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Food systems and rural wellbeing: challenges and opportunities

by
Jim Woodhill
Avinash Kishore
Jemimah Njuki
Kristal Jones
Saher Hasnain

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Contents

Abstract

The future wellbeing of billions of rural people is interconnected with transforming food systems for equity, nutrition, environmental sustainability, and resilience. This background paper tackles three blind spots in the understanding of rural poverty and vulnerability: the narrow focus on extreme poverty and hunger that hides a much wider set of inequalities and vulnerabilities, insufficient recognition of the diversity of rural households, and an inadequate appreciation of the impact of rapid structural changes in markets, the physical environment, and the political economic context. A better understanding of these areas is necessary for imagining a new policy landscape that can align progress on rural poverty alleviation with a wider transformation of food systems. The paper provides a framework for assessing the dynamics of rural wellbeing and food systems change. It looks at the viability of small-scale farming and the diversification of livelihood options needed to overcome rural poverty and inequality. The analysis suggests that the future prosperity of rural areas will depend on policy reforms to address market failures in the food system, which currently work against equity, good nutrition and sustainability. Investments will also be needed to enable rural economies to capture greater value from the food system, particularly in the midstream of food distribution, processing and services. The likely future scale and nature of rural poverty and inequality is such that improved social protection and humanitarian relief schemes that support those in crisis or being left behind will still be essential. The paper provides a synthesis of over 840 recommendations made in recent international reports that cover the linkages between food systems and rural development. It concludes with five founds for bring about policy change, related to stakeholder dialogue, foresight, systemic research, financing and tackling incentive structures.

Keywords: food systems; rural poverty; small-scale farming; livelihoods

1. Introduction

The future well-being of billions of rural people hinges on transforming food systems to improve equity, nutrition, environmental sustainability and resilience. This background paper addresses what we believe are three blind spots in the collective understanding of rural poverty and vulnerability in the global South. The first is a narrow yet widespread focus on extreme poverty and hunger that hides a wider set of inequalities and vulnerabilities. The second is insufficient recognition of the diversity of rural households, with many of their livelihoods increasingly depending on a mix of on- and off-farm income sources alongside food production for self-consumption. The third is an inadequate appreciation of the impact of rapid structural changes in markets, the physical environment and the political economic context. A better understanding of these areas is necessary to design new policies that align progress on rural poverty alleviation with a wider transformation of food systems.

The purpose of this paper is to provide a conceptual framing of the linkages between rural well-being and food systems transformation and to present data that illustrate the scale and nature of the challenges faced by policymakers. Although elements of this analysis are established and understood in the academic literature, in our view, significant gaps remain in integrating and synthesizing such understanding in ways that are accessible to policymakers. We argue the need for a wider and more nuanced debate about the linkages between food systems, rural poverty and small-scale agriculture.

In low- and middle-income countries, nearly 3.4 billion people live in rural areas (UNDESA 2019), and most still depend to varying degrees on agriculture and food systems for their livelihoods. Critically, this rural population includes the large majority of those who are extremely and moderately poor and/or undernourished (UNDESA 2021). Despite rapid urbanization, large or increasing rural populations will be a reality for most low- and middle-income countries for the foreseeable future (ibid.). Meeting the Sustainable Development Goals (SDGs), in particular SDG 1 (poverty) and SDG 2 (hunger), and a longer-term agenda of “leaving no-one behind” will require the linkages between rural people’s well-being and food systems to be addressed fully (FAO 2017b).

In this chapter we use the concept of rural well-being (OECD 2020a) to bring a holistic and integrated perspective of how changing food systems influence rural people’s lives and security. The COVID-19 pandemic and the locust outbreaks across East Africa highlight how vulnerable rural people are to various forms of shocks to food and economic systems. Climate change-driven extreme weather events, natural disasters and pest and disease outbreaks affecting both humans and agriculture are likely to increase, possibly dramatically, over the coming decades (Calicioglu et al. 2019; Gregory et al. 2009; Marvin et al. 2013). These events have the potential to seriously affect vast numbers of rural people, hampering efforts to reduce existing poverty, pushing people back into poverty and potentially creating large-scale humanitarian crises (Islam and Winkel 2017; Nicoson et al. 2019). Creating more resilient food systems is central to buffering against these shocks and vulnerabilities affecting poor people in rural areas.

Poor rural people have opportunities and face risks as food systems change, and from the implications of the call for a food systems transformation. On the one hand, growing demand for food in general and for higher-value and more nutritious food products can be a substantial driver of rural economic development (Pawlak and Kołodziejczak 2020). On the other hand, there is the risk that these economic opportunities will be captured by a minority. To avoid this, governments will need policies to ensure that opportunities result in inclusive rural economic development. There is also the risk that solutions for the current nutritional and environmental failings of the food system come at a cost rather than a benefit to the poor rural people – for example, through standards that smaller producers find difficult to meet.

This paper explores three important dimensions of the relationship between food systems and rural well-being: livelihoods, nutrition and vulnerability. Livelihood refers to the resources – financial and other – that people are able to attain to meet their needs, such as food, health, education, housing and leisure (UNDP 2010). Nutrition refers to people’s overall food and nutrition security (Hwalla et al. 2016). Vulnerability refers to people’s capacity (or lack thereof) to sustain their well-being in the face of risks and shocks, be they from climate change, declining natural resources, disease outbreaks, market volatility or political instability (O’Brien et al. 2007; Parry et al. 2007; Porter et al. 2014).

This paper argues that rural well-being must be understood against the backdrop of diversifying patterns of employment and income. It makes little sense to speak of the "rural poor" or "small-scale farmers" as a homogenous group. Different strategies and policies are needed, tailored to the specific needs of different groups living in different contexts. This paper explicitly focuses on rural households rather than just farming households. There is no doubt that small-scale family farming is critical to the future of food systems and rural well-being (Hazell et al. 2010; HLPE 2013; Hwalla et al. 2016; IFPRI 2020; Wiggins et al. 2010). However, it is also apparent that very large numbers of small-scale farmers will be unable to make a viable living from farming alone (Fan and Rue 2020; Gneiting 2018). A much more nuanced understanding of the diversity of small-scale farming is needed, along with a more integrated perspective of on- and off-farm livelihood options.

Food systems change, and rural well-being must be seen through an explicit gender lens. Gender inequalities are critically important in terms of poverty, nutrition and vulnerability. The empowerment of women and girls, as well as rural youth, through economic opportunity, education and inclusion in decision-making at all levels is essential to any strategy for improving rural well-being. However, less than a quarter of the indicators required to monitor gender across the 2030 Agenda for Sustainable Development are available in a gender-disaggregated way (Commission on the Status of Women 2018). In this paper, we raise the challenges faced uniquely or disproportionately by women to achieving rural well-being, to highlight the gendered dimensions of food systems and rural well-being.

The paper first provides a conceptual framing of the linkages between food systems and rural well-being. It then examines the diversification of rural livelihoods and the changing role of farming in household incomes. We take a closer look at the trajectories of rural well-being in terms of livelihoods, nutrition and vulnerability. This leads to a deeper exploration of dynamics between rural well-being and food systems change, and concludes with the implications for policy.

We take a global perspective, but pay more attention to regions where there are higher levels of rural poverty, in particular sub-Saharan Africa and South Asia. Although there is much commonality in the underlying dynamics of rural poverty and food systems across all regions and countries, we also fully acknowledge the substantial differences between regions and countries, and argue the need for better data to develop comprehensive mapping of food systems and rural poverty dynamics at the national scale.

2. Conceptual framing: taking a systems perspective

Recent years have seen issues of food security, nutrition and agriculture merge into a wider narrative of food systems. This is not just semantics. The shift signals a more holistic view of nutrition and its links with health, the interlinkages been food production, climate and environment, and the critical role that food systems play in employment and the economy. The food system, as understood in this paper, is illustrated in figure 1 (Foresight4Food), drawing on Ingram and Zurek (2011) and Van Berkum and Ruben (2018).

A set of food system megatrends has emerged. Demand will substantially increase and change as a result of population growth, urbanization and the demands of a growing middle class (FAO 2017a, 2017b). At the same time, the world faces a health crisis from the "triple burden" of undernutrition, micronutrient deficiencies and overnutrition (FAO 2020b). Food system activities will continue to contribute significantly to greenhouse gas emissions, and climate change risks negative impacts for food production and food security (Springmann et al. 2018; Vermeulen et al. 2012). Furthermore, how food is produced means we are overshooting the Earth's capacity to sustainably meet demand (Springmann et al. 2018; Willett et al. 2019).

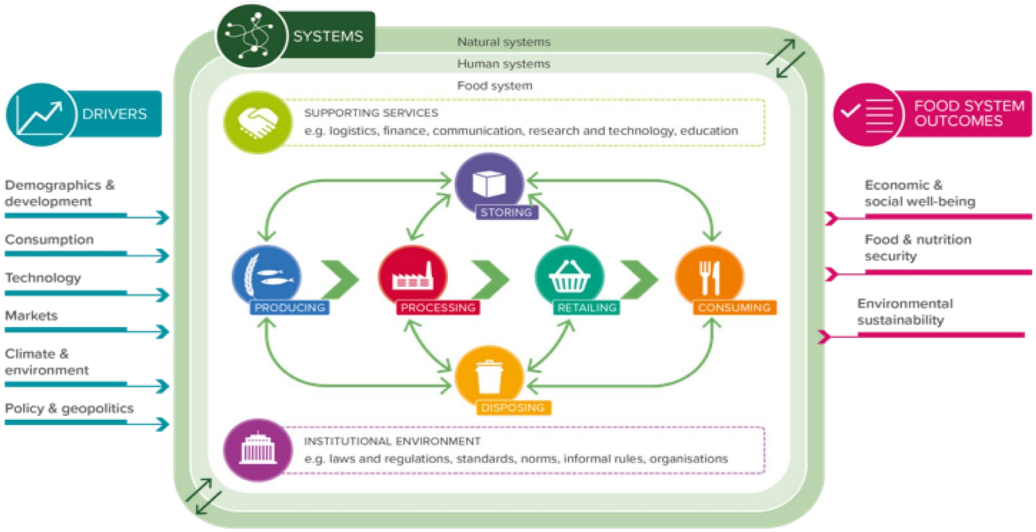

Figure 1: Conceptual model of a food system

Source: Woodhill (2019).

Figure 2 connects this wider conception of food systems to the dynamics of rural well-being with the intention of creating a more holistic and integrated view. Our focus is on the degree to which food systems are delivering well-being for rural people – or not – in terms of livelihoods, nutrition and resilience (see outcomes on the right of the diagram). The wider set of food system drivers discussed above is on the left. In the centre of the diagram are four factors influencing the trajectories of rural well-being: changing food markets (1), investment patterns (2), farm productivity profitability (3) and livelihood options (4), which result from the dynamics of the other three factors. These factors are influenced by a wider context of environmental and climatic conditions, and a set of risks related to these conditions as well as to other risks, including market fluctuations, pests and disease or personal misadventure.

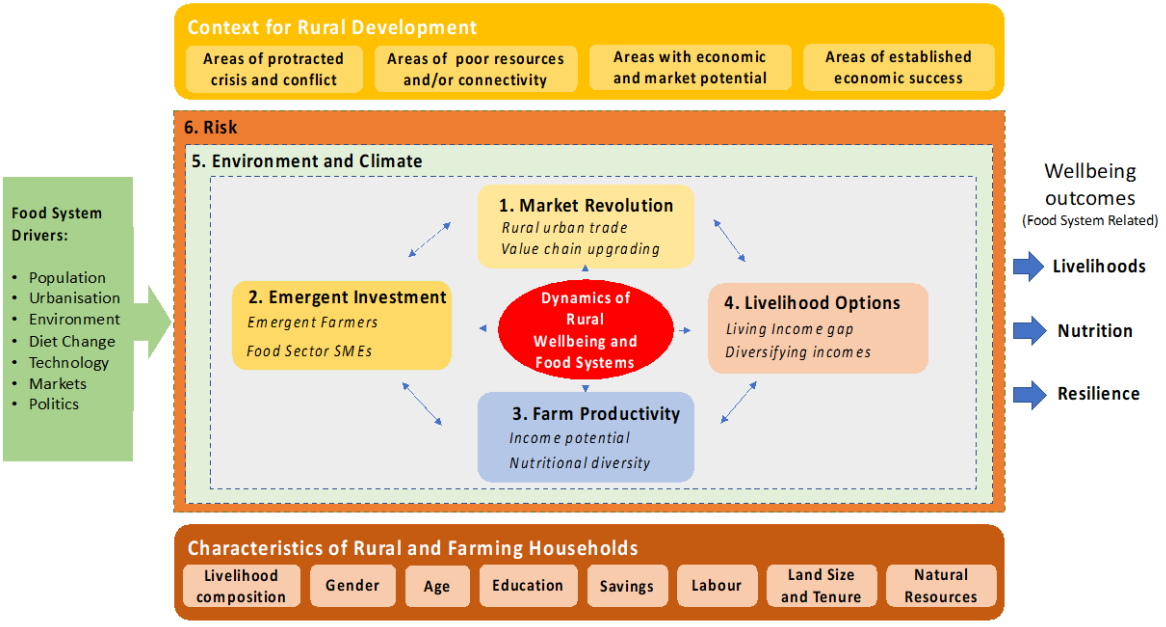

Figure 2: Dimensions for exploring the linkages between rural well-being and food systems

Source: Adapted from Woodhill, Hasnain and Griffith (2020a).

