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Reducing inequalities for food security and nutrition

HLPE report

Vo Draft for e-consultation

(do not cite or quote)

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Chapter 1. ENGAGING WITH INEQUALITY AND INEQUITY: CONCEPTS AND DEFINITIONS, SCOPE AND CONCEPTUAL FRAMEWORK

Introduction

Vast inequalities are prevalent and continue to grow throughout and beyond the food system, within and across nations, undermining progress towards meeting targets for food security and nutrition (HLPE,2017; Development Initiatives, 2020). These inequalities are seen as gaps between those who are food secure and those who are food insecure, and who is malnourished and who is well nourished (Development Initiatives, 2020; FAO *et al.*, 2022). These inequalities in food security and nutrition (FSN) outcomes are underlain by inequalities within the food system, such as uneven distribution of land and productive resources and unequal access to opportunities, and beyond the food system, such as unequal access to education. These inequalities are built on histories of the marginalization of certain countries, regions and populations – intergenerational inequities from which it is difficult to break free – shaping opportunities in food systems, economies and societies (Development Initiatives, 2020)In turn, food insecurity and malnutrition continue to contribute to precarious lives, disrupted livelihoods, and poor health (FAO *et al.*, 2022). This report tackles these issues head-on, building on previous HLPE reports and drawing on multidisciplinary evidence to strengthen the ways in which the global community might acknowledge, assess and address inequalities and inequities for food security and nutrition.

Why inequality and inequity?

Globally, malnutrition in all its forms is the leading cause of poor health (Development Initiatives, 2021) and food insecurity is rising (FAO *et al.*, 2022). Levels of undernourishment (a measure of hunger) have risen to 9.8% across the global population in 2021, affecting up to 828 million people (FAO *et al.*, 2022), and one in five children under the age of five is stunted, an estimated 150 million children (Development Initiatives, 2021)At the same time, 2.2 billion adults are overweight or obese (around 40% of adults) with millions experiencing associated chronic diseases (Development Initiatives, 2021). Poor quality diets are one of the leading causes of death and disability globally (GBD 2017 Diet Collaborators, 2019): three billion people cannot afford to eat a healthy diet (FAO *et al.*, 2022); and 63% of adolescents do not consume vegetables daily, while 80% consume daily carbonated soft drinks (GAIN and JHU, 2020). These issues do not occur in isolation but are present in the same countries, households, and individuals simultaneously; and global shocks such as Covid-19, conflict and economic turbulence are further disrupting lives and livelihoods, and FSN outcomes, for large swathes of the global population.

Key to this report, though, is that fact that not all populations are affected by these issues in the same ways. Over time, food systems have made more and healthier foods available to some people, while others face increased difficulties in feeding themselves adequately, safely, and nutritiously (Global Panel, 2016). While economic (income) inequality has been argued as a positive force fuelling competition and incentivizing production effort (and therefore, potentially individual achievement or economic growth) (Fields and Ok, 1999), inequality is never a good thing in terms of FSN outcomes: The aim is to have populations converge at the 'positive' end of any spectrum (low hunger; high dietary diversity; etc.). Marginalization of certain populations breeds inequity, and inequity systematically

creates unequal opportunities and unequal outcomes for certain groups, hence the consequences of marginalization, inequity and inequality is worse FSN outcomes and higher vulnerability to shocks such as war, drought and pandemics that further worsen these outcomes for these groups. The unequal distribution in FSN outcomes and food system opportunities is not random but is underpinned by inequitable processes at the global or local societal level that shape systems and ultimately outcomes differently, for different people in different contexts (Nisbett *et al.*, 2022).

Food security and malnutrition outcomes are remarkably unequal across regional and national boundaries (Development Initiatives, 2021; FAO *et al.*, 2022): Africa has the largest hunger prevalence at 20.2% of the population, compared to less than 2.5% in North America & Europe; young child (2-4 years) overweight prevalence is over 20% in Australia, Libya and Ukraine and lowest (<1%) in Burkina Faso, Myanmar and Mali (WHO, 2022). Food security and nutrition issues are global, but affect different countries differently, and increasingly global issues exacerbate inequality: Countries affected by conflict or other forms of fragility are at higher risk for many forms of malnutrition, for instance (Development Initiatives, 2021). Colonial histories shape current opportunities in global food systems (McMichael, 2009). Climate change puts additional pressure on often already hard-pressed populations (Swinburn *et al.*, 2019), and those who are first to feel its effects are those who are least likely to have had a hand in its creation; Indigenous peoples for instance, who rely heavily on healthy ecosystems for their food sustenance, are the first to feel its effects most acutely (Huambachano, 2018, 2020).

Differences therefore do not end at national boundaries but are also evident among different populations within countries (GNR 2020): Child stunting is far higher in rural communities globally (35.6% of children) than urban (25.6%); achievement of minimum dietary diversity is higher when caregivers have secondary or higher education (22.4%) than primary or lower (14.8%); and overweight is higher in children from richer (5.7%) than poorer (3.6%) households. Across the food system itself, we see inequalities along the lines of gender and other social groupings (for instance Indigenous peoples and ethnic minorities) in ownership and control of land and other productive assets; gendered pay and time use differentials; and different opportunities for participation across the value chain by small versus large farmholders, for instance (Anseeuw and Baldinelli Maria, 2020; Doss *et al.*, 2013; Tavenner *et al.*, 2019). Thus, understanding how inequities in global and local societies contribute to inequalities in food systems and ultimately in FSN outcomes is vital if these are to be addressed.

Addressing inequalities and inequities

Inequalities across and within countries exist in a context of global goals aiming for significant reductions in child stunting, wasting and overweight (obesity?), and anaemia and chronic diseases in adults by 2025 (WHO, 2014). The Sustainable Development Goals aim, by 2030, for Zero Hunger (SDG 2) and reduced inequalities (SDG 10) in particular gender equality (SDG 5), with a commitment to 'leave no-one behind' (UN, 2015) - though for SDG 10 in particular there is no clear institutional lead in ministries or global systems, so inequality is at risk of falling through the cracks of accountability. Inequalities also exist in a context of states universally affirming a right to food, drawing on the PANTHER principles (participation, accountability, non-discrimination, transparency, human dignity, empowerment, rule of law) many of which as we show below are key equity principles also (FAO, 2005). Inequalities in FSN outcomes and in food systems, and the inequities underpinning them have therefore been globally acknowledged, and are being globally tracked, with more recent efforts, albeit limited, reporting trends disaggregated according to some of the most affected population groups, with the aim of better acknowledging, assessing and addressing these enduring injustices.

Addressing inequalities in FSN is both an ethical and practical imperative, and in some cases a legal imperative too:

An ethical and (where legislation exists) legal imperative because multiple contemporary moral frameworks – including human rights; gender, racial and colonial justice movements; and many national constitutions and declarations – emphasise the importance of equality among different population groups. The imperative of equality has been embodied in the United Nations Sustainable Development Goals slogan *Nobody Left Behind,* applicable to high-and low-income countries alike (SDGs). Similarly, human rights emphasise non-discrimination and human dignity as fundamental to their achievement (Voluntary guidelines); human rights covenants are signed and ratified by a majority of countries in the world, and have shaped national legislation in many contexts. The Constitution of the United States of America approaches the idea of racial equality in its 14th amendment (US Constitution); and clauses guaranteeing gender equality are becoming a common feature of national constitutions, for instance (Chilton and Versteeg, 2021).

A practical imperative because countries will not reach their FSN goals without attending to the needs and experiences of the most marginalized people in their societies, regardless of country GDP or level of development, who invariably experience worse outcomes (Angdembe *et al.*, 2019; Harris *et al.*, 2021). And because addressing food insecurity and malnutrition for the most marginalized populations has positive magnifying effects for economies and societies: hunger and poor nutrition in childhood affect school performance and later earnings; nutrition-related diseases lead to healthcare spending; and the burden of poor food security and nutrition challenges countries' social and economic aims and the life goals of citizens (HLPE, 2017; Hoddinott, Rosegrant and Torero, 2012).

Concepts and definitions

The conceptualization of food security has evolved over time to go beyond 'availability, access, utilization and stability' to now include 'agency' and 'sustainability' and centring the right to food in its current conceptualization (HLPE, 2020)). Framing food systems through a lens of 'agency' signals the need for an expansion from policy and programmatic responses that seek to reduce food and nutrition insecurity by providing relief and social safety nets, to ones that seek to address underlying inequities driving food insecurity by placing power in the hands of those most affected. A focus on agency further situates food security within a rights-based framework, whereby food insecurity and malnutrition are seen as injustices for which duty-bearers are accountable, rather than technical issues amenable to the changing whims of policy and good will. The 'sustainability' dimension is defined as "food system practices that contribute to long-term regeneration of natural, social, and economic systems, ensuring the food needs of the present generations are met without compromising food needs of future generations" (HLPE, 2020, pg. 10). The incorporation of this dimension explicitly links food security outcomes to the nature of the food system, and calls for a radically transformed food systems that are "empowering, equitable, regenerative, productive, prosperous" and that "boldly reshape the underlying principles from production to consumption." (HLPE, 2020, pg. xvii). Through adoption of the reframing of food security and its dimensions proposed in HLPE, this report therefore situates the fundamental issue of inequality in food security and nutrition within a broader framing of equity, rights, agency and sustainability.

Box 1.1: Key definitions

A **food system** gathers all elements (environment, people, inputs, processes, infrastructures, institutions, etc.) and activities including socio-economic and environmental outcomes (HLPE 2008, 2014). Three key elements of food systems are: food supply, food environment, and consumer behaviour (HLPE, 2017)

Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe, nutritious food that meets their dietary need and food preferences for a healthy and active life (FAO, 2001). The key dimensions of food security are availability, access, sustainability, agency, utilization and stability (HLPE, 2020).

Equity and equality are contested concepts; the meanings of the words are not universally agreed upon. To create a collective understanding of these terms in the ways that they have been applied for the purposes of this report, we describe in Table 1.1 the key terms and definitions used here to describe inequalities, inequities, their relationships and supporting concepts. The definitions utilised are informed by extensive existing research spanning different disciplines (sociology, public health and health equity, economics, human rights, public health nutrition) so that different disciplinary points of view are reflected.

Drawing on the table, the concepts central to this report are 'inequity' and 'inequality' as they relate to FSN:

Inequalities can be understood broadly as *differences between socially relevant groups*, i.e., differences in FSN outcomes or food system-related aspects (e.g., land access) between individuals or groups. Inequality is understood here as an uneven distribution in an outcome, opportunity or resource. Which groups are socially relevant in terms of inequalities will vary by context, depending on which groups are most marginalized according to socio-political norms (this could be on a global scale, looking at marginalized countries, or a local scale, looking at marginalised communities). In many contexts these groups include the poor, small farmers, women, and the disabled; in different contexts there may be socially relevant differences based on ethnicity, race, caste, religion, age, sexuality, or other issues of social position.

Inequities, on the other hand, are the reasons for *why this uneven distribution exists and accrues systematically to certain social groups*, and therefore the unfair, unjust and avoidable differences in power through socio-political, historical, cultural, social, and other driving factors that causes inequalities in FSN. For instance, the reasons why some countries are economically disadvantaged in the global order (e.g., Colonialism), or the reasons why women have fewer opportunities to participate in some aspects of food systems (e.g., Patriarchy), or the reasons why it is certain ethnic or indigenous groups that experience poorer FSN outcomes (e.g., Racism).

Equity and equality as used in this report are therefore not the same but are not mutually exclusive; one chooses to focus on outcome, and the other on process, broadly. It is also helpful to understand inequity as an avoidable issue, one that could be avoided if a more 'just' or 'fair' society existed. Both equity and equality are underpinned philosophically by moral equality: the idea that all people count and should be treated as equals; the opposite of the marginalisation of certain groups or countries and the injustices inflicted upon them. They are, therefore, normative concepts; it is a claim that people s*hould* be treated equally. Talking about equity and equality is therefore value-laden, based on how it

is thought by many that the world *should* be; but no more so than aiming for economic growth, or human rights, or intergenerational justice, which are also choices based on value and belief systems. This does mean, however, that different people will prioritize different aspects of equity or equality, or not prioritize them at all, in research, policy and practice.

Table 1.1: Concept definitions and examples

Concept	Definition	Example
Inequality	Observed differences in measurable nutritional or food security outcomes or related food systems factors (e.g., land ownership) between socially relevant groups (e.g., socio-economic status, race or ethnicity, sex).	Women compared to men globally and regionally are more likely to experience food insecurity, especially during times of crises (Broussard, 2019)
Inequity	The reasons for why systematic differences in food system opportunities or the distribution of food security and nutritional outcomes exist, driven by systemic structural issues and unjust practices of unfairness, injustices and exclusion that lead to inequality in food systems and ultimately food security and nutrition.	Differences noted between men and women in food insecurity experienced can be partially explained by social norms limiting economic opportunities available to women, or bias towards men in policy formulation.
Vertical inequality	Vertical inequalities reflect the differences in the distribution of an outcome or factor of interest between individuals or households. For example, distributions of wealth, income or social outcomes including FSN for a country, region or globally revealing *who* are at the extrema of the outcome. Vertical inequalities are most frequently assessed using the Gini Index and oftentimes the most commonly presented when depicting inequalities. Ethnographic studies and case studies can also depict these inequalities. In some circumstances, individuals can progress 'upwards' (hence 'vertical') in the distribution of resource that defines a vertical inequality, e.g., an individual has the possibility to become wealthier, or a small farmer can improve their land access.	Socio economic status, often measured through wealth indices, identify women in India and Nepal with no formal education and from so-called 'lower caste' groups comprise the lower quintile of wealth versus men with college education and from 'highest caste' groups comprising the highest quintiles of wealth.
Horizontal inequality	Horizontal inequalities reflect differences between different groups based on social, ethnic, gender or other attributes. Horizontal inequalities can occur along economic, social, political and cultural dimensions (Stewart, 2015). Some definitions of horizontal inequalities describe them as differences between socially constructed groups be it gender, disability, caste, religion, sexuality (Balakrishnan and Heintz, 2015). An important question in examining horizontal inequalities is identifying groups that are both very apparently discriminated against as well as those that are not as visible and thus often not accounted for in that data (ex: sub ethnic groups). Globally, we find women, the disabled, and minority ethnic and religious groups,	In the USA, the national prevalence of adult obesity is 41.9% and 49% among non-Hispanic Black adults, 45,6% among Hispanic adults, 41.4% among non-Hispanic White adults and 16.1% among non-Hispanic Asian adults (Bryan *et al.*, 2021). Horizontal inequalities between ethnic groups that then interact with climate disasters and economic and

	among other minority groups in the lowest extreme of a distribution and thus experiencing most deprivation by way of wealth, food security, etc.	political marginalization political instability has been seen to fuel conflict in countries (Østby, 2013).
Intergenerational inequality	Intergenerational inequality is when inequality is passed on from one generation to the next. Economists often describe this in terms of wealth transmitted from one generation to the next, while sociologists often describe it in terms of mobility between socio-economic brackets. Often this is reflecting the extent to which horizontal inequality is perpetuated over time and can reflect persistence of systematic inequality for certain groups and its cumulative nature. For many Indigenous peoples preserving good kinships —with all human beings, non-humans (sea, mountains, rivers, etc), interconnectedness to the natural environment is fundamental to a well-functioning society; this Indigenous cosmovision or worldview is akin to intergenerational justice (Watene, 2016; Whyte, 2021).	Women who are undernourished during pregnancy give birth to children who have either low birth weight or are stunted which then sets those children to more likely to have poorer cognitive development and economic potential, to develop NCDS later in life. Conversely, interventions to address malnutrition in early life have positive effects on schooling, work and earnings (Hoddinott, Rosegrant and Torero, 2012).
Intersectional inequality	Intersectional inequalities can be described by the framework and concepts of intersectionality whereby interrelated and mutually shaping categories that describe groups who are marginalized (race, gender, ethnic minorities) interact with one another to further shape experiences of power asymmetries and health and nutrition inequalities (Kozlowski *et al.*, 2022). Intersectional inequalities reflect a compounding of multiple inequalities that interact to intensify deprivation. Intersectional inequality also reflects the cumulative nature of inequality but as applied to the group versus individual as they lead to an asymmetry in certain groups' capabilities to achieve optimal nutritional well-being and food security.	Different axes of social power, such as gender, economic class, ethnicity and caste often operate simultaneously, intersect, and mutually reinforce each other. In India, researchers looked at how caste, wealth and gender interacted to form stunting outcomes, finding groups worse off in all three dimensions (economic status, caste status and gender) have worse stunting outcomes than the best-off groups (non-poor, non-SC/ST boys) (Mukhopadhyay, 2015). Different forms of discrimination against indigenous peoples intersects with sexism contributing to the deepening of the injustice of indigenous women being more vulnerable to food insecurity and limited sovereignty over access to land ownership and in growing, producing, and making culturally relevant foods (Lemke and Delormier, 2017).

Inequity is avoidable and exists when injustice, unfairness, and bias are perpetuated.		
Injustice	Injustice reflects a lack of fairness and in the context of FSN, *social injustice* is defined as discrimination against individuals and groups because of social norms and cultural values which treat them as unequal, unwanted or stigmatised thus disallowing them from attaining a minimum level of food security or nutrition or the opportunity to assure their food security and nutritional well-being (Nisbett *et al.*, 2022).	Systemic discrimination against indigenous communities whose lands and rights to land ownership have systematically been taken away from them despite being stewards of those lands represents a social injustice. These injustices are perpetuated when not addressed by policy or societal action.
Unfairness	Policy and societal inaction can lead to systemic biases in systems rendering certain groups of people to unfair treatment i.e., unequal and unfair treatment. This unfair treatment can take on a multi-fold effect when certain groups experience multiple biases because of their intersecting social positioning.	A small holder woman farmer who belongs to a low caste group will experience multiple forms of biases and unfairness and therefore substantial difficulty in accessing resources due to her social position.
Different forms of injustice and unfairness that perpetuate inequity are:		
Exclusion	A state of disadvantage – lacking access and ability to resources and social and political participation – that is experienced by groups of people that exist (or are forced to exist) at the periphery of mainstream society.	The urban poor who lack access to stable formal housing and food.
Marginalization **(also called social exclusion in some literature)**	The process by which certain members of society are pushed to the periphery owing to their "identities, associations, experiences and environment" (Hall *et al.*, 1994) and thus creating barriers to actively participate in the society in which they reside. Implicit to the boundary (margins) creation and pushing of groups towards and beyond these margins is the exertion of power and dominance by certain groups over others reducing agency to access resources and to actively participate in society. We know that much nutrition research concerns itself with aspects of marginalization, for instance the disempowerment of women, or disparities in income. But other axes of marginalization, such as age, ethnicity, disability, sexuality, and geographic marginalization, seem to come up far less often in the nutrition or ag-nutrition literature, when looking at who has these different outcomes. And the	Racial minority groups (for example: African Americans) have systematically through repeated policy and social action, been marginalized and socially excluded by way of access to multiple mainstream resources and social participation be it voting rights, access to land, economic opportunities or healthcare access Exclusion of vulnerable populations in policy formulations for issues that most affect them as seen in climate resilience agriculture innovations

	interactions between these different aspects of marginalization even less often. And the structural determinants of marginalization - inequitable access to basic services, resources and political redressal; and power relations and social norms – are also under-explored (Harris *et al.*, 2019).Economic perspectives on marginalization are largely focused on economic structures, in particular to the structure of markets and their integration - the economy is structured in a way that some groups of people or individuals are segmented from it and are not able to participate in market activities (Kanbur, 2008).	that do not take into consideration the needs of small holder farmers especially those located in low-income countries
Discrimination	Differential treatment of persons or groups of people linked to the possession of certain characteristics unjustly identified as warranting differential treatment. Examples of these characteristics may be physical (ex: weight, sex), identity (ex: ethnicity, gender), age- or disability-related. This differential treatment impedes the ability of certain people to realize their human and/or other rights and can be further perpetuated and supported by law and policy leading to further inequality. It can be noted among people, for instance with similar economic characteristics experience different economic outcomes because of their race, sex, or other noneconomic characteristics (Anonymous, 2016)	Discriminatory laws and (lack of) policies that prevent women from earning the same income as their male counterparts. Food deserts in neighbourhoods of minority groups in the US.
Systematic discrimination and marginalization is an enabled through systems of beliefs, practices and values embedded in various levels of society from economic to social to political. These systems include:		
Concept	**Definition**	**Example**
Patriarchy	Patriarchy centres power in the hands of men and is based on assumptions of gendered roles and heterosexual norms in micro- (family, kin) and macro- (community, political) settings, sex, reproduction and caring, sexuality, access to knowledge, education, livelihoods, freedom of movement and expression(Nisbett *et al.*, 2022)A system of social structures, and practices in which men dominate, oppress and exploit women (Walby, 1989)Patriarchal structures have driven present day agricultural practice and system implementation through women's labour being expropriated by their husbands; patriarchal relations within waged labour (involves the exclusion of women from paid work or the segregation of women from it). Concepts of public patriarchy (not excluding women from spaces but instead	Male-centric and dominated decision-making roles within households as it relates to income expenditure on household and non-household items, agricultural inputs purchase and cultivation, etc.

	subordinates them) and private patriarchy (relative exclusion of women from arenas of social life apart from the household relegated to the private sphere of the home (Walby, 1989).	
Racism	Racism assigns values and social and economic opportunities based on assumptions related to race, ethnicity, caste, variations in skin colour and (assumed) hereditary characteristics (Nisbett *et al.*, 2022). Structural racism includes policy and practices that unfairly disadvantages and minoritizes certain groups may it be zoning policies in segregate neighbourhood and their mortgage policies. Within public health nutrition research, which informs policy, it has been argued that examining purely difference in outcomes based on racial groupings treating race as a biological construct determinant to explain malnutrition outcomes but not considering other social variables, limited reliability and validity of finding and perpetuates racist constructs (Duggan *et al.*, 2020). Such arguments contribute to the need to recognize the broader structural conditions that drive racism and as such drive inequalities in food security and nutrition.	Within food systems, this can be seen in concentration of power in the hands of a privileged minority (usually based on race) and passing off the social and environmental "externalities" disproportionately on to racially stigmatized groups.
Colonialism	The dominance of an external group of people upon another. Dominance is exerted by way of ideological, economical, territorial, linguistic, cultural and political (unjustified) subjugation of one group unto another while also exploiting the subjugated group's resources, culture, identity and so forth, for the colonizers' benefit (Horvath, 1972; Ma Rhea, 2016). Economists describe colonialism as a historical phenomenon of territorial expansion intimately connected with the rise and growth of the modern capitalist world system. It involves processes of control of supplies of raw materials, mineral resources, and markets in underdeveloped and pre-capitalist regions that are subjected to the political, social, economic, intellectual ideologies of the colonizers.	Traditional food systems in majority of countries in the Global South as well as indigenous communities and societies in the Western Hemisphere being wiped out and being replaced by mechanized mono-culture agriculture leading to a shift away from traditional diets to diets high in sodium, fat and processed foods. The colonized are stripped of the freedom to make independent economic decisions and the development of agricultural, utilization of the country's vast natural resources, its industrial and tariff policies, trading relations with foreign countries, and so on are left into the hands of the ruling country.

Ableism	Discrimination and exclusion of people with disabilities seeing them as inferior and not as capable as people without disabilities (Swenor, 2021). This includes discrimination at the individual, interpersonal and structural level against people with disabilities or those presumed to be disabled.	Inaccessibility of food environment which include transportation and access gaps for people with physical disabilities.
Power asymmetries	Power asymmetries reflect differentials in power by different actors in food systems and social systems, governed by different interests which have differing levels of influence and exert this influence differential across different sectors or parts of society. They are essentially power imbalances that occur across multiple levels – from multinational trade negotiations to national policy processes to local social structures – rendering certain voices louder than others and rendering the interests of certain groups more expressed and often more actualized.	Food lobbies of the US.
Positive forces to address inequality and inequity		
Agency	Agency has been defined in previous HLPE reports most commonly as "what a person is free to do and achieve in pursuit of whatever goals or values he or she regards as important." (Sen, 1985, p.203). Empowerment is an important aspect of agency such that people have the ability to participate and engage in society, contribute to shaping and bettering their own lives and wellbeing (Alsop and Heinsohn, 2005).	
Empowerment	"One way of thinking about power is in terms of the ability to make choices. To be disempowered means to be denied choice, while empowerment refers to the processes by which those who have been denied the ability to make choices acquire such an ability. In other words, empowerment entails change… There must be alternatives - the ability to have chosen differently… Alternatives must not only exist, they must also be seen to exist. The concept of empowerment can be explored through three closely interrelated dimensions: agency, resources, and achievements (Kabeer, 2005).	

Forms of knowledge and evidence

Building on these different worldviews and definitions, different academic disciplines have defined and understood equality and equity in diverse ways, helpfully reviewed in the context of food by Cabral and Devereux (Cabral and Devereux, 2022). Approaches are different in whether they focus on individuals (or individual units such as household) or take a collective focus (such as population groups by class or gender or self-defined communities); whether they focus on redistribution of material goods (income, food) or non-material goods (opportunities, capabilities); and on whether they focus on remedial actions (social protection, food aid) or radical actions (changing power dynamics, structural reform). Different disciplinary approaches offer different perspectives on equality and equity, each of which provides a useful understanding of this multifaceted issue.

In drawing on diverse evidence, this report incorporates insights from formal research such as scientific journals and institutional reports. Scientific knowledge and approaches to understand inequity and inequality take multiple forms, from the Gini coefficients and Lorenz curves familiar to economists; to population-level outcome data disaggregated by population groups familiar to epidemiologists; to qualitative ethnographies of people's lived experience of inequity familiar to anthropologists. This report explicitly includes and draws on these multiple forms of qualitative and quantitative evidence and discusses how these approaches are synergistic or where they critique each other in understanding issues and actions.

Other forms of knowledge are included in this report. As Pimbert (2017) contends, the democratization of knowledge leads to recognizing diverse ways of knowing and a more inclusive participatory knowledge approach, in which various forms of knowledge and practices of sustainable food systems could emerge. The distinctive body of knowledge of Indigenous and local communities, for instance, promotes and articulates diverse agroecological methods and traditions for improving the sustainability of food systems Coté, 2020. Local knowledge is defined in this literature as ancestral wisdom held by a distinct group of people passed down from one generation to the next (Joshi *et al.*, 2004). Traditional ecological knowledge (TEK) articulates the enduring body of knowledge and practices of Indigenous peoples related to the natural environment of specific geographic areas acquired mainly through oral history and experiential learning from one generation to the other over thousands of years (Cajete, 2000; Dudgeon and Berkes, 2003; LaDuke, 1994). The need to include diverse ways of knowledge is important to understand epistemologies and ontologies of local and Indigenous peoples who produce and consume food. For example, measures to achieve food security focusing predominantly at the individual or household scale are rooted in an Anglo-Eurocentric view of the family. For other societies, such as Indigenous peoples, food security is understood as part of a more holistic philosophy of living well or well-being grounded in a relational basis rather than an individual one (Huambachano, 2020).

The Report adopts the position that the exclusion of Indigenous, situated and tacit knowledge, as well as forms of qualitative data, from decision-making processes has heightened food and

nutrition security inequalities and led to greater food system inequities though presenting only partial evidence of the issues.

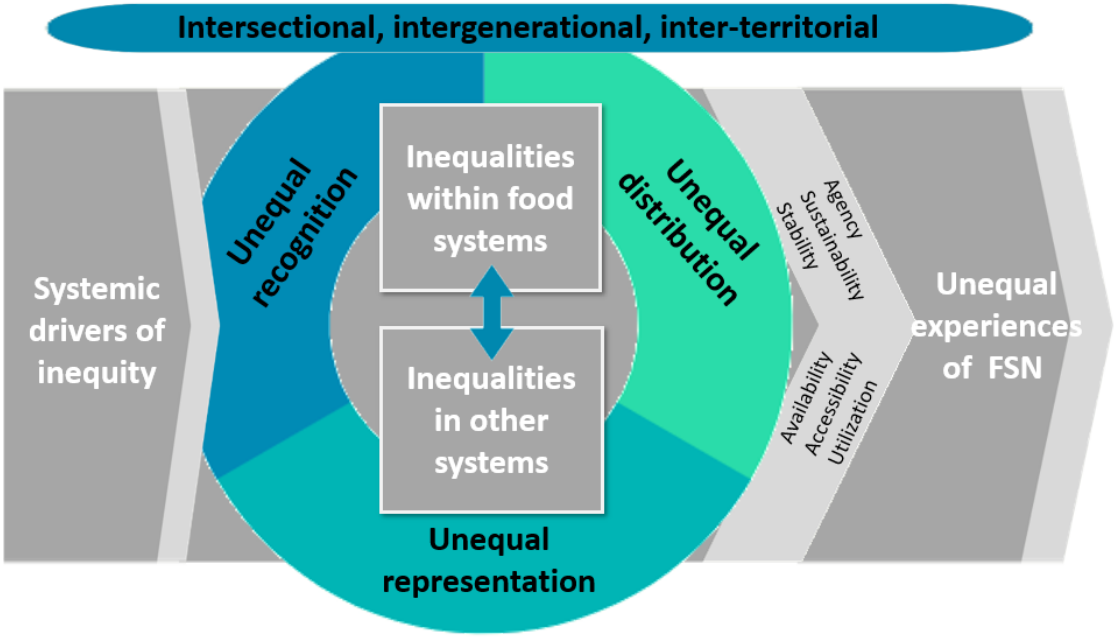
Conceptual framework

The conceptual framework is informed by key principles established in previous HLPE reports (HLPE, 2017, 2020), including agency, equity and justice. While slightly different framings, these principles share a common question: How can people be able to live a good life, defined on their own terms (Rawls, 1999)This larger philosophical question has been bounded in slightly smaller terms by the CFS and in turn by this report: How can people be able to live a life with food security and healthy nutrition, defined on their own terms? Food security and nutrition are an important part of this larger issue of social welfare (though only a part – there are other legitimate considerations that people might consider to constitute a good life, and we consider some of these such as decent livelihoods and a clean environment) and share philosophically some similar underpinnings. Our framework (Figure 1.1) considers this and draws on established social theory in defining the parameters of equality and equity in this report.

The conceptual framework is rooted in diverse literatures on inequality and inequity which have been combined into previous frameworks in related fields or derive from the equity literature (CSDH, 2008; Fraser, 2009; Nisbett *et al.*, 2022)Combined, these ideas focus the framework on the way in which different forms of inequality are driven by what we term an "engine of inequity" which produces and maintains inequality in FSN outcomes and inequality in the systems that shape FSN outcomes. This engine of inequity – the circle in the centre of the diagram – serves to link the component elements of the framework. The theoretical basis of this engine of inequity is described further below.

The overarching conceptual framework for analysing how inequalities in FSN are produced focusses on analysis at three levels: Systemic drivers of inequity; inequalities within food systems and in other relevant systems; and unequal FSN outcomes. These are connected by the engine of inequity, which through unequal distribution of resources and opportunities, unequal recognition of different groups and inequalities among them, and unequal representation of diverse groups in decision-making, creates and reinforces inequality within each subsequent level. A principle underlying the entire conceptual framework is that throughout the systems described and the deeper systemic drivers, inequity is always experienced through a lens of intersectionality (inequalities interact); and that they are intergenerational (relating to change or stagnation over time), and inter-territorial (relating to difference and similarity across place).

Figure 1.1: Conceptual framework of how unequal experiences of FSN are produced



This initial conceptual framework then provides the entry point for the report's theory of change, informed by earlier HLPE reports. As per HLPE 15, addressing inequalities in FSN will require radical transformation of food systems as a whole; recognising the interconnectedness of FSN with other systems and sectors; a focus on hunger and malnutrition in all its forms in their complex relation to one another; an understanding that food security and nutrition are context-specific and require diverse solutions; and an appreciation that there is a need to create enabling conditions within governance and research to achieve these aims. Within this conceptual framework we envisage this over-arching transformation being dependent on addressing FSN in the context of each of the components of the engine of inequity with underlying principles of the promotion of Agency, Human Rights and the Inclusion of diverse knowledge types.

Conceptual Framework components

Unequal outcomes

The location of unequal FSN outcomes at the end of the conceptual framework emphasises that FSN outcomes cannot be understood or engaged outside of the context of the wider drivers that shape these outcomes. Embedded in this box are two key principles established in earlier HLPE reports. Firstly, the analytical focus on FSN outcomes must include hunger and malnutrition in all its forms, and recognise the complex relations that these manifestations of food insecurity and malnutrition interact with each other and may co-exist from country to individual levels. The

experience of food insecurity and malnutrition is in itself intersectional, with some households or individuals experiencing multiple forms of malnutrition concurrently, which reinforce each other. Secondly, inequalities in FSN outcomes operate at multiple scales, between regions, within countries, within households, particularly in current eras of the globalizations of food systems and societies. FSN is context-specific and requires diverse solutions operating at a range of scales.

Inequalities in food systems and other systems

The construction of this layer within the conceptual framework is informed by the HLPE principle of viewing food security and nutrition as a system interconnected with other systems and sectors. Elements of the food system are therefore shown to be in dynamic relationship with other systems, shaping each other. Within the conceptual framework, inequalities within the food system are framed as both drivers of FSN inequality, and as themselves driven by deeper systemic drivers, through the engine of inequity. The food system inequalities addressed here include inequalities relating to: land, livestock, and other food production resources; inputs, technology and finance; value chains and markets; international trade and food environments. The 'other systems' considered are: wealth, assets and income; health systems and services; housing, water, sanitation and urban planning; and education. Evidence shows these as being the inter-related systems most closely linked to FSN outcomes.

Systemic Drivers

According to the conceptual framework, the starting point for understanding inequalities in FSN outcomes and inequalities in the systems that drive these unequal outcomes is a set of interlinked, underlying systemic drivers. These are understood as related and often mutually reinforcing (intersectional) structures which create conditions under which the engine of inequity produces inequalities in food systems and other related systems. Within the report the systemic drivers engaged are: culture and social norms; political systems; climate change and environmental degradation; innovation and technology; and demography and inequality transitions. These in turn are undergirded by political, social, economic and environmental conditions framed by colonialism, patriarchy and post-war development discourses and power disparities across multiple actors and scales.

Engine of inequity

At the centre of the framework, we draw on the idea of an 'engine of inequity' (Nisbett *et al.*, 2022)driving and reinforcing processes shaping inequality. This draws originally on theories of social justice (Fraser, 2009; Rawls, 1999) that have subsequently been taken up or adapted by many writing about justice, equity and inequality in the natural resources, food systems, health and nutrition fields (Karlsson *et al.*, 2018; Nichols, 2020; Powers and Faden, 2019). The engine of inequity focuses on how distribution, recognition and representation, individually and together, limit participation to affect equity and justice.

Distribution (maldistribution) refers to the need to attend to how material and non-material goods, harms, and other resources, are distributed among different people and social groups. Material goods in this context are likely to be either food or the income to buy food, and it is

well-established that both availability of these and access to them are vital aspects of how they are ultimately distributed in a population (Sen, 2004). Non-material goods may refer to forms of capital (such as social capital and community networks, or cultural capital such as food knowledges - (Bourdieu, 1986)accrue differently to different groups of people. Non-material goods may also refer to, knowledge, formal education, or essential goods and services including access to health - and are often supplied by the state. These resources create opportunities to participate and thus benefit, whereas the lack of them creates barriers to participation. These can thus impact FSN, where food system actors may not have the income, education or health, to participate fully in the food system or because opportunities and resources (grants, projects, financial aid) are captured by elites, thus limiting livelihood and income opportunities. In some cases a particular policy decision, for example taking land into a conversation area, or adding a carbon tax (costs) will affect some groups more than others, leading to further distributional inequities.

Recognition (misrecognition) refers to the need to value equally different social identities and to therefore recognise how history, convention, social status, and social norms can result in forms of discrimination and marginalisation that can make it hard or impossible for everyone to participate fully in society. Such injustices can drive maldistribution and wider forms of social and political exclusion (below). Gender, 'race' and ethnicity, indigeneity, sexuality, disability for example, can all play a role in how people are able to access resources, participate in political decision making or simply pursue traditional ways of knowing and being in relation to food and nature. These can impact food system outcomes directly, in the way that gender assumptions mean that women farmers and fishers can be invisible to some forms of intervention such as knowledge extension, loans or land reform, for example, or the ways in which traditional values, culture and knowledge about land and food production can be devalued and ignored. But social status can also affect FSN outcomes indirectly, in the way that discrimination and marginalisation will shape access to public and private services, for example in the way that health worker discrimination directed towards particular ethnic groups can limit access to health interventions (refs), which increases the negative feedback between poor health status and nutritional outcomes.

Representation (political and social exclusion) sometimes referred to as participation or 'procedural' justice, refers to the need to ensure representation of different social groups in political processes and decision making–at both micro and macro levels. A lack of political representation can result in policies and practices that mean certain individuals or groups are unable to participate sufficiently for their needs, preferences or framings of the issues to be represented adequately. alludes to multiple different groups: Sometimes discussed as social groups, sometimes named as women or indigenous peoples or the poor, for an equity framing to work it is important to specify a way by which different groups experiencing inequity and inequality might be identified. Who these groups are will vary by social context: In some contexts, framings of caste or race or ethnicity will shape marginalization most strongly, and in some contexts, women may be more marginalized than in others, for instance. Just as food systems have expanded from local to national to global, so too do issues of equity cross national scales

(Fraser, 2009). Beyond marginalisation bounded by national borders therefore, globalisation requires a lens that considers groups marginalised from global participation and in global food system, such as disenfranchised migrant workers or the global poor.

