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Food Security and Nutrition Inequities in the Context of Agricultural Commercialisation in Sub- Saharan Africa: A Narrative Literature Review

**Jessica Gordon
April 2022**

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Summary

Many sub-Saharan African countries are choosing to prioritise market-oriented agricultural production as a central component of their agricultural and economic development strategies. An increasing focus on inequity in international development research has in part been driven by the observation of persistent and worsening marginalisation of particular groups. In some cases this has been linked to agricultural commercialisation processes (i.e. farmers becoming increasingly market-oriented) and unequal food security and nutrition outcomes in sub-Saharan Africa.

This narrative literature review addresses the question: **what are the different forms and processes of inequity seen to influence unequal food security and nutrition outcomes in the context of agricultural commercialisation in sub-Saharan Africa?**

The review findings point to a rich and diverse set of literature exploring various dimensions of inequity in relation to agricultural commercialisation, food security and nutrition in sub-Saharan Africa. To facilitate exploration of these dimensions, and drawing on other recent equity literature framings, inequities are conceptualised and examined at three intersecting levels: (1) unequal food security and nutrition outcomes based on social position, (2) underlying material circumstances, and (3) basic structural causes.

The review provides a first step to advancing theoretical understandings around these three intersecting areas and suggests further research is needed to explore and define inequities and further develop the conceptual framework. This is considered a critical priority to mitigate against and reverse existing food security and nutrition inequities that might in part be attributed to agricultural commercialisation processes.

Keywords

Agricultural commercialisation; food security; nutrition; sub-Saharan Africa; inequity; inequality; equity; narrative review; literature review

Authors

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Executive Summary

Many sub-Saharan African countries are choosing to prioritise market-oriented agricultural production as a central component of their agricultural and economic development strategies. An increasing focus on inequity in international development research has in part been driven by the observation of persistent and worsening marginalisation of particular groups, which in some cases has been linked to agricultural commercialisation processes (i.e. farmers becoming increasingly market-orientated), and unequal food security and nutrition outcomes in sub-Saharan Africa.

Through a systematic screening and analysis process of published social science literature, this narrative literature review addresses the question: **what are the different forms and processes of inequity seen to influence unequal food security and nutrition outcomes in the context of agricultural commercialisation in sub-Saharan Africa?**

The review findings point to a rich and diverse set of literature exploring various dimensions of inequity in relation to agricultural commercialisation, food security and nutrition in sub-Saharan Africa. These cut across multiple geographic contexts, methodological approaches, disciplines, and product supply chains. To facilitate exploration of these dimensions, and drawing on other recent equity literature framings, inequities are conceptualised and examined at three intersecting levels: (1) unequal food security and nutrition outcomes based on social position, (2) underlying material circumstances, and (3) basic structural causes. Some alternative approaches proposed by critics of mainstream commercialisation approaches are reported, including agroecology and food sovereignty.

The review provides a first step to advancing theoretical understandings around these three intersecting areas and suggests that further cross-discipline consolidation and research is needed to explore and define inequities and further develop the conceptual framework – particularly at the level of basic structural determinants of inequity. This is considered a critical priority if we are to mitigate against and reverse existing food security and nutrition inequities that might in part be attributed to agricultural commercialisation processes.

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Acronyms

AC	Agricultural commercialisation
A4NH	Agriculture for Nutrition and Health
ANH	Agriculture, nutrition and health
APRA	Agricultural Policy Research in Africa
CGIAR	Consultative Group on International Agricultural Research
FSN	Food security and nutrition
NCD	Non-communicable disease
NSA	Nutrition-sensitive agriculture
SDG	Sustainable Development Goal
SME	Small and medium-sized enterprise
SSA	Sub-Saharan Africa

1. Introduction

Over the past few decades there has been a growing interest and research focus on issues of inequity and inequality in the context of international development programmes, policy, and research. Whilst inequity and inequality are underpinned by the same moral philosophy focusing on marginalisation, the terms are not synonymous; inequality is concerned with differences in *outcomes* for different groups whilst inequity – the main focus of this paper – is more concerned with unjust and unfair *systems and processes* that might lead to unequal outcomes (Harris and Nisbett 2018). Recent global interest in inequity has in part been driven by efforts to understand the critical processes behind increasing, intersecting inequalities observed in many countries and regions of the world where unequal opportunities, varying personal capabilities, and broader social contexts have together led to or exacerbated existing marginalisation and discrimination of particular groups and individuals. In some cases this has been linked to agricultural commercialisation and poor nutrition outcomes. We have seen for example a slowing of progress towards reducing global and national child stunting levels as poorer segments of societies have faced additional barriers such as lack of access to land, inputs, functioning markets, or extension support, and haven't been able to take advantage of national infrastructural or service improvements. A core part of the agenda to tackle inequities is therefore the concept of 'leaving no one behind' which is engrained in much of the recent policy discourse in international development research, perhaps most notably as part of recent work on health equity and social determinants of health (Marmot *et al.* 2008) and more recently in nutrition and food systems discourse (e.g. Harris and Nisbett 2020).