3. Beyond just farming

Historically, the vast majority of rural people were farmers, with most of their income from farming. This led to rural development and poverty alleviation programmes that focused heavily on agricultural productivity, agricultural market development and small-scale farmer commercialization. Linked to this was a general development narrative of agricultural productivity growth driving wider economic development that eventually leads to jobs being created in the wider economy (Mellor 2017). Theoretically, this results in a substantial drop in employment in the agricultural sector (Headey, Bezemer and Hazell 2010), as people move to higher-paying and (sometimes) less arduous opportunities in manufacturing and services, resulting in the very low levels of farm employment seen in most Organisation for Economic Co-operation and Development (OECD) economies.

For many low- and middle-income countries this shift out of agriculture has not been as simple or as fast as theory might have predicted. Population growth, limited jobs in other sectors and people's tendency to hold onto land has meant continued high levels of employment in agriculture and an increasing rather than decreasing number of small-scale farms (Fan and Rue 2020; Hazell 2015; Nolte and Ostermeier 2017). However, this has also been accompanied by a significant diversification of farming household income, driven by both opportunity and necessity (Loison and Bignebat 2017; Reardon et al. 2006).

The total rural population for low- and middle-income countries is approximately 3.4 billion people (UNDESA 2019). With approximately 450 million small-scale farms and taking account of family sizes, these countries have some 2-3 billion people living in households that farm – i.e. approximately 60 per cent of the rural population. However, the incomes of rural households are diversifying dramatically through on- and off-farm employment, remittances, non-farm microenterprises, trading and social protection payments (FAO 2017b, 79-83). Country-level census data and data from smaller case studies suggest, for example, that agriculture currently contributes roughly 40 per cent of rural household income in India (Pingali et al. 2019), 33 per cent in Bangladesh (Ahmed et al. 2015) and 82 per cent in high-agricultural-potential rural areas in Ethiopia (Bachewe et al. 2020). Increasingly, the reality is not one of small-scale farming households, but of rural households that also farm. In India, for example, 88 per cent of farming households also have some non-farm income (Pingali et al. 2019). Similarly, Roy and Basu (2020) find that in coastal areas of Bangladesh at least 25 per cent of very small-scale (owning less than 1 ha) farmers also have off-farm income. However, there is a lack of comprehensive country-level data on how the livelihoods of rural households are changing, and on the distribution of employment and income across on- and off-farm activities.

Income diversification has significant implications. Many rural households are becoming less dependent on their agricultural production and farm income, with this becoming just part of their overall livelihood strategy. This means that the return to labour from farming – and how it compares with other income-earning opportunities – becomes more important. Having a very small plot of land is not necessarily a problem if it is a complement to other sources of income, provided it gives a competitive return to labour. These changes also have significant gender implications in terms of the balance of farm work being undertaken by women, their role in off-farm enterprise and employment, and the inequalities they face as economic actors.

Currently the only disaggregated data on small-scale agriculture are in relation to farm size. Lowder et al. (2016, 2019) conducted a comprehensive review on farm numbers and farm size distribution. They conclude that globally there are at least 540 million farms, 90 per cent of these are family farms, and some 447 million farms (or 84 per cent) are < 2 ha and operate 12 per cent of agricultural land. Drawing on this analysis and food and nutrient supply by farm scale (Herrero et al. 2017; Ricciardi et al. 2018), a categorization of farms by land size and food production is provided in table 1 (adapted from Woodhill et al. 2020). Data availability, differences between countries and methodological challenges mean this analysis is indicative, pointing to larger trends that need further investigation. However, the overall picture aligns with detailed field observations in Africa and India (Giller et al. 2021).

Table 1
Indicative characteristics of farm numbers, area farmed and food production related to farm size

Scale	Farm size distribution[a]				% Global Production (kcal) [b]	Global food production type by weight (%) [c]									Type [d]	
	Farm Size (ha)	% farms	No. farms (million)	% Farmland [e]		Cereals	Vegetables	Fruit	Sugar crops	Roots/Tubers	Oil Crops	Pulses	Livestock	Average		
Large	> 200	0.2	1	56.9	18	18	11	18	35	9	39	18	18	21	Corporate (10%)	Family (90%)
	50-200	0.4	2	12.8	19	22	19	17	14	15	25	18	23	19		
Medium	20-50	0.7	4	4.6	4	8	9	10	9	8	6	8	10	9		
	5-20	4.3	23	8.8	14	31	33	34	30	38	19	37	31	32		
Small	2-5	10.4	55	6.1	14											
	1-2	13.8	73	4.0	16	21	28	21	13	30	11	19	18	20		
	< 1	70.4	374	6.7	15											

Source: Modified from Woodhill et al. (2020) based on data from Lowder et al. (2019), Ricciardi et al. (2018) and Herrero et al. (2017).
Note: [a] data from Lowder et al. (2019), table A2 – estimates based on 129 countries; [b] data from Ricciardi et al. (2018), values estimated from figure 2H – based on 55 countries; [c] data from Herrero et al. (2017), values estimated from figure 1 – based on 161 countries; [d] data from Lowder et al. (2019); [e] data from Lowder et al. (2019) show that farms of < 2 ha use around 11 per cent of farmland, while Ricciardi et al. (2018) estimate this to be about 24 per cent.

There are two important observations from these data (figure 3). The first is the very large number of very small-scale farms. Of all small-scale farms < 2 ha, 86 per cent, or 374 million, are actually < 1 ha, with many much smaller still. This group constitutes 70 per cent of all farms globally. The reality for farmers growing staple crops – or traditional cash crops such as coffee and cocoa – on these small areas of land is the difficulty of making a living, given often low productivity and current market prices. Many poor rural households are net purchasers of food (Aksoy and Isik-Dikmelik 2008). Combined with an increasing need for income to cover the costs of housing, education, transport and health, this makes off-farm income a necessity for many small-scale farming households.

The second observation is that most food is not produced by this very large number of very small farms that together farm a relatively small area of land. An oft-used justification for supporting small-scale agriculture is that small-scale farmers produce 70 per cent of food consumed in low- and middle-income countries (Ricciardi et al. 2018). While it may be true that all smaller-scale farmers of < 20 ha produce this 70 per cent (see figure 3), this generalization hides the reality that on average the bulk of this 70 per cent of food is likely produced by a smaller number of larger-scale small-scale farmers. This suggests a dualism in small-scale agriculture between very large numbers of very small-scale farmers who do not produce a great deal of food and a smaller number of larger small-scale farmers who produce most of the food. The food this larger group of very small-scale farmers produces is critical for their own income and food and nutrition security, and for localized markets, but less so for meeting the growing demands of urban populations.

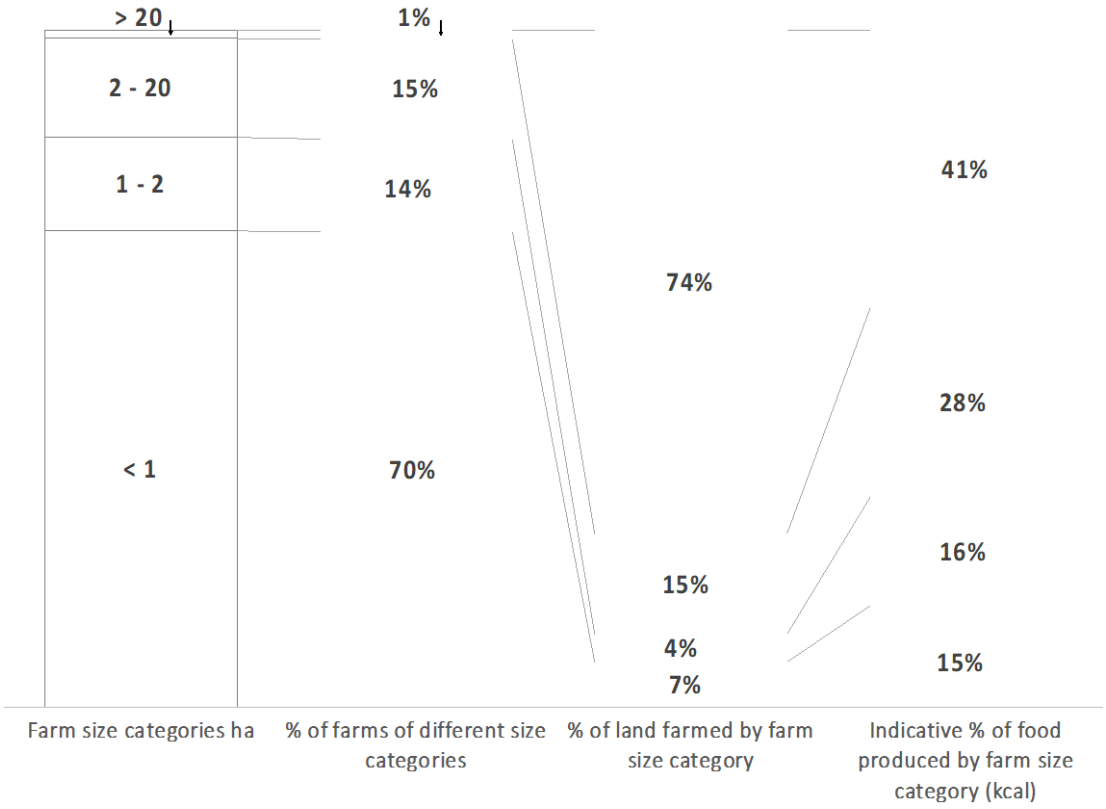

Figure 3: Indicative relationship between farm size, area of land farmed and food produced

Source: Data from table 1.

This emerging dualism of small-scale agriculture means that it is important not to conflate the challenges of tackling the poverty and malnutrition of small-scale farming families with the challenge of meeting growing food supply demands for urban populations (Gassner et al. 2019). If a smaller group of farmers who have more substantial assets is already meeting the bulk of food demand, the market options for the very large numbers with much more limited assets are limited. Although there is no doubt that the challenges of tackling rural poverty and ensuring domestic and global food security overlap, there is a need for sharper analysis of the degree to which agricultural production on its own can lift very small-scale producers out of poverty or ensure their food and nutrition security.

The diversification of household incomes and the relationship to different degrees of farm commercialization and non-farm income is illustrated in figure 4. This builds on previous authors' categorizations of farming types (Berdegué and Escobar 2002; Mangnus and Metz 2019; Vorley 2002; Woodhill et al. 2020a) to take better account of non-farm income. The relative sizes of the boxes of different categories will vary by locality and country but have been calibrated to give an indicative impression of the global situation. The extreme poor tend to be either very small-scale farmers with minimal non-farm income or the landless who have limited sources of income. By far most rural households (see the red dashed box) remain extremely or moderately poor, and an increasing majority of these have a mixed livelihood with income from farm and non-farm sources. The number of small-scale commercial farmers able to make a living income with minimal off-farm income is relatively small. Although precise figures do not exist, most experts with hands-on knowledge do not assume this to be much above 10 per cent of all small-scale farmers. There is also a growing group of emergent small-commercial farmers who are salaried urban workers investing back into agriculture and who are able to support this with substantial off-farm income and assets (Jayne et al. 2016). In many locations, a growing group of non-poor and well-off households is important to the rural economy. A more nuanced understanding of this diversity in rural households and how it is changing is necessary for the development of strategies and policies to optimize an inclusive transformation of food systems.

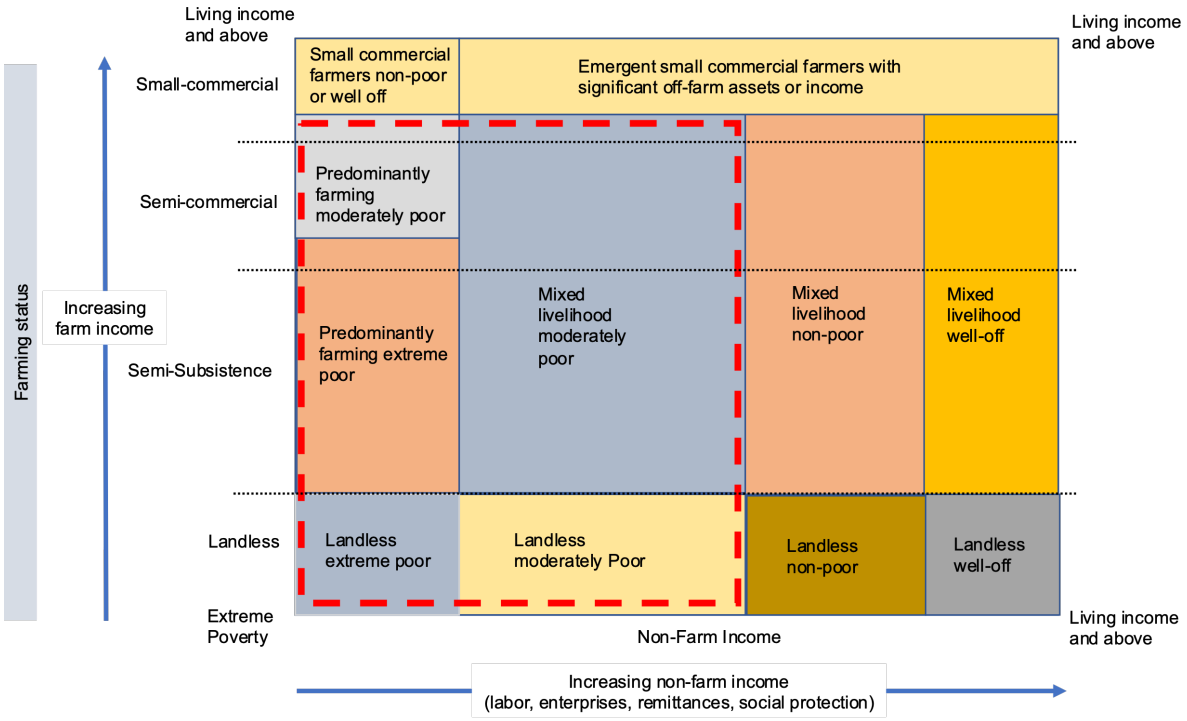

Figure 4: Indicative distribution of different household livelihood mixes relative to degree of farm and non-farm income

Source: Authors' own elaboration.