All three aspects of equity – distribution, recognition and representation – are intertwined and necessary for effective participation in the food system and in broader social and political life. Without redistribution and recognition, marginalised groups are not able to participate fully alongside those whose resources and social status allow them to dominate decision making. To achieve real 'parity of participation' (Fraser, 2009) requires attention both to the micro- (are time-poor indigenous women being given a specific platform to speak in a forum that recognises that they have rarely enjoyed the status of an equal participant? Do they even have the time to attend such a meeting?) and the macro- (what longer term political processes are needed to redress the specific maldistribution of wealth and opportunity and the misrecognition of the intersecting injustices, before they can participate fully?). These ideas therefore relate to agency (what a person is free to do and achieve in pursuit of whatever goals or values he or she regards as important) and empowerment (the processes by which those who have been denied the ability to make choices acquire such an ability).

Strategies to address inequities and inequalities that depend on only one of the aspects of the 'engine of inequity' are less likely to be successful and sustainable. For instance, land reform and social protection policies, for example, often work through distributive assumptions and are often vital in the short term to avoid the worst harms of food insecurity and malnutrition – but these approaches may exclude key groups by not recognising them in the process in the first place, or not ensuring adequate means for people to participate in their design and execution, and so may miss the most marginalized or not be planned in a way that all can participate sustainably. As another example, interventions that only focus on recognition, for instance providing a specific space for marginalised people to participate in a political process or intervention design, are less likely to be successful if they don't also address fundamental resources constraints through redistribution, allowing participation in policy or decision processes on more equal terms.

This report

Summary and chapter 1 review

This first chapter sets the scene for engaging with equality and equity in food and broader social systems for food security and nutrition outcomes. It shows clearly the inequalities in multiple FSN and food system outcomes and opportunities, both across and within countries, and outlines some of the fundamental inequities that drive these. It situates inequalities and inequities within multiple global and national goals and as both an ethical and practical imperative: FSN goals will not be met without addressing inequality and inequity.

The chapter continues with definitions used in this report, clarified here for ease of reading though acknowledging that different traditions and disciplines understand the words slightly

differently (in English at least). It defines **inequalities** as *differences between socially relevant groups*, ie. differences in FSN outcomes or food system-related aspects (e.g., land access) between individuals or groups. It defines **inequities** as the reasons for *why this uneven distribution exists and accrues systematically to certain social groups*, and therefore the political, historical, cultural, social, and other driving factors that causes these unfair, unjust and avoidable inequalities. A full table (Table 1) of key concepts provides definitions and examples for ideas used throughout the report.

With an equity and inclusion lens, the chapter then lays out the types of evidence considered in this report. In intentionally drawing on diverse evidence, this report incorporates insights from formal research such as that found in scientific journals and institutional reports; purposefully includes qualitative and ethnographic evidence often left out of policymaking; and draws explicitly on Indigenous, situated and tacit knowledge as vital to understanding equity issues and actions. Ideas from these literatures and knowledges are then combined into a conceptual framework that describes inequalities in FSN outcomes as underpinned by inequalities in food and other systems; shaped by inequities at the level of fundamental socio-political systems; and driven by an 'engine of inequity' comprising issues of distribution, recognition and representation, most effectively addressed together to achieve agency and empowerment.

Clarifying scope and boundaries

This report considers inequalities as well as inequities, and in order to facilitate this consideration it makes some choices and simplifications in language that are continued throughout the report: *Inequalities* are discussed as differences between groups (in FSN outcomes, but also in underlying food system aspects such as land access and labour); major inequality issues are outlined, and largely involve comparisons among different population groups (global and sub-national), including understanding how inequalities interact (intersectionality) where possible. *Inequities* are discussed as the root reasons why those inequalities exist structurally for certain groups in certain contexts (politically, historically, and socio-culturally); major inequity issues are outlined, and involve reference to processes of unfairness, injustice, exclusion and power.

We discuss inequalities in FSN outcomes; in food systems themselves; and, where necessary, in other key systems that support FSN outcomes. By FSN outcomes, we mean all forms of malnutrition: hunger and undernourishment; poor and unhealthy diets; micronutrient deficiencies; undernutrition including stunting and wasting; and overweight and obesity and their attendant diseases. By food system issues, we mean those issues that accrue to people by virtue of their participation in food systems as food system workers or food producers, such as access to land and inputs. By other key systems we mean systems that contribute conceptually and actually to FSN outcomes through complementarities, trade-offs and feedback loops, such as education and ability to engage in the economy, and access to public health provision and social protection systems.

This potentially adds up to a very large number of inequalities in food systems and other spheres that have implications for FSN. We are not able in a single report to consider every inequality and

inequity that relates to food systems and FSN outcomes; rather we illustrate key issues and populations that particularly highlight these issues, and call for further research and context-specific action. Some of the aspects that we consider in guiding our coverage include:

i) Original guidance from CFS regarding the scope of the report ,in particular guidance about a central focus on agri-food systems
ii) Responses to the e-consultation that was held on the scope of the report, and of public reviews of early drafts.
iii) The HLPE report group's expert judgement regarding particularly important areas for inclusion and those that illustrate particularly issues clearly. We do not consider food system inequalities that do not have a significant FSN implication that can be clearly articulated.

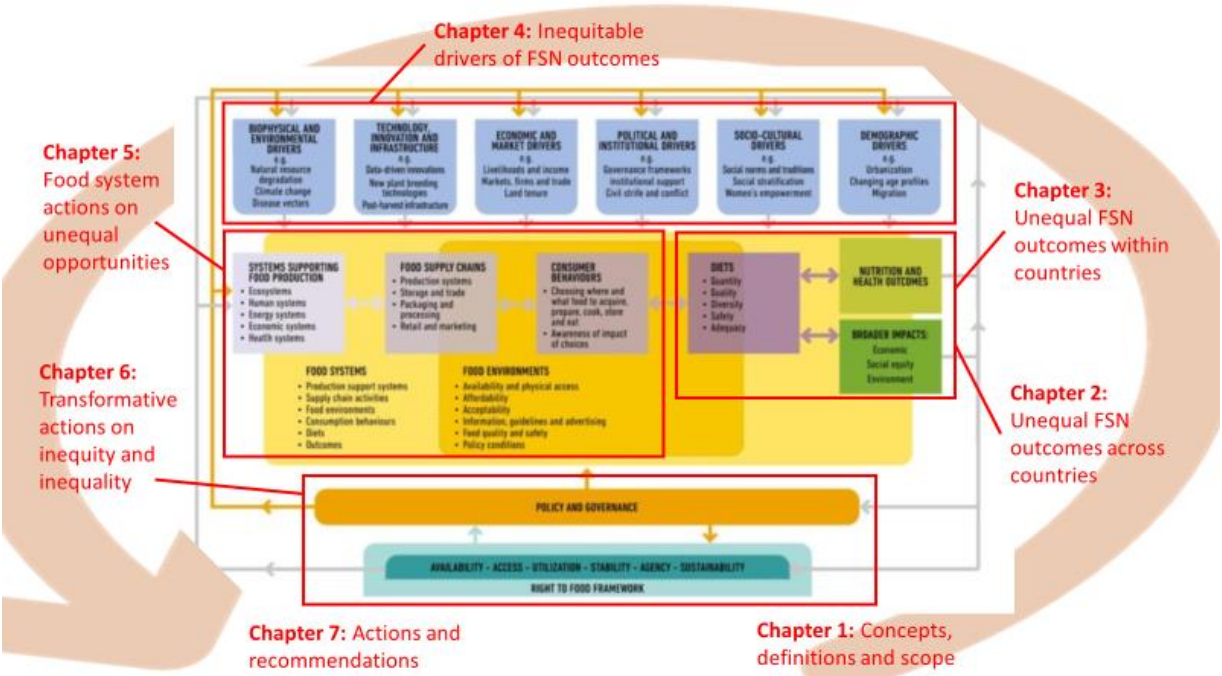
In this report we take a 'universal development' approach (Longhurst, 2017), meaning that in defining issues and approaches to equality and equity we do not only take lessons from the North for the South, or from high-income to low-income countries, as has often been true in development. Recognising that Northern countries also have inequalities and inequities affecting FSN, and that many of the drivers of inequality in food systems are common problems or even globalized in nature, this report recognises in addition South-North, South-South, and multiply interlinked issues and solutions, framed by the Sustainable Development Goals.

This report is a snapshot in time of the current state of knowledge. We do, however, also take a temporal view in this report. Much of the data presented is contemporary, in illustrating inequalities among population groups using the most recent data. Building back from the present time, we focus where possible on change in relative and absolute terms of inequalities over time (mobility); on how inequities are passed on over time (intergenerationally); and on the historical drivers of current inequities, mindful of understandings provided by historical inequities. Building forward, we also focus where possible on important future trends in inequalities, such as those driven by climate change, and on how action on equity could mitigate or transform these.

Report structure

This report has seven chapters, organised according to the HLPE food systems framework (2020) and looking at issues and solutions for inequalities and inequities across the system (Figure 1.2).

Figure 1.2: How the report is structured around the food systems framework



We began here in Chapter 1 with a broad introduction and contextual setting, specification of key concepts and definitions and clarification of the scope of the report, culminating in a conceptual framework. In the next three chapters we describe inequalities in FSN outcomes and examine their drivers. First, in chapter 2 we characterise further the major inequalities in FSN outcomes across and within countries. In Chapter 3, we examine major inequalities within food systems and other FSN-relevant systems that influence the unequal FSN outcomes described in chapter 2. Then in Chapter 4 we examine the deeper layer of structural drivers fundamental to understanding inequity, including sociocultural, economic and political aspects. The next two chapters on actions and policies to reduce inequalities mirrors these layers of drivers: in Chapter 5 we examine actions within agri-food systems and other FSN-relevant systems; and in Chapter 6 we consider broader transformation and approaches towards such transformation Chapter 7 wraps up with a prioritized set of recommendations.

Chapter 2. Inequalities in food security and nutrition outcomes

Introduction

Inequalities in Food Security and Nutrition (FSN) outcomes are widespread globally with disparities across countries as well as across subpopulations within countries. Hunger has been steadily increasing, made worse by the Covid pandemic. The triple burden of malnutrition – underweight, micronutrient deficiencies and overweight – increasingly exists within the same countries and households, and sometimes within the same individual (specifically overweight/underweight and micronutrient deficiencies). This chapter examines inequalities in these outcomes across regions and countries and within countries. While inequalities in FSN outcomes are presented in this chapter, inequalities in food and other systems that drive these FSN outcomes in Chapter 3 and the structural drivers of these inequalities in Chapter 4, these inequalities are often overlapping and mutually reinforcing. In many cases the inequalities are intersectional in character, although these interconnections are not always evident through the kinds of data generated and the modes of data disaggregation employed.

Outcomes of focus

For this chapter, we focus on food security and nutrition outcomes at various levels using indicators to reflect the inequality in FSN globally, nationally, as well as the household and individual level, paying special attention to indicators of global interest covered by the SDGs, the State of Food Insecurity and Nutrition (SOFI) and Global Nutrition Reports (GNR) (Development Initiatives, 2021; FAO *et al.*, 2021; UN, 2022). Further, we explore inequalities in dimensions of food security (HLPE 15) where feasible. We do not try to be exhaustive in our depiction of existing inequalities but rather seek to provide a depiction of the magnitude of the problem, trends and illustrations of disparities as data availability allows.

Types of data

Food insecurity comprises of six dimensions – availability, access, stability, utilization, sustainability, and agency. Not all dimensions of food insecurity are typically assessed at the same time given resource constraints, and thus it is common for studies to focus on one or a few dimensions. Also, researchers are typically limited to the use of proxies in practice (Barrett, 2010). Inequalities in food availability can be assessed using, for example, Food Balance Sheets and market and food environment surveys of available foods. Food access is commonly examined using experience-based scales, questions related to coping strategies and dietary diversity assessment, all assessed at the household and individual level (with the exception of coping strategies) (Leroy *et al.*, 2015). Dietary data while limited (FAO and Intake-Center for dietary assessment, 2022) is often used to measure quality of diet but metrics exist to assess dietary adequacy, quality, sustainability and safety (INDEX Project, 2022). Stability can be examined, for

example, via consumption survey data repeated across seasons and utilization using dietary and biochemical data. Sustainability can be assessed using measurements of agrobiodiversity, soil health, water quality, etc. Agency can be measured using gender empowerment and experience-based indices (Clapp *et al.*, 2022; Jones *et al.*, 2013). Such data, where available, are used to demonstrate inequalities in food security.

When assessing FSN outcomes and assessing differences between individuals, groups and countries, the types of data relied upon are typically quantitative in nature. However, going beyond statistical data and methods, inequalities may in many cases be best elucidated using different types of data (qualitative data), methods (political economy analyses, life histories), and knowledge (TEK and ILK). While qualitative data does not quantify the magnitude of these inequalities, it has the power to unmask who is behind national and sub-national estimates and how, why and by whom inequalities are being experienced. We gain insights into lived experience of social groups who may be particularly vulnerable to FSN inequities. It is especially helpful in identifying populations that are often 'hidden' as a result of their marginalized status in society. The contributions of TEK and ILK knowledge systems in contributing to our understanding of inequalities have been outlined in Chapter 1.

Inequalities in Food Security and Nutrition outcomes across Regions and Countries

This section describes inequalities in FSN outcomes from a global (cross-regional or cross-country perspective). The objective is to first describe here how these outcomes are distributed across regions or countries before the inequalities that underlie and drive these outcomes are explored in subsequent sections and chapters.

FSN outcomes: the State of Food Insecurity and Nutrition report

Table 2.1 below summarizes key findings on interregional disparities in FSN outcomes from the latest (2022) edition of the *State of Food Insecurity and Nutrition*, supplemented with other information. It presents a snapshot of FSN outcomes as per the latest available data, along with brief indication of notable recent change. The table indicates that the prevalence of most food insecurity, healthy diet unaffordability and undernutrition outcomes are highest in the African continent. They are minimal in Europe & North America and Australia & New Zealand, which however have amongst the highest burdens of overweight and obesity.

Middle Africa and Eastern Africa face particular challenges with some of the highest prevalence of hunger, moderate/severe food insecurity (>65%), healthy diet unaffordability (>85%) as well as child stunting (>32%). Although Western Africa has lower food insecurity prevalence than Eastern and Middle Africa, food insecurity in Western Africa has increased particularly sharply in recent times. Western Africa also has amongst the highest burdens of child stunting and anaemia amongst women of reproductive age (~51%).

Southern Asia suffers high prevalence of child stunting and wasting, and anaemia amongst women of reproductive age. Overall, the burden of anaemia is higher among pregnant women. Of note, the prevalence of aneamia among children 6- 59 months of age is the highest at >60% in both Sub-Saharan and Western Africa. Although the *prevalence rates* of several food insecurity

and undernutrition outcomes are higher in some African regions than in Southern Asia, almost uniformly the largest *numbers* of affected people (e.g. numbers of hungry, numbers of those reporting moderate/severe food insecurity, numbers unable to afford a healthy diet) are located in Southern Asia, given its high population.

Europe, North America, Australia, and New Zealand have amongst the highest prevalence of child overweight and adult obesity. Overnutrition is not exclusively a problem in these regions, however – the prevalence of child overweight in Northern as well as Southern Africa, is very high as is the prevalence of adult obesity in some countries in Middle East and North Africa.

Table 2.1: Summary of Inequalities in Food Security and Nutrition Across Regions and Groups

Food Security or Nutrition metric	Notable disparities across regions/countries.	Recent change	Notable inequalities across socioeconomic and other groups
Prevalence of undernourishment (hunger) *(SDG Indicator 2.1.1* *% of population with inadequate dietary energy intake. Based on country-level data on food availability, food consumption and energy needs)*	***Africa*** has largest hunger prevalence at 20.2% of population, compared to less than 10% in Asia and Latin America, and less than 2.5% in N America & Europe. ***Eastern and Middle Africa*** have particularly high prevalence, but largest numbers of hungry live in ***South Asia.***	Most regions experienced slow but steady decline of hunger since 2015, but an increase following the start of the Covid-19 pandemic.	N/A
Prevalence of Moderate or Severe Food Insecurity *(SDG Indicator 2.1.2* *% of population facing difficulty in obtaining sufficient safe & nutritious food. Based on direct interviews of individuals using the Food Insecurity Experience Scale.)*	***Africa*** has largest prevalence (57.9% of population), compared to less than 25% in Asia, 40% in Latin American and Caribbean and 8% in North American and Europe. ***Eastern*** (66.9%) and ***Middle Africa*** (75.3%) and the ***Caribbean*** (64%) have particularly high prevalence. Largest numbers of people experiencing moderate/severe food insecurity were in ***Southern Asia and Sub-Saharan Africa*.**	Food insecurity has increased across Africa, Asia and Latin America since 2014, with particularly sharp increases in Western Africa, followed by Southern Asia.	In every region of the world, food insecurity is ***higher among women than men***.

Food Security or Nutrition metric	Notable disparities across regions/countries.	Recent change	Notable inequalities across socioeconomic groups
People unable to afford a healthy diet *(% of people for whom the cost (based on least expensive local foods) of a healthy diet (a diet that meets local dietary guidelines) exceeds a threshold proportion of their income.)*	In ***Eastern, Middle and Western Africa*****,** more than 85% of the population is unable to afford a healthy diet, followed by ***Southern Asia*** with 70%. Less than 2% of the population in Europe and North America faces this challenge.	The recent increase in food prices, accompanied by income shocks during the pandemic have worsened the affordability of diets in almost all regions.	
Under-5 child stunting prevalence *(SDG indicator 2.2.1.* *% of children under 5 years of age with height for age more than 2 standard deviations below the benchmark.)*	Stunting prevalence is highest in ***Melanesia*** (40.6%), followed by ***Middle Africa*** (36.8%), ***Eastern Africa*** (32.6%) and ***Western Africa*** (30.9%) and ***Southern Asia*** (30.7%). In contrast stunting prevalence is only 3 to 5% in Europe and North America. The largest numbers of stunted children are in ***Southern Asia***.	Child stunting has declined steadily in the last two decades and has become more concentrated in LICs. Some countries in Northern Africa, Oceania and the Caribbean have had a recent uptick in stunting, however.	Stunted children are ***more likely to be male, live in rural areas, be poor, and have mothers with no formal education.***
Under-5 child wasting prevalence *(SDG indicator 2.2.2.*	Child wasting prevalence is highest in ***Southern Asia*** (14.1%) followed by ***Oceania (Melanesia, Micronesia and Polynesia)*** (9.0%). Wasting is	Wasting reduction is occurring at a rate insufficient to meet the 5% global target even if some countries are making progress. Worse still, wasting has worsened during the pandemic which is	Child wasting shows relatively weak associations with socioeconomic groupings. However, ***those in poorer rural households and with mothers with no***

% of children under 5 years of age with weight for height more than 2 standard deviations below the benchmark.)	negligible in Europe and North America.	especially of concern for South and Southeast Asia where the burden is high.	***formal education are more vulnerable to being wasted**.*

Food Security or Nutrition metric	**Notable disparities across regions/countries.**	**Recent change**	**Notable inequalities across socioeconomic groups**
Prevalence of anaemia among women (*SDG indicator 2.2.3.* *Prevalence of anemia (haemoglobin less than threshold level) in women aged 15-49 years*)	Anemia prevalence among women is highest in ***Western Africa*** (51.8%), followed by ***Southern Asia*** (48.2%) and ***Middle Africa*** (43.2%).	There has been little progress in anaemia reduction among women in the last decade.	Anaemic women are ***more likely to be poor, have no formal education and be from rural areas***.
Under-5 child overweight prevalence *(SDG indicator 2.2.2* *% of children under 5 with weight for height more than 2 standard deviations above the benchmark.)*	Child overweight prevalence is highest in **Australia and New Zealand** (16.9%), followed by **Northern Africa** (13%) and **Southern Africa** (12%), **Eastern Europe** (9.9%) and **North America** (9.1%)	Overweight prevalence is increasing in many countries in Southern Africa, Southeast Asia, Oceania and South America and the Caribbean.	Overweight children are ***more likely to be from wealthier households and have mothers with at least secondary school education***.

Adult obesity prevalence *(% of adults with body mass index greater than 30 kg/m^2.)*	Adult obesity prevalence is highest in **North America, Europe**, and **Australia & New Zealand**. Asia and Africa have significantly lower obesity prevalence, although some countries in ***Middle East and North Africa*** have prevalence comparable to western nations.	Adult obesity has trended upwards in all regions of the world over the last two decades.	Overweight ***women are more likely to be urban and from wealthier households***. Overall, ***wealthier countries have overweight and obesity rates that five times those of poorer countries*** (Development Initiatives, 2021).

Sources: (FAO *et al.*, 2022); supplemented with information from (Seferidi *et al.*, 2022; UNICEF, WHO, and World Bank Group, 2021)

Double and triple burdens of malnutrition

The Double Burden of Malnutrition (DBM), or the co-existence of undernutrition and overweight/obesity in the same country/region, household or individual, is now a feature of most LMICs. Popkin *et al.,* (2020) report that Sub-Saharan Africa, Southern Asia and East Asia and the Pacific carry particularly large burdens of DBM. Since 1990, much of the growth in DBM has happened particularly in countries in the lowest income quartile while fewer countries from the higher income quartiles have significant DBM. This is driven by increasing overweight in low-income countries that have not managed to reduce undernutrition rapidly enough (Popkin, Corvalan and Grummer-Strawn, 2020). Of the countries identified as experiencing the *triple* burden of malnutrition (co-existence of undernutrition, overweight/obesity and micronutrient deficiencies), the vast majority are in Africa and a concentration of those experiencing this burden exist in fragile and extremely fragile countries (Development Initiatives, 2020).

Diet quality

Global dietary quality is moderate at best measured by the Alternative Healthy Eating Index (AHEI), an index shown to be associated with the risk of Non-communicable diseases (NCD). Differences in dietary quality exist globally and regionally, driven by consumption of different food groups (Miller *et al.*, 2022). Among both adults and children, the highest dietary quality among populous countries included Iran, Indonesia, India and Viet Nam and lowest in the United States, Brazil and Mexico. Regionally, trends show that South Asia and sub-Saharan Africa have a relatively higher consumption of more healthful foods with low intake of sugar-sweetened beverages (SSB) and red and processed meats. Central/Eastern Europe, Northern Africa, Central Asia and the Middle East meanwhile are consuming relatively high amounts of healthy foods such as fruits, legumes and omega-3 fats, but also relatively high amounts of red and processed meats and sodium. The recent 2022 Global Report 'Measuring what the world eats' (Global Diet Quality Project, 2022)uses a rapid tool to assess diet quality and was conducted in over 40 countries. It reveals that the majority of people across countries are not consuming diets that even minimally adhere to dietary guidelines. In 34 of the 41 countries covered in this report, less than 50% of the population was consuming all five recommended food groups. Tajikistan, Indonesia, Sri Lanka, Mexico, China and Nicaragua were the only countries where the majority of the population was consuming all food groups (Global Diet Quality Project, 2022).

Breastfeeding and child diets

We also consider infant and young child feeding practices in this report, in particular exclusive breastfeeding as a 'first food' given its indisputable health and nutrition benefits to infants. Also, there are important inequalities inherent in feeding practices given breastfeeding's inherent relationship with commercially produced formula. Aggressive marketing of formula, in all settings but especially in LMICs, coupled with unsupportive environments for breastfeeding policies and environment threatens displacement of this important first food, further driving inequalities in FSN outcomes (Champeny *et al.*, 2019). Low mean exclusive breastfeeding prevalences (<25%) are noted in Dominican Republic, Tunisia, Thailand, Yemen and in Suriname where it is particularly low at ~6% and has stayed low for close to a decade.

In addition, inequalities in exclusive breastfeeding practices are seen within LMICs along wealth gradients- continued breastfeeding is more likely to be practiced in poor compared to rich households (Neves *et al.*, 2020; Victora *et al.*, 2016). Across LMICs, there is high variation in national breastfeeding rates, ranging from 2% in Chad to 88% in Rwanda based on 2018 data (Bhattacharjee *et al.*, 2021). Finally, there have been notable trends of improvement in exclusive breastfeeding prevalence over a decade in certain LMICs particularly Cambodia, Democratic Republic of Congo, Guinea-Bissau, Lesotho, Liberia, Sudan and Turkmenistan (Bhattacharjee *et al.*, 2021). As for diet quality among children, recent studies reveal that diet quality decreases between infancy and adolescence globally and especially in Sub-Saharan Africa and South Asia (Miller *et al.*, 2022).

Long-run trends in inequality

The discussion above suggests there are significant disparities in FSN outcomes across countries currently. An examination of long-run trends however shows movement towards cross-country equalization in some indicators. (Bell, Lividini and Masters, 2021)present Gini coefficients (0=perfect equality; 1=maximum inequality) for a range of food supplies (availability), nutrient supplies and nutrition outcomes based on country-level data from across the world. These are illustrated in **Figure 2.1** below. It must be kept in mind that the food and nutrient data used are based on national level supplies and are not derived from information on individual diets. The figure shows that, although inequality persists, countries have become more similar over 1970-2010 with respect to food supplies and certain nutrition outcomes.

Box: Gini coefficients

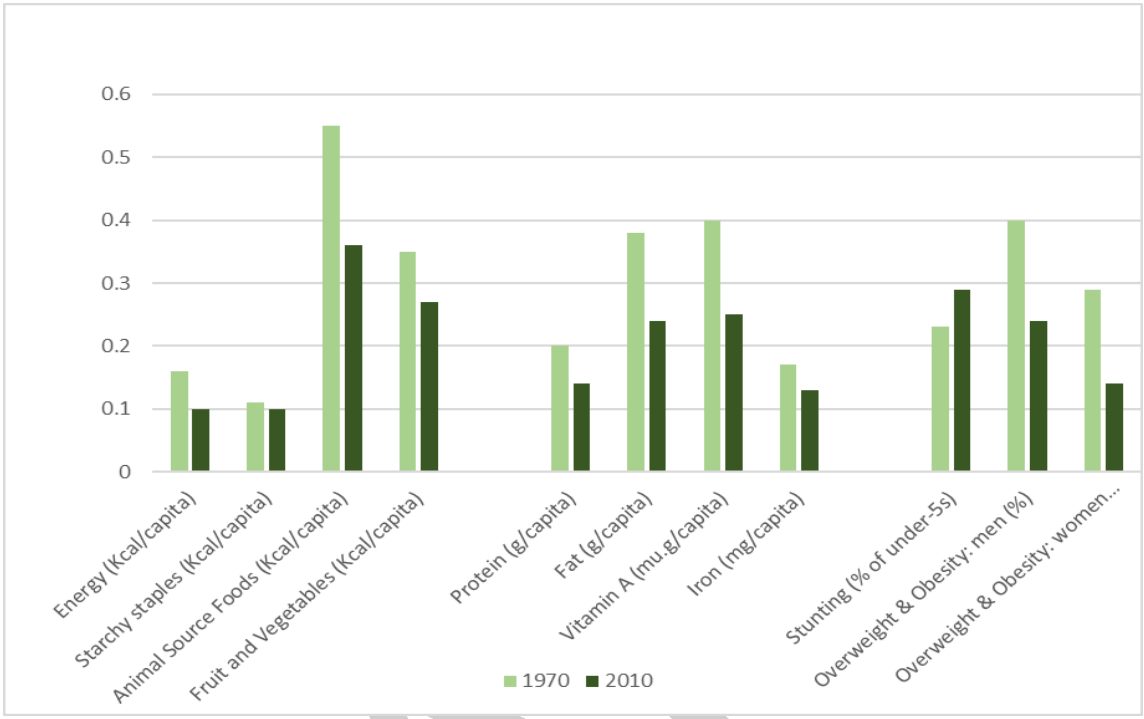
A Gini coefficient (or Gini index) is a measure of how unequally a resource (or burden) is distributed. The value of the Gini coefficient ranges between 0 (perfect equality) and 1 (maximum inequality), and a higher value within this range indicates greater inequality. Sometimes the Gini coefficient is expressed in percentage terms. Originally used in economics to measure inequality in the distribution of income and wealth, it is has been widely adapted to measuring inequality in a variety of settings, including agriculture and nutrition.

Animal Source Foods and Fruit and Vegetables are particularly important sources of vitamins and minerals, but generally expensive sources of energy. Accordingly, their supplies across countries are much more unequally distributed than supplies of staples and food in general (proxied by overall energy intake). However, country-level food availabilities across the globe have become more equal over time, particularly in the case of ASFs. As food supplies have become more equal over the decades, country-level nutrient supplies have also become more equal over time.

The gradual convergence of food supplies across the world and the increasing prevalence of overweight even in low-income countries has resulted in the prevalence of overweight and obesity becoming less confined to a limited number of countries, *i.e.*, more equal. Stunting prevalence is the only metric shown in **Figure 2.1** that has witnessed an increase in the cross-country Gini coefficient. Many countries have made progress in tackling stunting since the 1970s, and high prevalence of stunting is concentrated in a smaller number of countries now,

resulting in higher inequality. As (Bell, Lividini and Masters, 2021)note, the reduction in cross-country inequalities in food and nutrient supplies and nutrition outcomes over the decades implies that increasingly, inequalities are increasingly concentrated *within* countries and populations.

Figure 2.1: Gini coefficients of global food/nutrient supplies and nutrition outcomes



Source: Based on (Bell, Lividini and Masters, 2021).

Inequalities in Food Security and Nutrition outcomes *within* countries

Inequality in FSN outcomes within countries reflects a multitude of food based maldistributions, social exclusions and injustices arising between individuals and households but also between groups. These disparities within countries are prevalent worldwide. (Atkinson, 2015)describes us at a tipping point wherein previously observed downward trends in within-country economic inequality historically noted among HIC have now slowed. We see similar trends in FSN related outcomes. Trends in within-country inequalities in HICs have now reversed and are on the rise, while in LMICs health and nutrition inequalities persist (Deurzen, Oorschot and Ingen, 2014). Taken together, FSN inequalities exist within countries regardless of national economic status. These inequalities are a function of how the global food system is constructed and how it operates (Ambikapathi *et al.*, 2022; Kaplinsky, 2010), and the entitlements available to people, and driven by the 'engine of inequity' described in Chapter 1.

We now turn to the evidence on within-country inequalities that contribute to the global burden of FSN inequalities (FAO *et al.*, 2021). The objective is to highlight and characterize inequalities in FSN outcomes within countries using diverse data sources, with a focus on socially excluded, and the intersectional nature of experienced inequalities. In doing so, we reveal data gaps that perpetuate inequalities by keeping them hidden. This section does not seek to be comprehensive. Instead, it focuses on highlighting major types of inequality, those most often affected and those overlooked, using examples from countries around the world.

Data and evidence to assess FSN inequalities within countries

Statistical data lend themselves to assessing within-country inequalities, allowing insight into the magnitude of differences between individual, households (vertical inequality) and groups (horizontal inequality). Quite often however, data to assess horizontal inequality are lacking given that representative disaggregated data on social groups within countries on FSN outcomes is sparse. Modeling studies have alluded to this underlying issue of insufficient individual, household, and group data with wide spatial representation (LBD Double Burden of Malnutrition Collaborators, 2020). However, it is also important not to limit assessment of FSN inequality to quantitative assessment. Food security given its complexity and interactions across dimensions, especially would benefit from other types of inquiry. Qualitative data reflecting lived experience and Indigenous knowledge to FSN assessment such as biocentrism (HLPE, 2022a), give important insights into FSN inequalities within countries.

Within-country inequalities in FSN outcomes

Inequalities in FSN outcomes within countries are typically closely tied to inequalities in wealth or income, (Restrepo-Méndez *et al.*, 2015; Victora *et al.*, 2021)geographic location (urban/ rural) (Ruel *et al.*, 2017)and education. Additionally, significant inequalities in FSN arise between groups distinguished by ethnicity, caste, religion, gender, and age. Children under the age of five are particularly vulnerable to food insecurity and malnutrition (Ahmed, Hossain and Sanin, 2012; FAO *et al.*, 2022). The most important basis for inequality may vary from country to country, and is context specific. Further, given that FSN inequalities exist along lines of gender and social grouping, the intersectional nature of identity compounds inequalities experienced (Barak and Melgar-Quiñonez, 2022; Riley and Dodson, 2016).

Nutritional status and wealth/ income inequality

Wealth/income is a common basis of within-country inequalities in nutritional outcomes. In the case of childhood stunting in LMICs cross-sectional analyses, further supported by large cohort studies, show that children belonging to higher quartiles of wealth have lower likelihood of being stunted (Schott *et al.*, 2019). A systematic review (Alao *et al.*, 2021) shows that food insecurity and child undernutrition are concentrated among low income households globally. However, overweight and obesity are concentrated among high income households in many parts of Asia and Africa, whereas they are concentrated amongst low income households in Europe and North America (Alao *et al.*, 2021). Thus although food insecurity and malnutrition has a strong wealth basis, neither country nor household income status provides an exemption.

Double Burden of Malnutrition (DBM) also has a wealth basis. Analysis of 55 LMICs between 1992-2018, reveals that children who were older, lived-in urban areas, were male, came from a wealthier household and had an older, educated mother who was not breastfeeding had a higher probability of DBM compared to those who did not (Wood *et al.*, 2018). Generally, in countries with a lower Gross National Income (GNI), mother-child pairs from higher income classes were more likely to have DBM. But as the country GNI increased the highest income class mother-child pairs were less likely to have DMB compared to the poorest quantiles. Countries that have been successful in reducing FSN inequalities have targeted pro-poor

social assistance programs as in the case of Brazil which decreased both economic and geographic inequality in malnutrition between 1974-2007.

Amongst women, inequalities in underweight have been shown to have a strong wealth basis, particularly in LMIC countries with high prevalence of underweight (**Figure 2.2A**) (Reyes Matos, Mesenburg and Victora, 2019). Kenya, Pakistan Bangladesh and Yemen are amongst countries showing large gaps in underweight prevalence according to wealth status. With respect to overweight or obesity, a linear relationship with wealth is observed – a higher prevalence of overweight/obesity among the higher wealth deciles as shown in **Figure 2.2B** with a wide difference in prevalence between the higher and lower wealth deciles. This difference is attenuated when national prevalence of overweight/ obesity is high (>20%) in countries such as Leostho, Peru, Honduras, Ghana and Gabon (Reyes Matos, Mesenburg and Victora, 2019), but the inequalities are still significant and overall overweight/ obesity is a problem of public health significance in these LMIC countries.

Figure 2.2A: Underweight in women by decile of wealth (D1-D10) c

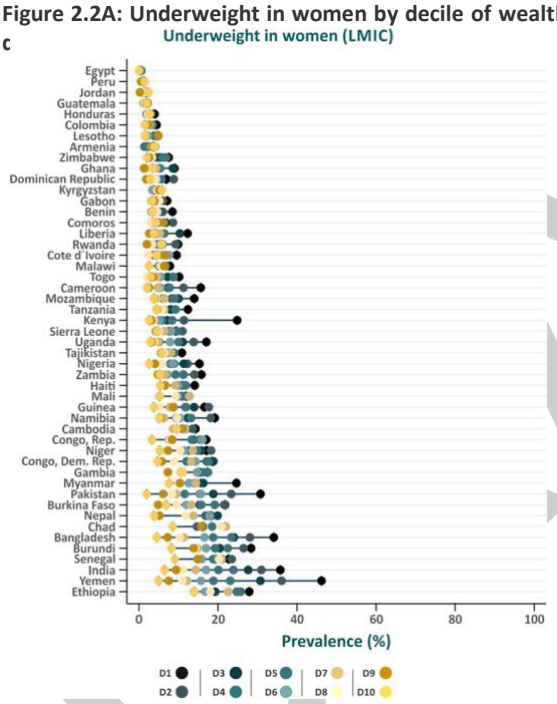
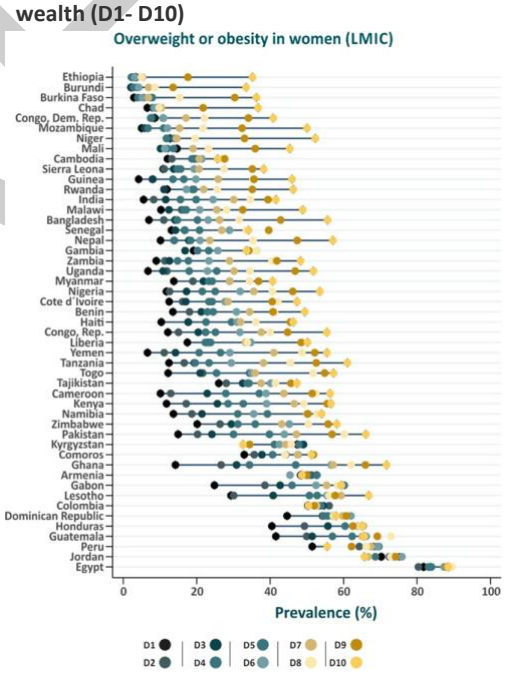


Figure 2.2B: Overweight/ obesity in women by wealth (D1- D10)



Source: (Reyes Matos, Mesenburg and Victora, 2019)

Inequality in child feeding practices and dietary intake by socio-economic status

Inequalities based on sex, maternal education, wealth and geographic location in infant and young child feeding indicators are observed in data from Demographic and Health Surveys (DHS) in LMIC countries. Timely introduction of solid foods to children and the quality of these foods (measured by minimum acceptable diet and dietary diversity) differ significantly along the wealth and education continuums with the poorer and less educated faring worse. Urban children show better outcomes compared to rural. Thus, in the case of children, who are

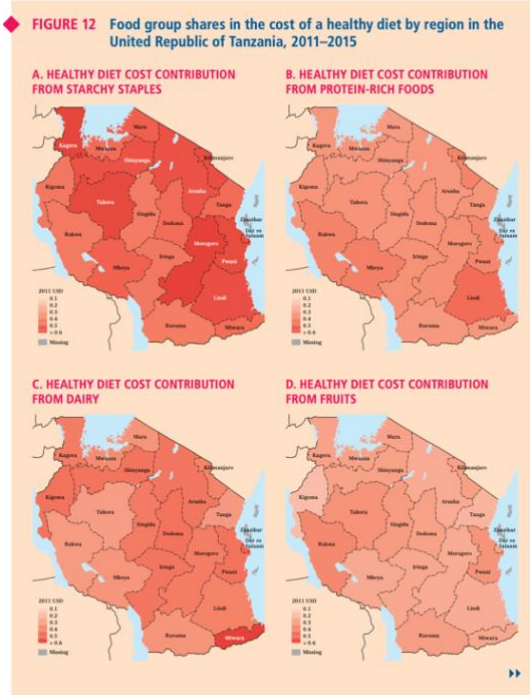
amongst the most vulnerable populations, wealth, location and maternal education are significant bases of nutrition inequalities. Cultural norms also strongly impact disparities in nutritional status, particularly gender- specific norms and practices. For example, inequality in feeding practices that favors boys' intake over girls (including breastfeeding) is noted in some countries in South Asia (Haddad *et al.*, 1996).