Most of the world's poor depend on agriculture for food, employment and income. Agriculture needs to meet multiple goals to support economic growth, livelihoods, and supply of diverse foods. The global development community has for decades acknowledged the central role of agriculture in addressing food insecurity and the global burden of undernutrition (Ruel, Quisumbing and Balagamwala 2017). In recent years there has been a growing volume of research exploring causal pathways linking agricultural commercialisation (AC) – i.e. increasing market-oriented agricultural production – to food security and nutrition outcomes (see for example Carletto, Corral and Guelfi 2017; Harris *et al.* 2022). AC has been associated with increased productivity, incomes, employment, and nutrition, and many national governments have incorporated commercial farming into their development strategies. In its simplest form, AC refers to farmers increasing their proportion of marketed agricultural output

(volume or income)¹, becoming more integrated with markets via a gradual transition from subsistence production to market-orientation (Von Braun and Kennedy 1994; Pingali and Rosengrant 1995). Despite growing commercial farming aspirations, some literature suggests certain industrialised, intensive, technology-oriented models or approaches to commercialisation might enable some types of farmers to 'step up' into more lucrative farming operations whilst others are forced to 'drop out' of farming altogether (Poulton 2017). This can be seen to exacerbate unequal nutrition outcomes between groups and individuals, creating clear 'winners and losers' (Von Braun and Kennedy 1994).

Whilst gender-based inequalities in agriculture have been widely researched, and women's empowerment embedded in agricultural approaches (Quisumbing *et al.* 2021), other axes of social differences seen to impact on nutrition outcomes (e.g. age, ethnicity) remain underexplored, as do underlying and structural factors such as unequal access to markets, technologies, land, and extension support, or the role of patriarchal cultural norms and power dynamics, unfair state policies, and volatile food prices (Harris *et al.* 2021). A growing number of studies have focused on specific aspects of inequity, with a few recent reviews pulling together some of the key literature such as gender in agriculture, nutrition, and health research (Harris-Fry *et al.* 2020), or how socioeconomic inequities shape nutrition outcomes (Barros *et al.* 2010). One review (Harris *et al.* 2021) has looked at aspects of inequity more broadly within the context of agriculture, nutrition, and health. Despite the recent growth in individual papers looking at inequity within the context of agricultural commercialisation specifically, no reviews to date have attempted to bring these together.

The conceptual framing for this paper's analysis is on the negative aspects of *inequity*, rather than equity, i.e. where there are unfair, unjust or exclusionary features or pathways of commercialisation. This is to intentionally reflect and focus on the evidence of increasing inequities, with a view to then considering possible measures to address and reduce these inequities as part of future policy and programming efforts.

This review focuses on the sub-Saharan Africa (SSA) region. SSA has the highest dependency on agriculture for individual's livelihoods and, alongside South Asia, has the highest burden of poverty, food insecurity, undernutrition, and poor health. FAO *et al.* (2020) estimate that the prevalence of undernourishment in sub-Saharan Africa is 21.4% (compared, for example, to 13.8% in Southern Asia (FAO *et al.*, 2020)). Harris *et al.* (2021) argue that particular attention needs to be given to regions where malnutrition remains a major cause of morbidity and mortality and where agriculture remains the primary source of livelihood.