4. Trends in rural well-being

This section considers trends in rural well-being from the perspectives of livelihood, nutrition and vulnerability. The status of rural people's well-being is a mixed and often contradictory picture with evidence to derive both optimistic and pessimistic conclusions. It is unquestionable that over the last decades vast numbers of people have been lifted out of extreme rural poverty and hunger through agricultural development and wider economic growth (Birner and Resnick 2010; Fan and Rue 2020). In many countries, rural villages and towns are unrecognizable from just a decade or two ago in terms of their economic activity, wealth, infrastructure and rural-urban linkages. However, this uplift has been far from universal (UNDESA 2021). There are very significant differences across regions and countries, as well as between genders and different ethnic groups. There is no doubt that very large numbers of people at the bottom of the economic pyramid, and in marginal and strife-torn areas, are being left behind (Fan and Rue 2020; IFPRI 2020).

The view of progress is shaped by the metrics used. The dominant metrics for assessing rural well-being have been the percentage of people living in extreme poverty and the percentage of child stunting. These metrics, while important, overshadow the scale of moderate poverty, the escalating scale of overnutrition and nutrient deficiencies, and rural people's vulnerability to shocks. This section takes a broader perspective on assessing rural well-being.

Table 2 provides a snapshot of the most recent data available on rural well-being metrics, for illustrative countries and regions. The data highlight significant differences across these regions and countries, which reinforce the need for disaggregated analysis and responses tailored to the needs of specific situations. The table shows the vast numbers of moderately and extreme poor people in sub-Saharan Africa and South Asia relative to the rest of the world, and the dominance of agricultural employment for vast numbers of rural people. It also illustrates the nutritional issue of continued high levels of child stunting and the significant increase in obesity for the more urbanized Latin America and the Caribbean and Middle East and North Africa regions.

Table 2
Metrics on rural well-being for selected countries and regions

	Countries						*Regions*				
Indicator	*DRC*	*ETH*	*GHA*	*BGL*	*IND*	*PAK*	*SSA*	*SA*	*EA*	*LAC*	*MENA*
Rural population: % of population (million individuals)[a]	55 47.7	79 88.3	43 13.2	63 102.1	66 895.0	63 136.7	59 655.5	66 1,203.7	43 909.3	19 118.5	38 148.4
Rural poor (3.20): % of total population (million individuals)[b]	45 30.0	56 50.7	30 6.6	58 85.3	44 553.1	30 55.0	49 469.7	44 804.3	18 410.3	2 12.5	2 9.6
Extreme poverty in rural areas: % of rural population (million individuals)[c]	No data	35 30.8	24 3.2	18 18.3	25 222.0	5.5 7.5	45 297.2	27 329.0	15 136.8	No data	No data
Rural employment in agriculture: % of rural employment (million individuals)[d]	No data	71 31.4	37 3.1	31 23.8	35 190.3	33 24.5	72 182.4	56 257.4	48* 86.6	47 29.4	34 20.3
Small-scale farms (<1 ha): % of total farms (million farms)[e]	85 3.8	59 8.5	No data	84 12.8	68 99.9	36 2.4	52 28.5	69 120.0	86 211.3	16 3.1	56 6.8
Small-scale farms (1-2 ha): % of total farms (million farms)[e]	10 0.5	25 3.6	No data	7 1.1	18 25.8	22 1.4	19 12.0	17 29.1	8 19.2	20 3.9	10 1.2
Extreme poor working in agriculture: % of extreme poor (million individuals)[f]	No data	No data	No data	No data	No data	No data	76 498.2	56 674.1	49 445.5	68 80.6	No data
Moderate or severe food insecurity: % of population (million individuals)[g]	No data	58 63.2	51 15.2	32 50.8	32[a] 426.5	No data	56 577.5	33 633.3	19* 126.1	32 203.7	30 153.4
Undernourishment: % of population (million individuals)[h]	No data	20 21.5	7 1.9	13 21.0	14 189.2	12 26.1	22 224.3	13 254.7	10* 64.1	7 45.9	9 45.6
Rural stunting: % of children under 5 years[i]	47	40	22	31	41	48	31	32	25	8	15
Rural obesity: % of non-pregnant women or adults[i]	1.2	0.4	9	3	3	11	9	5	7	24	27
Rural electricity: % of population lacking access (million individuals)[g]	No data	67 59.5	33 4.3	22 22.2	7 63.3	46 62.3	No data	No data	No data	No data	No data
Rural water: % of population lacking access (million individuals)[i]	77 36.8	69 60.9	32 4.3	3 3.3	9 80.6	10 13.8	54 356.4	9 114.2	14 129.1	13 15.5	13 18.8

Source<: [a] World Bank (2020a); [b] World Bank (2020b); [c] World Bank (2020c); [d] ILO (2020); [e] Lowder et al. (2019); [f] Castañeda and Newhouse (2016); [g] World Bank (2020d); [h] FAO (2020); [i] WHO (2020).
Note: DRC = Democratic Republic of the Congo; ETH = Ethiopia; GHA = Ghana; BGL = Bangladesh; IND = India; PAK = Pakistan; SSA = Sub-Saharan Africa; SA = South Asia; EA = East Asia; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa.

4.1 Livelihoods

This section discusses data on projected poverty levels, rates of poverty in rural areas, the extent to which poorer people are employed in the agriculture sector, gender inequalities and youth unemployment. The current international **extreme** poverty line is US$1.90 a day. The current international **moderate** poverty line is US$3.20 a day, typical for lower- and middle-income countries (this is an update from the previous level of US$3.10 a day, and we use both in the analysis, as the current estimates at US$3.20 have not been disaggregated by rural and urban locations). For poverty in general we use the international poverty line of US$5.50 a day. Current poverty trends underscore the need for continued focus on rural poverty and inequality (UNDESA 2021; United Nations 2019). We argue that development efforts should focus on creating a living income for people. This is the income that people need, in their circumstances, to afford a healthy diet, housing, education and health care, and to meet other social and family needs and responsibilities (Giller et al. 2021; Gneiting 2018; van de Ven et al. 2020). For most rural households in most locations, the extreme and moderate poverty rate falls very far short of a decent living income and what people need to realize their life ambitions. Extreme poverty and hunger remain critical concerns still affecting 600-700 million people – nearly 10 per cent of the world population – with COVID-19 likely to increase those numbers by 100 million (World Bank 2020f). However, the even bigger challenges for future rural development efforts are the vast numbers of rural people living in moderate poverty, a rapidly growing rural youth population in many countries, and continued gender inequalities.

For all regions except sub-Saharan Africa, extreme poverty levels are decreasing. By around 2050, almost all extreme poverty will be in Africa. Moderate poverty, however, will remain high across most regions. Figure 5 illustrates extreme and moderate rural poverty trends from the 1990s, with an indicative trajectory to 2025. Africa and South Asia will even see an increase in the numbers of moderately poor people. In South Asia, while significant numbers of people are escaping extreme poverty, many are simply being nudged into moderate poverty, with moderate poverty levels likely to further increase over the coming decade. Africa will see extreme poverty plateau, but moderate poverty will increase so that by around 2025, an estimated 534 million people (43 per cent of the continent's population) will still be living in poverty. With a projected doubling of the population in Africa by 2050, the longer-term perspective, unless there is massive economic progress, is particularly concerning. While the situation in East and South-East Asia appears less dramatic, the very large population there means that even with only 11 per cent living in poverty, this is still over 250 million people.

Figure 6 illustrates the distribution of extreme poverty disaggregated by rural and urban areas and regions, while figure 7 shows the same disaggregation for moderate poverty. The reality is that, despite urbanization, poverty remains concentrated in rural areas and for those working in the agriculture sector. The World Bank estimates that 79 per cent of the world's extremely poor people live in rural areas, even though only 54 per cent of the global population live in rural areas (World Bank 2018). In many parts of the world, the majority of the working extreme poor (who live on less than US$1.90 a day) work in agriculture: 76 per cent of the working poor in sub-Saharan Africa, 68 per cent in Latin America and the Caribbean and 56 per cent in South-East Asia. Agriculture is also the main employer for moderately poor people: 61 per cent of them work in agriculture (Castañeda and Newhouse 2016). These averages hide great variation across countries and regions. For example, in Ethiopia, 71 per cent of the rural population work in agriculture, while across South Asia it is only around a third of the rural population (see table 2). Extreme poverty rates in rural areas vary widely as well. In India, 25 per cent of the rural population live on less than US$1.90 a day, compared with 5.5 per cent of the rural population in neighbouring Pakistan (World Bank 2020e). Projections of changes in agricultural wages suggest that climate change in most low- and middle-income countries will cause wages to fall between 2011 and 2050, with agricultural employment becoming a decreasingly viable path to a stable livelihood (Cui et al. 2018).

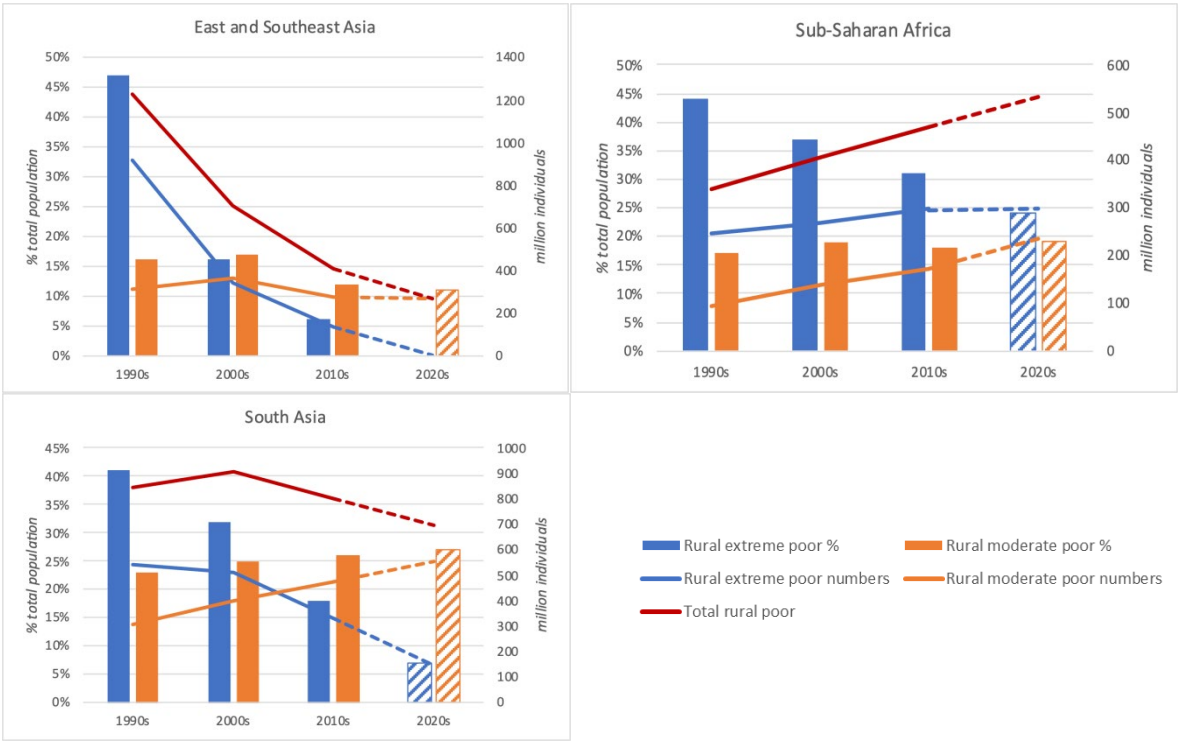

Figure 5: Trends in extreme and moderate poverty levels by region

Source: Data from De La O Campos et al. (2018). Population estimates taken for the mid-point year of each decade (1995, 2005, 2015, 2025) from World Bank (2020e), and projected trajectories calculated as a simple linear estimate based on the three time points provided.

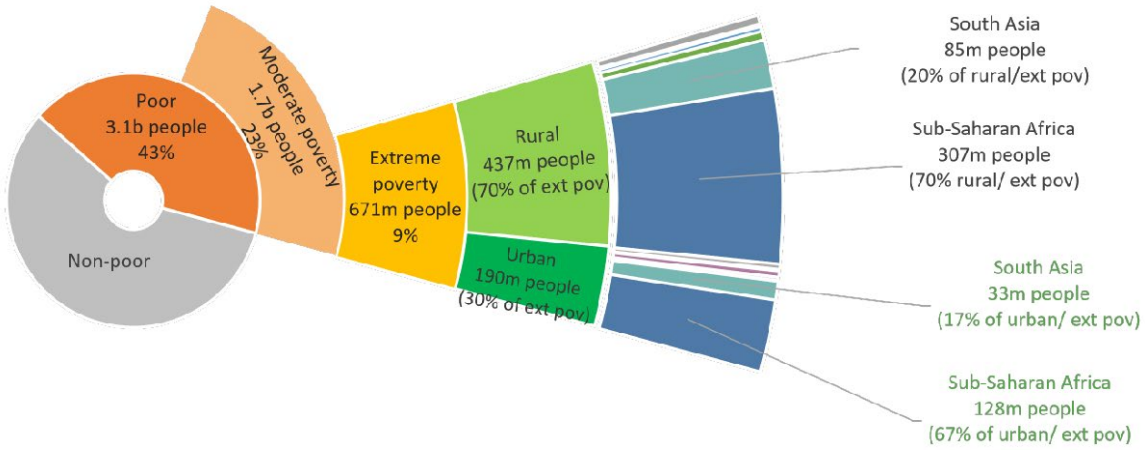

Figure 6: Distribution of extreme rural poverty disaggregated by rural and urban areas and geographic regions

Source: Authors' own elaboration using data from Povcal and the World Poverty Clock.