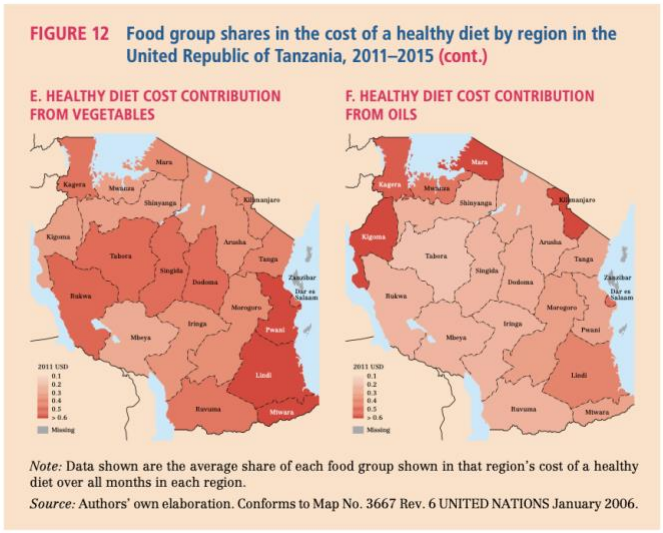
Place-based FSN inequality

Geographic variation exists within countries in malnutrition across the spectrum from wasting to obesity prevalence. Place based FSN inequalities may reflect issues of structural inequality, with some areas being less economically and politically invested in. Remoteness, arising either from challenging geophysical features or due to disadvantages in investment, is especially detrimental to nutrition (Headey, Hoddinott and Park, 2017). Place-based FSN inequalities are apparent within LMICs even where progress has been made in reducing overall undernutrition burden over time. For example, South Africa has high geographic variability in malnutrition in children. The national prevalence of overweight was 24.9% in 2017, but while the Northern Cape and Siyanda had 12-14% of overweight children, Ugu and the Eastern Cape reported 32- 36% prevalence of children overweight (LBD Double Burden of Malnutrition Collaborators, 2020). Even more granular place-based nutrition inequality can be seen when data is available at the sub-district level. For example, in the Indian state of Maharashtra which fares well on economic and social development indicators more broadly, regional stunting prevalence ranges from 40% of children in North Maharashtra and Marathwada to 22% in West Maharashtra. Central to the issue of intersectional inequality, we see these geographic inequalities in Maharashtra overlap with other social groups with undernutrition concentrated in rural areas and among scheduled tribe caste groups (Khadse and Chaurasia, 2020). Geographical inequalities in FSN outcomes are also evident in HICs. As described further in chapter 3, food availability and access are often constrained by geography, with 'food deserts', marked by poor access to affordable and nutritious foods, a feature in many HICs.

Food prices vary significantly not only across countries and regions, but also within countries. These variations produce unequal access to healthy diets within countries (Herforth *et al.*, 2020). For example, in Tanzania, variation in the cost of food groups that contribute to a healthy diet varied significantly across space during 2011-2015, with vegetables and oils having the highest variation in price, disadvantaging the regions of Lindi, Mtwara and Pwani (Figure 2.3). The same report revealed that healthy diets were least affordable in Northern and Western regions of Ghana but that the food group driving high costs varied by region. Seasonal fluctuations in price within-countries was also an important finding. Such evidence points to the importance of monitoring food prices at the sub-national level to identify price bottlenecks that limit accessibility in certain areas and as such threaten year-round food security.

Figure 2.3: Food group shares in the cost of a healthy diet by region in the United Republic of Tanzania.





Source: (Herforth *et al.*, 2020)

Gender and FSN inequality

FSN inequalities cannot be discussed without acknowledging the importance in disparities by gender seen worldwide (FAO *et al.*, 2021). Gender dynamics drive resource and power asymmetries and can limit agency thus presenting as inequalities in FSN outcomes. Women are repeatedly revealed to be the most food insecure across country income status - up to a 19-percentage point differential between men and women. In Peru, mild/moderate/severe insecurity was experienced by 44% of the population in 2014. However, the prevalence was 53% amongst women versus 34% amongst men. (Broussard, 2019). These gaps within

countries can be explained consistently by differences in employment status, education, and social networks (Broussard, 2019).

Estimates of food insecurity prevalence by gender may be underestimated, as often food insecurity is measured at the household level. Gender is at the core of intra-household dynamics in how resources are distributed within the household. However, there is often a lack of disaggregated food insecurity data at the individual level to ascertain such differences, and most analysis is restricted to the use of aggregate data to draw conclusions about food insecurity (Barrett, 2010). Nevertheless, in many countries there is evidence of nutritional deprivation within households among the most vulnerable (women and children) regardless of household wealth (Brown, Ravallion and van de Walle, 2017). Studies have shown that both food and nutrient are inequitably allocated within households in South Asia with men consuming more nutrient rich foods such as animal-source foods and having higher dietary adequacy compared to women; a consistent finding over time (D'Souza and Tandon, 2015; Gittelsohn, 1991; Harris-Fry *et al.*, 2018).

An added layer to gender inequalities within countries is the shift in inequality through the life course that can be seen within households. Female adolescents from households that are food insecure were shown to be two times more likely to have excess weight compared to those from food secure households in Brazil (Schlüssel *et al.*, 2013). Intergenerational inequalities of undernutrition are well documented in the literature with undernourished (and young) mothers having a higher likelihood of not only low birth weight infants but also stunted children and this intergenerational cycle of undernutrition is noted in higher magnitude among women who marry early, do not complete secondary education and are from lower socioeconomic status groups (Aizer and Currie, 2014; Perez-Escamilla *et al.*, 2018).

FSN inequalities and its links to gender differences within countries can also be seen among transgender and non-conforming gender groups as well, which are already vulnerable groups. For examples in the United States, a third of transgender people live in poverty compared to 12% of the general population and, in a qualitative study of transgender individuals, they reported gender-based discrimination and stigmatization limiting economic opportunities and ultimately impacting their ability to afford both enough and quality food and reporting frequent skipped meals (Russomanno, Patterson and Jabson, 2019).

Gender is frequently intersectional with drivers of food insecurity such as conflict. In the post-conflict setting of Columbia for example, rural areas experienced a disproportionally high proportion of food insecurity (50% among rural women versus 40% in the general population), and this was especially concentrated among women whose opportunities were particularly curtailed by armed conflict (Sinclair *et al.*, 2022). Other intersectional disadvantages relating to FSN suffered by women include belonging to lower socio-economic groups, residing in rural areas, not having formal education, ethnicity, and indigeneity (Botreau and Cohen, 2020; Munro, Parker and McIntyre, 2014), which limit their agency and resource control. Broader social forces also shape FSN inequalities faced by women through patriarchal societal and cultural norms (Akter, 2021; Jung *et al.*, 2017).Marginalized groups and FSN inequality: ethnic and racial minorities and Indigenous peoples

Earlier in the chapter, we noted place and ethnicity intersecting to reinforce FSN inequalities experienced by social groups. FSN inequalities experienced by inequality between social

groups are closely tied to economic and political inequalities these groups face (Poverty Inequality Commission, 2017)Bhagat *et al.*, 2017. Even in countries where substantial progress in reducing malnutrition has been made, progress in the aggregate can mask uneven benefits across social groups, e.g. ethnic subpopulations In the text box below, an example of this is illustrated. The evidence makes note of important reductions in Viet Nam over the past 15 years, but also of masked inequalities in stunting reduction for ethnic minority groups compared to the ethnic majority population.

Ethnic disparities in FSN are evident across the world. In some parts of Latin America, large within country inequalities in stunting are noted between Indigenous and Afro descendant children versus non-Indigenous and non-Afro descendant children. For example, in Guatemala, prevalence of under-five stunting was 61.4% among Indigenous children and 34.1% among non-Indigenous children (Gatica-Domínguez *et al.*, 2020). In the US, disparities are apparent between racial groups (a higher proportion of obesity being seen among non-Hispanic black adults and Hispanic adults (Petersen, 2019). Disparities in nutrition outcomes by racial groups are especially important to be viewed in the larger political and social context within which these differences occur. This is because race is a social construct, and ethnic groupings provide a rich framework of shared identity, culture, values that represent how people see themselves and how others view them i.e., how for a variety of reasons they may experience bias, be overlooked or be marginalized (Wells, 2020).

Relative disadvantage in FSN defined by social groupings and their intersectionalities is also evident in many HICs. In remote rural areas of Australia, there is often an inadequate availability and access of healthy foods (Whelan *et al.*, 2018). Older Indigenous adults have a 5-7 times higher risk of experiencing food security compared to their non-Indigenous counterparts (Temple and Russell, 2018). In the United States, in 2021, the national prevalence of household food insecurity was 10% and among those households under the poverty line, the prevalence was 32% (USDA ERS, 2021. Black non-Hispanics have a high proportion of household food insecurity (22.7%) compared to White non-Hispanic households (8.7%) (D'Souza and Jolliffe, 2013; Sinclair *et al.*, 2022). Yet another example from Canada shows First Nations, Métis, and Inuit people have disproportionally higher prevalence of food insecurity compared to the general population, and members of these communities report barriers relating to traditional food acquisition and high food prices. They report coping by changing their traditional diet, rationing, sharing food and changing purchasing patterns (Skinner *et al.*, 2013). Thus, FSN inequalities are rooted deeply in social hierarchies that are very context specific.

Religious minorities and FSN

There is evidence that some religious minorities in some parts of the world experience barrier to food access arising from discrimination. Lived experience research illustrates some of the ways in which FSN inequality may be experienced by religious minorities in some settings: attacks on their community while farming, high food prices in their neighborhoods, gender-based violence against women in their community who are acquiring food for their families and a lack of access to public services and public protection (Howard *et al.*, 2021). Which religious group experiences FSN-related inequality differs by country and is context specific. Evidence from country reports by the Special Rapporteur on Food reveals Muslim minorities

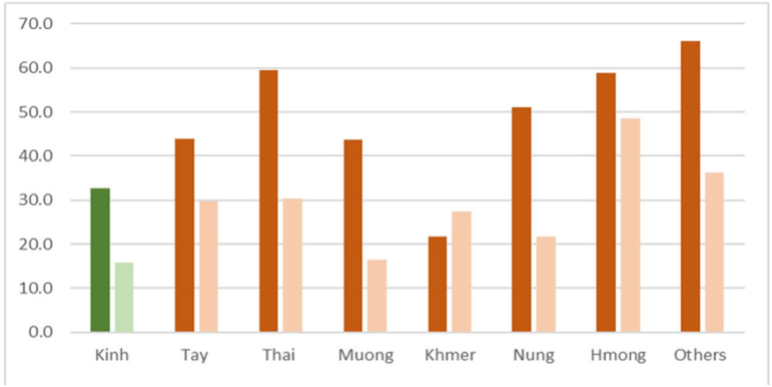
in some countries, those identified as being in the lowest caste group (Dalits) among Hindus and Christians in certain country contexts are among the religious groups and subgroups who are discriminated against and experience FSN inequalities in certain settings (OHCHR, 2022).

People with disabilities and FSN

People with disabilities are at greater risk of food insecurity given they are also more likely to be living in poverty (Schwartz, Buliung and Wilson, 2019)and may face special challenges in acquiring food. Disabilities span physical, mental, cognitive, sensory, or psychiatric related issues. In the US, adults with disabilities have 2 times higher odds of being food insecure (Brucker and Coleman-Jensen, 2017)and in Trinidad and Tobago, those needing higher assistance with activities of daily living had 3 times higher odds of being food insecure (Gulliford, Mahabir and Rocke, 2003). Further, evidence from Bulgaria and Kenya reveals adolescents and women of reproductive age with disabilities have been noted to have worse nutritional status compared to their counterparts without disabilities (Groce *et al.*, 2013; Kuper *et al.*, 2015). While limited research exists in this area, it is clear that overall issues of food access are a hurdle for people with disabilities.

Box: Ethnic inequalities in stunting reduction in Viet Nam

Vietnam has registered significant progress in efforts to reduce undernutrition over the past several decades with stunting reduction from 37% to 25% between 2000 and 2014. However, the reduction has not been uniform across groups. Stunting declined more dramatically in high income households than in low-income households, from 21% to 6% and 52% to 41% respectively (Development Initiatives, 2018). In Vietnam, ethnic minorities make up the poorest households and make up the largest percentage of the population living below the poverty line. These minorities also have the highest stunting prevalence. Stunting in ethnic minority groups reduced more slowly from 50.6% to 34.8% compared to ethnic majority groups from 33.4% to 15.2% between 2000 and 2010. Even within the ethnic minorities, stunting levels vary, with some groups having stunting rates above 50%.



Source: (Harris *et al.*, 2021)

Chapter 3. Inequalities in food and other systems and their FSN implications

This chapter describes major inequalities arising within food systems and other systems relevant for FSN and considers their implications for FSN. As such, it examines inequalities in areas that are *proximate* drivers of the FSN disparities described in Chapter 2, to be followed by an examination of deeper, more structural inequity drivers in chapter 4. In keeping with scope of this report as originally defined, the predominant focus is on inequalities within agri-food systems, although inequalities in other FSN-relevant sectors such as health systems and education are also discussed. The examination of inequalities along food systems, or more specifically along food chains, is organized into the following sections: i) inequalities in land, livestock and other food production resources ii) Inequalities in finance and information iii) Inequalities in value chains and markets iv) Inequalities in international food trade and v) Inequalities in food environments. Non-food inequalities discussed include inequalities relating to income; health systems and services; housing, water, sanitation and infrastructure; education; reproductive systems and time use.

Given the multitude of inequalities in these systems, we do not attempt to be comprehensive, but rather focus on key areas. The range of types of inequality is covered. Size/scale (e.g. small compared to large farms; rich and poor) is one major type. Gender inequalities are another important theme cutting across the sections. Inequalities relating to ethnicity, indigeneity, geography (e.g. rural versus urban) etc. are also addressed as relevant. Within each section, we describe the nature and extent of the major inequalities and draw implications for the dimensions of FSN that may be affected.

Inequalities in land, livestock and other food production resources

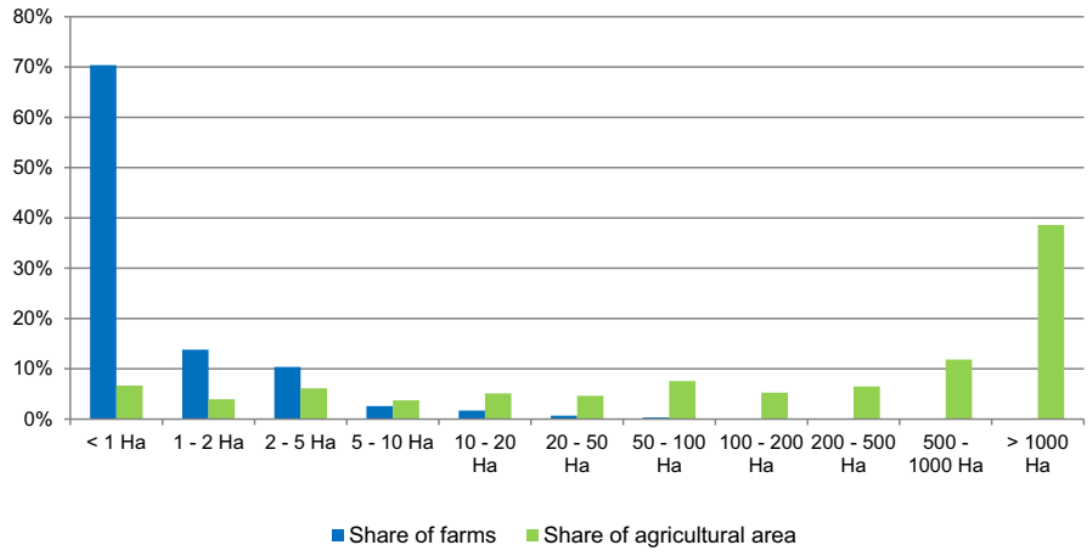
Inequality status and trends

Inequalities in access to food production resources, including land, livestock and fisheries are large, widespread and persistent.

Land inequality

Land is of fundamental importance to livelihoods, food security and nutrition. Beginning with the most basic metric, farm size, recent analysis by (Lowder, Sánchez and Bertini, 2021)shown in figure 3.1 below illustrates the stark inequality in the global distribution of farmland. Globally, small farms (defined as operating less than 2 hectares of land) account for 85% of all farms, but only account for 12% of farmland. Farms larger than 50 hectares on the other hand are only 1% of all farms but occupy 70% of farmland.

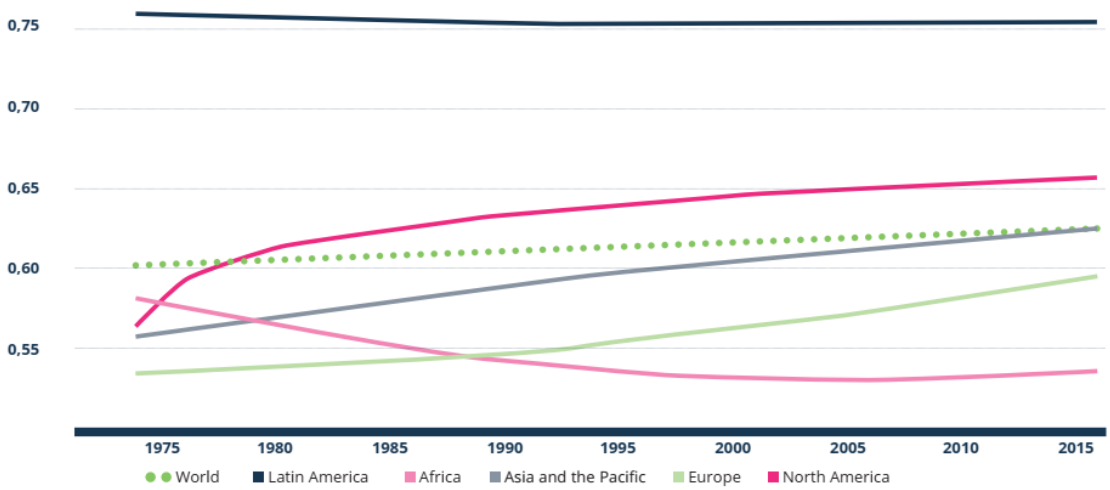
Figure 3.1. Global distribution of farms and agricultural area by size of farm



Source: (Lowder, Sánchez and Bertini, 2021)

This pattern appears to vary by country income levels – in the low and lower-middle income countries of South and East Asia and Sub-Saharan Africa, small farms (about 80% of farms) occupy 30 to 40% of farmland, whereas in the high income countries in the West, small farms account for less than 5% of land. This suggests farmland gets increasingly concentrated in large farms as economies grow (Lowder, Sánchez and Bertini, 2021). With some exceptions average farm sizes have declined over time in LMICs and increased in HICs. In some land-abundant countries such as Brazil and the USA, already high land inequality has worsened over time, with numbers of small farms increasing at the same time as increasing proportions of farmland being held by large farms (Lowder, Sánchez and Bertini, 2021). The high inequality of land across the world is confirmed by Gini coefficient estimates compiled by the International Land Coalition (ILC) and shown in Figure 3.2. Globally and in most regions of the world, land inequality as measured by the Gini coefficient has been on an increasing trend since 1975, while the very high coefficient values for Latin America highlight the continuing extreme inequality in land holdings in that continent.

Figure 3.2. Land inequality (measured by Gini coefficients) trends since 1975



Source: (Anseeuw and Baldinelli Maria, 2020)

These increasing land inequalities are set in the context of increasing large scale acquisition of land by corporate entities and international investors, particularly in Africa and Asia. By the time of this writing, the Land Matrix had identified 2188 large scale deals involving 64 million hectares of land around the world (International Land Coalition (ILC) *et al.*, 2022). The opaque nature, the potentially large impacts on local communities, and inadequate consent processes involved with many of these deals are aspects of concern.

Land inequality should be understood not only in terms of ownership and size, but also in terms of disparities in access, quality and the ability to control the use of and benefit from the proceeds of the land (Oberlack *et al.*, 2020; Wegerif and Guereña, 2020). These aspects are especially evident when considering the many horizontal, group-based inequalities relating to land. Gender, ethnicity, caste, indigeneity and geographical location are some of the key bases for land inequality.

Gender-wise disparities in land and farm control have been documented widely. Women are much less likely than men to control or manage agricultural landholdings in low- and middle-income countries. Women's share of agricultural landholdings managed ranges from 4-5% in Algeria, Morocco and Bangladesh to 29-31% in Peru, Panama and Lesotho (FAO Gender and Land Rights Database, 2022). In many settings, even when women have formal title to or control over land, the *de facto* control can be weak and/or the control may be over poor-quality land (Guereña and Wegerif, 2019).For example, (Burke and Jayne, 2021) find that women farmers in Malawi are disproportionately likely to be farming on lower quality soils than men. Social norms relating to gender may circumscribe land use and the control of benefits from land use. The notion of 'men's crops' and 'women's crops' is commonly encountered in the discourse on gender and agriculture relating to some regions of the world. Although this neat categorisation is an oversimplification of a complex reality, it captures the idea that there is frequently a gendered specialisation, constrained by local norms, in the use that land is put to. Often, men's crops correspond to higher value crops attracting greater extension and financial support (Hillenbrand and Miruka, 2019).

Significant disparities related to land are also found across ethnic and caste groups. In India, land disparity has been found to be a major source of overall caste disparity (Deshpande, 2000). The historically marginalized 'Scheduled castes' and 'Scheduled Tribes' living in rural areas have the lowest average values of land assets held (Zacharias and Vakulabharanam, 2011). Rural landlessness prevalence is highest among the most disadvantaged castes (Goli, Rammohan and Reddy, 2021).

For Indigenous peoples, the value of land is not a commodity but a treasured resource to be respected, cared for, and preserved. This Indigenous understanding of the land/sea encapsulates an Indigenous cosmovision or worldview rooted in a collective, holistic, and spiritual approach to all beings (Huambachano, 2020).Indigenous botanist Robin Kimmerer eloquently describes the view of land from an Indigenous perspective: *''In the Indigenous worldview, a healthy landscape is understood to be whole and generous enough to be able to sustain its partners. It engages land not as a machine but as community of respected non-human persons to whom we humans have a responsibility…reconnecting people and the landscape is as essential as re-establishing proper hydrology or cleaning up contaminants. It is medicine for the earth*" (Kimmerer, 2013)p.338).

Kimmerer's description is helpful in the understanding of Indigenous cultures, cosmovision/worldviews, and histories. Food and land play a significant role in the way of life for Indigenous peoples as they have spiritual, cultural, and physical relationships to their ancestral lands and food practices within their own unique geographic areas (Hutchings and Smith, 2020, (Huambachano, 2018)). However, the drivers of colonization and economic development models such as intensive farming and land grabbing, deepens ethnic inequalities and threaten the livelihoods of Indigenous peoples.

Indigenous peoples have long been concerned that colonial approaches to land for growing food rooted in agribusiness and industrial agriculture characterised by large-scale farming and the adoption of scientific-technological systems such as the use of Genetically Modified Organisms (GMOs) disregards their rights to self-determination and spiritual, cultural and physical relationships to ancestral lands (Bernstein 2013; Collier 2008; Pimbert 2009). Speaking from an Indigenous perspective Potawatomi scholar Kyle Whyte (2016) discusses that settler colonisation owes much to the loss of Indigenous land, and with this lack of land, there was a subsequent lack of agency over food security. The right to food of Indigenous peoples is tied to their collective land rights. Although the rights of Indigenous people over their territories and natural resources are recognized by international treaties, in practice these rights are frequently disregarded (IFAD, 2018).

Livestock inequality

Livestock provide a number of services, including income, food, draught, manure, financial and social capital. Given that the supply of livestock assets is not as fixed as in the case of land, and some species of livestock are relatively inexpensive to acquire, livestock pose a lower barrier as assets for the poor than land does. Livestock also provide the poor with an opportunity to diversify their livelihoods to cope with risk. For richer households livestock can offer significant commercial opportunities. This diversity of roles played by livestock often implies that some livestock are held by most income classes. In a comparative study of mixed farming households in 12 low and low-middle income countries in Africa, Asia and Latin

America, (Pica-Ciamarra *et al.*, 2015)find that livestock is owned across the income quintiles in their study countries, and that there are typically only modest differences in % of households holding livestock across income classes. Nor is there always a clear-cut universal pattern in terms of livestock herd sizes across income classes among livestock-keeping households – for example, in Nepal, livestock keepers in the lowest income class have almost the same herd size of ruminants as the wealthiest income classes.

In spite of this, the Gini coefficients of livestock ownership reflect high inequality of livestock holdings, as shown in Table X below. The relatively even distribution of holdings across income classes along with high inequality shown in the Gini coefficients suggest that, although there are high disparities in livestock holdings among households, the disparities are not always driven by income. Instead, the multi-functionality of livestock means that households have different reasons for keeping livestock (Njuki and Miller, 2019). Some households may choose to hold small amounts of livestock to provide modest livelihood enhancements (*eg.* eggs, milk) while others may hold large herds to provide significant supplements to income.

Table X: Gini coefficients of livestock ownership

	Gini coefficient of livestock ownership
Malawi	0.44
Madagascar	0.73
Bangladesh	0.54
Nepal	0.39
Ghana	0.67
Vietnam	0.50
Nigeria	0.64
Nicaragua	0.73
Guatemala	0.79
Ecuador	0.75
Panama	0.87

Source: (Pica-Ciamarra *et al.*, 2015)

Livestock are considered particularly important for gender equality as ownership of livestock pose fewer entry barriers for women than land and are typically governed by simpler property rights (Njuki and Miller, 2019). There is evidence to indicate that small species such as poultry and small ruminants are particularly important for women, and larger animals are more likely to be controlled by men (Njuki and Mburu, 2013)However, caution is warranted in

generalising this insight excessively - as in the case of land, ownership and control can be quite different things, and local context matters considerably.

Inequalities in Aquatic Food Resources: To be Added.

Implications of inequalities for FSN

The inequalities in land, livestock and other productive resources described above hold significant implications for all six dimensions of food security.

Availability

Unequal farm sizes have implications for productivity and therefore for food availability. There is a long history of research on whether smaller or larger farms are more productive. There is evidence for both sides of the argument (Lowder, Sánchez and Bertini, 2021), but a broad generalization is that in many LMIC settings (with exceptions), small farms may indeed be more productive, especially where labour is relatively cheap while capital is relatively expensive (Wiggins, 2009). Small farms rely significantly on household labour and are able to manage and supervise farm labour effectively. Large farms in such settings may be less efficient due to difficulties in managing labour. In contrast, in settings where labour is expensive, but capital is relatively cheap – as in many HICs, and in some countries in Asia where wages are increasing fast (Otsuka, Liu and Yamauchi, 2016)– large farms may have an advantage. Thus, a highly unequal distribution of farm size with significant concentration at the top may incur a productivity penalty in some LMIC settings, and result in lower food availability from domestic sources compared to a more equal distribution of farm size.

What is produced by small versus large farms is also relevant. While small farms may have a productivity advantage, large farms are better able to reap economies of scale in external linkages beyond the farm gate – in organising modern inputs and finance (see separate section), processing, traceability and certification, risk management and contractual arrangements (Poulton, *et al.* 2005). This is consistent with specialisation or monoculture (HLPE, 2020) in a narrow range of high value commodities, often to export markets. Large/corporate farms in certain circumstances may help deliver a food or nutrient effectively and affordably to a large population, e.g. animal protein from large livestock farms. They may generate significant tax revenue and foreign exchange for governments and contribute to enhancing food availability via imports. However, this pathway depends on strong governance of large farms. Small farms are more likely to produce a diverse range of foods and nutrients (HLPE, 2020), and where provided with institutional support and linked to territorial markets, are capable of supporting availability of diverse, locally-relevant foods.

Gender inequalities in the distribution of land may also have an influence on agricultural productivity, and thereby on food availability, although the evidence for this is not clear. Based on a review of evidence, FAO's State of Food and Agriculture 2011 (FAO, 2011, p.5), noted that '*If women had the same access to productive resources as men, they could increase yields on their farms by 20–30 percent. This could raise total agricultural output in developing countries by 2.5–4 percent, which could in turn reduce the number of hungry people in the world by 12–17 percent.*' However, the evidence base for the implications of gender inequality for productivity is riddled with conceptual and empirical problems, and clear conclusions are difficult to reach (Doss, 2017). Reflecting this, a systematic review of intra-household gender

equality in land and livestock on food security and nutrition found a mixed picture (Harris-Fry *et al.*, 2022). This remains an area where more high-quality research is needed.

Access

Inequalities in land, livestock and other food production resources are of fundamental importance for access to food. Food production assets are a major source of livelihoods and income for a high proportion of households in low-income countries, particularly in rural areas. Where assets such as land and livestock are very unequally distributed, in the absence of a strongly redistributive policy environment, a high proportion of those with little or no access to assets are deprived of a major potential source of income and thereby the means to afford sufficient food and healthy diets. Apart from income generation, food production assets provide direct access to own-grown food for a large number of subsistence and semi-subsistence households. Food markets in many settings fail to ensure that sufficient diverse food is available in an affordable way, resulting in households provisioning food from their own production. Those with inadequate access to food production resources, such as the landless and the near-landless may thus face great access challenges in terms of self-provisioning.

Utilization

Food production assets, by providing income and a means to produce one's own food, not only improve access to sufficient food, they may also improve access to a diverse food basket and a healthy diet, particularly in low income rural settings. There is a significant amount of research demonstrating that income, as well as self-provisioning of food, enabled by access to productive assets such as land and livestock, matter for dietary diversity and nutrition (Flores-Martinez *et al.*, 2016; Harris *et al.*, 2021);, Shankar *et al.*, 2019. More equal access to food production assets thus has the potential to improve utilization for the disadvantaged.

Stability

The interplay between specific food production resources in providing FSN can vary by season and by setting, and inequality in access can be particularly detrimental in some seasons. For example, Zanello *et al.*, (2018) find that in Afghanistan, diversity in livestock holdings increases in importance for dietary diversity during the harsh winter season when cropping possibilities diminish. In the floodplains of Bangladesh, access to floodplain fisheries becomes important for food consumption of the poor in the monsoon months when the land is flooded, but this access is often compromised when powerful local interests restrict access and drain land for rice production (Shankar, Halls and Barr, 2005).

Agency

The agency dimension is reflected in many aspects of the discussion of inequality status and trends above. We have noted (in the context of land) that inequality is not just about size and holdings, but also concerns the ability to control the use of and benefit from the proceeds of the food production resource. Restrictions on choice, control, and enjoyment of benefits from food production assets is a breakdown of agency. Unequal control over resources frequently results in an imbalance of power in decision making and a lack of voice for those with the least control. For example, large land acquisitions, frequently backed by corporations and financial investors, have sometimes been associated with a loss of voice and autonomy for local

communities, including forced evictions or curtailment of land use rights (Wegerif and Guereña, 2020). The Women's Empowerment in Agriculture Index (WEAI), a major innovation in measurement, places agency, including control over assets and income, at the heart of measurement (Malapit *et al.*, 2019). A stream of research has found women's empowerment, as measured by WEAI, to be related to food security and nutrition outcomes (Quisumbing *et al.*, 2020).

Sustainability

The increasing concentration of some food production assets, and particularly the emergence of very large farms at the expense of smallholdings has implications for environmental sustainability. Smaller farms are often considered more likely than large farms to be in tune with the local ecology, more moderate in the use of polluting inputs and practices, and more likely to take a long-term approach to stewarding resources, such as adopting soil conservation measures, especially where tenure is secure. However, there is also another perspective in this debate which argues that the farm size distribution matters less than the production methods and the efficiency with which inputs are used (van Vliet *et al.*, 2015). Nor are small farms exempt from sharing responsibility for the environmental footprint of agriculture. Nevertheless, the environmental costs of monocropping by large agribusiness, often expanding at the expense of small farms, are well documented. Oil palm plantations and their role in deforestation in Malaysia and Indonesia provide a good example. Oil palm plantations contain very little biodiversity even compared to highly degraded forests, and smallholder plots in oil palm areas, which often retain some remnants of the forest, display more biodiversity than plantations ((Byerlee, Falcon and Naylor, 2017).

Also relevant to the sustainability dimension is food production assets' role in coping with shocks and stresses. In low-income settings, the sale of assets such as land and livestock are crucial to maintaining some level of food security when shocks such as crop failures or major illness threatens livelihoods. Large inequalities in asset holding may deprive the most disadvantaged of a critical coping mechanism.

Inequalities in finance and information

Many of the inequalities in food production assets and resources are also mirrored in complementary services and resources for food production and marketing, such as credit and finance, and extension and information. A fundamental divide is apparent based upon farm size, while gender, geography and ethnicity are some of other major sources of disparity.

Inequalities in finance

Small food producers have long faced significant obstacles in accessing credit, insurance and other financial products. This is particularly the case with formal financial services such as banks and microfinance institutions. The lack of collateral and credit history, fragmentation and informality of smallholders results in their exclusion from the lending portfolios of many financial institutions (IFAD, 2015). Instead, in many LMICs, informal finance operators, ranging from moneylenders and merchants/traders to savings and credit groups provide a high proportion of rural finance, and in some countries formal finance provides less than 5% of borrowing by poor rural households (HLPE, 2013). Although there has long been concern about exploitative loan conditions and exorbitant interest rates charged by informal lenders,

it is frequently the case that informal lenders fill a vital gap left by formal finance. Also, the terms of informal loans often reflect the opportunity costs of scarce finance, and informal lending is often more nimble, flexible and innovative than formal finance (Adams and Fitchett, 1992).

Formal finance still has a potentially important role to play, particularly in longer-term financing for investment in agriculture or value-chain participation. In recognition of the need for a greater role for formal finance in this arena, regional and multilateral development banks (MDB) have scaled up their efforts to meeting the financing needs of small farmers and other micro, small and medium enterprises in rural areas. However, the needs of the sector are vast, with almost 2.5 billion people lacking formal finance living in rural areas where agriculture is the main source of livelihood (IFAD, 2015). (IFAD, 2015)notes a number of inequalities in financing of MSMEs in the agri-food sector, including where they are located in the value chain (input provision and farming being particularly disadvantaged), location, gender and commercial orientation.

Women are frequently disadvantaged compared to men in their ability to access credit and other financial services. Social norms, insufficient property rights and control over assets, and institutional bias in lending are some of the major reasons for such unequal access (Fletschner and Kenney, 2014). Although microfinance initiatives have typically focused on women, they are often not tailored to agricultural investments, for example in how repayment schedules match agricultural calendars (Doss and Quisumbing, 2021). Ethnicity, caste and indigeneity are also relevant. For example, in India it has been shown that caste is relevant to formal agricultural credit access: firstly, there is caste-based disparity in loan applications, and furthermore the historically disadvantaged Scheduled Castes are less likely to have loans approved (Kumar, 2016).

There are potential implications for multiple FSN dimensions arising from the continuing large gaps in meeting the financing needs of small farmers and other MSMEs, women and specific social groups facing disparity. The inability of a large proportion of the rural population being unable to access credit to finance inputs or undertake investments may limit productivity and influence availability. Income losses from lost productivity may limit food access for the particular disadvantaged group, even where informal finance may help bridge short-term consumption gaps. The unequal access to credit faced by women may also constrain the important role that women play in consumption and nutrition-friendly household decision-making (Fletschner and Kenney, 2014). Lack of finance for undertaking longer-term investments such as in soil health may constrain the sustainability dimension of FSN.