¹ The Household Commercialisation Index (HCI)

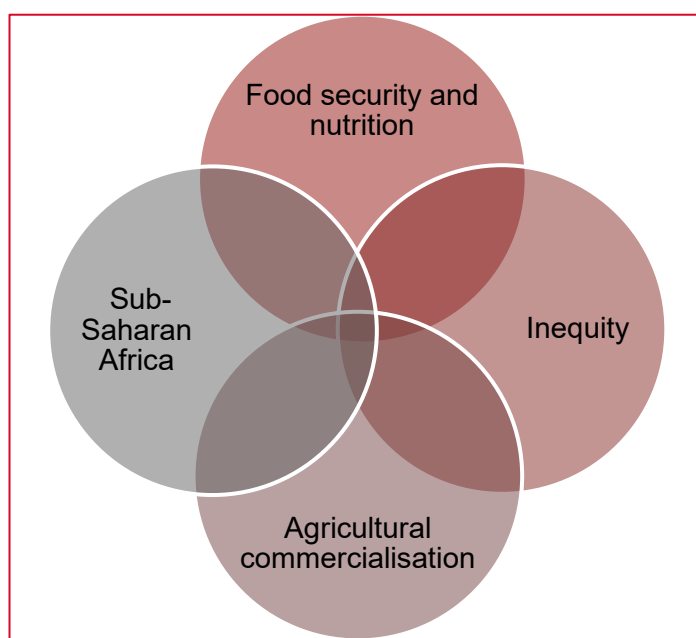
The purpose of this review therefore is to identify and synthesise key inequity themes and narratives relating to unequal food security and nutrition (FSN) outcomes explored in the recent published social science literature within the context of agricultural commercialisation, and agriculture more broadly, in sub-Saharan Africa to understand implications for approaches to commercialisation. In doing so, the review proposes new conceptual framings and understandings of some of the complex and dynamic features important for future research and initiatives in this relatively neglected area.

The key research question framing this review is: **what are the different forms and processes of inequity seen to influence unequal food security and nutrition outcomes in the context of agricultural commercialisation in sub-Saharan Africa?**

2. Definitions of key concepts

This section provides a definition of the conceptual framing guiding this review and provides justification and context for the analysis in section 4 and discussion in section 5. Figure 1 below illustrates how this review is concerned with evidence which addresses the intersection of these four distinct areas.

Figure 1 Focus of paper at intersection of focal areas



Source: Author's own.

2.1 Agricultural commercialisation

2.1.1 Definitions and concepts

Analysis of agricultural development changes or 'trajectories' that farmers experience at the farming systems level has been a common approach used to compare farmers' different pathways in response to internal and external drivers (Ollenburger *et al.* 2016; Poulton, 2017). Such analysis shows that AC occurs via multiple and varied pathways depending on context-specific circumstances and market dynamics. The dominant, mainstream model of AC advocated widely by governments, agribusinesses, and other key players in the agricultural sector focuses on modifying critical features of agricultural production, which can include increased use of agricultural inputs, mechanisation and technological

innovation, use of hired labour, and intensification and extensification of land under cultivation. Through these various changes in production, AC can be seen to increase farm productivity, yield, and income from sales of produce, and ultimately contribute towards reduced poverty and improved livelihoods (Barrett 2008; de Janvry and Sadoulet 2010; Carletto *et al.* 2017). This review adopts a broad understanding of these multiple aspects and processes shaping commercialisation and its pathways to impact.

In the AC literature, farming models are frequently classified into typologies based on the nature of farming characteristics, including smallholder, medium-scale, and large-scale plantation farming enterprises, or else distinguishing between 'subsistence', 'commercial', and 'export' agriculture (Pingali and Rosegrant 1995; Leavy and Poulton 2008). Whilst useful, such typologies can risk implying a linear pathway towards commercialisation and oversimplify the diverse circumstances and characteristics of different farmers as well as the coexistence and interaction between them. AC is applicable to all food production systems and models of production, yet the term can often evoke fears amongst some groups who associate it with capitalism, expropriation of land, dispossession of peasants, and more broadly the promotion of changes that are beneficial to larger, more powerful players to the detriment of smallholders.

Similarly, research has tended to explain agricultural development trajectories purely based on farming systems' response to largely economic drivers. However recent critics claim this fails to highlight interactions with broader historical, political, and social factors, and complex drivers underlying change (Ollenburger *et al.* 2016).

The SSA literature to date has tended to focus most on smallholder commercialisation given the central focus of many national governments on the role of smallholder agriculture in pro-poor poverty reduction. This is also in part due to the dominance of small farm production in the poorest and most food-insecure areas of SSA where farmers face multiple barriers to market engagement (Saha, Sabates-Wheeler and Thompson 2021). The focus has shifted slightly in recent years towards multiple production models as there is increasing recognition of the diverse trajectories farmers undertake. There is also greater focus on the role of larger-scale commercialisation models as there is evidence that they have an indirect or multiplier effect on poverty reduction (Von Braun and Kennedy 1994; Jayne *et al.* 2016; Muyanga *et al.* 2019). This review covers all forms of commercialisation, although the inherent bias towards smallholder commercialisation in the literature and policy discourse is reflected in the findings and themes discussed.