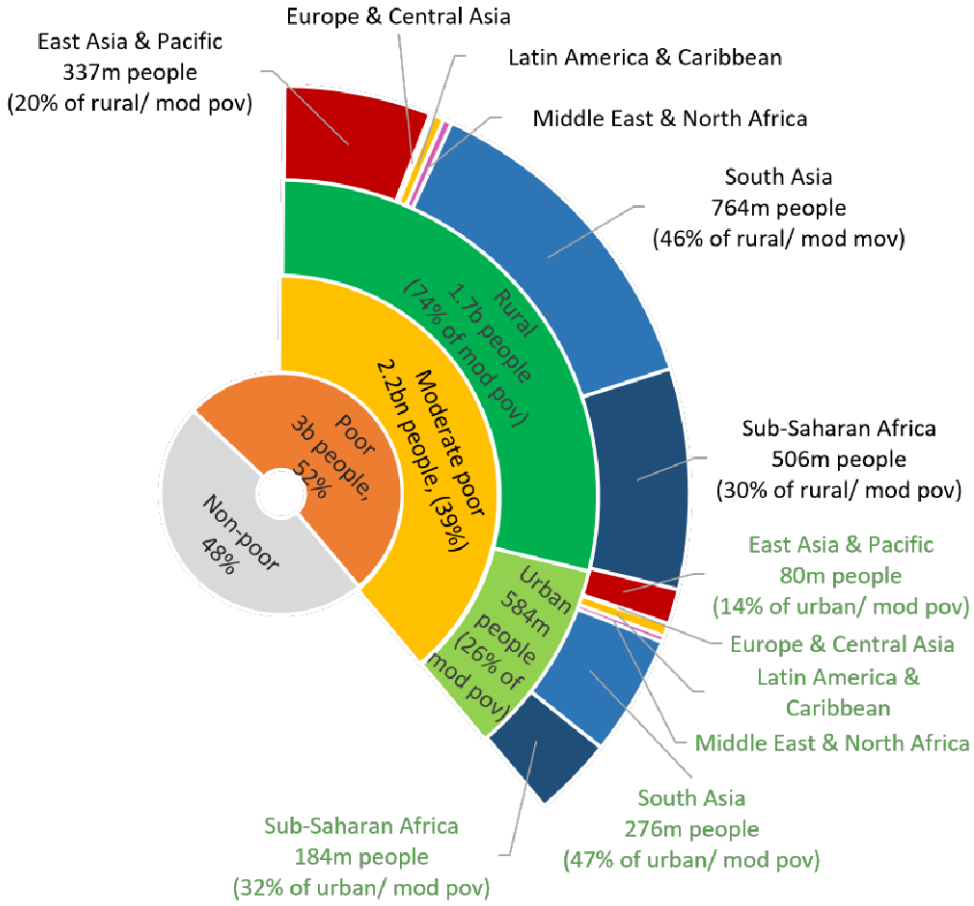

Figure 7: Distribution of moderate rural poverty disaggregated by rural and urban areas and geographic regions

Sources: For moderate poverty, FAO (2017); for poverty at US$5.50 per day, Povcal.

Evidence shows a close link between extreme poverty and landlessness in South Asia. In sub-Saharan Africa, those living in extreme poverty might have access to a very small amount of land but lack other inputs and access to markets (De La O Campos et al. 2018; IFPRI 2020). A study of 134 countries suggests that poverty rates are higher among the overall rural population than among farmers, suggesting that poverty is more likely among landless and non-agricultural rural households (Debucquet and Martin 2018).

Significantly, while agriculture as a share of gross domestic product (GDP) has dropped over time, the percentages of employment in agriculture and food systems remain high for all countries with high rates of moderate and extreme rural poverty – above 80 per cent for Africa and 50 per cent for South Asia (see table 3). Structural factors that will affect the future dynamics of food systems and rural well-being include the economic scale of GDP relative to the scale of the rural population, population growth rates, the demographics of a large youth population and the scope for economic growth. In this regard, sub-Saharan Africa faces a particular challenge with a likely doubling of the population amid more constrained opportunities for broader economic transformation.

Rural inequalities disproportionally affect women and girls. A gender perspective shows that women and girls suffer greater deprivation, fewer economic and life opportunities and higher levels of physical insecurity than man and boys (Commission on the Status of Women 2018; FAO 2011; United Nations Secretary-General 2015). Women's economic empowerment, including equitable land tenure, access to financial technical services, increased household and community decision-making power, overcoming their time poverty and girls' education are critical foundations for reducing rural poverty and inequality for them and their communities (Andersson Djurfeldt, Mawunyo Dzanku and Cuthbert Isinika 2018; FAO 2018, 2020c; FAO, IFAD and WFP 2021; Huyer 2016; United Nations Secretary-General 2019).

Table 3
Indicators of freedom, corruption and business environment for selected countries

	Countries					
	DRC	*ETH*	*GHA*	*BGL*	*IND*	*PAK*
Freedom status (politics, press, etc.)[a]	Not free	Not free	Free	Partly free	Free	Partly free
Percentage of people accessing public services who had to pay a bribe[b]	80	No data	33	No data	69	40
Ease of doing business (0-100 scale)[c]	36	48	60	45	71	61

Source: [a] Freedom House (2019); [b] Transparency International (2017, 2019); [c] World Bank (2020a).

The substantial rural youth bulge that will occur over the coming several decades, particularly in Africa, and the employment options in food systems have received much recent attention (IFAD 2019; IFPRI 2020; Jayne et al. 2017). By 2030, youth in Africa, Asia and the Pacific will make up over 77 per cent of the world's total youth labour force (ILO 2017). This represents an increase in youth labour by 41.8 million globally. The "youth bulge" in Africa alone constitutes about 55 per cent of the region's labour force, with 11 million Africans entering the labour force every year. Unfortunately, current estimates show that only 25 per cent of these young women and men will find wage-based employment over the next 10 years (Yeboah and Jayne 2018). Employment alone does not solve issues of poverty among the youth, with 70 per cent of employed youth in sub-Saharan Africa still suffering from poverty (United Nations 2018).

The consequences of entrenched rural poverty and inequality are significant. Hundreds of millions of rural people are unable or only marginally able to afford basic levels of healthy food, education, health care and housing, and are unable to save for emergencies, old age or other responsibilities and life goals. Further, a significant number of people fall in and out of poverty and are highly vulnerable to economic downturns such as that brought on by COVID-19. It is also increasingly well understood that a sense of individual well-being along with social cohesion and stability is linked not just to absolute poverty but to relative poverty and feelings of inequality (Wilkinson and Picket 2010). The scale and future trajectories of rural poverty and inequality, combined with the extent to which rural people earn their livelihoods from food production, inextricably link food systems and rural poverty. Rural poverty will not be overcome without making food systems more equitable. Conversely, the poor nutritional and environmental outcomes of current food systems cannot be overcome without tackling rural poverty.

4.2 Nutrition

The world is facing a nutrition crisis: a triple burden of undernutrition, overweight and obesity, and micronutrition deficiencies (FAO et al. 2021). This crisis significantly affects the well-being of rural people. The majority of people still suffering hunger, undernutrition and micronutrient deficiencies live in rural areas (ibid.). At the same time, rural diets are changing towards higher consumption of highly processed, low nutrient quality foods, leading to rising levels of overweight and obesity, albeit still lower than in urban populations (Christian and Dake 2021; Kadiyala et al. 2019; NCD-RisC 2019; Popkin 2015; Popkin et al. 2020). These trends indicate that the triple burden will become concentrated in rural populations, with increasing levels of non-communicable disease and reduced earning capacities for those who can least afford it. Furthermore, how the rest of the world chooses to eat in the future will significantly affect rural livelihood opportunities. The consumption of better nutritional quality, safer and higher-value food could open up significant economic opportunities for small-scale farmers and enterprises. However, without inclusive policies for food system transformation, such opportunities are likely to be captured by larger operators, thereby further marginalizing the vast numbers of rural people who depend on food production for their livelihoods.

Many low- and middle-income countries still have child stunting rates in excess of 30 per cent, mostly concentrated in rural areas. Micronutrient deficiencies affect around 2 billion people, and obesity levels are rising rapidly (FAO et al. 2021). The distribution of diverse forms of malnutrition across different socio-economic groups and rural and urban populations is complex. However, poverty and undernutrition are correlated, and, as most poor people live in rural areas, undernutrition in terms of calorie intake is a predominantly rural phenomenon. For example, per capita caloric and protein intake has been falling in rural India, while remaining stable in urban India (Deaton and Dreze 2008). Stunting continues to affect

almost half of children under the age of 5 years living in rural areas in many countries, including those in vastly different contexts, such as the Democratic Republic of the Congo (DRC, 47 per cent) and India (41 per cent) (WHO 2020a). Globally, children in rural areas are almost twice as likely to experience stunting as children in urban areas (FAO 2020b). Rural households spend 20-30 per cent less on food than urban households, with more spent on grains (de Bruin et al. 2021).

While overall obesity rates in rural areas are generally still low, they are growing at alarming rates in rural and urban areas of low- and middle-income countries. Rates of diabetes have projected increases of 60-70 per cent for sub-Saharan Africa and South Asia from 2013 to 2035 (Popkin 2015). Popkin (2015) shows that in Bangladesh and Ghana, for example, urban obesity rates are twice those in rural areas, and in Ethiopia the urban obesity rate is five times that of the rural obesity rate. Given that the diets of many rural people are worsening, obesity rates in rural areas are likely to rise further. Although many rural people are still linked to farming, many are net purchasers of food (FAO 2017b, 28-29), with purchased food shifting to cheap, highly processed, high-calorie and low nutrient quality foods. Additionally, there is evidence of intrahousehold undernutrition and overnutrition, with stunted children and overweight adults.

Women's empowerment is integral to improving nutritional outcomes of rural households, as women strongly influence food decisions and expenditure patterns and enable households to increase their incomes (IFPRI 2020; Jones et al. 2019).

Poor nutrition strongly affects life opportunities through reduced capacities, reduced earning potential and the costs of nutrition-related diseases (Siddiqui et al. 2020). Beyond individual and household economic impacts, such diseases have astronomical costs for societal health (Bloom et al. 2011). The implications for rural populations, particularly in poorer countries, are increased pressures on already limited public finances that potentially negatively affect public investment in rural services and infrastructure. At the global level, ballooning public health costs represent a lost opportunity for investing in productive assets and being able to contribute more to rural economic development.

4.3 Vulnerability

Vulnerability and risk include environmental, climatic, political, social and health shocks that are unexpected and potentially destabilizing to overall well-being. The 2020 COVID-19 pandemic and the locust outbreak across East Africa highlighted how vulnerable rural people are to food and economic system shocks. Climate change-driven extreme weather events, natural disasters, and pest and disease outbreaks will increase, possibly dramatically, over the coming three decades. These events will seriously affect vast numbers of rural people and the natural resource base on which they depend, hampering efforts to reduce existing poverty, pushing people back into poverty and creating large-scale humanitarian crises (Dasgupta et al. 2014). The number of recorded natural disasters, which are increasingly extreme weather-related, has increased substantially since the middle of the last century, from around 20 per year to 300-400 a year. These disasters affect, on average, up to 160 million people per year, and over 500 million in some years (IFRC 2020; WHO 2020b).

Food systems are highly interconnected with these shocks and vulnerabilities affecting poor people in rural areas. Food consumption and production are major contributors to climate change and resource degradation – for example, through land-use change and high greenhouse gas emissions – and, reciprocally, food systems are highly vulnerable to climate change-induced shocks (IPCC 2019; Vermeulen et al. 2012). Rural people are affected in two compounding ways: (i) income loss because of reduced production and contraction of the rural economy; and (ii) increased food prices that they cannot afford, which pushes them towards cheaper and less nutritious diets.

Vulnerability is especially high in fragile States. Definitions of fragile States generally include countries experiencing human-caused crisis and conflict, including violence and institutional failure, that leads to instability and human outmigration (World Bank 2020c). There were 50 fragile States in 2015, according to the OECD. In 2015, these States were home to 1.4 billion people – 20 per cent of the world's population – and over half are in sub-Saharan Africa. World Bank estimates suggest that in 2015 roughly a third of the population in fragile States lived in extreme poverty, with another third living in moderate poverty (Collier 2019). Estimates also show that about half of the population in fragile States live in rural areas (World Bank

2020h). Rural poverty is the norm in many fragile and conflict-affected States. For example, 89 per cent of the DRC's rural population live in extreme poverty. Public infrastructure and services in fragile States are often limited or non-existent in rural areas because of limited resources and political corruption (OECD 2018). From a global humanitarian perspective, 1.4 billion people represent a massive rural food system challenge in terms of tackling the existing high levels of hunger, averting the risks of larger-scale famine and finding ways to improve the resilience of local food systems in a context of providing food aid.

5. Unpacking the dynamics of food systems change for rural well-being

We look now at how food system changes affect economic opportunities for rural people, in particular the linkages between changing food markets, investment, farm productivity and livelihood options. These dynamics unfold in very different contexts of the political economy, environmental conditions and infrastructure. These differences need to be understood, as they have substantial implications for future rural poverty trends, the capacities of States to respond and the interventions likely to be effective.

5.1 The influence of differing contexts

Rural poverty and food systems are highly influenced by national political economics, natural resources and rural connectivity. These factors will shape the types of food system transformations that could improve rural well-being. There are several ways to characterize and assess these contextual factors.