Inequalities in information

The ways in which small farmers obtain information and update their skills has changed considerably in the last few decades. Traditional public agricultural extension services have shrunk, and a much more pluralistic world of agricultural information provision, involving public, private as well as NGO providers has emerged (Davis, Babu and Ragasa, 2020; Norton and Alwang, 2020). Traditional farm visits by extension agents are less important now than they used to be, with digital provision of information becoming much more commonplace. These changes have likely helped ameliorate some old inequalities with information access – e.g., remote or conflict affected areas are less cut off from information access with the use of

information and communication technologies (ICTs), and a diversity of providers potentially raises the likelihood of a greater diversity of audiences being reached.

However, they may also embed new inequalities. Private extension services may exclude smaller, poorer farmers who are unable to pay for the service (Davis, Babu and Ragasa, 2020). Also, although mobile phones are widespread in LMIC rural settings now, digital exclusion remains a factor, and more sophisticated digital information services may struggle to reach less well-resourced and less educated groups. Many traditional inequalities persist as well. Women are less likely to receive information and extension services, and available services often lack gender-sensitivity, e.g., consideration of the conditions under which women farmers farm and the best practice in working with women farmers (Doss and Quisumbing, 2021; Ragasa, 2014). As in the case of finance, lost productivity and income arising from these inequalities may hold FSN implications.

Inequalities in value chains and markets

Many LMICs have undergone a process of 'structural transformation' over the last several decades, wherein a shrinking agricultural sector has given way to a growing manufacturing sector. This transformation is typically accompanied by increases in income and urbanisation and dietary transition towards foods involving greater levels of processing, value addition and marketing. Simpler, local chains of transaction between producers and consumers are increasingly replaced by longer value chains linking rural producers with urban consumers (Reardon *et al.*, 2009). Large traders and assemblers displace traditional networks of small traders, processers, wholesalers and distributors begin to dominate the midstream of value chains, and modern retail grows in prominence. International trade in food has also witnessed a transformation – an increasing proportion of food trade (approximately one-third) is accounted for by 'global value chains' where the food exported is an intermediate product that undergoes further transformations such as processing, packaging and marketing in the country of destination (Bellemare, Bloem and Lim, 2022).

These transformations embed several inequalities with implications for FSN, which we describe below.

Inequalities in participation

Restructuring value chains can offer significant opportunities for agricultural producers and labourers to benefit from the higher value generated. Indeed, 'agricultural commercialization' and 'upgrading' of farmers to access these markets is a central plank of agricultural development strategies across the world and is widely considered to hold potential to be pro-poor and favourable to improved FSN.

However, the participation of small farmers is frequently constrained by larger volume requirements and higher quality standards in these chains. Of course, farmers are only one segment of a larger population, and agricultural commercialization opportunities could be considered as similar to any other income generating opportunity (off-farm and non-farm opportunities) for farmers. However, small farmers and agricultural labourers constitute a high proportion of the world's poor, and the use of their agricultural assets and skills usually offers the most viable opportunities for income generation in the medium term. Income improvements are frequently associated with improved FSN. Therefore, any inability of small

farmers and labourers to participate in new markets is an important inequality from an FSN perspective, and reducing these inequalities is a potential pathway to improving FSN.

Agricultural commercialization opportunities may be on a contractual or non-contractual basis. The challenges relating to participation in contract farming are multi-fold. The large actors in modern value chains, whether large traders, processors or retailers, prefer not to incur the transactions costs of buying small quantities from a multitude of smallholders, and therefore typically stipulate minimum volume requirements that the smallest farmers may struggle to meet. Consistent with the more sophisticated markets being served, minimum quality standards are often imposed, which again poses a barrier for resource poor farmers. Upgrading to attain the quality and quantity requirements of these markets may require financing and the use of modern inputs, which as reviewed in an earlier section, is challenging for the smallest farmers. Often, contracts do come with access to embedded services, *e.g.* access to inputs or technical services, but these nevertheless impose financial or informational burdens that the smallest farmers may struggle with.

The overall evidence from the contract farming literature regarding smallholder participation is mixed – there are studies that show that small producers are able to participate, but there are also many studies that demonstrate that the smallest producers face a struggle to be included. A systematic review of contract farming impacts on smallholder incomes notes that smallholders can benefit from participation, but that "*…the poorest farmers are rarely included…in 61% of the cases, the contract farmers had significantly larger landholdings or more assets than the average farmers in the region*.' (Ton *et al.*, 2018). The text box below discusses the case of supermarkets contracting with farmers in Nicaragua and illustrates the bias towards better-resourced farmers.

Box: Supermarkets contracting with farmers in Nicaragua: Do all farmers benefit?

In Nicaragua, supermarket food retailing is dominated by retail giant Walmart. To supply its large network of outlets, Walmart has established purchasing relationships with hundreds of individual farmers. This relationship has been found to have a positive effect on the household welfare of participating farmers over time, by increasing their household productive asset holdings which in turn positively impacts poverty outcomes within participating households.

Despite the positive outcomes, the relationship embeds fundamental inequalities in participation. Predictors of household inclusion include residence in regions of higher agricultural potential and geographical advantages such as access to year-round water and closeness to the closest supermarket retail outlet. Walmart supermarket produce buyers indicated that easy access by roads and phone and access to year-round water were the primary attributes for entering into a supply relationship. Such attributes could mean exclusion of poor farmers living in geographically constrained areas with poor infrastructure.

Source: (Michelson, 2013)

For farmers who are able to participate, contract farming offers the potential to improve income through multiple pathways: through premium prices, through the ability to supply higher quantities, and/or through yield enhancements facilitated by embedded inputs. As with participation, the literature shows mixed results on income effects, varying by region, commodity and contractual arrangement. The systematic review by (Ton *et al.*, 2018)collates the evidence to estimate an income effect of contract farming of between 23% and 55% (although they caveat that this could be an overestimate since research does not pick up schemes that collapse early). Where participation boosts income, it opens up the potential for an improvement in the food security of participants, particularly via the *access* dimension. In some cases, contracting for income may also help food security by 'spilling over' into food produced for household consumption – e.g. via produce not meeting quality standards being retained for home consumption.

However, there is no guarantee that food security will improve with incomes generated by participation in commercialization, as increased incomes may be spent on non-food priorities, income growth may be captured by men who prioritize food security less than women might, and incomes from harvest time are challenging to save until the next pre-harvest hungry season (Bellemare, Bloem and Lim, 2022). Only a few studies study the food security impacts of contracting, however. In their study of contracting for food crop production in Madagascar, (Bellemare and Novak, 2017)show that the duration of the hungry season is shortened due to contracting (thus also suggesting an influence on the *stability* dimension of food security), and that this likely happens because households are able to save increased income from harvest time until the hungry season. (Chege, Andersson and Qaim, 2015)study supermarket contracting of vegetable smallholders in Kenya and find that participation in contracting improved micronutrient consumption. The 'income' and 'spillover consumption' pathways acted to boost consumption but capture of income by men acted to lower that positive effect.

In summary, (a) the weight of evidence indicates that the smallest farmers are often (but not always) unable to participate in contracts with actors downstream from them in modern value chains, and (b) farmers who do participate are often (but not always) able to gain income, and potentially, improved food security. Given that smallholders are amongst the poorest and most food insecure in many parts of the world, finding ways to reduce this inequality in participation must be an important priority towards improved FSN.

Unequal power and exploitation

For those who do manage to participate in modern value chains, a potential inequality relates to asymmetric power between contractors and farmers and farm labourers. On the one hand, contractors in modern value chains operating in a competitive environment may find it advantageous to offer good terms to contractees, or large contractors may set a farmer-friendly benchmark that other buyers find themselves having to match. Or it may be that large traders, processors, retailers and other contractors dominate and dictate terms in relationships with typically small, geographically scattered farmers (Montalbano, Pietrelli and Salvatici, 2018). An important concern is that the funds and in-kind assistance offered by contractors may implicitly carry very high interest rates as farmers are obliged to sell contracted produce at low prices – indeed, the emergence of parastatals or government marketing agencies in some parts of the world was as a consequence of such concerns

(Bellemare *et al.*, 2022). Intermediaries such as processors and traders may also take advantage of small, geographically remote, poorly informed farmers, to act collusively or exert local market power, offering poor terms to farmers (Montalbano, Pietrelli and Salvatici, 2018; Swinnen and Vandeplas, 2014). Large food service establishments and modern retailers may distort local markets, consolidating power on the selling side by driving out local competition, an on the buying side using that market power to lower the prices offered to farmers (Bellemare, Bloem and Lim, 2022).

As noted above, there is a reasonable amount of evidence that farmers participating in modern value chains are often able to gain income, and more limited evidence that this may translate to positive food security outcomes as well. This is not to deny that there are situations in which exploitation does take place to the detriment of farmer outcomes. More research is needed to enable a systematic understanding of conditions that result in farmer exploitation in modern value chains.

Gender inequalities in accessing value chains and markets

Just as women often have lower ownership or access to key assets and resources for agricultural production compared to men, they also face challenges in being able to participate in opportunities provided by modern value chains. Indeed, disadvantage in access to assets is a source of disadvantage in value chain participation, as resources are often a prerequisite for inclusion in value chains (Doss and Quisumbing, 2020). In some contexts, social norms may play a role in gender inequalities in commercialization – e.g. where men have the traditional role of income earners and women of carers for the family, opportunities for high-return cash cropping may be mostly captured by men, with women having a greater focus on food crops (Doss, 2002).

However, although women often face difficulties in accessing contract farming opportunities, some studies (*e.g.* (Maertens and Swinnen, 2012)) find that they play an important role as wage labourers in global value chains, with attendant income earning opportunities. In such instances where women are able to participate in modern value chains, not only is there a prospect of improved food security due to higher household income, but the improved bargaining power within the household offers an additional pathway to food security enhancement. The text box below outlines such an example.

Box: Women's employment in horticultural export value chains and food security in Ethiopia

In Ethiopia's rural Oromia, the employment of women in the cut rose industry has had a positive impact on household income, poverty and food security. Women's access to formal, salaried, low-skilled employment revealed significant improvements to their intra-household bargaining power, likely due to more equal income, improved networks and self-confidence, contributing to

improved consumption and food security. The study also strikes a cautionary note that such employment also decreased leisure time in the household, particularly for the participating woman.

Source: (Getahun and Villanger, 2018)

An important aspect of gender inequality in relation to commercialization is that it raises the prospect of capture by men. This aspect has been particularly noted in the literature on

livestock commercialization. There is much emphasis around the world on programmes that connect women livestock keepers to markets. The theory of change is that increased income from sales will empower women livestock keepers and contribute to broader household welfare. However, increased commercialization may attract increased capture by men. (Tavenner *et al.*, 2019)find that as livestock sales increase in importance, control by women declines. They find, in contrast, that diversification of livestock increases control by women. Also, as the markets become more formal and commercial, loss of control by women can increase. For example, Njuki and Miller (2019) note the case of East African women dairy farmers who used to sell dairy products into informal markets for cash that would then be spent on household consumption. These women farmers lost control when milk was sold to chilling plants, as weekly cheques would be sent to the household head, typically the male (Njuki and Miller, 2019)

Modern value chains, markets and geographical inequalities

There are strong geographically defined inequalities in market and value-chain access. Aspects such as poor market access for consumers in rural areas and food deserts are described in the Food Environment section. Here we highlight a related issue: the displacement or de-prioritization of local food consumption priorities, particularly related to nutrient-dense foods, as modern value chains gain prominence. The debates that have captured most attention in this regard relate to fashionable 'superfoods' where surging demand from international or national elite urban consumption results in the development of value chains designed to move rural production quickly and at scale to urban centres of demand. A result may be a lack of availability and high prices locally for foods that may have special cultural or nutritional significance, potentially affecting local consumers negatively, even if producers may profit. Taking Quinoa as an example, an economics literature has suggested the local consumption and nutrition impacts are limited (Bellemare, Fajardo-Gonzalez and Gitter, 2018; Stevens, 2017). However, even where the availability, access and utilization dimensions are not strongly impacted, research suggesting increasing problems relating to land use competition, natural resource management and agricultural biodiversity limitation arising from the Quinoa boom (Bedoya-Perales *et al.*, 2018), as well as inevitable problems with small farmer participation bring into play limitations relating to the sustainability and agency dimensions.

The geographical inequalities relating to modern value chains are not limited to the pull from external/urban elite demand impinging on rural food security but can also arise from the push of (well-intentioned) rural initiatives that aim to benefit local farmers by tapping into those lucrative, often distant, markets. Connecting farmers to high value markets is a popular policy and programming approach in many LMICs, helping push production out to ever-distant markets. However, there is usually little strategic consideration of the rural consumer's needs in market policies and programming, particularly relating to nutrient-dense foods. In the absence of adequate investment in rural markets and infrastructure, the initiatives have the potential to deepen geographical inequalities and their food security implications. The box below illustrates an example from India.

Box: Vegetable aggregation and implications for small rural markets in India

The Indian population has very low levels of fruit and vegetable intakes, with negative implications for nutrition. Boosting production and making it available through markets is an important first step towards improving consumption. Longstanding problems that small farmers in LMICs face in selling at markets beyond their immediate locality include their high marketing costs relative to their production scale, and their weak bargaining power in larger markets. To overcome this, aggregation schemes that coordinate joint transport of produce and arrange collective sale at the market have become popular. Studying one such example of a vegetable aggregation scheme in India, Cooper *et al.* (2021) find that by lowering transport costs through joint transport, the scheme results in aggregation groups seeking larger, more distant markets for sale, resulting in the bypass of smaller local markets that would have previously received produce. Exploring what would make the bypassed local markets attractive to aggregation scheme members, they find that investments in small market infrastructure such as smallscale cold storage, as well as boosting demand in local market catchments are important.

Source: (Cooper *et al.*, 2021)

Inequalities in international food trade

Trade liberalization and potential role in food security

Amongst the most consequential developments in the last few decades in the global food system has been the liberalization of trade and foreign investment that was kick-started in the 1980s. Championed by the international financial institutions and facilitated first by GATT, followed by the setting up of the World Trade Organization (WTO), liberal trade policies have included lowering of import tariffs and easing of a range of 'non-tariff measures' (policy measures besides import tariffs that constrain trade, such as import quotas, import licensing and export subsidies).

The economic logic underpinning liberal trade regimes suggests that liberalization could improve food security through multiple pathways, including: (i) specialization and trade enable efficiencies to be reaped compared to a situation with self-sufficiency, resulting in income growth that improves access to food (ii) trade boosts availability of a diverse range of foods via imports, (iii) trade acts to lower prices and (iv) trade helps diversify supply lines for key foods, adding to the stability of availability and lower volatility of prices (although dependence on global markets may also a provide a transmission mechanism for volatility).

Trade liberalization and equalization of national-level availability of food and nutrients

Although the human welfare implications of liberal trade regimes have been hotly debated, regarding the narrower national income perspective, the evidence does broadly indicate that agricultural liberalization has boosted national incomes in both high- and low-income countries (Anderson, Cockburn and Martin, 2011; Traill *et al.*, 2014). The evidence also suggests that trade over the last few decades has helped equalize the cross-country national availability of key foods and nutrients. The (Bell, Lividini and Masters, 2021)study on cross-country inequalities discussed in Chapter 2 showed that the national-level availability of

nutrient dense foods such as animal source foods, as well as of a range of nutrients had equalized over the decades. Given that the large inequalities in distribution of land and other resources had endured over the same period, they interpret the food and nutrient availability equalization as being driven by trade (although as they note, trade has also helped equalize the availability of unhealthy foods across countries). Comparing trade in the current global food system with no-trade scenarios, Wood *et al.* (2018) similarly find that no-trade scenarios would imply less equality in cross-country nutrient distributions, with low-income countries being particularly disadvantaged, and conclude that '*Protectionist trade policies could…have serious negative consequences for food security'* (Wood *et al.*, 2018).

That noted, we turn to the several serious inequalities embedded in the global trade regime that have implications for FSN.

Inequality in groups able to benefit from trade

It is important to note that the above discussion of trade improving incomes and equalizing food and nutrient availability applies at the *national* level. Aggregate impacts do not imply uniform impacts throughout the population. Trade liberalization inevitably creates winners and losers within countries. For example, groups that are able to take advantage of new export opportunities stand to gain and have improved incomes (as well as generally lower food prices arising from trade), whereas groups that were engaged in import-competing sectors stand to lose relatively as they face competition from imports (Matthews, 2014). These winners and losers may well end up being defined on the basis of size and wealth – for example, large farmers may be much better positioned to exploit opportunities created by global value chains, as discussed in the value chains section above. On the other hand, small farmers or labourers engaged in producing products that suddenly face a tide of competition from imports may not have the resources to withstand the surge. These livelihood impairments have the potential to lower *access* and compromise food security for the left-behind groups (Matthews, 2014). In a study linking liberal trade policies with household level food security outcomes (as measured by the Food Insecurity Experience Scale), Barlow *et al.*, (2020)find that liberal trade policies are not associated with an improvement in the food security of the poorest across the world. In HICs, more liberal trade policies are associated with better food security for 90% of the population but have no relationship with food security of the poorest 10%. On the other hand, in LICs, they find that for 95% of the population, liberal trade policies are associated with *lower* food security.

While economic ability, size or wealth may determine relative winners and losers from liberal trade policies, these aspects are often underlain by 'horizontal' (culturally defined) inequalities across groups. Langer and Stewart, (2012)describe how historical influences, particularly colonialism, have often determined patterns of economic specialisation across groups (e.g. on the basis of ethnicity or regions), and this economic specialisation positions some groups to take advantage of opportunities arising from trade liberalization while other groups are left behind or negatively impacted. Thus, trade liberalization can widen existing inequalities across groups originally seeded by historical influences, with implications for access to food and food security. The text box below provides an example from Mexico.

These inequalities in the ability of specific groups to benefit from more liberal trade may to some extent be attenuated by country-level policies, an aspect we discuss in chapter 5.

Source: (Langer and Stewart, 2012)

Box: Trade liberalization and the disadvantage faced by Indigenous People in Mexico

In Mexico, a colonial legacy has been the embedding of inequalities between Indigenous People (IP) and those of European descent (even if the distinction has blurred somewhat over time). The North American Free Trade Agreement (NAFTA) and other trade liberalization measures have weakened the agriculture sector while strengthening manufacturing. IP are relatively concentrated in more agriculture-dependent regions. They have been disadvantaged by liberalization compared to northern populations with lower IP proportions that have been benefited from the boost to manufacturing. Notably, NAFTA liberalized corn and beans imports from the US, with particularly adverse consequences for regions with high IP populations.

Source: Langer and Stewart (2012)

Unequal support levels for domestic producers

A longstanding disparity that has cast a shadow over international agricultural trade is the level to which HICs have supported their domestic producers to the detriment of competing producers in LICs. Many HICs, notably the USA and the EU, have historically subsidized their producers in ways (e.g., via payments tied to levels of production or use of inputs) that result in increased domestic production. This has the effect of lowering prices in the global market, which could potentially benefit global food security. However, these lower prices may well negatively impact the livelihoods and food security of small farmers in LICs that compete in the production of those subsidised commodities. LICs may lack the resources to support their own producers to a similar extent, even if they wished to provide such support. The rules-based trade system developed under the WTO made substantial progress in bringing down the levels of support in HICs and encouraging any support to be less trade-distorting (e.g. environmental payments rather than production payments) (Matthews, 2014). However, the progress has levelled off in recent times, and furthermore, agricultural support has been increasing in emerging countries such as China and India (Smith and Glauber, 2019). Therefore, despite progress this remains a significant problem. While LICs that are net food importers may benefit from lower food prices, LICs with large agricultural sectors may well face the prospect of lowered income and food security (Smith and Glauber, 2019)

Power and policy space for developing FSN-relevant policies

WTO rules that members states sign up to include those under the 'Technical Barriers to Trade' agreement (TBT) that aims to prevent 'unnecessary trade costs' that arise from variations in regulations across countries. Proposed new regulations with a bearing on trade are expected to be submitted for scrutiny by WTO members, who then have the opportunity to challenge the regulation if they contend that it is at odds with TBT specifications. In the event of a challenge, the nation intending to introduce the regulation must demonstrate that there are not less costly ways to achieve the objectives of the policy (Barlow and Stuckler, 2021). Where the policy is health/nutrition-focused, evidence about the potential impact on those outcomes must also be provided.

A major concern is that these requirements can shrink the freedom to operate, or the 'policy space' to introduce new FSN-relevant policies. Asymmetric power and the relative ability to challenge or defend such policies is at the heart of these concerns. Powerful HICs are more likely to have the financial and scientific resources to engage in such challenges in comparison to LMICs. Also relevant is that the most powerful multinational food companies are typically headquartered in HICs and through their lobbying efforts and with the help of their vast resources may exert considerable influence on challenges. The prospective costs and burden of proof of having to defend such policies may make it less likely for LMICs to introduce such policies in the first place, or having proposed it, to water it down or abandon it, causing 'regulatory chill' (Tienhaara, 2011). The text box below describes a case study of how the policy space of several LMICs attempting to introduce nutrition labelling guidelines has been restricted by HIC challenges. A restriction of policy space in this fashion is a restriction of the agency dimension of food security, with entire populations facing curtailment of their capacity to act independently (via their governments) to make choices in connection to their food. A high proportion of such challenges in the health and nutrition arena related to aspects such as labelling, and regulatory chill compromises nutritional quality of diets and the utilization dimension of food security.

Box: Informal challenges at TBT Committee of nutrition labelling guidelines proposed by Thailand, Chile, Indonesia, Peru and Ecuador

Nutrition labelling regulations tend to be particularly subject to informal challenges at TBT Committee of the WTO. Thow *et al.* (2017) examined such challenges made to nutrition labelling guidelines proposed by Thailand, Chile, Indonesia, Peru and Ecuador over 2007 to 2015. They found that the HICs that challenged these policy proposals questioned their justification, the scientific evidence for their effectiveness and their alignment with international standards. Barlow et al. (2018) conducted a follow-up study that found that many of these informal challenges resulted in alterations to policy design and implementation delays.

Sources: Thow et al. (2017); Barlow et al. (2018)

Source: (Barlow *et al.*, 2018; Thow *et al.*, 2018)

Inequalities in food environments

The food environment is where the consumer and the food system interact. While there are many definitions of food environments, this report adopts the FAO's 2016 definition: "Food environments comprise the foods available to people in their surroundings as they go about their everyday lives and the nutritional quality, safety, price, convenience, labelling and promotion of these foods." (FAO, 2016). HLPE 12 identifies a number of key entry points for food environment improvement: Availability, physical access (proximity); Economic access (affordability); Promotion, advertising and information; Food quality and safety (HLPE, 2017). Turner et al (2018) offer an expanded framework that considers the external food environment (availability, pricing, vendor properties, marketing and regulation) and the personal food environment (accessibility, affordability, convenience and desirability). This framework is useful in that it enables us to focus on both inequalities that are embedded

within the food environment (external) and the way in which these inequalities interface with other inequalities (personal food environment) to produce unequal food security and nutrition outcomes. Other frameworks various expand to built vs wild food environments (Downs *et al.*, 2020)and the role of sharing, gathering, community food and food aid (Bogard *et al.*, 2021).

This section provides a descriptive account of inequalities within key aspects of food environments and how existing societal inequalities exacerbate unequal FSN outcomes from food environments.

Food affordability

One of the foundational challenges for FSN and inequality in FSN outcomes is food affordability. While inequalities in income have been identified as an important determinant of FSN outcomes, the literature also indicates that the actual cost of healthy diets is a challenge and that food prices are drivers of unequal FSN outcomes. Long term trends in a number of countries in different parts of the world indicate that the price of fruit and vegetables has risen substantially over time, but that relative price of processed foods has fallen (Wiggins and Keats, 2015). Further research based on a systematic review of 27 case studies from 10 countries found that purchasing healthier instead of less healthy options of the same foods would lead it increased diet cost of $1.48 per day (Rao *et al.*, 2013). These differences in the cost of healthy diets compound the impacts of income inequality on FSN outcomes.

While the work presented above indicate a global trend in the relatively higher price of healthy diets within countries, it has also been found that healthier diets are generally more affordable in real terms in high income countries than low income countries. Residents of low income countries spend a greater proportion of their incomes on food and achievement food security. This has recently been confirmed by modelling costs of the EAT-Lancet references diets in countries in different income categories (Hirvonen *et al.*, 2020).

In additional to regional differences in relative food prices or relative affordability, there are inequalities within countries too. Food prices are generally higher in rural areas than urban areas globally, despite sometimes proximity to sites of production. This is the outcome of food chain logistics that increase the cost of food as it moves from central markets (often located in urban centres) to more remote markets and households. This is particularly marked in remote, geographically isolated locations often populated by marginalised indigenous populations, such as in Northern Canada (Veeraraghavan *et al.*, 2016). Although rural food prices are often more expensive than urban prices, it is important that these relatively higher food prices may not translate into significant differences in affordability as a result of the higher urban cost of living due to higher rents and transport costs.

A further differentiation in the experience of food prices are in the lived experiences of prices of higher and lower income households within the same geographical setting. The interaction of households and food environments exacerbates unequal FSN outcomes across income categories. The difference in physical access to affordable, nutritious, safe and culturally

appropriate foods will be discussed later. However, at this point, it is important to acknowledge the different purchasing practices of lower income households and how there serve to make diets more expensive. Households experiencing income poverty and income precarity, together with limited access to private transportation and storage capacity mean that lower income household often buy in smaller unit sizes. Informal traders will often bulk break, which increases the per-unit cost of foods. Furthermore, households with insecure access and utilization of stable energy supply for cooking and poor sanitation and water access will have purchasing patterns that are more dependent on processed foods that have lower food safety risks or be more dependent on purchasing cooked food. A healthy diet exceeds in infrastructural costs of these households.

It is important to note that these conditions of multidimensional poverty have provided opportunities both for small scale, informal actors to play an important role in the food environments of the poor, but they have also provided a new entry point for major global processing companies to gain traction in these markets by providing highly processed foods in small, individually packaged units, which have both implications for nutritional health and food system sustainability.

Box: Food affordability case study from South Africa

Healthy diets are beyond the budgets of many households. BFAP (the Bureau for Food and Agricultural Policy) calculate the cost of a "Thrifty Healthy Food Basket" quarterly. This is based on the costs of a "nutritionally balanced combination of 26 food items from all the food groups," and assumes a four person household consisting of two adults, an older child, a younger child with both adults earning a full-time minimum wage income and the children receiving government Child Support Grants and receiving school feeding. The most recent (June 2022) calculation of the Basket's cost was R3621, which is 31.1% of total household income. Each month the PMBEJD (Pietermaritzburg Economic Justice and Dignity Project) calculate the cost of a typical household food basket, based on food price data collected at point of sale from a range of retailers. Their basket is based on the food items and the volumes of these foods that women living in a family of seven members (an average low-income household size) tell us they typically try and secure each month. This yields very different figures. The latest figures (August 2022) show that the cost of this diet for a seven person household would be R4775.59, but the cost of the minimally nutritious diet for a household would be R5617.31. Currently 55.5% of South Africans live below the Upper-bound poverty line of R1335 per month, and 25.2% live below the Food Poverty Line (R624 per month)

Source: (PMBEJD, 2022)

Physical access to food

Unequal physical access to affordable and nutritious food has been highlighted as an important determinant of inequalities in FSN outcomes, with considerable research and policy on issue of "food deserts" since the mid-1990s. There have been many attempts to fix a definition of a food desert, but most definitions agree that food deserts are neighbourhoods and communities that have limited access to affordable and nutritious

foods ((ver Ploeg *et al.*, 2009)). Research on food deserts in North America and European contexts has consistently highlighted the intersection of these food retail environments with income poverty, race, and limited mobilities and other markers of structural inequality (e.g. (Shannon, 2014; Walker, Keane and Burke, 2010).

While the original framing of food deserts did not focus on specific types of retail, the default framing of food deserts has become the absence of large grocery retailers, largely as a result of the definition adopted by the USDA in their nation-wide mapping of food deserts in the United States. This conflation of access to affordable, healthy, nutritious food with the presence of a large grocery store has been reinforced in global policy discourse through tools like the Milan Urban Food Policy Pact Monitoring Framework and Rockefeller Foundation's 100 Resilient Cities indicators (Battersby, 2019). While there has been substantial focus on supermarkets as markers of unequal physical access to food driving unequal FSN outcomes, it is essential to recognise that supermarkets are not the only source of affordable, nutritious foods, and that the conflation of physical access with the presence or absence of supermarkets has been argued in the literature to potentially undermine long term FSN for vulnerable populations, particularly in countries with more diverse food retail environments that have not been replaced by supermarket as the dominant source of food. In much of African, Asia and South America informal traders and wet markets remain the dominant source of physical access for the majority, particularly lower income residents. These provide important economic, physical and social access to food, offering smaller unit sizes, informal credit arrangements, operating long hours, and selling culturally appropriate foods (Wegerif, 2020). Physical access to healthy foods from informal vendors has been demonstrated to increase purchase of these foods. For instance, those living closer to informal vegetable vendors in Tanzania were found to be more likely to buy vegetables (Ambikapathi *et al.*, 2021).

There are concerns that the failure to understand the important role that small scale and informal retailers play in affording physical access to affordable, nutritious food for the poor is leading to their marginalisation in policy and planning and to unfair privileging of large-scale formal retailers. The loss of these retailers would have a detrimental effect on long term food security and nutrition for lower-income residents (Battersby, 2019; Wertheim-Heck, Vellema and Spaargaren, 2015).

More recently, the idea of food swamps, defined as areas with a high-density of establishments selling high-calorie fast food and junk food, relative to healthier food options, has been gaining traction within research and policy space (Cooksey-Stowers, Schwartz and Brownell, 2017). Research in the North American context has found that both food swamps and food deserts have been associated with racial, ethnic, and socioeconomic disparities in obesity rates ((Cooksey Stowers *et al.*, 2020).

Both the concept of the food desert and the food swamp have been challenged as analytical and policy tools with researchers arguing that there is a need for greater nuance in analysis of lived experience. The impact of changed physical access to different food retail types is not uniform across populations. Using the same panel data from urban households in Kenya Demmler, Ecker and Qaim, (2018)and Debela *et al.*, (2020) found that the impact of the arrival of supermarkets has different FSN impacts for different household members. Demmler, Ecker and Qaim, (2018)found increased rates of adult overweight, but Debela *et al.*, (2020). found

positive nutrition outcomes for children with increased height-for-weight and weight-for-age z scores, but no increase in child obesity. Physical access to food in the food environment must be viewed through an intersectional lens.

Food promotion and commercial determinants of health

Food security and nutrition outcomes are shaped by a number of commercial determinants of health within the food environment, including the formulation, packaging design, marketing and promotions of products.

In terms of marketing and promotion, it has been noted across a range of countries that food advertising tends focus on less nutritious foods than nutritious foods. For example, research conducted on TV advertisements in 11 countries found that less healthy foods were more commonly featured than health foods, and that this proportion increased during children's programming hours (Kelly *et al.*, 2010). Similarly, research on food advertising within magazines in South Africa found that almost 60% of food advertisements were for unhealthy foods (Abrahams *et al.*, 2017).

Food advertisements promoting unhealthy foods are not equally placed. As indicated above, certain population groups, such as children, have higher exposure to advertising of unhealthy foods. This advertising is also unequal in terms of targeting of particular demographic groups. A recent systematic review concluded that children from minority and socio-economically disadvantaged backgrounds are disproportionately exposed to unhealthy food advertising (Backholer *et al.*, 2021).

Additionally, unhealthy food brands reinforce their position through sponsorship of sporting events, schools, scholarship and other corporate social responsiveness activities ((Beder, Varney and Gosden, 2009; Bragg *et al.*, 2018; Harris *et al.*, 2019). The presence of these businesses in schools is particularly marked in contexts of state under-funding of education, in which corporate actors are welcomed in to meet financial and capacity shortfalls (Battersby, 2017; Powell and Gard, 2015). These marketing strategies have the strongest impact on lower-income, ethnic minority populations in the global north and these strategies are increasingly prevalent in the global South (Harris, 2020; Scrinis, 2016). One area that has been of particular concern has been the marketing of formula milk to mothers violating the International Code of Marketing of Breast-milk Substitutes (WHO, 2022). Formula companies have been criticised for persistently flouting regulations around the marketing of formula by hosting public events promoting their products (Witten, 2021)

Discounting of food and promotions play an important role in the food security strategies of low income households. These households are therefore particularly vulnerable to the impacts of the advertising, promotion, and marketing of less healthy foods

Food safety

Unsafe foods have considerable impacts on FSN outcomes. Nutrition outcomes are undermined by foodborne diseases which disrupt food utilization. However, food safety has not historically been well-integrated into food system and food security research and action (Nordhagen *et al.*, 2022). The 2015 WHO Global Estimates of the Global Burden of Foodborne

Disease identified 31 different foodborne hazards, which in 2010 caused 600 000 foodborne illnesses and a further 420 000 deaths (Havelaar *et al.*, 2015).

The distribution of the burden of foodborne disease is highly unequal around the world, with low- and middle-income countries, particularly those in Africa, bearing most of the burden. In Africa the 31 foodborne hazards included in the WHO estimates of the global burden of foodborne diseases have been estimated to cause 1200–1300 DALYs (Disability Adjusted Life Years) per 100 000 inhabitants in 2010, compared to 35–711 in other regions (Pires *et al.*, 2021). Within countries the experience of foodborne disease centres on particular population groups, what Grace, (2015)has termed the YOMPIs (Young, Old, Malnourished, Pregnant and Immunosuppressed). Indeed, the WHO found that children under the age of five accounted for 40% of the disease burden of foodborne disease (Havelaar *et al.*, 2015).

Foodborne diseases perpetuate the cycle of poverty by causing short term and long term illnesses that undermine health and livelihoods. As the WHO note "Malnourished infants and children are especially exposed to foodborne hazards and are at higher risk of developing serious forms of foodborne diarrhoeal diseases; these infections in turn exacerbate malnutrition thus leading to a vicious circle of debilitation and mortality. Those who survive may suffer from delayed physical and mental development, depriving them of the opportunity to reach their full potential in society." (WHO, 2015).

Food safety disproportionately impacts poor and vulnerable populations due both to higher exposure to the hazard of unsafe food, but also due to underlying health vulnerabilities which increase the risk to health and exacerbate poor FSN outcomes.

Impact on the six FSN dimensions

The food environment interacts with each of the six dimensions in a series of interconnected, complex ways, which results in differential FSN outcomes for different cohorts. While decisions that shape the food environment may have ostensibly positive impacts for some populations in one of the dimensions, these same decisions may undermine food security in another dimension or for a different population. A key example of this is the rise of the supermarket as an increasingly dominant factor in food environments. While this may have a positive impact on economic accessibility to a diverse range of food stuffs improving the diets of some sub-populations, it may at the same time increase availability of obesogenic foods thereby contributing to increased incidence of diet-related non-communicable disease in other sub-populations. Further, this increased accessibility is premised on greater supply chain concentration, which may undermine agency, and sustainability.

Availability

While the food environment is often framed as the final stage of the food system, it is important to note that it has significant upstream linkages. Decisions taken by actors who shape the food environments shape the characteristics of the food system as a whole, by shaping demand and supply chains therefore affecting conditions of availability and issues of inequality in productive systems.

Accessibility

The various elements of the food environment interact to shape physical, economic and social access to food. As discussed above, food environments demonstrate considerable inequality in terms of food pricing, physical access to affordable, nutritious diets and are subject to social processes that shape access to healthy diets. Dominant framings of unequal access to healthy food have tended to focus on formal food retailers as the solution. However, this views food security as something to be externally delivered, rather than linking Access with Agency. As discussed in the section above, this has led to maladaptive approaches to increasing access which crowd out smaller actors and supply chains that have traditionally been a part of the food security strategies of the poor. This may lead to a reduction in agency at the same time as prices may be reduced.

Utilization

The interaction of the personal food environment with the external food environment shape utilization in driving the conditions under which individuals and households are able to utilize food. The limitations experienced in terms of utilization via multidimensional poverty, then shape food choice and diets thereby making healthy diets less accessible for already vulnerable populations. Further, concerns about food safety within the food environment shape the utilization dimension, and as noted, the burden of risk of unsafe food is disproportionately experienced by residents of low-income countries, and further focussed on existing vulnerable populations.

Stability

In order to meet the stability dimension, the food environment needs to be able to buffer consumers from food system shocks and household shocks. These shocks have greater impact on already poor households who not only have the lowest economic resilience to shocks but are also more vulnerable to economic and environmental shocks. The literature suggests that a diverse food environment (including a diversity of food retail types, diverse supply chains, diverse payment strategies) provide consumers with greater resilience to shocks.

Agency

There are concerns that while the increasing formalisation of food retail environment may have some benefits in terms of physical and economic accessibility (though this is contested), it may undermine the agency of consumers and the livelihood capacities of small scale and informal retailers and their supply chains. This is further eroded up the value chain by the increased concentration in the retail and processing sectors, as well as further upstream in the productive sector. There are further concerns too that formulation, marketing and promotions erode choice, and that these formulation, marketing and promotion efforts disproportionately target communities already vulnerable to poor food security and nutrition.

Sustainability

Processing, packaging, marketing waste and last mile transportation all have significant impacts on sustainability of food system.

