in African agriculture: Trends and drivers of change* (Research Department Working Paper No. 25). Retrieved from International Labour Organization website: https://www.ilo.org/wcmsp5/groups/public/---dgreports/---inst/documents/publication/wcms_624872.pdf

OECD. (2016). *Agriculture and climate change: Towards sustainable, productive and climate-friendly agricultural systems*. Background note for OECD meeting of agriculture ministers. Retrieved from https://www.oecd.org/agriculture/ministerial/background/notes/4_background_note.pdf

Reardon, T. (2015). The hidden middle: The quiet revolution in the midstream of agrifood value chains in developing countries. *Oxford Review of Economic Policy*, 31(1), 45–63. Retrieved from <https://doi.org/10.1093/oxrep/grv011>

Reardon, T., Echeverria, R., Berdegué, J., Minten, B., Liverpool-Tasie, S., Tschirley, D., & Zilberman, D. (2018). Rapid transformation of food systems in developing regions: Highlighting the role of agricultural research and innovations. *Agricultural Systems*, 172, 47–59. Retrieved from <https://doi.org/10.1016/j.agsy.2018.01.022>

Townsend, R., Benfica, R. M., Prasann, A., & Lee, M. (2017). *Future of food: Shaping the food system to deliver jobs*. Retrieved from World Bank website: <https://openknowledge.worldbank.org/handle/10986/26506>

Tschirley, D., Reardon, T., Dolislager, M., & Snyder, J. (2015). The rise of a middle class in urban and rural East and southern Africa: Implications for food system transformation. *Journal of International Development*, 27(5), 628–646. Retrieved from <https://onlinelibrary.wiley.com/doi/full/10.1002/jid.3107>

UN. (2017). *World population prospects: The 2017 revision*. Retrieved from UN Department of Economic and Social Affairs website: <https://www.un.org/development/desa/publications/world-population-prospects-the-2017-revision.html>

UNICEF, WHO, & World Bank. (2017). *Levels and trends in child malnutrition. UNICEF/WHO/World Bank Group joint child malnutrition estimates. Key findings of the 2017 edition*. Retrieved from World Health Organization website: https://www.who.int/nutgrowthdb/jme_brochure2017.pdf?ua=1&ua=1

Wheeler, T., & von Braun, J. (2013). Climate change impacts on global food security. *Science*, 341(6145), 508–513. Retrieved from <https://science.sciencemag.org/content/341/6145/508>

Woodhill, W. & Hasnain, S. (2019). *A framework for understanding foresight and scenario analysis. Working draft for Foresight4Food Initiative*. Retrieved from https://www.foresight4food.net/wp-content/uploads/2019/05/Foresight-Approach_May_2019.pdf

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