IFAD and FAO (IFAD 2016, 2019; FAO 2017b) have assessed rural development and inclusive food systems in relation to a country's structural and rural transformation, measured, respectively, by non-agricultural GDP as a proportion of overall GDP, and value added per rural worker. Structural transformation involves a shift from primary production-based economies to those with a much higher proportion of manufacturing and services. Associated with this is increased agricultural productivity, rural-urban migration, increased international trade, more capital-intensive forms of production, greater returns to labour and decreasing birth rates. Rural transformation involves increased commercialization of agriculture, linked with improved agricultural productivity, and is associated with diversifying rural economies and household livelihoods, all underpinned by improved rural infrastructure and services.

This categorization largely aligns with the World Bank World Development Report (2008), which categorized countries as agriculture-based, transforming (diversifying above) or urbanized (transforming above). These categorizations also align with country income status but provide an additional value of helping to explain underlying economic mechanisms that influence rural development. Rural poverty has decreased most dramatically in fast-transforming economies with high economic growth, leading to diversified rural livelihoods (IFAD 2016). Rural poverty reduction and economic inclusion are functions of both rural economic transformation and wider structural transformation in national economies and how the two processes intertwine (IFAD 2016; FAO 2017a).

Alongside a country's economic context are the degree of social and political stability and the effectiveness of the State. By 2030, over 2 billion people will live in fragile States, comprising 85 per cent of those in extreme poverty and mainly in Africa (OECD 2020b). Meanwhile those in moderate poverty will be in diversifying middle-income countries. Another factor overlying a country's context of economic fragility is the nature of the resource base. Thirty-five per cent of the world's population (2.1 billion people) live in rangelands that characteristically have poor, low-productivity natural resources, poor infrastructure and services, and weak market linkages, and disproportionally suffer the effects of climate change and resource degradation (Godde et al. 2020; United Nations n.d.).

A final set of factors to consider are freedom, corruption and the ease of doing business. Table 4 illustrates the significant variation in these factors across six countries. It is often disadvantaged poor people who are disproportionately negatively affected by constrained freedoms, corruption and difficulties in doing business.

The underlying structural causes of rural poverty and inequality extend well beyond technical responses, no matter how important initiatives are for agricultural productivity, rural infrastructure, and access to finance or

markets. This political economic context shapes the nature and functioning of local, national and regional food systems. It also sets the boundaries around the extent to which a transformation of food systems can drive a reduction in rural poverty and inequality and the capacity of national governments to respond.

The 2008 World Development Report on agriculture (World Bank 2008) noted that a lack of attention to the political economics of agriculture and rural development was a key reason for not implementing reforms recommended 20 years earlier for an agricultural (food systems)-led approach to tackling rural poverty. Meanwhile, the African Agriculture Status Report (2018) notes the critical need for political will to drive the investments and reforms needed for rural transformation, which are largely well understood but not acted on.

5.2 The market revolution

Reardon et al. (2019) refer to a “quiet revolution” in food markets in low- and middle-income countries. This is the rapid growth of micro-, small and medium-sized enterprises operating in a transitional food market structure, driven by urbanization, increasing wealth and nutritional changes (FAO 2017b, 13). Transitional markets function in the middle space between traditional, informal markets (with no contracts and “spot market” cash-based transactions) and modern markets, which include long supply chains (rural-urban and international), consolidation and concentration of capital and standards (the supermarket model) (Reardon et al. 2019).

The scale of this market change over the last 20-30 years has been profound and will continue over the coming decades (FAO 2017b, 28). Haggblade, Hazell and Reardon (2010) estimate an increase in the flow of food products from rural to urban areas of 600-800 per cent from the 1980s to 2010 for Africa, while Reardon and Timmer (2014) have it at approximately 1,000 per cent in South-East Asia over the same period. These market changes are underpinned by deep structural shifts in procurement, retailing, value chain coordination, ownership, and power relations between larger- and smaller-scale operators in the food system. The central observation of Reardon et al. (2019) is that transitional markets dominate in the food systems of low- and middle-income countries and are likely to do so for the foreseeable future. Because of large rural populations in many areas, traditional markets will also coexist with transitional markets well into the future.

These market changes have occurred through large-scale endogenous processes and often despite the constraints of transport, finance and market distortions. They have been driven largely by the domestic private sector, and government- or donor-driven market development initiatives have arguably had only a minimal influence on the overall scale of this change. During the same period, global trade in food has also increased (FAOSTAT), with markets becoming more liberalized and competitive. Low- and middle-income countries have seen a substantial increase in the consumption of highly processed food (Baker and Friel 2016; Reardon et al. 2021), even in poor rural areas, leading to increased domestic food processing.

The economic benefits from this food market growth have been far from universal and equitable. The urban demand for food is more easily being met by production regions that have good infrastructure, market access and production conditions, and by farmers who have better assets in terms of land size, access to capital and other services, and skills (Fan and Rue 2020; Rapsomanikis 2016). As discussed in section 3, for many countries the bulk of food is produced by a smaller group of larger (but still small-scale) farmers. The need for bulk quantities, improved standards, economies of scale and more sophisticated production systems for non-staples further constrains who can benefit from these growing markets (Fan and Rue 2020). There is also considerable competition with food imports, which can often fill demand more cheaply than domestic production, particularly in Africa, as illustrated by the rising rate of food imports (FAOSTAT).

The transitional and informal nature of much employment in the agriculture and food sector, particularly where there is growing youth unemployment, also creates the potential for poor working conditions and exploitation. The reality would seem that, on their own, these growing markets will not create a sufficient scale of inclusive economic development to reduce inequality and substantially benefit poorer and more marginalized rural groups being left behind.

5.3 Emergent investment

The market revolution described above and the overall increasing global demand for food are driving emergent investment in food systems, both foreign and domestic. Many lower- and middle-income countries are seeing growth and domestic investments in the food and agriculture sectors – much at a small to medium scale. For example, Jayne et al. (2021) report agricultural growth in sub-Saharan Africa at a high 4.3 per cent since 2000. These private domestic investments in food and agriculture are far larger than those of foreign private investors, national governments and development agencies (Lowder et al. 2015). There is growing evidence of salaried urban elites making substantial investments back into agriculture as "emergent farmers" (Jayne et al. 2016) and food sector entrepreneurs. This investment offers both opportunities and risks. It enables countries to meet growing urban food demand and drives growth of the agrifood sector. However, there has been limited domestic application of principles of responsible agriculture investment, such as the Committee on World Food Security's Principles for Responsible Investment in Agriculture and Food Systems (CFS-RAI). This increases the risk of domestic land-grabbing, poor environmental practices and poor labour conditions.

Jayne et al. (2015) show that medium-scale farms are the fastest-growing segment of the family farm sector in sub-Saharan Africa, controlling more land than large-scale farms. However, there is evidence that much of this growth comes from investment by urban and rural elites (emergent farmers), and not from existing small-scale farmers graduating to become larger and commercially viable. While such investment is needed, it has implications for the transformation of small-scale agriculture. If new market opportunities in agriculture are being taken up on a significant scale by emergent investors, this potentially crowds out opportunities for existing smallholders and undermines the development narrative of tackling poverty by helping to connect small-scale farmers to markets. There are also arguments that this emergent investment could occur in inclusive ways that are synergistic between emergent and traditional small-scale farmers.

As yet there are insufficient data to show overall trends and effects of this emergent investment and its impact on commercialization of existing small-scale farmers. It is a trend that needs careful attention to understand the dynamics of transforming small-scale agriculture. Many small-scale farmers and aspiring agrifood sector entrepreneurs lack sufficient access to capital to run and expand their enterprises. This constrains a more inclusive development of the sector, as emerging opportunities can be captured more easily by elites who have capital and income, often from outside the sector, and who can also afford to take risks in shifting to new markets or production systems. This particularly constrains rural youth and women from taking up agrifood sector opportunities.

While domestic private sector investment into the food and agriculture sector is growing, this is not matched by public sector investment or foreign direct investment. Between 2013 and 2016, G20 gross fixed capital formation in agriculture fell to 0.2 per cent, compared with 4.5 per cent for the period 2002-2012. From a high in 2007 of over US$9 billion, foreign direct investment in agriculture decreased substantially over the next decade to below US$2 billion in 2017 (FAOSTAT). From 2001 to 2016, the Agricultural Orientation Index for Government Expenditures (AOI) showed a decline from 0.42 to 0.26, indicating a general relative decline in public investment in agriculture for all countries (FAOSTAT). Middle- and low-income countries invest relatively less in agriculture than high-income countries, even though agriculture contributes more to GDP and employment and despite their potential for agrifood sector expansion. The Ceres2030 report (Laborde, Parent and Smaller 2020) estimates that to end hunger would require an additional public investment from donors and national governments of US$33 billion per year, which would also spur an additional annual investment of US$52 billion from the private sector.

5.4 Farm productivity, profitability and production diversity

Rural transformation and well-being depend on farm productivity and profitability. However, in many parts of the world, particularly Africa, and for many poorer rural households there remains a substantial yield gap (Giller 2020; Rong et al. 2021). The negative effect on profitability is compounded by high input costs and often low farm-gate prices. The Green Revolution and agricultural development at the end of the last century focused almost exclusively on increasing the yield of staples, largely through improved varieties and the application of external inputs (Ameen and Raza 2018). The world now faces an evolving and

increasingly complex set of agricultural production challenges (Calicioglu et al. 2019; FAO 2017a). Poor farm productivity still afflicts much of the more impoverished parts of the world. This challenge is being compounded by the impacts of soil and water degradation, climate change-induced weather extremes and increased risk of pest and disease outbreaks. Further, a change is needed in the balance of production to increase nutrient-rich crops such as fruit and vegetables relative to energy-dense crops such as starchy staples for improved human nutrition (Fanzo et al. 2020). This change needs to occur in tandem with forms of agriculture that mitigate climate change (Lynch et al. 2021). The effects of environmentally unsustainable food systems have a far more dramatic impact on rural populations than on urban consumers.

These dynamics are a further driver of increasing inequality in rural well-being (UNDESA 2021). In general, poor productivity, resource degradation and climate impacts are much worse in marginal areas where there are higher levels of poverty. Poor households and communities are less able to cope with the shocks of climate extremes or disease outbreaks (UNCCD 2019). A nutrient-rich diet is more expensive, and unaffordable for the poorest and most malnourished people (Hirvonen et al. 2020). Further, shifting to more resource-efficient, climate-smart and nutrient-rich cropping systems requires access to technologies, capital, management skill, market linkages and an ability to absorb risk that is often difficult or impossible for poorer farming households.

Although there is a large body of evidence on the critical role gender dynamics play in small-scale agriculture and rural poverty (Huyer 2016; FAO 2018), there is a need to better understand how those dynamics are changing at farm level and elsewhere within the food system, and how they differ across contexts. As noted in a recent FAO report (FAO 2017b, 88), the observed “feminization of agriculture” exemplified by the increased female share in agricultural employment (almost 50 per cent in some regions) is occurring for many reasons. In some areas of India, for example, men are moving out of agriculture into higher-paying sectors as rural development occurs (Pingali et al. 2019). In many other countries, especially in sub-Saharan Africa, outmigration of men, to cities or other countries, has left women taking on new roles as primary food producers (FAO 2017b).

Even as women’s role in more formalized agricultural activities seems to be increasing, their factor productivity (yield, return on investment in inputs, etc.) remains far lower than men’s. The Enabling the Business of Agriculture report (World Bank Group 2017) describes how dramatic the “gender productivity gap” can be, such as in Niger, where it is estimated to be 66 per cent. In most countries the gap is estimated to be around 20-30 per cent. Many reasons interact, including time pressures from dual responsibilities of care and farming, limited decision-making power, inadequate land tenure rights and low access to finance. These differences have social and economic consequences for women farmers, while also significantly impacting the wider economy. Some sources suggest that equalizing this gap could boost agricultural output and decrease global undernourishment by up to 17 per cent (Doss et al. 2018; Oxfam 2017).

5.5 Livelihood options

These dynamics of markets, investment and farm productivity have significant implications for the future livelihood options of rural households. The implication is that farming on its own has limited potential to overcome the scale of moderate and extreme rural poverty still being experienced by many countries, particularly where there is a growing population of youth and fragmentation of land (Giller et al. 2021). Future strategies for overcoming rural poverty will need to look to a more diversified and integrated set of livelihood options. These include enterprise development and employment in the off-farm economy, particularly in the agrifood sector (Vos and Cattaneo 2021), remittances and improved access to social protection. Such diversification will need to include farming households integrating farming with other livelihood options, as many are already doing, as well as shifting out of farming to alternative employment and enterprise opportunities (Fan and Rue 2020).

Rural poverty reduction requires attention for expanding opportunities across the entire agrifood economy of rural areas. In particular, efforts are needed to ensure that value is added to farm production in rural areas to complement farming in attracting financial returns from the food sector into the rural economy, helping to generate rural employment and economic development (Haggblade, Hazell and Reardon 2010; Vos and Cattaneo 2021).

However, alternative livelihood options are not immediately or easily available to many poorer farming households. Many will still depend on farming for at least part of their livelihood for the foreseeable future, despite meagre returns. Countries will need transition strategies to support small-scale farmers who in the shorter term are caught in a poverty trap, while working towards longer-term viable livelihood options. These strategies should include ensuring poor and marginalized groups are not dispossessed of what limited natural resources they have, improving the performance of semi-subsistence agriculture, and providing support to improve access to off-farm livelihood opportunities, remittances and targeted social protection schemes.