Inequalities in other systems

Work to understand the drivers of nutrition outcomes consistently finds that systems outside of food have fundamental impacts on inequalities in FSN outcomes (Headey, Hoddinott and Park, 2017; Nisbett *et al.*, 2022). Analyses looking at the drivers of stunting reduction for instance pinpoint income, asset accumulation and wealth; nutrition-related health services; water and sanitation; and education (particularly for women but sometimes also for men) as driving change in malnutrition rates Nisbett *et al.*, (2022)We therefore summarise below some key evidence on inequalities in these systems that link to FSN outcomes.

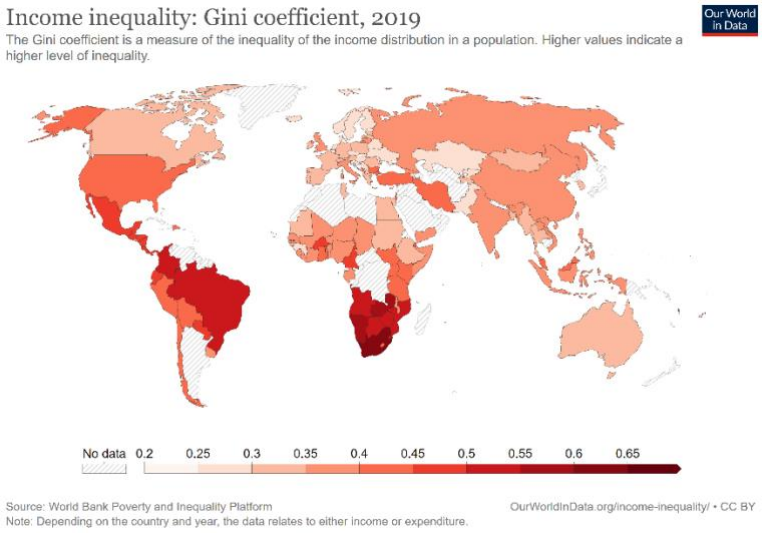
Income and economics resources

Many of the inequalities discussed earlier in this chapter, *e.g.* unequal access to food production resources and unequal ability to participate in modern value chains, have a bearing upon income inequalities. In this section, we focus discussion on FSN implications of income inequality (or the distribution of economic resources) more broadly. Inequalities in economic resources may be captured in different studies in terms of wealth, assets and other living standards measures. But income inequality is the most familiar metric in this regard, and is used here to represent the broader economic resources dimension (note that wealth as a basis for FSN inequalities was also discussed in chapter 2). Income inequality in turn has important implications for FSN of the disadvantaged, particularly in terms of food access, but also potentially via other pathways (e.g. the utilization dimension due to ability to afford adequate sanitation or health care). High income inequality may also reflect low social cohesion, and less cohesive societies may invest less in social safety nets (Larrea and Kawachi, 2005), constraining the FSN of the vulnerable.

Food insecurity and child undernutrition are concentrated among low income households globally. However, overweight and obesity are concentrated among high income households in many parts of Asia and Africa, whereas they are concentrated amongst low income households in Europe and North America (Alao *et al.*, 2021)

Economic growth over the last several decades has made a significant impact on reducing extreme poverty in many parts of the world. However, although relative income inequality between countries has fallen since 1975, particularly due to growth in China and India (Niño-Zarazúa, Roope and Tarp, 2017), inequalities *within* countries remains high, and in several LMIC countries income inequality has increased since 2000 (Holleman and Conti, 2020)Figure X below maps Gini coefficients of income in 2019, and illustrates the continuing high levels of income inequality, especially in Southern Africa and South America.

Figure 3.3: Gini coefficients showing income inequality in 2019



Source: Our World in Data, using data from the World Bank Poverty and Inequality Platform

The potential for growth to lift people out of poverty is compromised by high or increasing levels of inequality (World Bank Group, 2016)and in this situation the poorest may face food insecurity in the face of strong economic growth. Holleman and Conti, (2020) analyze the associations between food insecurity at the individual level (based on the Food Insecurity Experience Scale) and GDP per capita and Gini coefficients at the country level. They find that individuals living in countries with high income inequality have a significantly higher probability of facing moderate or severe food insecurity compared to individuals living in countries with lower income inequality. They also find that high income inequality erodes the potential of higher GDP per capita to reduce individual food insecurity (Holleman and Conti, 2020).

Turning to nutrition outcomes, some studies find that higher income inequality as measured by provincial/regional Gini coefficients worsens undernutrition outcomes at the individual level. For example, Larrea and Kawachi, (2005) report that higher income inequality at the province level is associated with greater child stunting in Ecuador. (Subramanian and Kawachi, 2007)find that higher state-level income inequality in India increases risk of both underweight as well as overweight and obesity. However, Alao *et al.*, (2021)in their systematic review conclude that the literature linking income inequality with nutrition outcomes is too slight to make firm conclusions. Although there is some indicative evidence on the intuitive notion that high income inequality worsens food insecurity and malnutrition, the evidence base is surprisingly thin, and this is an important area for future research.

Health systems and services

Access to health care is fundamental particularly for nutrition outcomes: It is a key part of the UNICEF conceptual framework of child malnutrition (UNICEF, 1990), and lack of consistent access to quality health services is consistently associated with malnutrition (UNICEF, 1990). It has long been acknowledged that there are issues with equity in access to healthcare,

including in high-income countries (Mooney, 1983), and that access depends on financial, organisational and social or cultural barriers (Gulliford *et al.*, 2002).

Access to health services is unequal between countries: While a global Healthcare Access and Quality index improved for most countries between 1990-2015, the divide between the best and worst-performing countries widened over that time to a 66-point gap on a scale of 1 to 100, a widening of inequality in access to healthcare between (GBD 2015 Healthcare Access and Quality Collaborators, 2017). Inequalities are also seen within regions: within sub-Saharan Africa countries fall both above and below expected levels of health service access, for instance (GBD 2015 Healthcare Access and Quality Collaborators, 2017).

Access to health services is also unequal within countries

Inequalities by wealth are seen in accessing health services in OECD countries, for instance (OECD, 2019); and in the USA studies show poorer households and individuals (particularly those from Hispanic and African-American communities) are less able to afford insurance payments and access healthcare (Dickman, Himmelstein and Woolhandler, 2017). Similarly, across 18 countries in sub-Saharan Africa healthcare use varies widely with wealth, and more so in the poorer countries, alongside education, employment and urbanicity (Bonfrer *et al.*, 2014), while greater gender discrimination at household and community level limits maternal health service use (Adjiwanou and LeGrand, 2014).

Housing, water, sanitation and equitable infrastructure

Access to and utilization of basic infrastructure have been identified as determinants of FSN outcomes. The importance of adequate access to water and sanitation (as WASH) to FSN has been a part of the UNICEF Conceptual Framework on Malnutrition since 1990, and has been the subject of substantial research and policy attention (e.g. (Pickering *et al.*, 2019; WHO, USAID, and UNICEF, 2015)). Poor access to WASH is concentrated in lower income communities in lower income countries, and therefore exacerbates unequal FSN outcomes. Within these populations the negative impacts of poor water and sanitation on FSN outcomes are experienced most by infants and young children, those with pre-existing medical conditions and the elderly.

While the focus on inadequate infrastructure on FSN outcomes has focused predominantly on WASH, there are other important factors that create FSN inequalities. Poor housing (Jonah and May, 2020), access to affordable, reliable energy supply (Bednar and Reames, 2020; Masters *et al.*, 2021) and time poverty linked to urban transportation times have all been shown to shape food practices and FSN outcomes, with low income households particularly impacted by poor access to basic infrastructure to support FSN.

While these infrastructural deficiencies have been well reviewed in the literature, it is important to note that food retailers operating within these geographical locations experience the same infrastructural deficiencies. Poor access to water, sanitation, reliable energy supplies and transport infrastructure shape the food practices of these businesses, which are often the primary source of food for low income residents. These infrastructural deficits impact stocking practices (meaning traders need to make small, frequent purchases to prevent spoilage, leading to greater per unit costs, food safety and the range of foods sold (as vendors may sell more processed goods to avoid spoilage or food safety risks) (Ahmed *et*

al., 2019; Fuseini, Battersby and Jain, 2018). There is therefore a double FSN penalty experienced by individuals and households living with infrastructural deficiencies.

There has been a recent rise in interest in equitable infrastructure (Gilbert, Eakin and McPhearson, 2022), and in the role of infrastructure in health and well being (Ramaswami, 2020). Inequitable infrastructures and spatial planning undermine FSN and impact characteristics of food environment in ways that undermine access to healthy diets for the most vulnerable.

Education

Education level, and particularly education for women, is known to be linked to nutrition outcomes, and assumed to be through pathways of general ability to understand nutrition and health information, and access to skilled work and livelihoods. Malnutrition rates in children differ according to the education levels of their mothers in many contexts: For instance, minimum dietary diversity is achieved by 24.4% of children whose mother has less than primary education; while dietary diversity is achieved by 35.2% of children whose mother has secondary or higher education (Development Initiatives, 2020).

Access to education is highly unequal: The World Inequality Database on Education shows that between 2014 and 2019, all high-income countries had achieved primary school completion rates over 96% (mostly 100%); meanwhile only one low-income country had (Tajikistan) and a majority hovered around 50% completion. Afghanistan had the largest gender disparity in primary education, with 67% of boys and 40% of girls completing this level. There are also large divides in terms of terms of rural-urban education in many countries, with for instance 84% of urban adolescents completing secondary schooling in Bolivia but only 50% of rural adolescents. Ethnicity also shapes school access, for instance in Brazil 25% of indigenous children have never been to school, compared to 16% of white children.

A common definition of equity in education is that equity has two dimensions: “The first is fairness, which basically means making sure that personal and social circumstances – for example gender, socio-economic status or ethnic origin – should not be an obstacle to achieving educational potential. The second is inclusion, in other words ensuring a basic minimum standard of education for all – for example that everyone should be able to read, write and do simple arithmetic” (OECD, 2008). Exclusion in education has been made worse by Covid-19 (Global Education Monitoring Report Team, 2020).

Reproductive systems and time use

Findings of multiple studies and reviews confirm the gendered nature and impact of working in agriculture and food systems on FSN outcomes. In particular, the evidence shows that:

- Women play a key role in agriculture, and this is reflected in their time commitments to these activities, whether as farmers or farmworkers
- Women are important actors in the uptake and response to agricultural interventions
- Agricultural interventions tend to increase women’s, men’s and children’s time burdens.

However, the studies included in this review do not provide clear-cut evidence on the nutritional implications of agricultural practices and interventions, even when these result in increased time spent on agricultural activities. Nutritional impacts are varied because

households and household members respond to increased time burden and workload in different ways. Why are responses different? It depends on a number of important differentiating factors that include income and the possibility to purchase food, household socio-economic status more generally, household type and composition (in particular the presence of members who can take up domestic work), and the types of indicator used to assess food consumption, security or nutrition (Johnson *et al.*, 2015).

Chapter 4. The systemic drivers and root causes of FSN inequalities

This chapter examines how the deeper drivers and root causes that are 'upstream' in the conceptual framework (Chapter 1) shape FSN outcomes unequally across time and place. Consistent with earlier HLPE assessments of the food system, these broader drivers are considered as overlapping with, but also outside of, the food system. They include social and cultural norms, the broader political economy (including national political systems, policy orientation and the broader international governance architecture), climate and environmental drivers, technology and innovation, and demographic and health drivers. Importantly, these upstream drivers of FSN inequality are interrelated. The cultural and social norms, values and prejudices described in the first section, for example, crystallise and shape the political economy described in the second (Nisbett, Harris and Baker, 2020)But culture and politics also fundamentally alter human relationships with nature in ways that affect people's FNS outcomes, their environments, and the climate (Huambachano, 2020). Finally, all impact on what innovations emerge, how they affect different people, and how demography and health outcomes change. Themes which run throughout these drivers are summarised at the end of this chapter.

Culture and social norms

Food is intimately connected to people's identities. The shared ideas, languages, practices and understandings that constitute culture deeply codify appropriate norms, behaviours and practices around producing and procuring food, around diets, cooking and eating practices, and wider culinary culture (Cole *et al.*, 2020; Mintz and Bois, 2002; Phillips, 2006; Purdam, Garratt and Esmail, 2016; Counihan, Esterik and Julier, 2018; Watson and Caldwell, 2005) . In some cases, this can promote food and nutrition outcomes, for example where food culture prioritises fresh foods rich in fruit and vegetables, nuts and healthy oils, and optimal amounts of animal source proteins (Martínez-González *et al.*, 2015)or traditional alternatives such as tofu (Qin, Wang and Luo, 2022). In other cases, this can undermine FSN outcomes; for example traditional taboos on eating certain foods can lead to ill health, particularly when combined with gendered assumptions around appropriate diets for pregnant and lactating women. Such taboos can be wide ranging and have potential damaging effects on already nutritionally vulnerable populations (see, e.g., (Chakona and Shackleton, 2019)).

Gender and intersectional social position

Although socio-cultural and gendered norms exist at a specific time and place, and need to be understood as such, they are created and recreated through social practices that reinforce broader patterns. The social practices surrounding food systems produce highly gendered social norms that can have inequitable impacts, and any changes to practices or policy can reinforce these inequities. For example, when a stress on fresh food prepared daily combines with an assumption that women are responsible for food preparation, the expectation is that women devote extra time, on top of existing care and work burdens, to

ensure this freshness. Gendered norms do not only impact women, for example, meat eating and the frequent consumption of large quantities of 'manly food', are often positioned as hallmarks of masculinities, but are associated with increased risk of obesity and diabetes, and greater environmental pressures (Al-Shaar *et al.*, 2020; Godfray *et al.*, 2018; Guasch-Ferré *et al.*, 2019; Helgeson, 1994; Sobal, 2005).

As chapter 3 discussed, gender as a socio-cultural driver of food practices extends into every aspect of the food system. For example, men and women often play different roles within production systems and as a result occupy different socio-economic positions. Across many societies, gendered assumptions exist about what are traditionally considered men and women's crops (Arndt and Tarp, 2000; Carr, 2008). These roles and assumptions feed into and are compounded by gendered differences in the availability of and access to land, credit and knowledge, together affecting the ability of women to work in prominent roles of ownership and management in wider value chain activities. Beyond production, processing, and trade, gendered assumptions are common in domestic care work including childcare, food purchase and preparation. These activities can however be impacted by gendered constraints such as whether women are free to access food or travel to retail outlets that are remote from their home, and the time and place at which women can eat and the types of food (including taboos) that are appropriate for women(Njuki *et al.*, 2022)

Cultural assumptions around gender intersect with other identities, such as class, and multiple other aspects of social position and power (Lips, 2020). Because women's roles in the production process are under recognised (Lawless *et al.*, 2019)women often lack political representation and in particular, the post-harvest sector, which tends to be dominated by women, is the least likely to receive governmental support (Hicks *et al.*, 2022; Lawless *et al.*, 2019)For example, during the lockdowns in first wave of the Covid-19 pandemic, many fishers (predominantly male) in India were given dispensation to continue working but fish traders (mainly women) were not afforded the same dispensation (Love *et al.*, 2021). The relative power of women is important as greater voice and agency for women whether at household or national level have been associated with better outcomes in terms of food production, nutrition, and reductions in post-harvest waste and loss (Cole *et al.*, 2020). Greater voice and agency is indeed associated with better outcomes for women, however efforts to redress these power imbalances require careful thought so as to avoid a wider cultural backlash (WFP 2021).

In many contexts, gender is also likely to intersect with ethnicity and/or citizenship status, such as in the condition of female migrant farm workers in the US, who may face additional forms of exploitation, including lower pay and being subject to sexual harassment and violence (National Farm Worker Ministry, 2018; Southern Poverty Law Centre, 2010). Many of the factors associated with migrant female farm labour including, e.g., insufficient safety protection and excessive pesticide use can be additional risks to women's health and carry reproductive risks (Habib and Fathallah, 2012).

Stigma, shame and institutionalised discrimination

The food systems' and broader socio-cultural settings thus involve a number of feedbacks between socio-cultural norms and assumptions and food and nutrition outcomes which can support or undermine FSN outcomes. The language and messaging around public health and food policies, be they to support food insecure households or more healthy eating practices can inadvertently create a culture of blame. For example, the language around food assistance, food insecurity, and those in need of welfare support can often result in a discourse of blame, creating stigma and shame, making it harder for those most in need of food assistance to access the resources they need (van der Horst, Pascucci and Bol, 2014; Purdam, Garratt and Esmail, 2016). Similarly, poorly nuanced public health interventions which stigmatise, rather than support, people living with obesity can feed-back into low self-esteem and poor mental health, as well as lead to wider discrimination in the workplace (ibid.). The result is, often in wealthy countries, people living with obesity are facing increasing societal stigma (World Obesity Federation, 2021) .

In addition to localised influences on individuals, households, or communities, socio-cultural norms and assumptions can have strong feedbacks, across multiple scales, with the wider geo-political ideas and systems shaping food policy and wider policies affecting the upstream determinants of food and nutrition (see *political economy* and *Food regimes* below). Sometimes, as in apartheid South Africa (Kloppers and Pienaar, 2014), countries that appropriated indigenous land, or countries that continue to pursue gender based discrimination, these are explicitly written into a wide range of rules, including land ownership, education, housing, welfare and political voting and representation. But in other cases these forms of discrimination are implicit, hidden and often denied. These norms and assumptions might affect food system inequities directly. For example, land or labour market discrimination might prevent particular groups of people pursuing agri-food livelihoods altogether, or at least the most lucrative and commercial forms of agrifood opportunities, because there are capital, educational or other barriers to their entry (see e.g. (Krishna, Aravalath and Vikraman, 2019)). These forms of discrimination also affect food system outcomes indirectly because when combined, they lead to lowered livelihood and income opportunities over lifetimes and over generations. Again, there are feedbacks between these processes, with poorer rural populations often denied opportunities, stigmatised as 'backwards' (e.g(Nichols, 2020)) and not worthy of those opportunities they might use to build a way out of poverty and food and nutrition insecurity. A key example of this is financial exclusion, where particular categories of people – poorer farmer and/or women and/or particular ethnicities being denied access to capital necessary to purchase land, equipment or inputs (see e.g., Adegbite and Machethe, 2020).

Changes in cultural preferences due to technology and globalisation

Socio-cultural drivers of food and eating can be pervasive over many centuries, but can also be subject to rapid change (see *innovation and technology* below). Globalisation has led to the adoption of new food commodities, often packaged goods and/or UPFS (Baker *et al.*, 2020; Popkin, 1994)). Changing preferences might relate to the adoption of green revolution technologies or other forms of industrial farming making certain commodities cheaper or

more plentiful. Examples include the adoption of white rice and wheat flour in countries such as India, which previously relied on a wider range of more nutritious grains staples (Dixit *et al.*, 2011), or a growing preference for meat and dairy as populations grow wealthier in countries such as China (He *et al.*, 2016). These interrelated socio-cultural and technological changes also have equity considerations: on the one hand, such trends may lead to further concentration in markets and shift from traditional production/retail, which may have livelihoods feedbacks. On the other hand, while new processed products such as package noodles may be nutritionally inferior, they may be cost and time saving, particularly for carers (often women) juggling multiple care burdens.

Political economy

(Placeholder, to be developed in V1)

Political systems as drivers of FSN inequalities

A political system refers to the type of rule by which a state is run, this captures the laws, regulations, and policies, as well as the government and other institutions who allocate resources, make and implement those laws, regulations, and policies. Political systems operate at regional, national and supra-national levels and differ substantially in terms of political orientation. This orientation can range from authoritarian through to democratic, from closed or liberal market to populist or elitist. The type of political system under which people live, or the political orientation of that system, can fundamentally affect people's freedoms, welfare, and lives, shaping wider socio-economic opportunity and disadvantage, including directly affecting what food system policies are likely to be affective and equitable. These systems therefore shape broader inequalities and inequities throughout society and are the context in which food security and nutrition opportunities and outcomes emerge. For example, over the past ~30 years, and through a combination of agricultural stimulus policies, poverty reduction, social protection programs, and expanding international food trade, dramatically reduce prevalence of poverty, childhood stunting, and wasting (Zhu 2011), although increases in income have not all translated to nutritional improvements (You et al 2014). In addition to these broad policy approaches, China has managed to maintain domestic food stability amid global food crises through the introduced additional policies in several areas, such as production and transportation, by opening a "green channel" to increase the transport of fresh agricultural product and setting a "farmland red lining" policy to keep no less than 120 million hectares of arable land for crop farming (Zang et al 2022). China's political system can be thought of as broadly authoritarian and these outcomes have been achieved through an at times aggressive, nationalist productivist strategy, including through the belt and road initiative (Zhang 2021). However, some critics argue this national strategy is undermining food security elsewhere by for example reconfiguring Africa's economic geography and extracting natural resources (e.g. fish) (Carmody 2011). Sweden's political system can in contrast be thought of as broadly socialist. Sweden has been equally successful in reducing inequalities in food security and nutrition outcomes, through a very different strategy, namely a strong welfare system that increases people's agency to secure adequate, safe, and nutritious food. However, critics similarly

argue Sweden's diets, through their excessive environmental footprints, are undermining food security elsewhere (Gordon Sweden diet footprint paper).

Within any political system, the ideas and interests of groups vying for political influence can have profound influences on access to societal institutions and resources, which in turn influences different peoples food security and nutrition outcomes. For example, patriarchy has been an overarching idea shaping institutions in the interests of men in most countries, which in the food and agriculture sector has led to institutions (e.g agriculture ministries) prioritising the needs and knowledge of male farmers (for example in terms of new technology information and extension – e.g. (Duffy *et al.*, 2021; Ragasa *et al.*, 2013)). Similarly, colonialism has had a central, historical and ongoing, influence on what is grown, by whom, and who owns and controls the land and the means of production, creating and replicating inequities across the world (Khoury 2016, Ginzburg 2022). As covered in chapter three, a growing literature on the commercial determinants of health and food systems also charts the over-influence of large food companies on food system and public health policies, often to the detriment of public health objectives (Baker *et al.*, 2020; Mialon, 2020). A political economy or power analyses - can help shed light on such dynamics, and in turn establish the underlying drivers of food security and nutrition inequalities (Baker *et al.*, 2020; Harris *et al.*, 2019; Nisbett *et al.*, 2014)Walls et al 2020.

Meeting the food needs of populations has meant that food and agriculture have always been central to the idea of a 'political settlement' with ruling elites often painfully aware that regime change can often follow period of hunger or rising food prices (Leach *et al.*, 2020; Hossain and Scott-Villiers, 2017). While this might be viewed as positive for hunger and food security, an overarching political focus on hunger comes at a cost for dietary diversity (GAIN and JHU, 2020)Gallup 2022and broader nutrition outcomes (Stevens et al 2022) where food security has been the dominant force (Te Lintelo & Lakshman 2015), though this bias is gradually shifting (see. E.g. (Harris, 2019; Ayele, Zegeye and Nisbett, 2020)).

Land policy, 'land grabbing' and conflicts with conservation policy

One key area of national political economy is land inequality and access to common resources such as fisheries (e.g. in ponds, lakes, rivers or oceans). Land inequality is identified in chapter two as a significant driver of broader inequalities in food and nutrition outcomes. As explained above, under colonial regimes, many people, particularly peasant farmers and indigenous peoples, were dispossessed of their lands or their access to common resources, or taxed to (literal) starvation, with land and rights handed to colonists or run on behalf of colonial powers by local elites such as traditional landlords (Husain and Sarwar, 2012; Sen, 1981)Access to land and other resources was a key part of the liberation and independence movements in many countries, but few countries fully implemented land reform following independence. Reforms in Asian countries such as Japan, South Korea and Taiwan were seen as models for other countries, with successful reforms to tenancy rights enabling wider ownership amongst tenants and sharcroppers (Lipton 1974), but it was hard to replicate this success elsewhere (White, Borras and Hall, 2014). A more recent trend in land policy has been the need to find ways to regulate foreign investment in land, which has

been on the increase since the food price spikes of 2007-2008, and sometimes known as 'land grabbing'.

Land grabbing is a phenomenon emerging from great pressures on land for resource use and production, exacerbating the need for sustainable production of nature-based products like timber and agriculture (De Shutter 2014, GRAIN 2014). These events not only threaten the socio-economic and cultural systems of land-based peoples, as they are pushed to produce goods for the greater society, but also deepen issues around land grabbing and lack of food security and nutrition. Borras and Franco (2013) define land grabbing as the expulsion of existing peoples from their land to advance land investment purposes, resulting in concentration of land ownership and control of vast areas belonging to an elite few. Land grabbing can occur both in physical removal and in claiming rights to certain attributes, like mineral, transportation, or even carbon rights (Karsenty et al. 2014).The right to land and other natural resources is recognized as a human right of Indigenous peoples, peasants and other people living in rural areas, as established in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and the United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas (UNDROP). The CFS Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security also recognize that "land, fisheries and forests are central for the realization of human rights, food security, poverty eradication, sustainable livelihoods, social stability, housing security, rural development, and social and economic growth" (FAO, 2012, p. 6). Yet, the dismissal of the right to land and other natural resources of Indigenous and local communities continue to be a threat for their FSN because they depend on their lands to gather food resources as well as grow, harvest, produce and recirculate their traditional foods.

While it is necessary to look carefully at environmental protections in the face of rapid biodiversity loss, equity considerations are also paramount, as conservation has a long history of dispossessing people from their land. For example, in Africa and Asia, towards the end of the colonial era a number of protected areas were set aside- primarily to protect the hunting grounds of the colonial elite. Local indigenous populations, who often sustained nomadic lifestyles, such as the Maasaai ,were evicted from their land, livelihoods, and traditional food systems. These models have persisted since colonial days and for many are at the heart of effective conservation, with recent calls to set half of earth aside for nature (Earlich). Despite considerable opposition, evidence of how these approaches exacerbate inequities (Duffy, Sandbroock), there have been renewed international commitments to protect 30% of nature by 2030 (ref) and evictions continue to this day.

Fisheries policy and investment

Within fisheries, funding and policy development has historically tended to focus on managing natural resources, based on western knowledge and production practices, consequently most fisheries policies pay scant attention to food and nutrition security and most nutrition policies overlook fisheries (Kohen et al 2021).

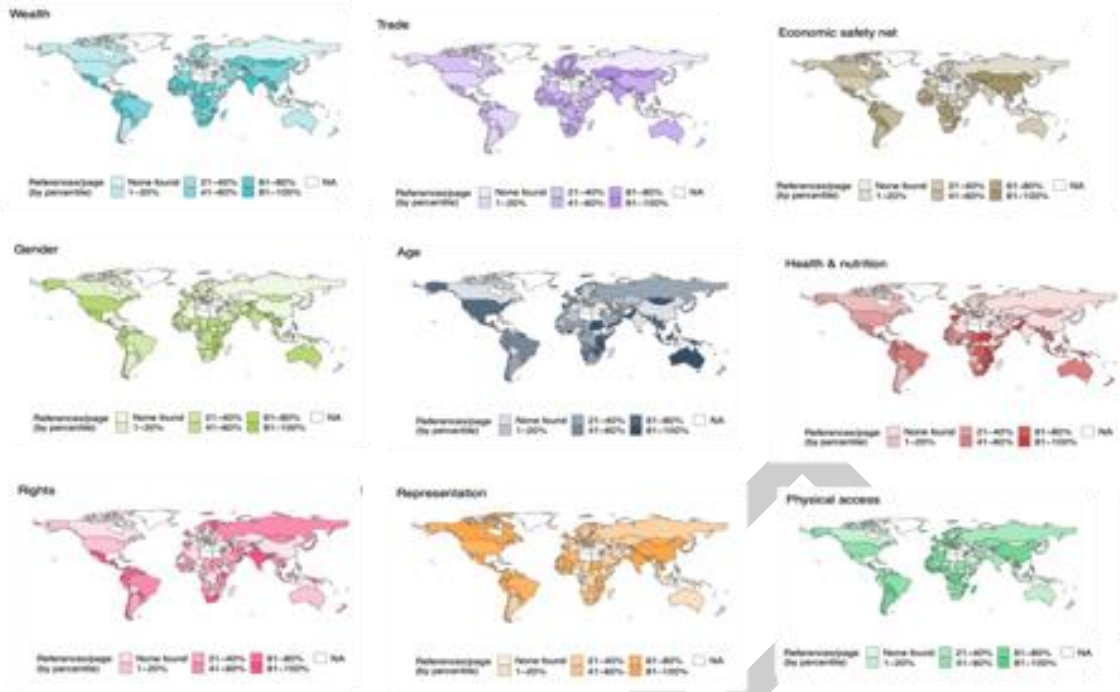
One exception has been fisheries subsidies, which have often been designed to lower access costs. However, most fisheries subsidies support fleets that operate out of high income nations, where food security is of less concern (Sumaila 2018). Subsidies have enabled these fleets from high income nations, to access distant waters, including in the high seas and the coastline of low income food insecure nations (Hicks 2019). This pattern results in a rerouting of nutrient rich fish away from food insecure nations towards food secure nations (Nash 2022).

Although global fisheries production peaked in the 1990s, total aquatic food production has remained relatively stable due to the rapid increase in mariculture and aquaculture since the 2000's (Naylor 2020). Fisheries subsidies have contributed to the decline in wild catches, by enhancing the capacity of fleets to continue to operate even when it is no longer economically productive. A third of global fish stocks were either fully- or over-exploited in 2017.

Policy orientation – the equity sensitive of food and wider government policy

Within the fisheries and social justice literature, inequities in food systems have been shown to emerge where economic, sociocultural, or political barriers limit participation (Kohen 2021, Hicks 2022). Policies, can help overcome these barriers but are far more likely to recognise economic barriers than to recognise or address political barriers, as highlighted in a recent review of current fisheries and aquaculture policies in relation to nutrition (World Bank 2022). This highlighted the predominance of economic, with attention to sociocultural barriers, in particular gender and age, was most variable underscoring the influence of socio-political barriers or drivers of food system inequalities (Fig. X), with large inter-country or intra-regional variation. For example, fifty-three, and 84 (20% and 30%) countries' production policies made no reference to gender or age, respectively, compared to only 3 and 9 countries' consumption policies (Hicks 2022), highlighting the slow progress in moving beyond gender-blind production-related policies (Rao 2020). Yet, global prevalence of child labour remains high (ILO), and ample evidence exists that gender norms and social constraints limit aquatic food system actors from participating equally (Cole 2020).

Historical and socio-cultural differences in how production and consumption sectors are perceived (Rao 2020, Barclay 2018), have created little overlap between sectors in awareness of barriers, reflecting a lack of institutional coordination. Production sectors tend to focus on overcoming economic barriers while the consumption sector focuses on social barriers. Rather than removing barriers to access, this siloed approach is likely to reinforce divisions of labour that are shaped by traditional social and cultural norms (Barclay 2018). Greater investments in mother and child-focused health likely account for differences between production- and consumption-related policies (Mozzaffarin 2018). However, differences across sectors in awareness of, and efforts to address, barriers can present an opportunity for cross-sector policy engagement to embed gender and broader socially sensitive strategies into production policies. (To be added Figure title and ref)



Outside of food policy the political system also has significant effects on food and nutrition inequality given that broader government policy can significantly shape or neglect the upstream drivers of food inequality (WHO 2008, Marmot et al 2008, Friel & Ford 2015, Nisbett, Harris et al. 2022;). This includes labour market regulation and incentives, housing, welfare, early years provision (support for preschool children) and social protection, which might include food provision. For example, labour market regulation may have a direct effect on the agri-food sector, governing the rights of, for example, migrant and agency workers who often work in lower paid and informal or only semi-formalised sectors such as fruit picking and other seasonal harvest tasks (Southern Poverty Law Centre) and exploitative systems of bonded and slave labour may exist alongside or even part of formal labour markets (Box 4.1). Furthermore, in African, Asian and Latin American cities informal components of food systems have been consistently marginalised or repressed in the pursuit of a modern ideal and orderly urbanism (Kamete 2013, Boonjubun 2017, Hayden 2021). At the same time, local governments have allowed, and at times actively pursued the development of supermarkets and shopping malls as symbols of modernization, as providers of formal employment and generators of municipal revenue. The food system and FSN consequences of these governance decisions are rarely considered as food is generally considered to be a local government mandate. These decisions transform food environments in the absence of food planning (Wertheim-Heck at al 2015, Battersby 2017).

Box 4.1 **Free yet still bonded and invisible: The case of the Kamaiya, Haruwa Charuwa and Haliya systems in Nepal**

The practice of bonded labor while abolished in Nepal in 2002 has left repercussions for those generationally forced into the system. Estimates as of 2017-8 report that over 31,000 people are forced into labor in Nepal and 17% of them are children (CBS Labour Force Survey 2017-18). These

estimates are likely an underestimate given the grave difficulty of identifying those in bonded labor given the 'hidden' nature of their existence. Many of those trapped are in an agricultural bonded labor system – the social groups who are exploited in this way primarily belong to the ethnic and caste minority groups, Tharu and Dalit, respectively (Giri). The Haruwa Charuwa and Haliya systems are particularly tied to agricultural bonded labor. Those trapped in these systems are often the most economically deprived taking loans from their landlords to meet daily needs and paying them back in labor and prohibitive interest rates. Haruwa Charuwa are made to plough, dig and herd cattle.

In 2009, 12% of households in a study area understood to have a concentration of ongoing bonded labor found that 12% of households were still affected by bonded labor. Those affected had far lower livestock ownership, a fraction owned land and over half do not have access to food for 4-9 months of the year and Dalits resident to the Tarai (plains region) were particularly vulnerable to food insecurity (ILO 2013). Others studies have shown that the prevalence of stunting, wasting and underweight among under-five children of former Kamiya families was higher than the national average (Khatri 2015) pointing to persistent intergenerational detrimental impacts of these systems even when abolished and those previously affected are no longer in them.

Global political architecture, geopolitics and food regimes

Many different international actors have an interest in tackling FSN inequalities and food and nutrition are part of the mandate of many UN bodies. A 2017 review of the international architecture for nutrition alone, for example, identified over 167 different actors involved in the previous decade (Friel et al. 2018). Confusion over overlapping mandates and priorities have often been blamed for failings in achieving global goals, which itself can have an impact on FSN outcomes (Morris et al. 2008; Gillespie et al. 2013; Friel et al. 2018).

The CFS has played a revived role in international policy discussions and interactions between different (UN, member state, civil society and business constituencies) and has often focused on the drivers of FSN inequalities. Reports produced by the HLPE-FSN are the starting point for the development of various policy products and recommendations. There is limited documented evidence or systematic monitoring on the influence of these products, including the frequency with which they are translated into policy in other UN bodies or in national governments (HLPE 15:39), but there are a number of positive areas where HLPE recommendations appear to have wide acceptance, including for example, the CFS Principles for Responsible Investment in Agriculture and Food Systems, with a formal review forthcoming (HLPE 15:46).

Binding international treaties of relevance to FSN inequalities include multiple agreements now under the auspices of the World Trade Organsiation, as well as other important agreements and conventions such the UN Framework Convention on Climate Change and the UN Convention on Biological Diversity. International and national human rights frameworks are of particular important to a rights and equity based approach and are reviewed in further detail in chapter 5.

Geopolitics, ie. political and power differences *between* countries have shaped and continue to shape these international agreements. These can have significant impacts on FSN inequalities. For example, in chapter 2 a number of inequalities in global trade and agricultural subsidies can be traced to the Uruguay Round of global trade negotiations which concluded in 1994. Historical accounts have documented the power of a small group of countries shaping the outcome of the round, particularly the 'Quad' represented by the EU, US, Japan and Canada, with many developing countries feeling marginalised in their influence over the final text, despite veto power (Shaffer 2021). These inequalities were meant to be addressed in the Doha Development Agenda round of WTO negotiations, which arose from civil society and LMIC pressure for reform (WTO 2020). As the DDA was never completed, the Agreement on Agriculture and other WTO agreements of huge importance to the food sector, such as the agreement on Sanitary and Phytosanitary measures, still stand. A substantial body of research in public health has thus considered how the WTO agreements work to shape, collectively, the policy space for agriculture and food policy in countries that are signatories (Friel & Ford 2015). This can sometimes be out of step with public health goals with regard to addressing health and nutrition inequalities (see e.g. Thow & Hawkes 2009, Hawkes et al. 2009, Friel et al 2013).

To move from Ch2:

Inequality in trade and FSN implications: Power wielded by commodity trading firms

Inequality in trade and FSN implications; Power and policy space for developing FSN-relevant policies]

'Food regimes' analysis can underpin such an analysis of power and politics in the food system by taking global and historical view to understand the rules-governed structure of production and consumption of food on a world scale (Friedman 1993). Food regime analysis has examined the political history of capital to distinguish three specific political-economic periods of the global food system. Between the mid 19th and mid 20th centuries, the global food system was characterised by British hegemony and as 'free trade liberalism' (Friedmann 2005, McMichaels 2004). This time manifest as a period of agricultural extensification, whereby large tracts of land in settler states were taken over by industrial agriculture geared to provide cheap food for a growing working class in Europe and in doing so, consolidate British commercial dominance in the world economy. The second period, starting in the mid 20th century, was characterised by US hegemony and as 'embedded liberalism' (Ruggie 1982). This period manifest as a time of agricultural intensification, through green revolution technologies rolled out through US aid programs in the newly independent colonies. This new 'development project' served to legitimise the US, and her model of consumption as the ultimate, phenomenal, goal of development (McMichael, 2004a). Food regimes and other geopolitical work has also underlined the important role played by a broader geopolitically important institutions and processes which include both international actors such as the World Bank and the IMF and dominant bilateral actors such as the US. In the 1980s, for example, the International Finance Institutions pressured many developing countries to reduce agricultural subsidies and open closed markets to imports and foreign direct investment (FDI) as part of structural adjustment programmes tied to

debt relief. Again, these broader political and policy drivers have significant impacts on food system inequalities, including the degree of national sovereignty in deciding whether food and agriculture policy are primarily directed towards the need of smaller producers or urban consumers, or export earnings and liberalising food commodity imports (Clapp, 2020).