2.1.2 AC approaches in policy discourse in SSA

Whilst farmers have relied on market engagement in various forms for centuries, both as suppliers and consumers, efforts to 'scale up' market-oriented agriculture have predominantly focused on approaches advocated via the Green Revolution productionist narratives from the 1970s onwards. These emphasise the role of technology and science in meeting global objectives to increase productivity, yields and income, and as a mechanism to drive rapid economic growth (World Bank 2009), rather than concerns about food access or distribution (Moorsom *et al.* 2020). This contrasts with post-colonial Malthusian ideologists who have seen it more as a means to meet the growing population's food security needs (Thompson and Scoones 2009). Despite receiving support from major corporations and international development agencies, and evidence of its positive contribution towards these global objectives, AC is at times criticised for promoting a particular 'model' of agriculture that favours large-scale, export-oriented farming often to the detriment of smallholder or subsistence farmers who are seen to experience greater rates of food insecurity, hunger and poverty leading to increased social differentiation within and between households (Yaro, Teye and Torvikey 2017; Bellwood-Howard and Dancer 2021). International waves of food riots and unrest witnessed over the past century, together with a renewed policy focus on the politics of food systems, have highlighted the role of commercialised agriculture in polarising wealth differentials. This has led to a growth of alternative approaches and pro-poor movements such as 'food sovereignty' and 'agroecology', which challenge the prominent model of industrialised, capitalist agriculture, aiming to reshape power dynamics and redress negative social and environmental impacts whilst supporting food security and nutrition improvements (Leach *et al.* 2020; Bezner Kerr *et al.* 2021). Consequently, it is important to understand the complexities and dynamics driving these inequities as well as the various alternative farming models incorporating aspects of commercialisation. These issues are key themes explored in this review.

2.2 Food security and nutrition – agriculture linkages

Most of the world's poor live in rural areas and depend on agriculture as a major source of food, employment and income. In low- and middle-income countries there are an estimated 500 million small-scale farms supporting three billion people (IFAD 2021). The global development community has for decades acknowledged the central role of agriculture in addressing food insecurity and the global burden of undernutrition² (Ruel *et al.* 2017). Small-scale farmers produce up to 34% of global food supply (IFAD 2021). Over the past decade, the

² Undernutrition includes micronutrient deficiencies, underweight, stunting, and wasting.

structural ‘nutrition transition’ many countries have experienced has led to a gradual increase in consumption of animal-source foods, sugar, fats and oils, refined grains, and processed foods (Hawkes, Harris and Gillespie 2017). This has contributed to the ‘double burden’ of malnutrition – the coexistence of undernutrition and overweight, obesity, and non-communicable diseases (NCDs), which now affects a significant proportion of low- and middle-income countries (Popkin, Corvalan and Grummer-Strawn 2020).

For farming communities in SSA, access to food and a nutritious diet can be achieved either through own-farm production, hunting or foraging for wild foods, income-generating activities within or outside agriculture that increase food purchasing power, or a mixture of all of these. The concept of ‘nutrition-sensitive agriculture’ (NSA) has grown in popularity in recent years in an effort to orientate agriculture more explicitly towards improving nutrition outcomes (Ruel, Quisumbing and Balagamwala 2018). A recent systematic review (Sharma *et al.* 2020) found that NSA interventions can be effective in simultaneously addressing multiple determinants of undernutrition, for example by significantly improving dietary practices through improved food access as well as addressing other underlying causes of undernutrition such as inadequate care practices. However, they appear to have a lesser impact on nutritional status and the review highlights the need for interventions to consider more multisectoral approaches and the multiple context-specific factors affecting pathways to impact, including women’s empowerment. As Nichols (2020) highlights, however, little research to date explores how NSA programmes might exacerbate or reduce rural inequities.