At the same time, a viable commercial small-scale agriculture sector remains a critical foundation for rural economic development (Mellor 2017; Mellor and Malik 2017). Viable small-scale agriculture is needed to meet the food demands of growing urban populations and to attract profits back to rural areas that can drive growth of the wider rural economy. However, in the long run, only a minority of better-endowed small-scale farmers are likely to make the transition to commercial viability that provides a decent income from farming. The proportion of small-scale farmers making this transition will depend strongly on local circumstances and the nature of agricultural and wider food systems policies.

The most obvious alternative livelihood strategy for farming households is participation in the midstream of the food system between production and consumption. Midstream economic activities include input supply, mechanization services, advisory services, trading, processing, marketing and food services. The informal and semi-formal nature of this sector offers a wider range of opportunities that can be taken up without necessarily high-level skills and/or capital investment. As outlined in section 5.2 above, micro-, small and medium-sized enterprises have expanded rapidly over recent decades, and, as noted in section 3, farming households are already diversifying into employment and enterprise in this midstream.

However, the full extent of economic value and employment opportunities in the midstream is not well quantified. Caution is also needed about the extent of the benefits from growth in the food systems economy, as employment conditions in the informal food economy and on-farm labouring are often poor or even exploitative, particularly where there is an oversupply of labour. Off-farm employment will not necessarily lift people above the poverty line or deliver them a decent income unless policies and standards are in place to ensure fair employment conditions. Further, over time the modernization of food markets, as ever greater economies of scale and efficiency are sought, drives towards mechanized, capital-intensive production with reduced labour demand. An important policy challenge for low- and middle-income economies will be to develop policies for the midstream of the food system that optimize the value creation and employment in the midstream, while also meeting the need for upgrading value chains to meet demands for food quality and safety, scales of efficiency and competitiveness.

In rural people's livelihood mix, remittances are also important to consider; they can represent a substantial contribution to household income, as well as providing a foundation for investment in farm and off-farm enterprises (Gelb et al. 2021; World Bank 2019). The scale of remittances varies significantly between countries. In many rural or fragile countries, such as the DRC and Ethiopia, average per capita annual remittances are quite small (US$22 and US$4, respectively). In other countries, including Ghana and Pakistan (US$118 and US$100, respectively), per capita remittances have the potential to greatly impact economic realities if they are flowing to rural areas (World Bank 2020c).

5.6 The challenge of leaving no one behind

Realism is needed about the scope for lifting the large numbers of rural people who are being left behind out of poverty through economic opportunity alone. Extreme poverty is becoming increasingly concentrated in a limited number of conflict-affected countries and/or fragile States (World Bank 2021, 21), where growth of the food sector and the wider economy is limited. However, virtually all low- and middle-income countries have significant numbers of excluded, vulnerable and extremely poor people living in rural areas (World Bank 2020f). Many of these people are in areas of poor resources and infrastructure (Ahmadzai, Tutundjian and Elouafi 2021). Further, many poorer groups are disadvantaged and marginalized in ways that exclude them from easily taking up economic opportunities. This is critical to recognize in understanding the scope and constraints for agricultural development and food market growth to be a driver of poverty reduction in these areas. Further, in such areas livelihood diversification from off-farm or non-agricultural employment

and remittances is often lower. This compounds the development challenges for these areas, making public investments in development and social protection critical for tackling poverty, malnutrition and vulnerability. To overcome continuing levels of extreme poverty, avoid growing inequalities and enhance resilience, society will need to find ways of filling the vast social protection gap that exists in low- and middle-income countries. Just under half the global population are covered by at least one social protection benefit, but in Africa it is less than 20 per cent and in Asia and the Pacific under 40 per cent (World Bank 2020h).

6. Linking food systems transformation and rural well-being: policy implications

The above analysis illustrates how the underlying dynamics of rural poverty, inequality and vulnerability are changing, with profound implications for future policymaking. Historically, comparatively simple approaches of increasing agricultural productivity combined with rapid growth in the wider economy lifted billions of rural people out of poverty (World Bank 2008). Today, however, the challenges are more complex (Christiaensen and Demery 2018; Christiaensen and Martin 2018; UNDESA 2021). Extreme rural poverty is increasingly concentrated within certain groups and geographies characterized by deep structural barriers to economic development. Rural inequality (moderate poverty) is embedded in a wider global phenomenon of rising inequalities and unequal economic progress (World Bank 2020f). Resource degradation, the impacts of climate change, emerging pest and disease risks and changing geopolitics are creating new vulnerabilities, potentially affecting large groups of rural people, but also have profound implications for society at large. Critically, the models of food production and consumption in which past approaches to agricultural and rural development have been embedded have given rise to huge environmental and human health externalities – prompting the United Nations Secretary-General to call for a food systems transformation (United Nations 2021). The analysis of the 2021 United Nations Social Report, Reconsidering Rural Development (UNDESA 2021), aligns closely with the arguments made in this background paper about the ongoing scale of rural poverty and inequality, and the impossibility of meeting the 2030 Agenda without a renewed focus on rural development.

6.1 Policy priorities

Transforming food systems in ways that will improve rural well-being alongside the wider food system will require substantial policy reform (UNDESA 2021; Webb et al. 2020). The directions for such reform have already been articulated in a wide range of recent reports. Table 4 (located at the end of the paper) provides a synthesis of 840 recommendations from more than 40 key reports related to food systems, agriculture, food security and rural development (Woodhill et al. 2021). Below we summarize these recommendations as 10 key policy priorities. Broadly, we know **what** needs to be done; the challenge is in **how** to make it happen.

1. **Rural infrastructure and services:** Adequate road, energy, market and telecommunications infrastructure, along with key education, health and financial services, is an absolute foundation for rural development, poverty reduction and the transformation of food systems. However, there remains a huge infrastructure and service gap in many rural areas, and particularly those that are impoverished. The overall infrastructure gap in low- and middle-income countries alone is estimated at US$1-1.5 trillion per year. This lack of infrastructure and services makes it difficult for rural populations to leverage potential market opportunities and to take risks to diversify their livelihood strategies within and outside the food system. It also provides a major disincentive for investment by the private sector. Education remains critical for people to have better life opportunities within and outside the food system, yet many rural areas still have very limited and poor-quality primary, secondary and tertiary education facilities.

2. **Inclusive market development:** While there has been a food market revolution, much remains to be done to optimize markets for inclusive, sustainable and nutritional outcomes. Transitional market systems will dominate for the foreseeable future and be a major source of income for rural workers and farmers. There are a large number of highly innovative developments in this space, but a critical need

to learn from them and scale up the impacts. Efforts are needed to upgrade value chains, improve quality, safety and efficiency, and add value. Incentive structures, financing mechanisms and support systems need to be strengthened to make the emerging market opportunities more inclusive. These investments in public goods can add greater value if integrated within a territorial approach that combines synergies across value chains in the agrifood sector. Smallholder commercialization needs constant support to enable farmers to access opportunities by ensuring they are able to meet requirements for volume, quality and safety in a competitive and profitable way, which in turn is highly dependent on good farm productivity.

3. **Transitional support for marginal farmers and rural workers:** As discussed in section 7.1, very large numbers of farming households are unable to make a living income out of agriculture and do not have conditions that would enable them to become more commercially oriented. However, as part of a transitional path out of poverty, and in combination with other forms of income, agriculture remains critically important. Increased productivity can provide small amounts of additional cash that help with purchasing food and paying for health and education. Further, improving semi-subsistence agriculture can be critical for improving nutrition and for reducing the need to purchase food, enabling limited cash resources to be used for other needs. Supporting agriculture in this way requires approaches different from a focus on farm commercialization. This needs to be combined with support for accessing off-farm enterprise and employment opportunities, particularly in the agriculture and food sectors.

4. **Gender equity and women's empowerment:** The continuing gender inequalities across food systems and rural well-being are well established, as is the transformative potential of women's empowerment. Critical dimensions include the feminization of agriculture, the critical role of women in ensuring the first 1,000 days of good child nutrition, inequitable access to land finance and technical advice, physical risks when going to markets, the gender bias in much policy and research through a continued lack of women in decision-making positions and consultation processes, and the poor disaggregation of data. Tackling this critical constraint to food systems transformation and improving rural well-being requires gender awareness in all aspects of policy alongside specific investments, programmes and initiatives to empower women in the agrifood sector.

5. **Innovative social protection:** Strengthening social protection systems remains a critical priority for those suffering extreme poverty or hunger and for supporting the resilience of people and communities in the face of shocks and disasters. As raised in section 5.6, a small minority of rural people have access to adequate social protection. To tackle this challenge, there is a need for much more innovative forms of social protection that help to build productive capacities and resilience, are better targeted, nutrition-sensitive and integrate forms of insurance (FAO 2017b, 98; IFPRI 2020, 25). Information and communication technology (ICT) developments and mobile technology open up tremendous opportunities for improving access to effective social protection. There is now a huge experience of different forms of social protection, yet a need to better integrate the thinking on social protection with food systems transformation and rural development.

6. **Nutrition-oriented food systems:** The importance of tackling the triple burden of malnutrition has received tremendous national and international attention over recent years. However, there remain vast gaps in linking nutrition, agriculture, environment and economic development policies and strategies, let alone putting more integrated policies into effective practice. This will require fundamental changes in incentive structures, social attitudes, business practices and farming systems.

7. **Land tenure and resource management:** An inclusive and sustainable transformation of rural areas is fundamentally linked to how land, forestry and water resources are allocated and used, and who has access and tenure. At a landscape level, there is a need to allocate resources in ways that protect biodiversity and ecosystem services (FAO 2017b, 75). At an individual level, secure access to resources and tenure over land are a foundation for secure livelihoods (IFPRI 2020, 23). At an economy-wide level, resources need to be used in ways that enable economies of scale and competitiveness. The growing pressure on resources and increasing land fragmentation, combined with the tremendous ongoing challenges of developing equitable systems of land tenure, present one of the most difficult trade-off issues at the interface of rural well-being and food systems transformation. Substantial global public goods will have to be invested in this issue.

8. **Climate- and resource-smart food systems:** The medium- and longer-term future for rural well-being will depend on developing food systems that are much more resource-efficient, climate-neutral and resilient to climate change. This means investing in agricultural production practices that reduce emissions and potentially capture carbon while also improving yields. This also means rethinking food value chains that span the globe, and focusing on building local and regional food systems that can withstand internal and external shocks. As climate financing has been established over the previous decade, there has been an increased focus on the need for investment specifically in climate-adapted agricultural practices, especially those that can also provide climate mitigation co-benefits (e.g. adoption of soil management approaches to improve soil health, which increases productivity and carbon capture) (St-Louis et al. 2018; FAO 2018). However, to date, the volume of climate financing flowing to support change in land use and agriculture has remained small (Buchner et al. 2019; Fallasch and Siemons 2020).

9. **Disaster preparedness:** The scale and severity of disasters is likely to increase over coming decades. COVID-19 has illustrated the severe impacts of a disease outbreak and how vulnerable poor people are in such a circumstance. Countries will need to develop much more proactive and forward-looking disaster response strategies that consider responses for different risks, build capacities for emergency responses, establish reserves of necessary resources and encourage citizens to be prepared. Critical to such preparedness is foresight and scenario analysis.

10. **Optimizing digital potential:** The huge potential benefits of digital innovations for improving rural well-being have been well illustrated by initiatives such as mobile banking, microinsurance, improved market information, delivery of social protection payments, product tracing and tracking through blockchain, and digital forms of advisory services (IFPRI 2020, 24-25). However, despite the huge growth in access to mobile devices, there remains a digital divide, with more remote poorer and vulnerable groups still lacking access (Hernandez and Roberts 2018; Roese 2021). Further, there is a need to ensure investment in the research, innovation development and roll-out of pro-poor digital solutions (Jütting, Blumrich and Lemke 2021).

6.2 Foundations for change

There are no magic bullets for achieving the above policy priorities and transforming food systems in ways that will be inclusive, nutritionally healthy, sustainable and resilient for society at large, while simultaneously improving rural well-being. As articulated above, much of what needs to be done in a generic sense is clear. At a basic level, a focus on improving rural infrastructure and services goes a long way to creating the conditions for economic development and innovation in rural areas. Beyond this, the very notion of food "systems" provides part of the answer – i.e. a much more systemic approach to policy formulation, implementation and learning that takes a more integrated approach to food and rural development issues and is tailored to the specific needs and circumstances of different individuals, households and communities in different contexts.

However, putting the necessary policy reform effectively into practice faces fundamental challenges.

1. The challenge of translating policy directions into implementable policy details, which is vastly complicated by the need for integrated cross-sectoral approaches.

2. The challenge of mobilizing political will and overcoming the constraining politics of vested interests in the status quo.

3. Interlinked with the second, is the need for societal understanding of the need for change, which must translate into changing consumer behaviour and political pressure.

4. The need for a substantial increase in and redirection of public and private investment driven by effective policy mechanisms.

Food production, processing, distribution and retailing are undertaken almost entirely by the private sector. However, the externalities of how the food system functions create vast public costs in terms of poverty, poor health, and impact on the environmental and climate (FOLU 2019). There are also significant time lags

between the negative impacts of how food systems currently function and evidence of any positive benefits from change. Consequently, balancing policies around public and private costs and benefits is highly complex and very politically difficult.

Policymakers do have at their disposal a wide range of policy mechanisms, including public education, tax incentives (positive and negative), domestic subsidies and price support, export subsidies and import tariffs, social protection schemes, and public investment in infrastructure, research and innovation, extension services and education. In any country a complex mix of these policy mechanisms can be seen at play across different sectors impacting on food systems and rural well-being, yet often creating perverse or conflicting incentives. Policy development also plays out against a background of deep philosophical and ideological differences on the role of the State, the degree to which markets and trade should be open or restricted, the efficacy of different forms of social protection and ways of tackling inequality, and, not least, beliefs about climate change. The options open to any individual country are highly influenced by the scale of public revenues, the nature of the tax base, the degree to which individuals are linked to formalized taxation, social protection and financial systems, and the capacities to implement policies and enforce regulations. Further, food systems have become increasingly globalized, meaning that options open to an individual country are highly influenced by the global regime of trade and finance, and factors of global competitiveness (FAO 2017b, 44-47).