There remains some disagreement as to the nature of the most recent food regime, which can be characterised by corporate hegemony, financial liberalism, and as the 'globalization project'. This most recent regime manifests the immanence of capital, the expansion of commodity frontiers, the dispossession of fishers and farmers, and the reorganization of supply chains.

Fragility and Conflict.

Placeholder – will be added in v1

Justice for nature and injustices for nature as a driver of FSN outcomes

The concept of nature itself varies among cultures, knowledge systems, and traditions. In a Western worldview, humans are dominant over nature, and natural resources are for the benefit of humanity. The western worldview puts 'man' first and declares human beings superior to all living and non-living beings in the environment. However, within the context of other knowledge systems, it includes a more holistic, relational, and unifying approach to the natural environment (Carino, 2003). Indeed, in the worldviews and languages of many Indigenous and local communities, there is no separation between humans and nature but rather a unique understanding of nature as the feminine force and giver of life (Kimmerer, 2013). Such understanding is entrenched in Indigenous worldviews, traditions, and creation stories. An example is the Anishinaabe people of North America, in which Sky woman or Mother Earth is the physical manifestation and embodiment of creation, the sustainer of life, offering teachings on how to relate to the world and respect for all beings who live upon it.

Consequently, mother earth or the land is highly esteemed (LaDuke, 2003). Central to many Indigenous peoples is the belief that Mother Earth is their mother, a living entity that deserves respect, love, and care. In this regard, Mother Earth is not a commodity to be exploited but rather a sacred space where all human-human and non-humans flourish in a nurturing environment and ultimately promote the well-being and sustenance of humanity (Huambachano, 2020). For Indigenous peoples, nature — e.g., mountains, native crops, landscapes, wildlife, forms an integral part of ancestral heritage and identity, fostering connection to ancestors and moral responsibilities to future generations (LaDuke 1994; Lajo 2012). However, around the globe Indigenous communities continue to experience disproportionally high rates of food insecurity as a byproduct of settler-colonial activities, including forced relocation to rural reservation lands and colonial erasure of Indigenous knowledge and TEK. Direct results have been denial of access to growing and enjoying their ancestors' gifts—food—and the imposition of processed foods on their diets, which continues to imperil Indigenous peoples' s culture, identity, sovereignty, health, and well-being (Coté 2022, Huambachano, 2020).

Thus, restoring the health and well-being of Indigenous peoples and humans requires restoring the health of the land. One of those mechanisms for seeking justice for Mother Earth

is the “Rights of Nature” movement that advocates for all beings and deities residing on Mother Earth, such as rivers, lakes, and mountains have legal rights in the same manner as human beings. The Rights of Nature law recognizes that an ecosystem has the right to exist, flourish, regenerate its vital cycles, and naturally evolve without human-caused disruption. In 2009, the UN General Assembly proclaimed April 22 as “International Mother Earth Day” and adopted its first resolution on Harmony with Nature to express the Member states’ recognition of the urgency to rethink humanity’s relationship with nature, to live in harmony with Nature to ensure a sustainable planet for the next generation. In recognition that Championing the Rights of Mother Earth in South America, the governments of Ecuador and Bolivia have taken the lead in advocating for it to the extend to include it in their constitutions (Becker, 2011; Peña, 2008; SENPLADES, 2010; Zibechi, 2010).

Climate Injustice and FSN outcomes

Climate change is increasingly driving negative food and nutrition security outcomes, both through impacts on the food systems and on economic, environment, and social systems on which people depend to meet their food security needs. These impacts are not equally distributed and so climate change is also exacerbating existing inequalities in FSN outcomes.

The negative and unequal impacts of climate change are projected to increase in severity as the rate of climate change increases. In recent years, climate scientists have raised concerns about key tipping points in climate change being breached (Armstrong McKay *et al.*, 2022; Lenton *et al.*, 2019; Wunderling *et al.*, 2021). The HLPE has therefore identified “Revitalising climate policies for food security and nutrition” as one of its seven Critical, Emerging and Enduring issues on which to focus (HLPE, 2022b)

Climate change exacerbates inequality in FSN outcomes at multiple scales. In 2001 the IPCC drew attention to the unequal distribution of impacts of climate change, concluding that here is high confidence that developing countries will be more vulnerable to climate change than developed countries (IPCC, 2001). The World Bank estimates that climate change will drive 68 million to 135 million into poverty by 2030. These newly poor people will be concentrated in sub-Saharan Africa and South Asia, the regions of the world with existing concentrations of poverty (World Bank, 2020). The countries that have contributed the most historically and currently to climate change are largely countries in the global north, so far less impacted directly by climate change and more capable of both adaptation and mitigation (Bruckner *et al.*, 2022). As a result of this inequality in causing climate change and the inequality in experience of climate change, calls for ‘climate reparations’ were brought to global attention COP 26 in Glasgow (Nevitt, 2021). The most recent IPCC report highlights the need for the principle of equity to be build into climate change responses (Allen *et al.*, 2022).

However, these inequalities in outcome do not only operate at regional scale. The impacts of climate change are highly vulnerable within countries with different population groups and geographies experiencing different vulnerabilities (Schneider *et al.*, 2007). These variable impacts are often the result of existing inequalities. Islam and Winkel, (2017) argue that the relationship between climate change and poverty is characterised by a vicious cycle, in which “*initial* inequality causes the disadvantaged groups to suffer *disproportionately* from the adverse effects of climate change, resulting in greater *subsequent* inequality.” The identify three main channels “through which the inequality-aggravating effect of climate change

materializes, namely (a) increase in the *exposure* of the disadvantaged groups to the adverse effects of climate change; (b) increase in their *susceptibility* to damage caused by climate change; and (c) decrease in their *ability to cope and recover* from the damage suffered."

The World Bank has identified a number of population groups more vulnerable to the impact of climate change, namely: female-headed households, children, persons with disabilities, Indigenous peoples and ethnic minorities, landless tenants, migrant workers, displaced persons, sexual and gender minorities, older people, and other socially marginalized groups. The Bank argues that "the root causes of their vulnerability lie in a combination of their geographical locations; their financial, socio-economic, cultural, and gender status; and their access to services, decision-making, and justice." (World Bank ND. https://www.worldbank.org/en/topic/social-dimensions-of-climate-change#1). Climate change has also affected exploited marine species through changes in species distributions and productivity, in turn altering catch composition (Cheung et al. 2013; Bindoff et al. 2019; Free et al. 2019). These climate impacts are projected to continue through the 21st century, tracking closely with emitted greenhouse gas levels (Cheung et al. 2016; Lotze et al. 2019). Mariculture will also be affected by climate change through, for example, changes in environmental conditions, risks of diseases, harmful algal blooms and feed supplies from wild fish stocks (Oyinlola et al. 2018; Davis et al. 2015; Tacon et al. 2008; Naylor et al. 2021).

Food system distributions can also result from natural variations in resource endowments (Levkoe 2017, Sumaila 2015). For example, the size of a countries' Economic Exclusive Zone, the amount of fresh water available, amount of high-quality land suitable for crop production, average temperatures, temperature range will all influence the type and amount of food a country can produce. Societies have historically adapted to these changes. However, global geopolitical processes such as colonization, globalisation, and corporate concentration have created a disconnect between many peoples and their traditional, climate sensitive food systems. While climate change is clearly exacerbating poverty and increasing inequality generally, it is impacting FSN outcomes by impacting the food system and by concentrating household and individual vulnerabilities.
Work on the impact of climate change of the food system has tended to have a productionist bias. In their review of papers on climate change and food security from 1990 to date of publication Wheeler and von Braun (2013) found that 70% of papers focused on the availability dimension of food security. However, the impacts of climate change are felt within all components of the food system (Battersby, 2012). Fanzo *et al.*, (2018) identify climate change impacts and potential points for intervention within food supply chain inputs, food production, post-harvest storage and processing, distribution, marketing and retail, food consumption and utilization, early warning systems, and evidence for and inclusion of (food security and)nutrition in climate research (Fanzo *et al.*, 2018)

Components of the food system which offer livelihoods to poor populations and are most commonly used for food security by poor populations have higher vulnerability to climate change. Small scale and informal actors are often limited in their capacity to respond to extreme weather events through poor access to climate information, insurance against lost, and capital or loans to recover. Additionally, they may be more vulnerable to extreme events through poor cold storage and other infrastructure, which increases spoilage.

As noted above poor populations have particular vulnerabilities to climate change, which increase unequal FSN outcomes. These are not just driven by their engagement with the food system, but with a set of "cascading impacts" where climate change intersects with biophysical, economic, social systems to drive FSN inequalities Salm *et al.*, (2021)map out the multiple pathways of climate change shaping nutrition outcomes.

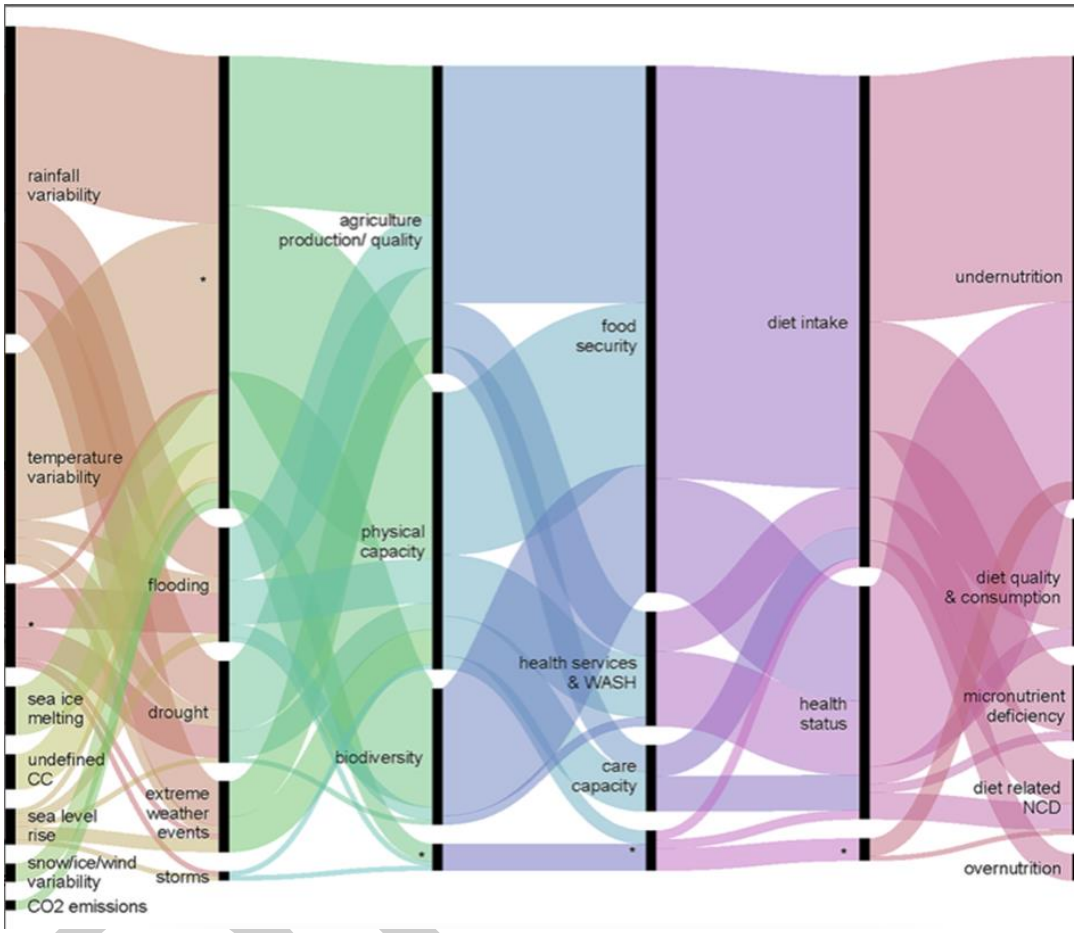


Figure X Pathways of interaction from climate change to nutrition outcomes. (Salm *et al.*, 2021)

While climate change contributes to FSN inequality, it is also just worth underlining the fact that the food system is a significant contributor to climate change. One recent calculation found that the food system accounted for 34% of total global greenhouse has emissions (Crippa *et al.*, 2021). The 3rd HLPE note on critical, emerging and enduring issues identifies a number of activities along the food system from production to consumption that exacerbate climate change (HLPE, 2022b). Most of these impacts are derived from large scale, industrialised components of the food system, again highlighting unequal drivers of climate change.

Finally, it is important to note that socioeconomic inequalities have themselves been identified as a driver of climate change (Green and Healy, 2022; Holmberg, 2017).These multiple interconnections indicate a strong multidirectional relationship between climate change, food security and nutrition and inequality, operating at different spatial and temporal scales and interaction to have intersectional effects on inequality in FSN outcomes.

Box x: Climate justice as a tool to analyse FSN inequalities – the case of the Lower Mekong

Climate justice fundamentally is about paying attention to how climate change impacts people differently, unevenly, and disproportionately, as well as redressing the resultant injustices in fair and equitable ways (Sultana, 2022). For example, the Lower Mekong is biologically diverse, economically important, and home to about 65 million people. The river connects six countries in the SEA region including China, Myanmar, Laos, Thailand, Cambodia and, Viet Nam but the lower Mekong River Basin overlaps excludes China. The Lower Mekong region has undergone extensive environmental changes since the 1990s due to such factors as agricultural expansion and intensification, deforestation, more river damming, increased urbanization, growing human populations, expansion of industrial forest plantations, plus frequent natural disasters from flooding and drought. The Mekong River is also heavily used for human transportation, fishing, drinking water, and irrigation. Over the last twenty years, the area has come under urban intensification, with rural areas and foodscapes under threat (Spruce *et al.*, 2020) and significant land use change. A climate justice framework helps us to think about and address these inequities. Climate justice scholarship (see (Sultana, 2022; Whyte, 2015)Gardiner, 2011) demonstrates how climate change is a moral and justice issue. These rivers communities are distinct in that their lives are changing due to governmental decisions on the management of the river (upstream and downstream dams), migration, and various environmental factors, including coastal collapse (Zalinge *et al.*, 2003; Smith *et al.*, 2017; Golden *et al.*, 2019). The livelihoods of those who depend on the Mekong river are transitioning. Declines in fish populations and natural resources are making life more difficult for some people living along the rivers. This situation has been increasingly severe due to extensive hydropower development in the Mekong basin, which has destroyed fisheries, reduced productivity of local farmers and altered flow regimes that people rely on for livelihoods. With environment and climate changes and hydropower development, the food environment of the Mekong is becoming less predictable for food security needs of those that rely on it. Consistently, it is the more marginalized groups that feel the impacts of both climate change and dam development in this region – Indigenous and rural fishing communities. A "top down" approach is taken as it relates to decision-making on damming and climate change adaptation (Barrington, Dobbs and Loden, 2012). Transboundary governance is inadequate and urgent calls have been made for transparent and timely data sharing on dam development, water levels and rainfall (MRC, 2021) A consultative, more inclusive, participatory and transparent approach is paramount. Thus, climate justice urges humanity to pay attention to how climate change impacts people differently, unevenly, and disproportionately and works toward reducing marginalization, exploitation, and oppression and enhancing equity and justice.

Innovation and technology

Developments in science and technology have been hugely important for boosting both agricultural yields and the growth of incomes in many low and middle income countries, particularly those who have benefitted from the development of 'green revolution' technologies such as new high yielding varieties of key staple crops, new inputs such as pesticide and fertilisers and investment and innovation in irrigation technologies (Pingali 2012). But these improvements have come at as social and environmental cost (ibid., Shiva 1991).

Green Revolution projects mostly between 1960s and 1970s caused a dramatic increase in high-yield seeds **e**specially wheat and rice). The green revolution as a package was heavily promoted by large aid donors, including the US, the FAO, the Rockefeller Foundation, and the Ford Foundation. In addition, the 'food aid' regime aided the green revolution project in which countries receiving US aid often used counterpart payments to pay for seeds, chemicals, and fertilizer packages (McMichael, 2008). The original Green Revolution involved an introduction of newly-developed wheat and rice seeds into Latin American countries and South-East Asia (Howard, 2009; Timmer, 2015). These seeds were more efficient and capable of producing much higher yields when harvested with adequate water and fertiliser. As a result, overall output in Asia grew at an annual rate of 2.9 percent during the 1980s and 1990s, compared with an annual rate of 2.1 percent before the new varieties were introduced in 1965 (Altieri, 2009; McMichael, 2010). The economic success of the Green Revolution in producing basic grains to meet population demands has led to improving other varieties of root crops such as cassava (Patel, 2013; Woodhouse, 2012).

Numerous highly technological and scientific research projects on food security have, for this same purpose, considered post-harvest technology (CGIAR, 2012a; Heinemann et al., 2013), biotechnological techniques (International Rice Research Institute (IRRI), 2013[1][1]), and genetically-modified organisms (GMOs) (Howard, 2009; Robin, 2013; Schwartz, 2013). Despite offering remarkable economic gains, the new seeds of the Green Revolution were surrounded by political controversy because, through the use of scientific resources, the biology of traditional seeds was altered (De Schutter & Vanloqueren, 2011; Friedmann, 2005). This controversy, highlighted inequities on vulnerable societies and minority groups such as peasant, Indigenous peoples, and peoples of color. In a comprehensive study of the global seed industry, Howard (2009) pointed out that the intensification of investments in GMOs among Indigenous food crops, such as maize, with the aim of increasing agricultural production, have shaped the seed industry wherein scientific and high-tech farming have come to dominate the global seed industry (Howard, 2009; La Vía Campesina, 2011a; McMichael, 2010). Notably, the seed industry is controlled by just four companies (Bene 2021:5, citing IPES 2017, Mooney 2018), which have control of seed patents of large Indigenous crops such as corn and potatoes (Kloppenburg, 2010b; Howard 2009; Wittman et al., 2010). The seed and food monopolies by multinational corporations offered no real possibility for peasant and Indigenous peoples' rights movements to grow healthy and culturally nutritious foods (Wittman et al 2010).

Demographic and health factors

Population policy as a driver of inequity and equity

Population growth will drive demand for food and other resources (Bedddington et al. 2011). But fears of a 'population explosion' leading to famine and food insecurity have

[1] C4 Rice Project: This project uses cutting-edge science and biological technologies to discover genes that will boost rice production. The Bill and Melinda Gates Foundation provide funds to the IRRI (IRR, 2013). http://c4rice.irri.org/

often underlain broader narratives on food security and nutrition in ways that have led to poorer populations bearing the brunt of repressive policies, since they were first eviced by the 18/19th century demographer and economist, Thomas Malthus. Social and historical research has documented how population control measures have been applied to marginalised communities and/or have been used as means of control and repression of women in particular (Packard 2016; Carter 2018; Hartmann 2016). Contemporary demographic research has long highlighted how such repressive measures are unnecessary, as total fertility rates (TFR) will decline in line with pro-poor income growth and female literacy and education (PRB 2011). Education alone has benefits both for women's empowerment, equality and for nutritional and wider health outcomes for both mother and child (PRB 2011; Black et al 2013). Delayed pregnancies and birth spacing also supports improved nutrition and health outcomes for mother and child with potential intergenerational benefits (Kozuki ref).

Public health and disease

The Covid-19 pandemic has significantly affected food and nutrition outcomes in ways that are still being charted. Generally it is thought that while supply was largely resilient (OECD 2021), a number of failures along the supply chain in countries facing restrictions may have exacerbated food and nutrition insecurity and broader inequities (Bene 2020, Ebata et al. 2021; Salm et al 2022) and that this combined with wider economic and livelihood shocks to significantly increase hunger in many countries, adding an estimated 150 million people to those who are hungry, according to the FAO (SOFI 2022).

Other aspects of public health and the disease profile of populations more broadly can have a significant impact on food and nutrition security, not just during times of public health emergencies such as pandemics. Not only are HIV and AIDS, for example, a driver of poverty and vulnerability, but the risks of catching HIV and AIDS are higher for vulnerable population, including, for example, children who are subject to abuse, sex workers and highly transient populations such as truck drivers. People living with HIV and on anti-retroviral treatment can also experience increased hunger and hunger pangs, the effects of which can have significant effects on treatment adherence (De Pee & Semba 2010). Malaria is another infectious disease which has significant and well known-feedbacks between nutritional status and disease, requiring co-treatment and prevention to take into account both malaria and nutrition in endemic areas (Das et al 2017, Oldenberg et al 2018. Overall, infectious disease – AIDS, malaria, measles, diarrhoea and pneumonia – account for more than half all-under-five deaths and there exist a strong relationship between malnutrition, infection, and mortality (Perin et al 2021). Infectious diseases leads to low appetite and to children becoming underweight and weakened, depressing immunity, leaving those with the disease vulnerable to further infections and malnutrition (Katona and Katona-Apte 2008). Infrastructural deficiencies such as poor access to water, hygiene and sanitation (WASH) can increase the risk of infectious diseases such as diarrheal disease.

While the COVID-19 was the first recent *pan*demic, other recent disease outbreaks provide further lessons on the interaction between disease, livelihoods, poverty and food and nutrition security. For example, delivery of health services was significantly affected by the

outbreak of Ebola in many West African countries, particularly facility or community based services associated with nutrition outcomes such as malaria prevention and immunisation (Mæstad, & Loha Shumbullo 2020). Similar effects were felt during the COVID-19 pandemic where, whether because of illness of health staff, government restrictions or lockdowns or health services needing to prioritise the care of people with COVID-19. Routine and important preventative services, including antenatal care, childhood vaccinations and infant and young child feeding (IYCF) advice were paused in many countries, alongside some important safety nets such as cash or food transfers, with significant effects on health, nutrition and food security (UNICEF, n.d.)

Summary

This chapter has highlighted some of the ideas and institutions that run across the broader food systems drivers described in earlier HLPE reports [HLPE 12/15] and how they subsequently impact on some of the food system drivers described in chapters 2 &3. Some key ideas shaping both societies and food systems emerge from social and cultural norms and beliefs and are also at the heart of some of the injustices faced by those most marginalised. These include, for example, patriarchy, racism and ableism. But the ideas and institutions driving system inequalities also include more distinctly political ideas such as authoritarianism, communism, colonialism or neoliberalism. Whatever the political system, the exploitation of nature as an expendable resource to be used for the benefit of economic development—often in direct opposition to ideas at the core of Indigenous TEK--has also been a presiding theme. These ideas matter deeply for food systems: once an idea such as patriarchy or racism is dominant, it is institutionalised and can permeate every decision from who eats what and when in a household, to who benefits from broader societal opportunities which shape education, livelihoods, incomes and, in turn, food and nutrition outcomes.

Along with these big 'ideas', the most powerful actors and institutions shaping global systems – and in turn food systems—have also been highlighted. Shifting geopolitics in global agriculture negotiations, for example, reveal the continuing power of traditional large countries and exporters coupled with the rise of new powerful geopolitical players who are exercising their ability to shape or halt global trade rounds. Men still hold positions of power in many institutions of governance and in corporate boardrooms, and in some countries these same actors may also belong to a more dominant ethnic or linguistic group, or are unlikely to have experienced living with a disability. These corporations now hold oligopolistic control over many functions of the food system from seed development to retail (Bene 2021). Such lack of representation and participation, highlighted in chapter 1's framework, will not lead to food systems shaped in the interests of the most marginalised or even the average citizen-consumer, particularly when health and sustainability factors are taken into account.

Finally a number of broader drivers of food system outcomes (HLPE 2012, 2015) have also been examined here and which include science and innovation, broader aspects of demography and health and the role of climate change. These important domains of policy and action include similar drivers of injustice and inequality which begin in social, cultural

and political ideas, the institutions that emerge from them and the actors which control them.

How does this analysis help move forward into the actions that are outlined in chapters [5-6?]. By embracing agency, sustainability and the need for transformative processes in the face of immense challenges caused by the interaction of these socio-natural systems, the shift in the definition of food and nutrition security first posited by HLPE 15 points to ways forward that put people and nature at the centre, harnessing, rather than enslaved to, new knowledge and technology and production pathways. This is a major shift in the way the global food systems operate and requires attendant changes in the drivers we have outlined here. Only by focusing on how resources, benefits and costs are distributed, alongside recognition of the diverse experience and knowledge of different social groups and the forms of injustice they have experienced; coupled with adequate representation and participation of people in the political processes that affect them (particularly but not limited to food system policies) will we achieve better food security and nutrition for all.

Chapter 5. Actions to reduce inequalities in food and other systems to improve FSN

Introduction

The preceding chapters have laid out the inequality and inequity issues – within food systems, in related systems, and in broader social structures – that shape the FSN experiences of different populations. The following two chapters lay out actions to address these inequalities and inequities. Drawing on the conceptual framework (Figure 1.1), these actions aim to address structural equity drivers, system inequalities, or FSN inequalities; through distributional, recognitional, or representational approaches.

Chapter 5 considers largely distributional actions that can be taken within the agri-food sector and other FSN-relevant sectors to reduce disparities in FSN. As such, these actions are often targeted at specific sources of inequality or parts of the food system and related areas, and are bounded in scope. In turn, Chapter 6 considers the more fundamental socio-political transformations required to secure broad-based and long-lasting transitions towards equitable FSN.

Throughout both chapters there is a focus on three fundamental issues in defining and designing action: The need to focus on agency as a key mechanism for achieving equity and equality; the need to address power in sustainable actions on equity and equality; and the need to adapt any action to the context in which it is being applied. This and the next chapter provide evidence-based ideas, examples and case-studies for effective action on inequity and inequality, but policymakers, activists and other actors will have to work on adapting these to the particular socio-political contexts in which they work.

In the next section, we discuss broad principles for crafting actions to reduce inequalities and inequities, and outline an equity-sensitive policy process. In the subsequent section, we present a series of recommended inequality-reducing actions and explain their rationale and how they may be developed to reduce inequalities and improve FSN.

Principles of designing equity-specific actions

Focus on agency

HLPE 15 adapted the established food systems framework (HLPE, 2017)and pillars of food security to emphasise two crucial issues: sustainability and agency. Agency (defined in Box 5.1) is a vital concept for addressing inequalities and inequities, as outlined in Chapter 1. Fundamental to addressing the distribution issues in the 'engine of inequity' are recognition of the views, needs and preferences of different groups; and the genuine representation or participation of different groups in deciding on actions most appropriate to different contexts: Crucial aspects of agency. Thus the idea of agency as fundamental to defining and enacting solutions to inequalities in FSN, and is a thread that runs through the actions on equity and equality below. Groups of particular importance to focus on include women, children, the poor, marginalized social groups (Indigenous Peoples, ethnic and religious minorities), refugees and, people with disabilities.

Box 5.1: Defining agency

From HLPE 15: Food security and nutrition: Building a global narrative towards 2030

"*Agency is widely accepted as a key aspect of the development process (Kabeer, 1999; World Bank, 2005; Ibrahim and Alkire, 2007). Agency is defined by* (Sen, (1985*, p.203) as "what a person is free to do and achieve in pursuit of whatever goals or values he or she regards as important*." Agency goes beyond access to material resources in that it includes empowerment— the ability of people to take actions that help improve their own wellbeing, as well as their ability to engage in society in ways that influence the broader context, including their exercise of voice in shaping policies (Alsop and Heinsohn, 2005).

Address power

As noted in HLPE, (2017) "power asymmetries are a fundamental obstacle preventing action towards improved FSN outcomes through food system transformation" (p.112). The role of power asymmetries in food systems, and in the local, national and global structures and societies which make up the food system, has been much discussed (Leach *et al.*, 2020); IDS Bulletin 2019). These range from the concentration of power in global agribusiness, limiting the choices of those who work in and eat from global food systems (Clapp; Howard) and leading to conflict of interest in policy processes (Walls); to historic power imbalances through colonialism that skew power in global trade negotiations on food (Nisbett and Thow; Friel, Schram et al. 2020; Rosset 2006) and in land access and rights; to power dynamics in communities that limit or shape the participation of different groups in food systems and broader social processes.

It has been suggested that issues of power in global development, food and nutrition need to be better acknowledged (recognising that these dynamics exist), assessed (researched or documented to understand who is affected and how), and addressed (using inclusive and context-specific solutions to empower those without power, and limit power of those working against equitable FSN outcomes) (Walls; Leach 2020). Acknowledging power disparities chimes with the recognitional piece of our equity framework. Assessing power is covered in the section on data and evidence; and addressing power is covered throughout chapters 5 and 6.

Adapt to context

HLPE 15 (2020) emphasises the need to acknowledge the diversity of situations across and within countries, and to propose actions that are context-specific, because food systems are situated in different environmental, political, sociocultural and economic contexts and face diverse challenges that cannot be foreseen in their entirety at the global level of reports such as these. As noted throughout this report, context is imperative to consider to be able to understand the magnitude of FSN inequalities, the key drivers in inequality and inequity and ultimately, tailored policy to promote equity and equality. It is what makes recommendations for action complex as no one policy action or set of actions can be adopt wholesale without considering context. (HLPE, 2020) acknowledges that actions must combine the technical and

political with the local; involve relevant actors at different scales equitably; and combine local and incremental change with broader structural change as appropriate to the situation.

Agency, power and context are therefore crucial and interacting aspects of action to address the inequities and inequalities underlying unequal experiences of FSN and food system opportunities. Each of the broad options outlined below address agency (in terms of ability to make choices in accessing services or make decisions on livelihood preferences, for instance); power (in terms of participation in making decisions that affect different groups of people or to claim accountability, for instance); and context (in terms of adapting action to the needs of different places and populations, for instance). These are broad guiding principles for making action equity sensitive.

Create equity- and equality-sensitive policy

There has been much discussion of making policy nutrition-sensitive, to incorporate consideration of nutrition into relevant policies across sectors (Ruel 2013). It has also been proposed that policy needs to be equity-sensitive, incorporating consideration of distribution, recognition, and representation into policies (across the board, including those affecting FSN) (Nisbett, Harris et al 2022). With a view to context-specificity, a process is outlined below for creating equity- and equality-sensitive policy

Several processes have been outlined as ways of making policy equity-sensitive. The World Health Organisation (2014) focuses on inequalities, and suggests focusing on addressing the health (or FSN) outcomes of the most disadvantaged; reducing the gap between the most advantaged and the most disadvantaged; seeking to flatten the gradient across the whole population; and ensuring that policy choices to not make inequalities worse. Others have focused more on equity, suggesting designing equitable policy through careful power-sensitive participation, explicitly including alternative voices in thinking and action to sensitise policy spaces and systems that affect marginalized groups (Cornwall, 2003).

These processes have been combined into a suggested process in Box 5.2. While these are general principles that can be followed to create a more equitable policy process with the aim of more equal FSN outcomes, the ultimate policy solutions – and the equitable policy processes needed to determine these – need to be worked out in national and local contexts according to the existing equity situation (Marmott 2008).

There are different tools that can be used to facilitate such a process with an equity lens:

- The Scaling Up Nutrition Multi-Stakeholder Partnership Toolkit provides guidance on bringing different voices into discussion spaces, and how to facilitate this: https://msptoolkit.scalingupnutrition.org/
- The Participatory Methods website provides tools and ideas on how to facilitate the participation of different groups in development processes: https://www.participatorymethods.org/authors/participation-group-ids
- The Power Cube website provides tools and resources for strategizing and acting in ways that are sensitive to the different forms of power that play out in policy and development processes: https://www.powercube.net/strategize-and-act/

Box 5.2: An equity-sensitive policy process to adapt to local contexts

Understand the issue with an equity lens

1. Understand inequality data and evidence
    a. What are the key FSN issues, and how bad?
    b. Who is affected? Which population groups are worst affected?
2. Understand the equity context
    a. What do we know about the drivers of the FSN issues in this context, particularly people's daily living conditions?
    b. How are these shaped by social assumptions about different groups?
3. Bring together key groups most affected by the FSN issues
    a. How do they characterise the FSN issues affecting them, and their drivers?
    b. What are their proposed solutions? What are differences among proposed solutions?

Define equitable policy or action options

4. Define together a process to agree on options to select
    a. What are existing governance or institutional arrangements that might shape action options?
    b. What capacities are available to create change?
    c. How do power dynamics play out to shape options for change?
5. Consider the evidence in light of the preferences of the most affected groups
    a. Think about what needs to change to address the issue in the most sustainable way
    b. Think about whose priorities are considered and whose are not
6. Consider intended outcomes from change
    a. Focus on improving the issue for the most affected groups first; then about reducing the gap between the most and least disadvantaged; and then flattening the gradient across the whole population.
    b. Think about equity trade-offs and synergies likely from proposed changes
    c. Think about other related outcomes that might need to change
7. Consider different population groups
    a. Think about who else will be impacted by any proposed changes – who would be winners and losers from proposed changes?
    b. Can the proposed action make inequities worse for any groups?
    c. How can more power be taken by the most affected groups to create change?

Support equity education and accountability

8. Ensure that affected populations are supported to learn about FSN and equity issues, and any rights or entitlements they have under current arrangements
9. Ensure that any accountable agencies or organisations are clearly identified, for proposed changes
10. Ensure that effects as a result of change are tracked
    a. Ensure FSN outcomes are tracked with data disaggregated by different populations, particularly those identified as most affected
    b. Ensure that the changing experiences of those most affected are considered
    c. Ensure that evidence and experiences are used to improve the process

Actions to reduce inequalities for FSN

We present here a series of highlighted actions to reduce inequalities in food and other systems to improve FSN. Of course, it is not possible to detail all possible relevant interventions (and those that are detailed here need to be adapted to context). Rather, we highlight a set of actions that hold significant potential for reducing some of the key inequalities described in chapter 3. These actions span different segments of the food system and surrounding areas. Several of these actions are also synergistic with each other in terms of reducing important inequalities. Apart from their importance in their own right, the outlined actions also serve as examples for the principles outlined in the previous section.

The table below lists the actions and the major inequalities that they address. Subsequently each of these actions is examined in detail.

Table 5.1 Actions and the inequalities they address

Actions	**Inequalities addressed**
Equalize access to food production resources	Unequal access to resources; Insufficient access to finance; inability to participate in value chains.
Develop inclusive farmers' organizations	Insufficient access to inputs and finance; inability to participate in value chains; unequal power in value chains
Boost public agricultural research and other rural public investments, with particular attention to the needs of disadvantaged groups	Regional inequalities and remoteness; Uneven prioritization for technological development.
Adapt inclusive value chain approaches to the local context to improve participation and outcomes of disadvantaged groups in value chains.	Inability to participate in value chains; unequal power in value chains.
Incorporate territorial approaches in food systems and regional development planning and policy	Regional inequalities and remoteness; inability to participate in remunerative value chains
Invest in storage, transport and market infrastructure with special consideration for disadvantaged groups and territorial considerations	Regional inequalities and remoteness; mitigating the inequalities of trade within populations

Invest in Information Systems across the food system, leveraging digital technologies	Unequal access to information; unequal power in value chains; regional inequalities and remoteness
Food retail environment planning, comprising: 1) food retail intervention beyond the supermarket 2) proactive food retail planning 3) incorporation of informal sector actors 4) food retail interventions to support vulnerable groups.	Unequal access to healthy, affordable, nutritious food; power imbalances within the retail sector
Universal Health Coverage with integration of nutrition care (preventative and curative)	Unequal access to health and nutrition services
Food and nutrition sensitive policy, planning and programming	Inequalities in other systems that interact with food systems to determine FSN.

Equalize access to food production resources

Chapter 3 discussed the large inequalities present in the access to and control over major food production assets including land, livestock and fisheries and the significant impediments these inequalities pose to all six dimensions of FSN. Here, we discuss some important approaches to alleviating these inequalities.

Land: As the most fundamental of food production assets, with its largely fixed supply and economic, socio-cultural and political significance, reducing inequalities in access to land is as challenging as it is important. Important fundamental principles for action in this area as put forth byAnseeuw and Baldinelli Maria, (2020) include i) ensuring any action is appropriate to the local social context and has widespread support; ii) action is embedded in a fully participatory process, in particular leveraging key third sector organizations and local institutions best placed to navigate local power structures; iii) going beyond ownership to full consideration of access and control, having consideration for groups that face particular disadvantage, including women, indigenous groups and the poor. Iv) ensuring that action towards reducing land inequality is not standalone, but rather embedded in a larger set of inequality-reducing actions in the food system, such as promoting inclusive value chains, agroecological approaches and territorial markets described in other sections or chapters.

Contextually appropriate regulation must be devised to strike a balance between the benefits and pitfalls inherent in the operation of land markets. On the one hand, secure tenure and well-functioning land markets can encourage transfers in the direction of the most productive use of land, encourage investment in the land and help provide collateral for finance (Deininger, 2003). On the other hand, unregulated land markets often become instruments of exclusion and concentration, and regulations such as limits on foreign ownership, legal

protections for renters and rights of first refusal must be considered (Anseeuw and Baldinelli Maria, 2020).

Action to bolster women's land rights, including legal recognition and inheritance rights is critically important to improving gender equality both within and outside the household, and thereby to improving FSN. This does not have to imply titling – programmes undertaking formal recognition and documentation of rights that are inclusive of women, such as Ethiopia's rural land certification programme (Deininger *et al.*, 2008)and Rwanda's land regularization programme (Ali, Deininger and Goldstein, 2014), can have powerful impacts. At the same time, it must be kept in mind that legal recognition or titling alone may not imply adequate *control* over assets for women in many settings (Harris-Fry *et al.*, 2020), and that further work on adaptation of social norms and attitudes will be needed (Anseeuw and Baldinelli Maria, 2020).

Protecting collective land tenure rights that are vital to the food security and nutrition of large numbers of vulnerable communities around the world requires priority action. Ongoing efforts to recognize and protect customary land rights of Indigenous People through mapping and documentation exemplify such action(Guereña and Wegerif, 2019). Free, Prior and Informed Consent (FPIC) must be enshrined in international law for Indigenous People so that the implementation of land projects is fully subject to community consent (Anseeuw and Baldinelli Maria, 2020).

Measures to significantly improve transferability, accountability and local/community consent with respect to corporate and international land acquisitions are urgently needed. Anseeuw and Baldinelli Maria, (2020)note that although voluntary guidelines such as the Principles for Responsible Investment in Agriculture and Food Systems (RAI) exist, there are major gaps in their translation into practice. One approach to improving transparency and accountability is for countries to mandatorily require project and company-level data on large-scale land investments. Such data would include information on investors, contractual details, consultation details, displacements of people, *etc.* and would be made available on public datasets such as Landmatrix.org (Flachsbarth *et al.*, 2020).

Finally, although the momentum for the historically most substantial and most studied land equalization policy, land reform, has shrunk considerably, it is important that efforts be made to learn from previous experience, so that improved land reform options remain on the table when social and political conditions permit (Anseeuw and Baldinelli Maria, 2020).

As discussed in chapter 3, livestock present a less challenging entry point for asset equalization, especially in terms of access and control opportunities for women. Livestock transfers to small farmers are a commonly applied action to achieve greater parity in livestock assets and potential for improved animal source food consumption (Rawlins *et al.*, 2014)as well as participation in value chains and market sale. Yet, they also present their own challenges, such as the propensity for male capture of livestock commercialization opportunities. From gender equality and FSN perspectives, small livestock programmes have shown particular promise. For example, women in Indonesia express a preference for small livestock with regard to household food security objectives (Wodajo *et al.*, 2020). The greater propensity for male control over higher value species makes small livestock programmes particularly attractive from a gender equality perspective (IFAD and ECG - Advantage Series, 2021). At the country level, taking a long-run, strategic approach to livestock development,

with smallholder and gender equity aspects embedded at the heart of the strategy, is advisable. ILRI has been working with countries to develop Livestock Master Plans that enshrine such an approach (ILRI, 2021)

Develop inclusive farmers' organizations

Several of the most acute food systems inequalities discussed in Chapter 3 come at the early stages of food supply chains, and in particular involve disadvantages faced by small compared to larger farmers. These disadvantages include inadequate food production resources to sustain food security and nutrition, financial and informational exclusion, and inability to take advantage of modern value chain opportunities. Collective action via formal grouping of farmers offers a pathway to surmount some of these inequalities and exclusions, and various types of Farmers' Organizations (FO) have accordingly emerged, including cooperatives, marketing groups, self-help groups, finance associations, producer companies, and various combinations of these.

Depending on their orientation, FOs can offer various mechanism for improving participation, inclusion and power of small farmers. Cooperation in production can pool technical knowledge and help with natural resource management, e.g. water management across contiguous farms. Collective marketing can lower transaction costs especially of small farmers (e.g via shared transport to the market), increase bargaining power with market buyers, and increase returns and lower risk by providing market information and seeking out stable markets. It can also help overcome the scale problem in supplying to modern value chains. External suppliers of services to farmers also realise cost advantages in delivering at a group level rather than to individual farmers. For example, providing extension services at the level of a collective is cost-effective compared to reaching individual farmers (Bizikova, *et al.*, 2020). In some countries, governments find it advantageous to deliver special programmes to farmers via FOs – for example, Zambia's Farm Input Subsidy Programme's (FISP) uses FOs to deliver fertilizer subsidies to farmers (Minah and Carletti, 2019). India has established a vast programme of Farmer Producer Organizations (FPO) and Farmer Producer Companies (FPC), many featuring a pipeline for delivery of government services to farmers.

FOs have had a mixed record historically. A review of studies of the FO experience in Sub-Saharan Africa and India found that the majority of studies reported an increase in income from participation, with marketing assistance and market information services showing the most consistent association with improved incomes (Bizikova *et al.* 2020). A smaller proportion of studies also recorded benefits to yields, production quality and/or environmental outcomes. Many reviewed studies did not explicitly study food security impacts. Of the ones that did examine it, some food security benefits were found, albeit not as strong or widespread as income impacts.

However, although FOs can be an important component of the portfolio of actions to reduce inequalities for FSN, they are not a panacea. Firstly, it is worth keeping in mind that unsuccessful FOs, especially those that have been withdrawn, are less likely to be studied. More importantly, historical experience with FOs suggests that although participation in FOs can help reduce inequalities (e.g. improved access to modern value chain opportunities), participation in FOs is itself often exclusionary (Bijman and Wijers, 2019; Chirwa, et al. 2005; Shiferaw *et al.* 2015). The review by Bizikova *et al.* (2020) finds access to land and other assets,

poverty, education and distance to market (remoteness) to be important determinants of FO participation. Gender is also a barrier, and FO participation can increase male control of resources within the household. Therefore it should not be assumed that FOs once functional will automatically reach disadvantaged populations and reduce inequalities.

For FOs to fulfil their potential with respect to reducing inequalities for FSN, it is important that their design pay explicit attention to inclusivity, thereby increasing representational equity. Some broad general principles are outlined in the equitable policy section. Specific considerations for FOs include:

1. As Shiferaw *et al.* (2015) note, careful consideration should be given from the outset to the balance between meeting business objectives and maximising inclusiveness. In some cases and in relation to some types of inclusion, a balance may be possible. However, there may be strong tradeoffs between efficiency and inclusion in other instances, and unrealistic expectations about meeting divergent objectives may threaten viability. There may also be tradeoffs between efficiency/return and participatory decision making within the FO. Thus careful groundwork to understand tradeoffs and develop realistic principles around inclusivity is important.
2. Additional interventions may well be needed to encourage the participation of marginalized groups targeted for inclusion. Some groups may be deterred by entry and/or membership fees, especially as such costs may come in advance of benefits. For example, Minah and Carletti (2019) report that non-affordability of FO fees was a significant factor in non-participation of some smallholders in Zambia's Farm Input Subsidy Programme. Timely financial support for specific groups may be a consideration in such cases. In some circumstances, the costs may be non-monetary, e.g. the opportunity costs of participation may be higher for women given their workloads and household responsibilities (Minah and Carletti, 2019). Carefully tailored additional interventions developed using participatory principles are likely to be important to encourage and sustain participation of disadvantaged groups.
3. The composition and operating principles of the group also need careful consideration. Larger FOs may reap greater economies of scale, but this may come at a cost of group cohesion. As the organization becomes more inclusive and is made of up more heterogeneous groups, decision-making can become more challenging and prone to domination by some sections, or democratic decision-making may find itself at odds with maximising group benefits. In some circumstances, FOs focused on specific marginalized groups may allow targeting and help maintain cohesion. For example, in India several states have made strong investments in setting up women's Self Help Groups (SHG) that have become the basis for a range of gender-targeted development programmes, with many SHGs taking on the functions of farmer or rural producer organizations. Prominently, in Odisha State, the women's SHG model is the cornerstone of the 'Mission Shakti' Department of the Government, and the vehicle for a huge range of livelihood and food security programmes.

Boost public agricultural research and other rural public investments, with particular attention to the needs of disadvantaged groups

Earlier chapters have described strong inequalities across space in FSN outcomes as well as their drivers within and outside the food system. Rural-urban inequalities are an important aspect of this, with the gap between urban and rural incomes and FSN outcomes continuing to widen, even in countries where rural poverty has been considerably reduced. Furthermore, even within rural areas, there are often wide gaps between regions, e.g. between high

potential, irrigated areas and low-potential, rainfed areas, or well-integrated versus remote areas. While subsides and other forms of support are often used by governments to bolster rural incomes, raising rural farm as well as non-farm incomes must be part of the long-term, sustainable solution (Byerlee, de Janvry and Sadoulet, 2009)

Agricultural growth is effective at reducing poverty (Christiaensen, Demery and Kuhl, 2011)and is also an important factor in reducing income inequality (Imai *et al.*, 2015). Rural public investments, including in agricultural research and rural infrastructure are important mechanisms for generating growth and improving rural incomes. It is important that countries not only invest in agriculture and rural areas, but also do so by striking a balance between high and low potential areas. Investment in high potential areas is important in ensuring food availability and keeping food prices low, while investment in low potential areas is particularly important from an equality perspective (Fan and Hazell, 2001).

We have discussed the importance of rural infrastructure investments in another section, but the role of publicly funded agricultural research merits special discussion. Agricultural research has been shown to be an important tool for fostering agricultural growth and reducing poverty (Pray et al, 2017; Thirtle *et al.*; 2003). While private R&D systems inevitably focus on technologies that skew towards wealthier producers and regions where significant returns are generated, the global public agricultural research system and the national agricultural research systems in individual countries are important for generating the equitable rural growth that is critical to reducing inequalities to improve FSN. Boosting public agricultural research is therefore an important tool for improving FSN-sensitive equality. While boosting productivity in historically important commodities will always be a component of public agricultural research, it is important that strong consideration be given to equity-sensitivity of the research portfolio, including investments in crops and livestock for marginal environments and low-potential rainfed areas and climate-resilient technologies for smallholders.

It is also important that agricultural research systems become more gender-responsive. Meinzen-Dick *et al.* (2010) outline some important aspects of this: i) incorporating gender equity into strategic prioritizing, which may lead to new areas of emphasis such as on crops or livestock particularly important for household FSN; ii) mainstreaming gender into all aspects of the research continuum, from priority setting to technology development to dissemination and evaluation; and iii) Incorporating gender-equity considerations into the surrounding enabling system, including policies and institutions.

Adapt inclusive value chain approaches to the local context to improve participation and outcomes of disadvantaged groups in value chains

Agricultural value chains are associated with a range of inequalities as described in chapter 3, including entry barriers that exclude smallholder farmers from remunerative markets, asymmetric power relations, and the tendency for men to control access to credit, assets, and markets. Inclusive value chain approaches aim to improve the market participation, equitable distribution of outcomes (e.g., profits and food availability) and agency of all value chain actors, regardless of gender, socioeconomic status and value chain role (UNIDO, 2011). While there is not a single recipe, the inclusive approaches developed over the last two decades generally fall into two broad categories (Devaux et al., 2016).

The first category aims to influence the institutions, rules and norms that produce risks and transaction costs for smallholders. Multi-stakeholder platforms (MSPs) (also 'innovation platforms' and 'Participatory Market-Chain Approaches') bring together diverse and marginalised stakeholders to contribute towards value chain decision-making (Barzola Iza et al., 2020; Devaux et al., 2018). Evidence from horticultural and livestock value chains in Sub-Saharan Africa and Latin America suggests that smallholder productivity, market linkages and income opportunities can be strengthened via the creation of strategic alliances in both directions, with upstream input suppliers and service providers as well as downstream buyers, the provision of financial support to assist with the purchase of productive assets (e.g., grants or low-interest loans), and the involvement of local actors who share new information and ideas (e.g., researchers and practitioners) (Devaux et al., 2009; Donovan & Poole, 2014; van Ewijk & Ros-Tonen, 2021). This process of co-learning has led to various value chain innovations with positive livelihood and food security implications, including improved packaging for sweet potatoes in Uganda (Horton et al., 2022) and access to new potato markets for smallholders in Ecuador (Cavatassi et al., 2011)

However, while multi-stakeholder platforms are often promoted as a means to increase inclusion and agency, there has also been substantial critique of the role of these platforms at global and local scales as sites of elite capture where existing power asymmetries are re-entrenched rather that challenged (McKeon 2017, Clapp et al 2021 , Nisbett et al 2021). It is essential therefore that the MSPs be carefully constituted with a deep understanding of local political contexts and existing power structures and are explicitly designed to address existing power asymmetries. This is particularly important in countries in the global south where strong local power asymmetries exist and many of the entities establishing MSPs from outside of the local context and therefore lack deep contextual knowledge of power relationships (Wegerif and Kissoly 2022 , Haysom and Currie 2022). Platform facilitators should be local, well-connected, and sensitive to power dynamics, whilst donors must appreciate that co-learning and trust development can take several years (Horton et al., 2022). Furthermore, MSPs can be supported by asset-based approaches that encourage the accumulation of social and financial capitals – enabling smallholders to reach the investment thresholds needed to purchase productive assets and absorb risks associated with new markets (Ros-Tonen et al., 2019; Stoian et al., 2012).

Another approach aims to group farmers and strengthen local infrastructure (both physical and digital) to improve connections between local value chain stakeholders and markets. Through collective transport and marketing, farmers' organizations and aggregation schemes help to reduce economic distances and increase collective bargaining power, as described in the section on farmers' organizations.

There is also no one-size-fits-all approach to improving gender inclusion and equity in agricultural value chains. Recent evidence from Benin, Malawi, Bangladesh and The Philippines suggests that the ability of practical steps such as training programmes, education, and small-scale financing and enterprise initiatives to produce greater gender parity is intrinsically linked to the underlying sociocultural context (Quisumbing et al., 2021). Therefore, efforts must go beyond gender-accommodating interventions (e.g., minimum representation quotas on multi-stakeholder platforms) to seek out genuinely gender-sensitive and transformative actions, that enable women to make more autonomous

decisions about their livelihoods and use of income by overcoming structural inequalities in employment conditions, social norms, and the ownership of assets, land and money (Stoian et al., 2018). However, despite general agreement about the barriers underlying women's dis-empowerment in agricultural value chains, the need to build an evidence-base of the practical steps that is valid in different contexts remains a global imperative (Njuki et al., 2022).

Incorporate territorial approaches in food systems and regional development planning and policy

Some of the major inequalities and their drivers discussed in previous chapters have a strong spatial dimension, e.g. rural-urban differences and linkages, and the challenges posed by remoteness. Yet, much of agri-food, rural development and FSN policy is designed on a sectoral basis (e.g. agricultural policy to drive availability, and social protection policy to promote access), or on the basis of administrative boundaries, with relatively little consideration for connectedness across space (Cistulli, et al., 2016). Territorial approaches recognize and leverage spatial interdependencies and place the diversity of resources and people across territories at the heart of policymaking and planning (IFAD, 2015).

A prominent example of a territorial approach is the City-Region Food System approach (Blay-Palmer et al. (2018); FAO (2018)). This approach considers a city or multiple cities (which may be smaller cities or towns), their peri-urban areas and the rural catchments or 'foodsheds' that they are linked to, as the unit for analysis and planning. Various flows across the region are taken into account, e.g. the flow of food and labour from rural and peri-urban areas to the city, the flow of waste from the city, and the flow of finance from cities to the rest of the regions. Mapping these flows as well as the infrastructure (e.g. markets, roads, storage), population and socioeconomic characteristics (e.g. indigenous lands) and geographical and agricultural characteristics (e.g. land use and agricultural potential) enables a holistic approach to regional planning. For example, under the auspices of FAO's Food for the Cities Programme, the city of Quito in Ecuador has adopted a territorial approach and co-developed with stakeholders a vision for a more sustainable and resilient food system and food strategy for the Quito city-region. Other city-region initiatives in the programme include Kitwe and Lusaka in Zambia, Colombo in Sri Lanka, Medellin in Colombia, Toronto in Canada and Utrecht in The Netherlands (FAO, 2018)

Such territorial approaches enable the recognition and incorporation of several different kinds of inequalities with implications for FSN into conceptualizing problems and the approaches to improving upon them. For example, small farmers in the city region may struggle compared to larger producers to supply to sophisticated value chains serving elite consumption globally or in big cities. At the same time, small and intermediate towns and cities in the region may experience growth and have unmet demand for nutritious food, whereas many modern value chain initiatives are primed to supply big city and global markets. A territorial approach in this example may find opportunities to develop these smaller markets with a particular focus on supply from small farmers in the region. This may involve strategic investment in market and transport infrastructure, cold storage and processing facilities (IFAD, 2015). In this connection, as HLPE 15 (2020) notes, "*A territorial market approach can help to improve food system equity and can strengthen the agency of producers and citizens, by empowering them vis à vis concentrated agricultural supply chains and retail outlets dominated by powerful transnational corporations*." (HLPE 2020). A territorial

approach that took this concept even further might develop special job creation and income growth programmes in small and intermediate towns and cities to improve FSN for their populations as well as to provide greater opportunity for small farmers in the region.

While there is considerable appetite for territorial food systems, this recommended action should not be read as a call to abandon distant and markets for local ones – rather, a judicious, strategic mix that leverages the advantages of both distant and local markets to maximise opportunity, reduce inequalities and build resilience is called for. Territorial approaches are not a panacea for all food systems challenges. As far back as 2006, Born and Purcell (2006) warned of the 'local trap,' and the assumption that localising food systems would necessarily deliver more sustainable, just food systems. In early on City Region Food Systems Jennings et al.(2015) tested assumptions regarding the benefits of local urban rural linkages to increased livelihood resilience for small-scale rural producers, reduced food prices for urban consumers, and increased resilience of urban food supply and prices against shocks. They found that these can be subject to considerable volatility, and have increased potential for market inefficiencies, monopolies and corruption and that while localised food chains may reduce food prices for consumers to some extent, this often related to specific types of food (such as fresh fruit and vegetables) and not to the major part of food consumption by food-insecure households provided through globalised food chains. While more recent efforts to enhance city region food system have worked to address some of these issues, it remains unclear that the approach is positively impacting the most vulnerable to food insecurity. In response to the latest food crisis amplified by the Russian-Ukraine War IPES Food (2022) argue for a diversified food system which amplifies the role of local and territorial systems, but recognises the role of more global supply chains in building resilience: "*Moving forward, it will be crucial for all regions to rebuild more diverse production and trade systems, grounded in local and regional territories. Supplementing local supplies with imported foods provides a necessary backstop against conflicts/shocks affecting that region*."

Invest in storage, transport and market infrastructure with special consideration for disadvantaged groups and territorial considerations

Important and interrelated inequalities discussed in chapter 3 include challenges faced by smallholders in accessing modern value chains, and geographical inequalities relating to local consumption and environmental priorities. Strategic investments in storage, rural transport and market infrastructure have a role to play in reducing economic distances and costs faced by smallholders, cutting perishable food losses, and ultimately improving availability and affordability of foods across space.

Studies from Kenya (Chege et al., 2015), Ethiopia (Rammelt & Leung, 2017) and India (Cooper et al., 2021) suggest that improved rural transport, through reliable access to roads, is positively associated with smallholder market inclusion. Experimental evidence from Tanzania (Brander et al., 2021) and Kenya (Huss et al., 2021) found that households with access to improved storage facilities (e.g., hermetic storage bags) maintained food security during seasonal shortages and COVID-19 market disruptions. In line with advances in the affordability and coverage of renewable technology, governments and private enterprises should seek opportunities for 'win-win-wins' in smallholder inclusion, local food security and the environment, for example, by upscaling access to small-scale solar powered cold storage units and hybrid vehicles for transporters.

Improved storage and transport in general can help a proportion of currently excluded smallholders to benefit from remunerative long value chains, but not all. To enable value chain participation benefits for a higher proportion of disadvantaged producers, as well as to relieve geographical inequalities in nutritious food consumption, strategic consideration should be given to territorial markets (described in the previous section) in infrastructure investment. For example, by investing in roads connecting rural areas to intermediate cities and towns (and not just national highways to capital cities) and creating or upgrading market infrastructure in such town and cities, a more level playing field is created. One example of such infrastructure investment in small regional markets is market-based small-scale solar powered cold storage that can help cut the loss of perishable nutrient-dense foods at market sites. Such expanded market opportunities can draw in a larger range of local producers, and the lowering of transport cost and reduced food loss at these smaller markets can help reduce inequalities in the availability and prices of nutritious food across space (a potential trade-off that must be kept in mind is that improved transport and local markets can also assist the spread of unhealthy foods). Finally, rural infrastructure investments can boost incomes for the broader rural population, and help reduce rural-urban income inequalities, with positive implications for FSN.

Invest in Information Systems across the food system, leveraging digital technologies

Smallholder farmers have traditionally depended upon personal experience and interactions with family members, friends, extension officers and traders to inform production and marketing decisions. As noted in chapter 3, there are many inequalities inherent in access to information. In particular, inequality in information access was typically associated with affluence and influence, in addition to intersectionalities that impact social connectedness (e.g., education, gender, remoteness). The rapid diffusion of relatively affordable mobile and internet technology is frequently acknowledged to be a potential playing field leveller across multiple food system echelons (Aker, 2011; Deichmann et al., 2016), by enabling smallholders to access guidance on how to treat pests and crop diseases, achieve quality standards, and inform decisions around what, where and when to sell produce (e.g., access market information and/or broker deals with buyers).

Recent studies indicate that farmers who have access to mobile phone-based digital extension services are more likely to adopt new and recommended production practices (Cole & Fernando, 2021; Fu and Akter, 2016; Rajkhowa & Qaim, 2021), including recommended fertiliser usage levels, access to credit, crop diversification, and climate change adaptation strategies. Critically, digital extension services help to bridge issues associated with remoteness and the cost of scaling, enabling information to be disseminated across space at a touch of a button (Bellemare et al., 2022).

However, there is increasing recognition that access to digital extension services is not in itself a panacea; for example, Coggins et al. (2022) recently identified 15 barriers to equitable technology use, ranging from individual factors such as digital literacy and distrust in technology, to systemic issues including electricity inaccessibility and mobile coverage. To address these inequalities, research suggests that digital extension may be more effective when combined with in-person approaches, including local experts who are able to provide personalised technology sensitisation (Fu & Akter, 2016), the involvement of potential end-users in the co-development of digital platforms, and gender-sensitive programmes that

account for differences in technology access at the household level (Dhehibi et al., 2022). Tailoring content for and considering the specific needs of disadvantaged communities, and investing in digital infrastructure in remote areas and neglected geographies is also important.

Downstream of the farmgate, evidence from grain markets in Niger (Aker, 2010), corn markets in Ivory Coast (Oura & Kouassi, 2015), and soybean and seafood markets in India (Goyal, 2010; Jensen, 2007) suggest that the communication of near real-time market prices to farmers can weaken the price-setting power of intermediaries and ultimately help reduce market price differentials across space. Such value chain transparency and reductions in price dispersion may have inequality-reducing implications for both producers and consumers. Farmers are able to overcome information asymmetries, diversify their marketing channels and respond to changes in prices. Better information also helps reduce the cost of supplying to previously under-served or remote markets, helping increase availability and affordability of food for consumers served by such markets.

Further downstream, there is evidence that digital information tailored for disadvantaged groups can play a role in stimulating demand for nutrient-dense food consumption in those groups. An example of this is the UPAVAN project in India that worked with women's groups in a low-income rural setting to develop a participatory video-based nutrition-sensitive agricultural extension service. The study found a positive link between the dietary diversity of women and children, and active engagement with participatory videos on agriculture and nutrition topics (Kadiyala et al., 2021).

To maximise synergies , policymakers should combine investments in information with other actions explored in this chapter, including improvements in rural transport and physical infrastructure to enable smallholders to act on the market information available and the establishment of inclusive multi-stakeholder platforms to promote the equitable distribution of decision-making and access to digital technologies.

Food retail environment planning and governance

Chapter 3 highlighted the multiple FSN inequalities driven by food environment characteristics. Chapter 4 drew attention to the wider structural issues driving these unequal food environments, including corporate power and underlying anti-informality biases in government. Within urban areas, in particular, there have been a variety of interventions designed to enable to the food environment to provide affordable, nutritious, safe and culturally appropriate foods to all residents and to regulate access to less healthy foods. Some interventions have not addressed power asymmetries in the food system (e.g. incentivisation of large grocery stores in low-income areas), while others have been more explicit in their efforts to increase both access and agency (e.g. provision of safe market space for street vendors).

While there are many components of food environments, this section focuses on interventions in the food retail environment as a node that has had considerable policy and planning attention with an equity lens applied. This section highlights four AREAS; 1) food retail intervention beyond the supermarket 2) proactive food retail planning 3)

incorporation of informal sector actors 4) food retail interventions to support vulnerable groups.

The first area has been interventions to enable retail food environments to meet FSN needs informed by lived experience. The problem of unequal access to affordable, nutritious, safe and culturally appropriate food and to obesogenic foods has been the subject of substantial research and policy action, with the concepts of food deserts and food swamps having passed into common usage in many parts of the world. However, as noted in Chapters 3 and 4, the promotion of supermarkets as a means to address the problems of the food desert does not necessarily address access challenges and may entrench power asymmetries in the food system. More recently, efforts have been made to take a more holistic approach to food retail planning and governance through processes like broader-based food asset mapping in Toronto (Baker 2018) and the extensive lived experience mapping of food environments by Gehl Architects in various cities (e.g. Bogota). This is leading to more integrated policies and planning around the creation of food environments that provide more equal access to healthy diets for all. https://issuu.com/gehlarchitects/docs/bogota_foodscape_strategy_2021 Birmingham, Alabama, for example, passed a Healthy Food Ordinance in 2019 designed to address multiple zoning issues related to the accessibility of healthy food and produce throughout the city – both improving access to healthy foods and preventing planning approach for retailers selling less healthy foods.

The second area has been pro-active planning of food environments in areas of rapid growth. Given the rapid urbanisation of many parts of the world, planning food environments as urban areas expand is an essential act to ensure equitable access to food, particularly as new urbanites are often poor and peripherally located. In Nanjing, China, as the city grows and as new residential areas are developed, city planners are obligated to incorporate new markets, activated as a specific threshold of residential units is surpassed (Zhong et al 2021). Similarly, in Dar es Salaam the 2016-2036 Master Plan states that each neighbourhood unit of approximately 24 000 people and 48 hectares should have markets and commercial facilities as part of basic services provided. The plan also provides for: home-based enterprises; vendors at busy transportation routes/nodes; and commercial space for a range of emerging sectors, that includes food processing. (Wegerif and Kissoly 2022).

The third area is the development of planning and policy tools to include informal traders within the food environment. As noted in Chapter 4, many governments have long standing anti-informality biases, and yet this sector is the primary source of food for the majority of the population in much of the world. The creation of an enabling environment for these vendors creates a more inclusionary food environment, ensures access to healthy diets for the poor and potentially improves food safety. An example of inclusive planning for informal traders is the Protection of Livelihood and Regulation of Street Vending Act, 2014 in India (Roever and Skinner 2016).This Act is based on the core principles of recognition and accommodation. The Act establishes Town Vending Committees, of which 40% of the members must be street traders. These Town Vending Committees have to ensure that all vendors are accommodated in vending zones. The Act then also recognises “natural markets” as “places where sellers and buyers have traditionally congregated” and prohibits TVCs from declaring these no-vending zones, which means that vendors can’t be relocated to inaccessible areas with low footfall. Street vendors have responsibilities in return for rights to

trade, in partnership with the state. This model is responsive to the needs of residents in terms of access, and given the co-governance approach provides for attention to food safety, thus enabling access to safe, affordable nutritious affordable food for low-income residents.

The final area is targeted food retail environment intervention to address FSN of particularly vulnerable groups. For example, in 2009 South Korea passed the Special Act on Safety Control of Children's Dietary Life, which establishes "Green Zones" in which the sale of fast foods and soda is banned within 200 meters of the selected schools. A series of similar ordinances were passed in cities in the Philippines in the early 2010s.

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Universal Health Care with integration of nutrition care (preventative and curative)

In Chapter 2, we showed that vast geographic inequalities exist in the double burden of malnutrition (DBM) globally and within countries between social groups are highly prevalent, and trends of DBM are increasing. Giving consideration to the inequities that drive DBM - the unaffordability of healthy diets for some sections of the population, Big Food's influence on market proliferation with non-nutritious foods (Clapp 2016), and other socioeconomic drivers of FSN inequality - are critical in designing effective nutrition action.

Integrating nutrition into Universal Health Coverage (UHC) at all levels of care – community, primary and tertiary provides multiple paths to improving economic and overall well-being. It requires extensive collaboration across government and other stakeholders to ensure reach, quality and coverage. When considering nutrition actions to be integrated in the UHC, there is a case for 'double-duty' nutrition actions, given both the universality of the DBM issue and its unequal distribution burden. Double-duty actions tackle both major burdens of malnutrition, undernutrition and overweight/obesity, and countries can adapt them to their country context. These policy considerations include addressing poor nutritional outcomes based on an extensive evidence base that primarily focuses on maternal nutrition and the first 1000 days of the child and include scaling up the evidence-based WHO antenatal care recommendations to prevent malnutrition early in life (Hawkes 2019). Specific actions include the scale-up of programmes that provide healthy eating during pregnancy counseling. Equity-informed approaches include targeting populations with higher rates of undernutrition to expand supplemental feeding programs for mothers using cash or food vouchers, and behaviour change communication to promote healthy eating and increased energy and protein intake during pregnancy. In addition, other child-centred recommended actions include investing in the scale-up of supportive environments to protect and support early life feeding (breastfeeding and complementary feeding practices). Furthermore, growth monitoring programs are recommended to monitor child overweight status in contexts where child overweight is rising. Finally, policies to promote and counsel on healthy diet consumption with close monitoring and appropriate targeting of fortified and supplemental foods are part of the double-duty action package.

To support and guide healthy food choices – the generation of Food-based dietary guidelines (FBDG) are encouraged to be developed for the country's context and provide food-based recommendations. Many countries have FBDG, but not for every life stage missing certain age groups (ex: adolescents, pregnant women, school-age children, the elderly) that are particularly vulnerable to malnutrition, especially when simultaneously experiencing resource

limitations. FBDG can only provide contextual guidelines to citizens if measures are taken to ensure dietary data representative of marginalized groups are adequately characterized and used to inform the development and revision of guidelines. Further, the accessibility and affordability of recommended foods should be considered (Herforth 2019). For such guidelines to be effective, they should also be developed transparently, accompanied by monitoring processes, and embedded into existing policies, programs, and strategies that are not widely practiced (Wijesinha-bettoni et al., 2021).

Regardless of the policy actions taken to address DBM inequities, it is critical that policies undergoing development or revision articulate clearly the nutrition equity concerns they are trying to address, recognize their deep drivers, and then the actions being taken across sectors in their context to address them. This process is universally vital for equity-centred policy but is especially relevant for nutrition actions focused on education and Behaviour Change Communication (BCC) actions. BCC policy actions otherwise run the risk of reductive and target vulnerable populations by problematizing their behaviors without addressing structural drivers such as power imbalances, commercial interests, and historical exclusion (Zorbas 2021).

Food and nutrition sensitive policy, planning and programming

As reflected in the conceptual framework many FSN outcomes are the outworking of inequalities in factors beyond the food system, and the interplay of these inequalities with food system inequalities. Policies and programmes to improve FSN largely focus on food security and nutrition specific or food system-specific interventions. However, the failure to address the wide range of contributing factors to FSN outcomes hinders progress towards FSN for all. Within nutrition there has been long term recognition of the need for nutrition-sensitive interventions and an integrated approach to health through a "process of bringing together common functions within and between organizations to solve common problems, developing a commitment to shared vision and goals and using common technologies and resources to achieve these goals" (WHO 1996).

There are increasing calls for 'governance for nutrition' (Friel et al 2017) rather than nutrition governance, and for food sensitive planning and policy (Haysom et al 2020). Nutrition-sensitive interventions include things like: investment in water, sanitation and hygiene; family planning; women's empowerment; and early childhood development. Food-sensitive planning and policy includes things like transport planning; precinct planning; housing building codes; and green infrastructure policies.

In order to maximise FSN benefits, it is important to link nutrition- and food-specific to nutrition- and food-sensitive policies, planning and programming (Ruel et al 2013). However, to do this effectively requires transversal governance processes. The most effective efforts to develop intra-governmental structures to enable this transversal governance of specific and sensitive actions appear currently to be at the sub-national governance scale were government departments have traditionally been less siloed than in national government. The Milan Urban Food Policy Pact website provides a number of examples of good practice which address transversal governance (*https://ruaf.org/document/milan-urban-food-policy-pact-selected-good-practices-from-cities/*). One challenge experienced by officials seeking to drive food-sensitive actions has been concerns about over-stepping of mandates and lack of

resources. The City of Cape Town has worked to address this challenge by developing a transversal food system working group and conducting a mandates mapping exercise that demonstrated the ways in which food and nutrition overlapped with existing mandates and programming

From an inequality perspective, it is important that food and nutrition-sensitive planning involving non-food systems actions consider the principles of equity action along the lines we have outlined earlier in this chapter, and also give consideration for the ways in which inequalities in these other systems may interact with food systems inequalities in driving FSN.

Summary and conclusion

Having examined the 'why' in previous chapters, this chapter first considered the 'how' of designing actions to reduce inequalities within food and other systems to improve FSN. It identified three overarching principles for design: a focus on agency, addressing of power and adaptation to local contexts. It then outlined an equity-sensitive policy process that unpacked policy design and provided guidance on key aspects to take into account. Subsequently, the chapter examined the 'what', describing a set of policy actions that would address some of the key inequalities outlined in chapter 3. While not comprehensive, these actions span the food/other systems, are well established and studied, and are important ways of addressing the inequalities. Three important aspects must be kept in mind about these actions. Firstly, they will need to be adapted to the local context. Secondly, many of these actions are synergistic with each other, and policy strategy must ideally consider a holistic approach that combines actions rather than consider them as standalone. For example, actions that promote greater equality in land access may not be sufficient to make a great impact on FSN until they are paired with integrating those beneficiaries into inclusive value chains. Likewise, providing market information systems that inform small producers about prices in different markets is most effective when there are market and transport infrastructure investments that allow them to leverage that information, or when they are in farmer's organizations through which marketing costs can be shared and market opportunities can be taken advantage of. Thirdly, while the actions outlined in this chapter help ameliorate inequalities to improve FSN, long lasting and fundamental resolution of disparities will require transformative action, which we turn to in the next chapter.

Chapter 6. Transformations necessary for positive structural change to reduce inequalities in FSN

Introduction

This chapter focuses on the transformative action that is required to reduce and ultimately sustain reductions in FSN inequalities that are detrimental to societal and environmental health and, overall well-being. This transformative action will be needed across our current food systems as well those systems which govern human health, planetary health and prosperity for all. Ultimately, these systems are not independent of each other and all feed into reducing FSN inequalities and promoting equity. This chapter describes a series of transformative actions that reflect the fundamental structural change needed to address the deep drivers and root causes of inequalities described in Chapter 4.

The case for transformative over incremental action

The HLPE 12 (2017) calls for transformative change in food systems and noted several obstacles and barriers, including failure to recognise the right to adequate food; power imbalances across the food system; and conflicts of interest (p112). The analysis in Chapters 2-4 highlights three factors and stressors in relation to FSN inequalities that only strengthen the argument for transformative over incremental change.

The first factor is the rate of progress towards agreed global targets is too slow at the current, incremental rates of change (HLPE 15 pviii)**.** The latest assessment by the GNR is that the world is collectively off course to meet five of the six World Health Assembly targets on malnutrition and all related targets on diet-related non-communicable disease (GNR 2021)[2]. This could be ascribed to the 'path dependency' of food and agriculture policy, which has focused on calorific availability at the expense of diversity (Global Panel 2020). Others have pointed to several factors that contribute to policy 'lock-ins' including oligopolistic control of large parts of the food system driving excess consumption of unhealthy foods (Bene 2022, Baker et al 2020). Combined, these factors mean that even if historical trends for reduction in rates of hunger continue (see below), they are unlikely to dent high levels of micronutrient deficiency, while rates of obesity and overweight and attendant NCDs continue to grow.

The second factor is that people's sovereignty over their land—and the ecosystem services and biodiversity provided by this land—are under unprecedented threat. The ability to produce food is fundamentally tied to land, its ownership and sovereignty, as well as the natural resource and biodiversity endowments—or the ecosystem services—provided by that land. Globally, the industrialisation of the food system has placed greater stresses on these endowments, to an unprecedented level, with severe biodiversity loss or degradation in soil, water and air quality across all major food producing regions (Global Panel 2020). Because of this land degradation, more productive or better endowed land is becoming more desirable

[2] The only target on which countries are collectively on course is "Increase the rate of exclusive breastfeeding in the first 6 months up to at least 50%." GNR 2021 reports a 2014-2019 rate of 44%, compared to a 2005-2012 baseline of 37%

and subject to 'land grabs'. These impacts are felt by those more vulnerable within the food system, including Indigenous peoples smallholder farmers, fishers, landless labourers and migrants (UNCCD 2019)

The third factor is that the pace of human-induced climate change has outstripped earlier predictions and has fundamental impacts on the ability to produce food; and is itself fundamentally impacted by the food system. As Chapter 4 illustrates, the outcomes of climate change and some of the impacts of policy to mitigate climate change will be greater on those already suffering from extreme forms of poverty, vulnerability, and marginalisation – those who have contributed least to climate change in the first place. The latest assessment by UNEP is that current policy actions by global governments do not amount to sufficient change to avert more severe forms of climate change associated with 2.8 degrees or potentially higher changes in global average temperature (UNEP 2022). Any other incremental actions will be rendered ineffective by the scale of the challenge this inaction creates.