There is no easy solution to these policy challenges and dilemmas. Systemic changes are needed, but human systems defy linear engineered approaches to change, and, as illustrated by COVID-19, change is often shaped by the unexpected. Further, political, social and policy processes are highly influenced by emotional and cultural factors in a complex interplay with the rationality of scientific analysis. However, from a systems-oriented perspective on change and leadership (Leeuwis, Boogaard and Atta-Krah 2021), there is often space for nudging systems in more positive directions while dampening down negative influences.

In both the substance and process of policymaking for food systems transformation there is, however, much to build on. The successes and failures of past policy initiatives are relatively well documented, as is the menu of necessary directions for change. Over recent years numerous processes – albeit with varying degrees of impact – have been established at local, national, regional and international scales, with much experience and many lessons on which to draw. Developments in ICT, big data, remote sensing and access to mobile technology all open up significant opportunities for innovation.

However, governments face considerable constraints, dilemmas and trade-offs in delivery of the necessary package of rural development policies and investments. At the most basic level, countries with the worst levels of rural poverty and malnutrition are also the poorest and simply have highly constrained public resources. Beyond this are challenges of balancing the politics of rural and urban interests, tackling short-term poverty and food security versus longer-term structural transformation, and often the influence of special interests and corruption. The combined consequence of these factors has been a tendency for governments to invest heavily in input subsidies and price support for staple crops at the expense of infrastructure, more effective forms of social protection and more nutritionally diverse production (Cervantes-Godoy 2015). Input subsidies and price support have proven easily open to corruption and often poorly targeted to those most in need.

Below, we outline five foundations for change, which we argue are necessary to help bring about the policy priorities articulated above. Despite much rhetoric about the need for dialogue and multi-stakeholder engagement, too often national and local governments, donors, research institutions and the private sector are reluctant to invest sufficiently in the core processes that underpin change, and in the capacities needed for them to be effective.

1. **Stakeholder dialogue and societal learning:** Processes of dialogue that bring together leaders and constituencies from across government, the private sector, civil society, consumers, research and farmer organizations have become recognized as essential to the systemic changes for which a transformation of food systems calls (IFPRI 2020). Further, broader processes of public awareness-raising, education and engagement, and societal learning are necessary to help build political momentum for change. Some observers are critical of “talk fests,” question the impact of such processes in the face of entrenched and powerful interests and raise concerns about co-option from groups with more power and capability. Change certainly requires strong political advocacy and

campaigning. However, putting practical and workable solutions into practice requires at least some degree of engagement and coordination across different actors in the system. To be effective, such processes need to occur across scales and sectors, be well designed and facilitated, draw on good science and evidence, and be inclusive. To enable deeper processes of societal learning and adaption, there is a need for ongoing dialogue and engagement using multiple forms of direct and virtual participation that work with stakeholder constituencies in different ways and combinations. There remains much to be done to strengthen such processes, particularly at local and national levels. In what seems an era of growing conspiracy theories, rejection of science and State-sponsored misinformation, promoting informed dialogue is a key to any rationale resolution of the challenges faced by society.

2. **Foresight, visions and scenarios:** A further foundation for motivating change is to establish shared perspectives on how the future might unfold and the consequences of this for the interests of different groups. Common visions for more desirable futures are needed, along with scenarios for practical strategies for change that tackle the need for an integration of technical, institutional and political innovation. However, as illustrated by this paper, food systems and their impact on rural well-being involve highly complex dynamics and significant degrees of uncertainty. Further, the transformation of food systems is not a linear process that can be neatly engineered. This calls for more sophisticated and systemic approaches to foresight and scenario analysis that can support stakeholders, policymakers and political leaders to explore options for the future and put in place processes of anticipatory and adaptive policymaking.

3. **Systemic research, innovation and data:** Dialogue and foresight processes, along with technological and institutional innovation, hinge on scientific research and analysis (IFPRI 2020, 26). Further, more accurate and sufficiently granular data on how food systems and rural livelihoods are changing are needed for informed decision-making (see box 1). There is, however, a need for more systemic sciences in the sense of being transdisciplinary, integrating the social and biophysical sciences and combining fundamental research with applied approaches that work with society and industry to support wider innovation processes. Despite calls for such forms of scientific support for food systems transformation, and some good examples, outmoded models of science funding, institutional arrangements and academic incentive structures significantly hamper a better integration of the science community with the practical challenges of inclusive food systems transformation. Strengthening such systemic science capability at the national level of low- and middle-income countries is critical.

Box 1: Data deficit

There is an overarching phenomenon of “data deprivation” in many low-income countries, where very few monitoring data are gathered to be able to track changes – positive or negative – over time (Serajuddin et al. 2015). This is especially the case in fragile States and conflict areas, where it is understandably difficult to gather data consistently over space and time (Hoogeveen and Pape 2020). For example, in the 10 most fragile States in 2020 (Yemen, Somalia, South Sudan, Syria, DRC, Central African Republic, Chad, Sudan, Afghanistan and Zimbabwe), only two (DRC and Yemen) have any rural poverty data reported any time in the previous 10 years (data from Fragile States Index and World Bank). In addition, there is also a disaggregation deprivation, with many measures reported only at the national scale and for the population as a whole. Thus, it is very difficult to identify disparities in both situation and outcomes on the basis of gender, age or geography, to name only a few individual or household characteristics that could influence inequality.

4. **Transformative and responsible financing:** Substantial levels of additional responsible financing from both the public and private sectors will be needed to transform food systems in ways that also improve rural well-being. This issue has been recognized by G20 Agriculture Ministers, who in 2020 issued the G20 Riyadh Statement to Enhance Implementation of Responsible Investment in Agriculture and Food Systems. Increased responsible investment and financing is needed across the board, from rural infrastructure to financing for small-scale farmers and emerging agrifood entrepreneurs, to value chain upgrading, including in cold storage, through to research and development, extension systems and financial incentives for implementing more inclusive, nutritionally healthy and sustainable business

practices. The Ceres2030 report (Laborde, Parent and Smaller 2020) suggests that some US$14 billion annually will need to be invested until 2030 by global donors simply to achieve SDG 2.

5. **Realigning incentives:** Implementing the sort of policy priorities articulated above, and realizing the scale of financing needed, depends on changing incentive structures across the entire food system. Ultimately, this requires economic and price signals in food markets, which are influenced by government policy, consumer preferences, technology and responsible business practices. Because of market failures and externalities, realigning incentive structures is heavily dependent on government policy in terms of the settings around tax arrangements, subsidies, tariffs, foreign investment, public expenditure priorities, tenure rights and systems, public education (including food labelling) and how politicians and public figures articulate the issues. There is a hierarchy to changing incentive structures. Government policies can be changed only if there is sufficient political will, which is in turn driven by the incentives for politicians that come from societal pressures, electoral factors, lobbying of interest groups and in some cases the rewards of corruption. Science, media and civil society all play a role in shaping public opinion and influencing the incentives for leaders and politicians to take action. A food systems transformation will depend on integrating processes of societal learning and dialogue, systemic science and foresight thinking to help bring about a fundamental restructuring of incentives.

7. Conclusions

Our analysis suggests that the future well-being of large numbers of rural people is at significant risk. This assessment comes from taking a broader view of well-being than just levels of extreme poverty and hunger/child stunting. The number of rural people whose well-being is at risk increases dramatically if all forms of malnutrition, all levels of poverty and inequality, and vulnerability, particularly related to climate change, are considered. This provides a much more sobering perspective on the degree of progress in rural development over recent decades and on the scale of future challenges than by looking only at the reduction in levels of extreme poverty. The analysis also shows how interconnected rural well-being is to food systems, both in terms of risks and opportunities for improvement. We also highlight how rural well-being and opportunities for improvement differ across different geographic and political economic contexts, with different countries and regions having very different dynamics and prospects. We argue that taking a food systems perspective means that the role of small-scale agriculture needs to be seen in a wider context and against the significant structural changes occurring in food markets and rural economies. In particular, the challenge for the very large number of very small-scale farmers who are unable to make a living income from farming needs much more attention, with solutions that go beyond agriculture alone. This situation needs to be understood in relation to significant diversification of rural household incomes, which is occurring in most rural areas.

Despite wider structural changes in economies, in particular the low contribution of the agriculture and food sector to national GDP for most countries, this paper has illustrated the multiple dimensions of how significant the food system is, and will remain, to rural people's well-being. However, policies that have underpinned national and rural structural change to date, and which have lifted vast numbers out of extreme poverty, fall well short of what will be needed in future to tackle the challenges of large numbers of rural people being economically left behind, increasing inequalities and emerging food system-related risks.

New framing is needed for a much more nuanced and disaggregated understanding of the relationships between food systems change and rural well-being, and what this implies for an agenda of "food systems transformation." In a policy life cycle, even the concept of food systems is relatively new and novel. The idea has gained currency over the last 5 years or so, but well after the 2008 food price crisis, in which the dominant discourse was on food and nutrition security. While national strategies and policies have started to articulate the concept of food systems, there is as yet little evidence of more systemic approaches that integrate across sectors and government policies being put into practice.

The very notion of transforming food systems brings with it three profound challenges. The first is to understand the essence of how to intervene systemically into what are complex adaptive systems and to recognize the limits of top-down forms of "engineered" and linear policy approaches. This is a fundamental "mindset" challenge, with linear and instrumental ways of thinking still permeating many government,

business and research processes. The second, related to the first, is to recognize that the challenges are only partly technical, root causes, and effective solutions are tied to the incentives of institutional arrangements, embedded within the structures of politics and power. A food systems transformation that will be more equitable for rural people will require processes of dialogue, engagement and empowerment that can help to drive the institutional and political innovation needed to reshape social structures and power dynamics. The third is to gain a better, more nuanced, disaggregated and granular understanding of what is going on for whom and where in the food system and of scenarios for how this might change. This is partly about better data, partly about better synthesis and systems analysis, and partly about better processes of foresight. Humans have a psychological disposition to be “blind” to the risks of inaction (maintaining the status quo) and are more concerned about the risks of doing something new or different. While data and science are generally not enough to sway entrenched attitudes, this is nevertheless a critical foundation for opening up informed dialogue.

A food systems transformation that addresses the challenges for rural well-being outlined in this paper will hinge to a significant extent on new forms of national engagement, analysis, dialogue, coalition-building and leadership, linked to similar processes at local scales. Investing in such processes needs to be seen as a critical global public good that warrants investment and support for cross-country learning and capacity development. Such engagement is no panacea and will always be influenced and constrained by the dynamics and freedoms of domestic politics. However, from a position that values democracy, freedom and justice, there would seem to be few alternatives other than to deepen processes of societal learning in ways that support and enable governments to act for the common food systems good of current and future generations.

Table 4

Synthesis of 840 recommendations from reports on food systems and rural development from over 40 reports from international organizations and G7 and G20 meetings

Recommendation area	*Clustered recommendations*	*No. clustered*	*Reports*
Empowerment, inclusion and equity	Create decent opportunities, especially for marginalized people	9	CFS 2014; Food Systems Dashboard; G7 2016, 2019; G20 2015, 2018, 2021; GAIN and JHU 2020; IFPRI 2020; Laborde et al. 2020; UNDESA 2021
	Empower through inclusive decision-making and policy processes	8	CFS 2014; FAO et al. 2019; G20 2018; HLPE 2020; IFPRI 2020
	Prioritize empowerment and capacity development for stakeholders, particularly smallholders	6	CFS 2014; G7 2016, 2017; G8 2009; G20 2015a, 2016
	Integrate equity and human rights in food security and nutrition interventions and policies	12	CFS 2014; G7 2016; G20 2015, 2021; HLPE 2020; IFPRI 2020; IPES et al. 2021
Enabling business environment	Create enabling environments to attract investment in the agrifood system	18	AGRA 2017; G8 2009; G20 2015b, 2016, 2018; IFAD 2016; IFPRI 2020; UNCCD 2017; UNDESA 2021; World Bank 2020
Environment	Promote sustainable and resource-efficient food production systems	39	CFS 2014, 2016; G7 2016, 2017; G8 2009; G20 2015a, 2015b, 2016, 2017, 2018, 2021; H20 2020; HLPE 2020a; IPES-Food 2020; UNCCD 2017; UNDESA 2021; Westhoek et al. 2016; WRI 2019
	Invest in research and innovation to identify and promote resource-efficient food systems	9	G7 2016; G20 2017; Westhoek et al. 2016; WRI 2019
	Promote sustainable management, restoration and efficient use of natural resources	26	CFS 2014, 2016; FAO 2020; G7 2017; G20 2018, 2020, 2021; UNCCD 2017; UNEP 2016; Westhoek et al. 2016; WRI 2019
	Reduce food loss and waste	17	CFS 2014, 2016; Fan et al. 2013; FAO et al. 2020; G7 2016, 2017; G20 2015a, 2015b, 2016, 2018; Laborde et al. 2020; Mbow et al. 2019; UNCCD 2017; UNDESA 2021; Westhoek et al. 2016; WRI 2019
	Prioritize integrated programmes	3	CFS 2016; IFAD 2019; WRI 2019
	Support institutional and policy reforms such as revaluing prices of environmental externalities	6	UNDESA 2021; Westhoek et al. 2016; WRI 2019
Financial services	Improve access to innovative financial services	19	AGRA 2017; Bharali et al. 2020; CFS 2014; Fan et al. 2013; G7 2017; G20 2015, 2016, 2018, 2021; HLPE 2013; IFAD 2016; UNDESA 2021; World Bank 2008
	Expand opportunities for risk-planning for small-scale farmers	2	Fan et al. 2013; World Bank 2019
	Reform financial regulations	1	IFAD 2016
	Introduce sustainable subsidies to reduce production costs	4	Laborde et al. 2020
Governance	Work towards responsible and inclusive investments, governance and accountability	12	CFS 2014; G7 2016, 2016 (V4A), 2017; G8 2009; G20 2015a, 2016, 2018, 2020; UNDESA 2021; World Bank 2008
	Decentralize and devolve policy and operations	3	Bharali et al. 2020; UNDESA 2021; Westhoek et al. 2016
	Strengthen public agrifood institutions	6	AGRA 2017; FAO et al. 2019; G8 2009; G20 2016, 2020; HLPE 2020a; IFAD 2016
	Design and implement medium- and long-term strategies	6	FAO et al. 2017, 2020; G7 2017; G20 2016