Just what transformative action on equity and FSN entails has been the subject of debate in the wider research and policy literature. For some authors, transformative action entails significant changes that are broadly within the existing policy space of sustainably increasing yields, improving access to knowledge and technology, and supporting consumers to afford and choose healthy foods (Rubens et al 2021). But without significant changes in structures of power and politics, many commentators have argued that such changes are either unlikely to happen, will be resisted by powerful vested interests, or will be misapplied in ways that only exacerbate inequalities in the food system or degrade natural environments and contribute to climate change (Bene 2021; Newell et al 2021). Drawing on HLPE 15, transformative change in FSN incorporates a systems approach, which recognises that 'tinkering' in discrete parts of the food system is unlikely to affect outcomes on the scale and with the urgency required by challenges such as climate change and biodiversity loss. It also recognises the moral urgency of addressing the continuing human cost of FSN inequalities and the pace agreed in global goals such as by the World Health Assembly and via the SDGs.

Box 6.1 outlines a definition of transformative change in relation to FSN inequalities.

Box 6.1

What is transformative change in relation to inequalities in Food Security and Nutrition?

Transformative change incorporates actions **across the entire food system** that require **fundamental changes to food system governance to redress power imbalances** that have 'normalised' high rates of food insecurity and malnutrition[1]. **Governance for transformative change explicitly recognises and represents those who have been marginalised in the current food system as well as the value of nature** and the ecosystem services provided by natural systems and **redistributes resources according to need.**

Transformative change happens at a pace that matches scientific consensus on rapidly escalating and fundamental threats to human and planetary health such as biodiversity loss and climate change, but **without exacerbating existing inequalities or placing the burden on future generations.**

[1] Devereux, Haysom, Maluf & Scott-Villiers 2022

Transformative action: the human right to food

The "right to food" is a human right. The right to food is about ensuring that all people have the capacity to feed themselves in dignity. As an international human right, the right to food articulates the protection of the right of all human beings to live in dignity, free from hunger, food insecurity, and malnutrition. HLPE reports have consistently stressed the right to adequate food as a key guiding principle in support of food security and nutrition. The right to food as inseparable from other rights has been recognized since 1948 and gradually specified and strengthened over time through various international instruments endorsed by most UN member states.

Understand the relationship between human rights and equity

Principles of human rights and equity both promote equality and can mutually reinforce each other and promote justice. FSN experiences are shaped and driven, as we have shown in Chapter 4, by social and political factors which also drive inequalities in these outcomes and systems. Human rights support the course corrections of the drivers of FSN and food systems inequalities given their political, economic and social indivisibility and interdependence and as such inherently relate to equity. Human rights and equity principles share concepts such as recognition of injustices, or non-discrimination, the latter being a key principle of human right. Where human rights particularly support achieving equity in food systems is via various institutionalised monitoring mechanisms and legal underpinnings which can provide agency to those most vulnerable, frameworks and a legal framework for governments and instruments for advocacy and monitoring FSN inequities (Braveman 2012).

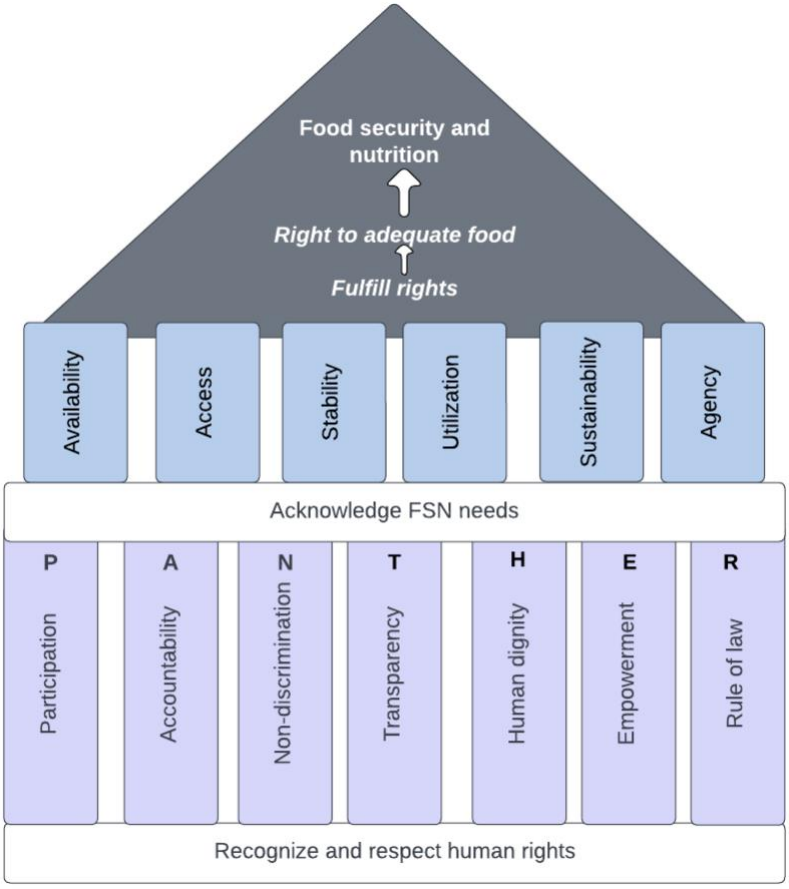
Identify human rights-based approaches to FSN and food systems reform

The 1999 Committee on Economic, Social and Cultural Rights (Committee on ESCR) defined in its General Comment 12: The Right to Adequate Food (Art. 11) as "*the right to adequate food is realized when every man, woman and child, alone and in community with others, has physical and economic access at all times to adequate food or means for its procurement" (para. 6).* Following this definition, all human beings have the right to food that is available in sufficient quantity, nutritionally and culturally appropriate, and physically and economically accessible which reflect the food security dimensions of availability, access, stability and utilization. Going beyond those four dimensions, the Right to Adequate Food and the International Covenant on Economic, Social and Cultural Rights more broadly embodies agency and sustainability which are fundamental aspects of food security. Governments should implement policies in support of the Right to Food drawing from current international instruments which include and are not limited to such as the "right to food guidelines 2004" adopted by the 127th Session of the FAO Council in November 2004 and the "Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the context of National Food Security 2012". Additionally, the Voluntary Guidelines on the Right to Food Guidelines (2004) confirm rights for specific groups such as women, indigenous peoples and peasant farmers. They further outline 19 specific guidelines covering areas such as governance and institutions, laws and policies, markets and economies, and education and safety nets that state and non-state actors should draw on according to their particular context. The Right to Food is important to recognize alongside other human rights (because of their interdependence, indivisibility and interrelatedness) and related instruments. This

includes the UN Declaration of the Rights of Indigenous Peoples and the UN Declaration of the Rights of Peasants which additionally promote equitable development and management of the environment.

All instruments and guidelines should incorporate be underpinned by the PANTHER principles. The PANTHER principles: Participation, Accountability, Non-discrimination, Transparency, Human dignity, Empowerment, and the Rule of law, should govern decision-making and implementation processes (FAO, 2011c). The supportive and interlinked relationship between rights, the guiding PANTHER principles and FSN are depicted in Figure 6.1.

Figure 6.1: FSN as a human rights framework incorporating the PANTHER principles (Participation, Accountability, Non-discrimination, Transparency, Human dignity, Empowerment, and the Rule of law (adapted from HLPE 14, Ekwall and Rosales 2009)



Recognize both government and other actors' obligations to respect, protect and fulfil those human rights that are relevant to FSN

The right to food gives rise to legal obligations of states specifically three types of state obligations–to *respect*, *protect* and to *fulfil* the right to food. The **obligation to respect** requires governments not to take any measures that arbitrarily deprive people of their right

to food, for example, by measures preventing people from having access to food. The **obligation to protect** implies that states should enforce appropriate laws and take other relevant criteria to prevent third parties, including individuals and corporations, from violating the right to food of others. The **obligation to fulfil** (facilitate and provide) entails that governments proactively engage in activities intended to strengthen people's access to and utilization of resources to promote their ability to feed themselves. As a last resort, states must fulfil that right directly when an individual or group cannot enjoy the right to adequate food for reasons beyond their control (OHCHR).

Foreground a focus on marginalized groups and their participation

It is paramount that member states create policy interventions to promote the right to food especially for specific groups such as women, Indigenous peoples and peasant farmers, and support a pathway towards the transformation to sustainable food systems. Over the last decades, several countries have developed and implemented constitutional amendments, national laws, strategies, and programmes that aim at fulfilment of all the elements of the right to food. For example, the National Constitutions of Ecuador in 2008 and Bolivia in 2009 amended their constitutions to include the right to food as an inclusive right. It is now not simply a right to a minimum ration of calories, proteins, and other specific nutrients but it also implies the right to respect the dignity of "Mother Earth" (Peña, 2013). Though most states commit to progressive (gradual) realisation of the Right to Food, it is acknowledged that efforts by most have so far been inadequate to support food system transformation, and that much stronger measures must be taken to respect, protect and fulfil these rights towards food equity and agency for the most marginalized groups.

Horizontal inequalities, often seen between marginalized and non-marginalized social groups, can be addressed through the leverage of human rights treaties and instruments that directly address inequalities through non-discrimination provisions in numerous treaties and those that specifically deal with the elimination of discrimination of certain groups. (McNaughton 2017) (ex: CEDAW). Despite reporting guidelines on monitoring states' progressive realization of human rights being available relating to the right to adequate food as a legally binding right, the right to food of humanity is at stake as nearly 811 million people face hunger and malnutrition, highlighting inequalities and injustices especially in low-income communities and amongst vulnerable groups such as Indigenous peoples and communities of colour in urban and rural areas.

Box 6.2: How do different actors understand a 'right to nutrition' in Zambia?

Different actors are assigned distinct roles, from governments as duty-bearers, to citizens as rights-holders, to civil society as monitors of accountability. One reason sometimes given for slow action on human rights is that these actors may not fully understand what it means to work on rights, or what their role might be. Harris et al. 2022 address this precise point, asking how the utility of a 'right to nutrition' is perceived by different actors, and how differences in interpretation affect its potential for reducing malnutrition, with a case-study crossing the international realm and national and local contexts in Zambia.

Zambia has domesticated relevant international human rights law and has recent case law building on international language and implicitly underpinning a right to nutrition, suggesting that formative moments such as activist-brought legal cases can shape the law in ways even more supporting of rights. Using the law brings a strengthening of policy, but also a narrowing of focus in terms of populations covered and issues justiciable because the law needs specificity whereas policy and international conventions are broad and inclusive.

Views on what a right to nutrition means in practice are contested, with a lack of citizen's rights education limiting participation, and a lack of clear norms on who should be doing what scattering accountability. Lack of action in practice—particularly in the areas of rights education, participation, and accountability—is a barrier for ordinary citizens to access their rights through legal mechanisms or raising the accountability of authorities; and it is unclear in many cases who is accountable for what in such a multifaceted right.

The study finds that there are three distinct aspects to a rights-based approach—rhetorical, legal and practical—but these generally act in silos which need to be addressed in combination and in context to foster a coherent rights-based approach. These three aspects of human rights—the rhetoric, the law, and the practice—will no doubt play out differently in different national (and local) contexts, but this empirical analysis has revealed them each to be critical faces of human rights that work together (and should be considered together) in understanding and working towards the achievement of rights more broadly.

Source: Harris et al, 2022.

Transformative action: addressing agency and power through inclusive governance

Transformative action towards agency requires inclusive governance and structures of power and decision making at all levels. Inclusive governance refers to the need to include relevant marginalized groups in a given context in discussions about food system and broader social change, including policy; and explicitly recognizing their framings of issues and solutions (Fraser 2015). Including marginalized groups is not always straightforward, as they may not have the time or resources to participate without significant assistance; or other participants may not speak their language or be familiar with their way of negotiating. These are explicit considerations if marginalised groups are to participate genuinely in processes that affect them, whether at local, national or global level (Bryson 2012). It should be noted that reaching marginalized groups (for instance telling them about a new programme or policy), is not the same as these changes benefiting them. Benefitting from changes is also not the same as being empowered to participate fully in decision-making, which is not the same again as transforming the social relations which limits people's agency in the first place (Quisumbing, 2019). It is the latter of these changes—to social relations as fundamental as gender or ethnic discrimination, for example—that represent the most transformative equity goal.

Box 6.3 [To be added]: Agency and power in labour relations

Expand labour protections/recognition of relationship between labour rights-human rights for food system workers (especially women, migrants, most often employed in the informal economy)- including undocumented workers.

[to be added]

Inclusive food systems governance has to operate in recognition of these multiple levels to achieve participation from local level decision-making through to global level institutions. First, stakeholders from marginalized groups including Indigenous Peoples must be engaged in review, development and revisions of policies, legislation and finances. Special consideration ought to be given to the varying levels of conditions that allow for participation - be it power asymmetries, civic space and state fragility. Transparent mechanisms should be in place for inclusive participation of monitoring of policies regardless of these variations. Such approaches also apply to overall governance because of the interrelated nature of FSN and food systems with other systems that influence the social conditions that shape FSN experiences as described in previous chapters. Context for inclusive governance at various levels needs to be considered especially in areas where state fragility is an issue.

Addressing power as part of inclusive governance can happen in multiple contexts. This might include various forms of decentralization and moving power closer to people (Baker, Hawkes et al. 2018, Zaidi, Bhutta et al. 2018, Milsom, Smith et al. 2020), including revived forms of local decision making and democracy such as at the level of municipal food systems (Rocha & Lessa 2010). Governance here is not always in the hand of the state, as the role of activism, demonstrations or even riots have been important ways in which citizens have called for more equitable food systems (Walls, Smith et al. 2015, Baker, Hawkes et al. 2018, Walls 2018, Zaidi, Bhutta et al. 2018; Hossain and Scott-Villiers).

At a programme or project level, there is a long history of participatory methods that have been trialled to ensure equitable participation and attempt to address power imbalances in decision-making and programming (George, Mehra et al. 2015). Participatory learning and appraisal approaches, for example, where rural and marginalized women focus on defining problems and solutions relating to malnutrition, have been associated with better outcomes in terms of child wasting (Tripathy et al. 2019) and dietary diversity (Prost et al. 2022) when combined with other interventions such as provision of childcare creches, home based nutrition support and video-based training. Addressing power disparities between communities and authorities through social accountability measures has also showed potential in improving local forms of civic participation and decision making by marginalized groups (Nisbett, Gillespie et al. 2014, Baker, Hawkes et al. 2018, Gordon, Tranchant et al. 2019). Special measures may be needed to counter the power asymmetries that exist when corporate actors, particularly those who are in monopolistic positions nationally or oligopolistic positions globally, are part of decision-making fora (Baker, Hawkes et al. 2018; Mialon, 2020; Brooks 2016). There are challenges to finding effective measures to manage such power disparities (Fanzo et al. 2020). Options range from learning from the experience of the CFS itself in managing these relations via its different business and civil society constituencies and interface (Duncan & Claeys 2018, Turnhout et al 2021), to a framework convention on food systems (modelled after other international conventions and tobacco

control measures) that would specifically exclude private sector actors given the danger of industry interference in policy on obesity (Swinburn et al. 2019).

- Accountability initiatives, Improved tools for equity auditing
- Land reforms
- Agribusiness and land grabbing

Activism in governance

Activism is a way that marginalized groups, and those experiencing hunger and malnutrition, can find a voice in governance processes when these are not inclusive of their priorities or responsive to their needs. The 2008 food price crisis produced food riots that were broadly seen to work in terms of focusing the attention of multiple governments on issues of subsistence crisis (Hossain and Scott Villiers 2017). Less unruly forms of activism include bringing these issues into formal policy spaces, such as the work of FIAN International or the UN-CFS Civil Society Mechanism in coordinating civil society inputs and bringing the voices of the marginalized into decision-making forums (FIAN). Grassroots work on food equity includes alternative food movements (Sage et al., 2020), access to the law for upholding rights claims (Dancer 2018); and advocacy through plural routes (Jurkovich 2020), all of which can be seen as forms of activism.

Transformative action: a holistic approach to climate and sustainability

HLPE 15 established sustainable food systems as a key dimension of food security. The report identified sustainable food systems as: productive and prosperous; equitable and inclusive; empowering and respectful; resilient; regenerative; and healthy and nutritious. Current negative experiences of the impacts of unsustainable food systems activities are unevenly distributed, often impacting already vulnerable populations (Drew 2021, Mbow et al 2019) and food sector workers (IPES-Food 2017) most acutely. It is clear that unsustainable food system activities are a considerable driver of climate change, with food systems being responsible for one third of the world's greenhouse gas emissions (Crippa et al 2021). As noted in Chapter 4, the burden of climate change has unequal effects across the food system, often exacerbating existing inequalities.

As it becomes increasingly apparent that the pace of climate change is accelerating, it is essential that all food policy be informed by climate sensitivity and sustainability principles, seeking both to adapt to and mitigate climate change.

Within climate change policy and advocacy, the concept of "climate equity" is gaining traction (Allen et al 2021). Manzo (2021) develops a framework for an equitable climate change regime based on three core principles: first, equity comes to the fore to protect the most vulnerable people from adverse effects of global warming; second to provide distributive justice among the present generations, as well as the future generations. Third, equity is invoked to ensure an inclusive and transparent negotiation process. Klinsky & Winkler 2018 identify a set of five principles for assessing the equity implications of climate policy which align well with the food equity principles established in Chapter 5.

Given the clear multi-directional linkages between unequal FSN outcomes, food systems sustainability and climate change, it is essential that efforts to address inequalities in FSN and food systems are foundationally informed by how they are impacted by and in turn impact

sustainability and climate change. The convergence of equity principles across climate change and food policy thinking provides scope for dialogue and policy innovation. An example of commitment to these principles is the Glasgow Food and Climate Declaration launched at COP26, which calls for joined-up action on food and climate.

There are many entry points for embedding principles of sustainability and climate change adaptation and/or mitigation into transformative food systems actions which reduce inequalities. The brief examples provided below are by no means exhaustive and are provided merely as potential entry points.

[**to be written:** worked examples on trade & climate boundaries; biodiversity in production systems, addressing human-bioplanetary feedbacks and circular economy measures including via drawing on Indigenous TEK and rights based approaches]

Transformative action: universal access to services and social protection

Social protection

Social protection has featured strongly amongst policy responses to the global food crisis (Global Panel 2020, HLPE 15) and is also one of the means to tackle fundamental inequalities in access to food and income and other resources which lie root of FNS inequalities. Depending on the context, social protection may be funded by national fiscal measures, such as taxation, or via international aid, or be privately/consumer funded, or be a combination. Social protection incorporates various forms of social assistance (such as cash or food transfers, or the provision of school meals), social insurance (such as health or employment insurance) and economic development or income generating activities (such as youth employment schemes or training), reflecting different objectives that might be protective, preventative or promotive (see **Table 6.1**) (Guhan 1994, ILO, Devereux & Sabates-Wheeler 2004). Developments over the past 20 years have also seen a shift to a discussion of more transformative forms of social protection which specifically address equity issues (Devereux & Sabates-Wheeler 2004) and a focus on 'graduation' models, which usually focus a sequenced package of activities on the extreme poor, including cash and 'productive asset' transfers (which might include livestock or seeds or fisheries inputs) alongside a wider range of support which usually include microcredit, intensive training and women's empowerment activities (Devereux & Sabates-Wheeler 2015)[1]. **Table 6.1** summarises the relevance of these difference social protection objectives and interventions to reducing FSN inequalities.

Table 6.1 – Different forms of social protection and relevance to reducing FSN inequalities (Source: based on analysis in Devereux & Sabates Wheeler, with additional FSN analysis)

Objectives	Types of intervention	Relevance to FSN inequalities
Protective (provide relief from social deprivation)	Social assistance (e.g. cash, school feeding or food transfers)	Cash and food transfers can directly avert food insecurity. May be combined with education/support for feeding practices/ dietary diversity and broader nutritional outcomes including child growth

Preventive (avert deprivation)	Social insurance (e.g. health or employment insurance)	Helps families deal with shocks that may otherwise force them into destitution / losing income sources Crop insurance can help smooth seasonal or pest/disease shocks for producers
Promotive (enhance incomes and capabilities)	Income generation (e.g. microcredit, productive assets employment training and support)	Productive assets can often also be food production e.g. livestock, poultry. Microcredit can help the poorest overcome financial exclusion to production inputs (e.g. fertilizer, seeds, irrigation, mechanisation). Training can include non-farm rural income generation to help smallholders diversity income
Transformative (address social equity and inclusion)	Anti-discrimination, sensitisation campaigns, legislative and regulatory changes to protect the vulnerable	When combined with different protective, preventive, promotive measures can help tackle both immediate (lack of income/food) and root causes.

Evidence on the links between social protection and FSN outcomes has also been growing over the past decade, with new programmes and evaluations contributing to the evidence base. Many studies have focused on the ways in which Social Protection can be made more 'nutrition sensitive', although the evidence is still mixed and cautions against a 'one-size fits all' approach (Drimie & Yosef 2016; De Groot et al. 2016; Manley et al. 2020; Olney et al. 2022; Barnett et al. 2022). One systematic review of 74 studies found that cash transfers improved linear growth of children and reduced stunting working through pathways including children's diets and increasing access to "nutrient dense animal source foods such as dairy, eggs, fish and meat; and by increasing the diversity of food groups" (Manley et al. 2020:8). Another review of social assistance programmes on outcomes for women and children found similar improvements in dietary diversity and intake of micronutrient rich foods, but more likelihood of impacting maternal nutrition when including in-kind transfers, particularly of fortified foods, and when the intervention included a nutrition education component (Olney et al. 2022). Other studies have compared different modalities (cash, food vouchers) and found that the context matters as to which may be more beneficial, such as whether local markets are sufficiently diverse, and may also affect the type of FSN outcome directly, such as whether the intervention successfully targets calorie deficiencies, or the wider issue of dietary diversity (Hoddinott et al 2013). Some researchers have raised important equity considerations around nutrition sensitive social protection in calling for interventions to not overly burden the poor with demands on their time, where they are already juggling multiple burdens. This can be

the case, for example, with many interventions targeted primarily at mothers (Gillespie 2017; Barnett et al. 2022).

Universal access to services and infrastructure

Social protection programmes may help deliver public services, or they may encourage use of public services, particularly programmes that include various 'conditionalities' or 'co-responsibilities' to access health care or education in return for some type of transfer. But governments and other stakeholders need to take a wider role in ensuring universal access to services that benefit the poorest, if the root causes of FNS inequalities are to be tackled. The UN General Assembly in 2019 committed to Universal Health Coverage (UHC) by 2030 and the Global Nutrition Report (GNR) identifies a number of actions that must be included within UHC to ensure that the health system can deliver on better nutrition. This includes support to parents for infant and young child feeding, access to antenatal care and micronutrient supplementation programmes (GNR 2020), but the GNR also notes the need to include action designed to support better diets and prevent and treat NCDs.

More broadly, the declaration on UHC notes how building healthier societies requires action on delivering services outside of the health system including education, gender equality, water and sanitation provision alongside social protection (GNR 2020:60). This might follow the concept of 'proportionate universalism', an equity focused approach which concentrates resources first towards those most in need (Marmot 2010). Improvements in the delivery of services have been strongly linked to better nutrition outcomes (Smith & Haddad 2014; Gillespie & Van Den Bold 2017; https://www.exemplars.health/topics/stunting/cross-country-synthesis; Nisbett et al. 2022). Some research has found, for example, links between better nutrition outcomes and wider access to infrastructure such as electrification in Indian villages (Avula et al. 2022). Work on obesity on NCDs has also stressed the links between broader drivers of poverty and destitution such as poor housing stock or low labour standards and therefore the need to provide better all-round services to the poor as part of a focus the social determinants of poor health and unhealthy eating (WHO 2008, Friel & Ford 2015).

Recently, other aspects of equity such as participation and recognition have begun to be applied to the social protection field. For example, targeting of beneficiaries takes place as a participatory exercise in some programmes, with different forms of social mapping or prioritisation used to determine who is most in need. Community assessments of the way in which social protection programmes are being delivered is also being encouraged by organisations such as the World Food Programme (WFP)

Transformative action: data and knowledge revolution

Data and knowledge are imperative tools for action, as HLPE 17 has outlined. To make the most of the powerful ways in which a data and knowledge revolution can underpin equity action, firstly a commitment is needed from governments and major funding and other agencies to improve data collection and availability on equality and equity aspects. Secondly, researchers and practitioners need to recognise the importance of equality and equity dimensions (a form of 'recognition justice') to their own areas of FSN research. Research and practice in FSN/food systems must regularly and comprehensively assess and report on the

ways in which inequity shapes FSN outcomes, including through better data and diverse forms of knowledge. Thirdly, fairness and justice imply the need not only to recognise the imbalances in existing systems, and to use data and research to highlight these, but also the need for some form of action to address the situation. A lack of global data sufficiently disaggregated by relevant social groupings limits global tracking.

Formal research – such as that published in academic journals and institutional reports – is a fundamental resource for understanding inequalities and inequities in food systems and in FSN outcomes. Formal research across intersectoral agriculture-nutrition-health disciplines has however been slow to embrace these concepts, with far fewer studies explicitly addressing equity than are needed (Harris *et al.* 2021). These limitations are explained in part by data limitations, and by limitations in the types of research produced and valued.

Need for equality data

Globally and nationally, FSN, livings standards and food systems collection exercises have been limited in the ways in which they allow insight into inequalities, and it is recognised that there are many gaps which need to be filled by "*simultaneous disaggregation of data by multiple dimensions, including income, sex, age, race, ethnicity, migration status, disability, geographic location and other characteristics relevant to national contexts*" (UN Women, Women Count, & United Nations Department of Economic and Social Affairs, 2019). There is considerable room for improvement in current global and national data collection systems in terms of embedding equality dimensions into adequate comprehensive and regular monitoring and reporting. For example, disaggregated data collection by gender on aspects such as asset ownership and use of financial services would greatly enhance understanding of critical dimensions of gender inequalities (Quisumbing and Doss, 2018).

There have been some recent improvements. Data collected via Demographic and Health Surveys (DHS) modules on disability, for example, has recently been improved (DHS Program, 2016) and will help meet calls for "disaggregated data to enable comparison between the disabled and their non-disabled peers" on some key FSN issues (Groce et al., 2014). New tools are available for expedient data collection and disaggregation. For example, the Global Dietary Quality Questionnaires which provides a rapid, standardized and simple way to collect dietary data (GDD 2022), allowing cross-country inequalities in diets to be tracked systematically. It is imperative that there is more investment and innovation directed towards equality dimensions in data collection.

Need for equity research

Importantly, not all relevant equity factors are amenable to quantitative research, so a range of evidence is needed to properly assess equity in context, with the attendant focus on building respect across disciplines for different types of research. Beyond disaggregating data by axes of marginalisation, there is a need for further research to assess the social, economic, political, and commercial determinants of malnutrition, focusing on ways of understanding structure and process. This will include "qualitative work to understand root causes," including from the perspectives of those experiencing social disadvantage (UN Women et al., 2019). The latter is important to bring forward the voices of those affected by food insecurity and malnutrition, and of those who play vital roles in food systems (ibid.). This research takes

many forms, from ethnographic explorations of lived experiences of nutrition inequity, to policy process studies of inequity in systems and services, to economic assessments of the asset bases of marginalised groups. This work can make use of existing social and political theory relating to equity in other fields beyond those normally central to FSN research, such as sociology, anthropology, and psychology. This plurality of qualitative and quantitative research and theory is vital to understand the multiple facets of inequity and inequality shaping FSN outcomes, and to formulate appropriate responses. Decisions on what to assess in specific research will depend on the research context (including which groups are marginalised, and the history of unfairness, injustice and exclusion in each place), and on the policy and action needs in different places and literatures.

There is widespread recognition that intersectional inequalities in food systems and FSN are extremely important, and yet there is relatively limited research on this aspect – at least in part due to data inadequacies. Understanding how different axes of marginalization interact and intersect, drawing on existing work on intersectionality (Bauer, 2014; López & Gadsden, 2017; Mullings & Schulz, 2006) is a priority.

Need for diverse knowledges and to democratize knowledge

Democratization of knowledge production in FSN is vital for creating, transforming, and distributing food systems knowledge. Furthermore, recognition and support of diverse knowledge systems of, for example, local and Indigenous peoples help to bolster dialogue to understand different epistemologies, ontologies, and ethical considerations when relating to Nature for food sustenance (Huambachano et al. 2022). This includes traditional ecological knowledge (TEK) and the geographically specific and nature-related body of knowledge and practices of Indigenous peoples acquired mostly through oral history and experiential learning passed from one generation to the next Berkes, 2003. Cajete 2000, LaDuke 1994). Uptake of Indigenous peoples' TEK into mainstream food and environmental policy is crucial in charting global solutions inclusive of TEK and supportive of self-determination. Care needs to be utilized by the scientific community as which has at times resulted in TEK or ILK being removed from its cultural context, distilled, and synthesized to the extent that it undermines its original meaning and on-going capacity for validation, change and adaptation. As Casimirri (2003) noted in relation to the lack of recognition of Indigenous and local knowledge in resource management: “if practices and procedures of Indigenous peoples’ and local communities are used only to provide data to enrich a western approach, even if it is interdisciplinary, it will not serve the needs of the providers of that knowledge” (p. 199).

Another aspect of the need to harness different forms of knowledge to inequalities is through the development of methodologies that need to be equitable and empowering. Along with recognizing methodologies beyond those that are quantitative, there is a need to recognize new hybrid research methods that defy the need for scientific validation. These methodological approaches centre power, ethics, and social justice (Huambachano, 2018, Pihama et al. 2002; Wilson, 2008). Huambachano (2020) Some examples of these methods are the Kaupapa Māori, the framework for Research Engagement with First Nation, Metis, and Inuit Peoples and the Khipu Model (Peru and Aotearoa). It is imperative to respect Indigenous peoples’ forms of living, as well as to create spaces for inquiry within Indigenous contexts by acknowledging these frameworks and allowing their findings to inform policy.

Structural reformation approaches with implications for equity

Agroecology

The COVID-19 health crisis has revealed the racial and economic inequities embedded in the concept of food security endorsed by industrial agriculture. To counteract these historical power imbalances, social justice movements seeking justice for land stewards such as Black, Indigenous, and people of colour (BIPOC) offer important pathways for equity in food systems. Direct advocacy informed by Indigenous TEK regarding the Rights of Mother Earth combines with international mechanisms, such as the United Nations Declaration on the Rights of Peasants and Other People Working in Rural Areas. These efforts aim to protect local and Indigenous TEK on biodiversity, economic control of the production and redistribution of natural resources vital for fostering equity in food systems. Many of these concepts are aligned with broader movements towards agroecology and food sovereignty. Agroecology "is defined as the application of ecological concepts and principles to the design and management of sustainable agroecosystems" (Altieri, 1995, p. 8). It reflects a science, practice and social movement that fundamentally rethinks food systems as they currently exist (IPES) and one of its foregrounding principles is social equity linked to co-creation of knowledge, social values and diets, land and resource governance, participation, fairness and connectivity.

Agroecology supports traditional agricultural practices that have been implemented for decades in Peru, Ecuador, and Brazil, as well as in other Latin American countries (Altieri, 1995, Holt-Giménez & Shattuck, 2021; Gliessman, 2011). However, in most European countries, agroecology is not yet as well-established as organic farming (Gliessman, 2011). Nevertheless, various European scholars are extending their research from organic farming to agroecology, both in the social sciences and research and in the education arena. An example is the case of France, where the Institute for Agricultural Research (INRA) recently announced that agroecology would be one of its main research priority areas (INRA, 2014). Agroecology is associated with traditional agriculture and applies ecological concepts and principles to the design, development, and management of agricultural ecosystems (Altieri, 1995). Agroecology reflects the importance of fundamental values such as social justice. It aims to achieve a sustainable agricultural system in all areas—economic, social, and environmental—and to offset modern technologies' negative ecological and socio-economic impacts (Altieri, 1995). In recent years there have been concerns expressed at the concept of Agroecology has been co-opted and hollowed out by certain elements of the corporate food sector, international development agencies and the NGO sector to strip Agroecology of its emancipatory potential (Giraldo & Rosset 2022, IPES Food 2022). It is essential that if Agroecology is invoked in policy and programming, that it is done so on the integrative, justice-centred principles defined by Altieri, Giraldo & Rosset and others. Agroecology is not to be confused with other loosely defined terms such as ‘regenerative agriculture’ and ‘nature-based’ solutions which are not clearly conceptualized nor have the scientific backing agroecology does in certain contexts. Agroecology has been strongly linked to food sovereignty, a political movement which foregrounds rights and control over land, food systems and associated natural resources (**Box 6.4**)

Box 6.4 – Food sovereignty, the evolution of a concept and a movement

The Green Revolution of the 1960s laid the foundation for the food sovereignty movement (Desmarais, 2012). La Vía Campesina, an international organisation of farmers, peasants, small producers, and farm workers, initiated the food sovereignty movement in 1996 to take a stance against the neoliberal model of agriculture and trade. La Vía Campesina advocates for the right of nations and peoples to control their own food systems, food cultures and the environment and demands a fundamental shift towards alternative agricultures such as organic and predominantly agroecology (Gliessman and Fergusson, 2020; La Via Campesina 1996).

Wittman et al. (2010) argue that the food sovereignty movement gained momentum with the world food crisis of 2007-2008, characterised by the sudden and dramatic increase in food prices, which led to food scarcity, inflation, and a lack of purchasing power for the poor. Subsequently, the term was refined at the Nyéléni 2007 Forum for Food Sovereignty, organised by La Vía Campesina in Selingue, Mali, and attended by five hundred delegates from over eighty countries culminating in the adoption of the Declaration of Nyéléni. The Declaration of Nyéléni, highlights the "rights of all peoples to healthy and culturally appropriate food and to define their own food and agricultural systems" (Declaration of Nyéléni 2007).

Agroecology and food sovereignty have become key concepts and methods to strengthening the livelihoods of smallholders, eradication of hunger, and agroecosystems resilience, which is considered to be neglected in industrial food production (Gliessman and Fergusson, 2020). Many Indigenous communities are revitalizing their Indigenous foodways and taking control of their health and nutrition by enacting Indigenous food sovereignty (IFS) practices such as self-determination, self-sufficiency, and empowerment to access healthy and culturally appropriate foods while defining their own food systems (Cotte, 2022, Huambachano, 2018, Nelson, 2018). Not only does this offer an important set of actions that can be applied to tackling structural socio-economic FSN inequalities in terms of land ownership and political control but it also allows Indigenous peoples to enact their rights as stewards of the land and the rebuilding of the relationship between humans and non-humans in a restorative framework.

Conclusion

This chapter has defined transformative action for FSN inequalities as action *across* the food system, redistributing resources to those most in need and with due representation of those most marginalised; and acting with due haste to global targets and challenges to the food system including biodiversity loss and climate change. Incremental change, for example that which involves piecemeal implementation of the equity-sensitive food system interventions described in chapter five, will not achieve the global targets of the SDGs, or those set by the urgency of the biodiversity and climate crises. *Only* by combining the interventions and

programmatic approaches of chapter five with the more fundamental approaches set out here to rights, equity, agency, agroecology, climate and sustainability justice, inclusive governance and knowledge, will changes happen on the scale and pace that is dictated by these challenges.

This definition of transformative action for food system change operationalises chapter one's definition of inequity and posits that different forms of distributional, recognition and representational justice (Fraser 2015) are necessary to counter existing forms of maldistribution, misrecognition and social and political exclusion which are at the core of food system inequalities. It draws on and extends HLPE 2015's foregrounding of the right to food and agency in the conceptualisation of FSN and food systems. Outlined in this chapter are several areas in which such approaches can be used to ground action within and outside of the food system. These include various legal measures (such as national implementation of global human rights measures); programmatic and policy measures (such as linked climate and food justice actions, nutrition-sensitive and 'transformative' forms of social protection) and governance approaches (such as deepening democratic inclusion of marginalised groups, social accountability, or broader approaches to food sovereignty). Activism (whether through formal civil society, broader political movements, demonstrations and protest) has played and will continue play a particularly important role in forcing the right pace for change and holding governments, the private sector and other powerful food system actors to account.

The scale of the challenge faced by food systems and various other human and natural or planetary systems covered in the SDGs requires new thinking that crosses the boundaries on human and planetary health and wellbeing. Researchers and advocates in food and nutrition policy have discussed the need for 'double-duty' actions that help tackle the root causes of multiple forms of malnutrition (such as, for example, breastfeeding promotion, which has multiple impacts on stunting, wasting, overweight, children's immunity and maternal health) (Hawkes et al. 2020). Now is the time for triple or quadruple multi-duty actions that work simultaneously on the interrelated and systemic drivers that concentrate impacts exceptionally on the food system's most vulnerable and marginalised (sometimes termed a global 'syndemic' - Swinburn et al. 2019). The next and final chapter revisits and summarises recommendations for those actions that meet this urgent and multi-duty mandate in the context of FSN inequalities.

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