	Strengthen policy integration and coherence though improved planning, coordination and governance	17	Bharali et al. 2020; CFS 2014, 2016; Fan et al. 2013; FAO 2020; FAO et al. 2018; G7 2016; G20 2017, 2021; HLPE 2013, 2020a; IFAD 2019; IPES-Food 2020; Mbow et al. 2019; World Bank 2008
	Prioritize collaborative, multi-stakeholder and multidisciplinary food systems approaches	14	Bharali et al. 2020; Biovision Foundation for Ecological Development and IPES-Food 2020; CFS 2014; G7 2016, 2017; G8 2009; G20 2015, 2016, 2018; HLPE 2020a; Westhoek et al. 2016
	Work at multiple scales and consider context specificity	10	CFS 2016; G7 2016 (V4A); G20 2016, 2018; HLPE 2020a; UNCCD 2017; UNDESA 2021
	Recognize the role of the CFS as a lead body in coordinating an international governance	4	G20 2019; HLPE 2020a
	Liberalize trade to expand access to markets and inputs	9	AGRA 2017; FAO et al. 2020; G20 2021; World Bank 2019
	Increase and coordinate public and donor investments in global public goods for agriculture	7	AGRA 2017; Bharali et al. 2020; Fan et al. 2013; G7 2016 (V4A)
	Invest in essential infrastructure (e.g. ICT, transport and market infrastructure), especially in remote rural areas	26	CFS 2014; FAO et al. 2019, 2020; G7 2016 (V4A); G20 2015a, 2016, 2017, 2018; HLPE 2020a; IFAD 2016, 2019; IFPRI 2020; Laborde et al. 2020; UNDESA 2021; Westhoek et al. 2016; World Bank 2019;
	Invest in irrigation infrastructure	3	G7 2016 (V4A); IFAD 2016; Laborde et al. 2020
Infrastructure and smallholder-friendly technology	Develop smallholder-friendly technology	8	CFS 2014; Fan et al. 2013; G20 2016; HLPE 2020a; UNEP 2016, 2019; Westhoek et al. 2016; World Bank 2020
	Support farmers' access to markets and market information	5	CFS 2016; G20 2017, 2021; HLPE 2013; IFPRI 2020
	Target policy interventions to correct market failures and improve market performance	17	CFS 2014, 2016; Fan et al. 2013; G7 2017; G8 2009; G20 2015, 2016, 2017, 2018, 2021; HLPE 2013; World Bank 2008, 2019
Market access and performance	Pursue trade agreements and cooperation	7	G7 2017; G20 2017, 2018, 2020, 2021; World Bank 2019
	Promote nutrition-sensitive food systems	18	CFS 2014; FAO et al. 2019; G7 2016 (V4A); G7/G5 2019; G20 2021; GAIN and JHU 2020; HLPE 2020; IFAD 2016, 2019; IFPRI 2020
	Prioritize policy actions and investments that increase access to nutritious food, especially for poor consumers	18	CFS 2014; FAO et al. 2019, 2020; G20 2021; GAIN and JHU 2020
	Promote policies and interventions to ensure access to nutritious foods for infants, such as exclusive breastfeeding promotion	5	FAO et al. 2019, 2020
	Enforce dietary guidelines, regulations and laws	22	FAO et al. 2019, 2020; GAIN and JHU 2020; IPES et al. 2021
	Reduce food and nutrition loss, risks and contamination	15	CFS 2014, 2016; FAO et al. 2020; G8 2009; G20 2015, 2018, 2021; GAIN and JHU 2020
	Invest in food fortification programmes	4	FAO et al. 2020; GAIN and JHU 2020
Nutrition	Invest in research, processing and technology actions to enhance nutrition	3	FAO et al. 2020; GAIN and JHU 2020

	Invest in public services and infrastructure to enable delivery of nutritious diets	8	CFS 2014; FAO et al. 2019; GAIN and JHU 2020
	Promote social protection programmes that enhance access to healthy and nutritious foods	9	FAO et al. 2019; G20 2021; GAIN and JHU 2020; HLPE 2020a
	Promote sustainable and healthy consumption patterns	8	CFS 2014, 2016; Development Initiatives 2018; FAO et al. 2019; G7 2017; Westhoek et al. 2016
	Scale up financing and implement integrated policies that address hunger and malnutrition in all its forms	7	Development Initiatives 2018; FAO et al. 2019, 2020; G7/G5 2019; HLPE 2020;
	Invest in nutrition education and global campaigns to create awareness on nutrition-sensitive practices	17	CFS 2014; FAO et al. 2019, 2020; G7 2016, 2020; GAIN and JHU 2020; IFAD 2019
	Promote investments that address antimicrobial resistance, animal and plant diseases, and biological threats	6	G7 2016; G20 2017, 2018, 2020
	Establish clear regulatory frameworks for linking farmers with private institutions	2	AGRA 2017; Fan et al. 2013
Private sector	Encourage and incentivize innovative and responsible investments, partnerships and facilitation	16	AGRA 2017; Bharali et al. 2020; CFS 2016; FAO 2020; G8 2009; G20 2015b, 2016, 2018, 2020, 2021; IFAD 2016, 2019; UNDESA 2021
Producer organizations	Enhance the performance and role of producer organizations and other rural collectives	7	AGRA 2017; CFS 2016; G7 2017; GAIN and JHU 2020; IFAD 2016; World Bank 2008
Public services	Invest in education, universal health care services, and water and sanitation services	16	CFS 2014, 2016; FAO 2020; FAO et al. 2019; G20 2016, 2018, 2020; HLPE 2013, 2020a; IFAD 2016, 2019; IFPRI 2020; World Bank 2008, 2020
	Ensure continuous monitoring, evaluation and data collection across the entire food systems	16	Bharali et al. 2020; CFS 2016; FAO 2020; G7 2016, 2016 (V4A), 2017; G8 2009; G20 2020; HLPE 2013; IFAD 2013, 2016; Westhoek et al. 2016
Research and development	Invest in setting up, upgrading and financing agricultural research and development, extension services, innovations and technologies	51	Biovision and IPES-Food 2020; CFS 2014, 2016; Fan et al. 2013; FAO et al. 2018, 2020; G7 2016, 2016 (V4A), 2017; G8 2009; G20 2015, 2016, 2017, 2018, 2019, 2020, 2021; HLPE 2013, 2020a; IFAD 2016; IPES-Food 2020; Laborde et al. 2020; UNDESA 2021; Westhoek et al. 2016; World Bank 2008; WRI 2019
	Promote diversity, including the use of traditional and indigenous knowledge and genetic resources	2	CFS 2014
	Improve direct support to smallholders, including access to extension and veterinary services	6	CFS 2016; Fan et al. 2013; IFAD 2013; IPES et al. 2021; Laborde et al. 2020; UNDESA 2021
	Support more resilient and sustainable food production systems and livelihoods	30	AGRA 2017; CFS 2014, 2016; Fan et al. 2013; FAO et al. 2017; G7 2016; G7 2016, 2017; G20 2015b, 2021; HLPE 2020a; IFPRI 2020; IPES et al. 2021; Mbow et al. 2019; UNCCD 2017; UNDESA 2021
Resilience	Foster integrated risk management and enhance economic resilience to risks and disasters	6	FAO et al. 2019; G7 2016 (V4A); G20 2018, 2021

	Promote efficient and effective disaster preparedness and response systems	12	CFS 2016; FAO et al. 2016, 2017, 2018, 2019; G7 2016 (V4A); G8 2009; HLPE 2020a
	Use both science and interdisciplinary knowledge to identify appropriate solutions	5	AGRA 2017; Fan et al. 2013; FAO et al. 2018
	Strengthen social protection policies and investments	4	FAO et al. 2017, 2018; G7 2016
	Foster adaptation to climate change	3	G7 2017; G20 2018, 2021
	Promote closer partnerships between humanitarian, development and peace actors and international financial institutions	3	FAO et al. 2017; G7 2016 (V4A); G20 2018
	Promote pro-smallholder and inclusive value chains	9	G7 2016; G20 2016, 2019, 2020, 2021; HLPE 2020; IFPRI 2020
	Ensure vertical and horizontal integration and/or coordination	3	AGRA 2017; FAO 2020; G20 2021
	Lower trade barriers	3	FAO 2020; G20 2021
	Trade policies that foster open markets should be complemented by measures that improve the capacity to compete in modern global value chains	6	FAO et al. 2020; G8 2009; G20 2017, 2018, 2021
Sector and value chain development	Encourage regional and international trade agreements	5	FAO 2020; G7 2017; G20 2019, 2021
	Create flexible and clear arrangements for land transfer and strengthening tenure security	11	G7 2016; G20 2015, 2018; UNDESA 2021; Westhoek et al. 2016; World Bank 2008
	Establish land tenure reforms for more secure access	7	CFS 2014, 2016; G7 2016 (V4A); IFPRI 2020; UNCCD 2017; Westhoek et al. 2016
Secure land tenure and property rights	Implement the CFS Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forestry in the Context of National Food Security and the CFS Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication	6	CFS 2014, 2016; G7 2016; G20 2015, 2018; HLPE 2013
Social protection programmes	Establish and maintain targeted social protection programmes	18	CFS 2014, 2016; FAO et al. 2018, 2019, 2020; G7 2016; G20 2015, 2021; HLPE 2013, 2020a; IFAD 2016; World Bank 2008
	Design and expand humanitarian assistance programmes	4	FAO et al. 2020; HLPE 2020a; IPES 2021
	In the context of the COVID-19 pandemic, provide debt relief to governments struggling to maintain necessary social safety nets	1	HLPE 2020b
	Explore social protection reforms to integrate social protection and agricultural programmes	2	Fan et al. 2013; IFAD 2016
Sustainable consumption and diets	Provide incentives for sustainable consumption and reduction of food waste	7	FAO et al. 2020; G7 2016, 2017; GAIN and JHU 2020; Mbow et al. 2019; UNCCD 2017; WRI 2019
	Encourage shifts to less resource-intensive products (e.g. plant-based diets)	6	UNCCD 2017; UNEP 2016; Westhoek et al. 2016; WRI 2019
	Ensure trade and marketing policies balance producers' and consumers' preferences	2	FAO et al. 2020; Westhoek et al. 2016

	Adopt consumption-oriented policies	5	CFS 2014; G8 2009; IFPRI 2020; Westhoek et al. 2016; WRI 2019
	Develop policies for promoting and incentivizing rural development	11	CFS 2014; FAO et al. 2020; G7 2017, 2018, 2019; HLPE 2020a; IFAD 2016, 2019; IFPRI 2020
	Promote non-farm employment	8	G7 2017, 2019; G20 2018; HLPE 2013; IFAD 2016; UNDESA 2021; World Bank 2008
	Strengthen rural-urban linkages	2	UNDESA 2021; Westhoek et al. 2016
Territorial approaches/rural development	Promote context-specific policies	5	HLPE 2020a; IFAD 2016; IFPRI 2020; UNDESA 2021
	Invest in enhanced territorial market development	3	G20 2021; HLPE 2020a
	Improve women's access to knowledge, skills, technology, productive assets and resources	12	CFS 2014, 2016; G7 2016, 2019; G20 2021; GAIN and JHU 2020; IFAD 2016; UNDESA 2021; WRI 2019
	Reduce drudgery, and empower through inclusive decision-making and policy processes	10	CFS 2014; G7 2016; HLPE 2013; IFPRI 2020 ; Mbow et al. 2019
	Encourage private sector and civil society organization initiatives to foster women's empowerment	2	HLPE 2013; IFPRI 2013
Women's empowerment and gender equity	Prioritize interventions that enhance gender equity and a rights-based approach	6	CFS 2014, 2016; G20 2019; UNDESA 2021; WRI 2019
Youth empowerment	Invest in broad-based growth, not just in youth	3	IFAD 2019; IFPRI 2020
	Increase their access to productive resources, including land and financial services, as well as training	2	CFS 2014; G7 2016, 2019
	Include youth in decision-making	1	CFS 2014; G7 2019
	Design youth strategies that are appropriate for specific countries and their rural spaces	9	G7 2019; IFAD 2019
	Prioritize multicomponent and comprehensive programmes to tackle youth constraints	3	G7 2019; IFAD 2019; UNDESA 2021
	Invest in education, training and advisory services, and access to innovative technologies	14	CFS 2014, 2016; G7 2019; G20 2019, 2021; IFAD 2019
	Embed rural youth policy and investments in broader rural development strategies	1	G7 2019; IFAD 2019
	Encourage private sector and civil society organization initiatives to foster youth empowerment	1	G7 2019; IFAD 2019

Source: Woodhill et al. (2021).

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