The widely cited FAO (2014) definition of food security is: ‘when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life’. FAO’s four pillars of food security include availability, access, utilisation and stability. The impacts of AC on food security and nutrition have been a focus of international development research since at least the 1970s during the ‘Green Revolution’ era, which saw rapid technological innovation, intensified production, and increasingly globalised supply chains. One of the primary pathways to impact proposed at the household level, which focuses on improvements in productivity and yield (as opposed to food access and distribution), assumes that increased income from commercialisation will lead to higher caloric intake, dietary diversity, and other food security improvements (Moorsom *et al.* 2020).

However, despite the rapid growth in published studies examining agriculture–nutrition linkages in recent years at various levels (from individual and household through to broader national and international policy level), there is a lack of consensus on the nature of the relationships between commercialisation and

malnutrition, and questions remain around who benefits and under what circumstances. National- and global-level data also suggest a more complex story: despite impressive yield gains in agriculture over the last few decades, rates of malnutrition and food insecurity remain concerningly high (Development Initiatives 2020). This implies that increased household food availability and income from market sales do not necessarily translate into enhanced food security or improvements in nutritional status for all (Beuchelt and Badstue 2013). These outcomes must therefore depend on a combination of specific household and broader structural political, economic and social dynamics (Kangmennaang *et al.* 2017). This is discussed more in section 2.3 in relation to inequity.

Programmes focusing on nutrition-sensitive agriculture approaches have tended to adopt a narrow focus – looking at its effects on food security (in terms of calories consumed) and diet quality rather than malnutrition (Harris *et al.* 2022; FAO *et al.* 2020). These indicators might be a more appropriate proximal outcome measure of the effects of AC given the multiple other external factors seen to influence malnutrition that may be unrelated to AC, although more research is needed to understand these links.

In terms of conceptual understandings around food security, whilst there is widespread consensus on the importance of availability, access, utilisation, and stability the emphasis on availability by productivist framings continue to dominate discourses and policies, which neglects access, distributional, and political/power-related issues (Fonjong and Gyapong 2021; Tomlinson 2013). In a similar way the Sustainable Development Goal (SDG) targets around food security and nutrition are criticised for focusing too much on productivity and market access whereas the reality is in fact far more complex and political. The increasing prominence of rights-based political framings such as the Right to Food Movement (Pingali and Rosegrant 1995; Hossain 2017) and the food sovereignty movement (Patel 2009) have challenged normative framings of food security and nutrition. Given the focus on inequity dimensions these are important narratives to consider for the conceptual framing for this review and are discussed more in the following section.

2.3 Inequity, power, and food security and nutrition

Despite increasing global recognition of the importance of inequity factors within international development discourse, and some recent focus on certain aspects of inequity such as women's disempowerment, international research and policies on nutrition have yet to engage extensively with equity issues (Harris and Nisbett 2018). It is now widely recognised that food and nutrition insecurity results not from a lack or shortage of food but more frequently, from unequal

and/or unfair access to food resulting from persistent social, economic, and political inequalities (HLPE 2017). Whilst food access issues can in some cases be addressed through agricultural, trade or social protection policies, or specific programmes targeting nutrition education, for example, much of the recent food power and politics literature emphasises other broader food system pathways that incorporate political, economic, social and/or cultural dimensions that are equally important for addressing FSN inequalities (Friel and Ford 2015; Hossain 2017; Leach *et al.* 2020). In this context power inequities are pivotal.

Power has been defined in multiple ways in the context of agri-food [systems (Harris *et al.*, 2019) but in the context of inequities between groups a political economy definition is helpful. One such definition is of power being:

the degree of control over material, human, intellectual and financial resources exercised by different sections of society... Power is dynamic and relational, rather than absolute – it is exercised in the social, economic and political relations between individuals and groups. It is also unequally distributed – some individuals and groups having greater control over the sources of power and others having little or no control. (VeneKlasen and Miller 2002)

In part in response to growing global concerns about rising inequities and unequal outcomes, the UN's SDGs' specific targets to end hunger, achieve food security and improve sustainable agriculture and nutrition place particular emphasis on 'leaving no-one behind' (United Nations 2015). This implies a focus on unequal outcomes and inequitable processes to ensure particular groups aren't excluded. Despite this emphasis, structural FSN-related inequities remain and, in many cases, have worsened in recent years, which has limited progress towards meeting these goals. In the field of health equity, where governments have a much longer history of designing policies targeting poorer or deprived areas specifically, there have been improvements (Nisbett *et al.* 2022), which suggests the same is possible for FSN inequities if done in the right way.

Gender-related inequities and associated approaches to women's empowerment in nutrition-sensitive agriculture have been a specific focus of development studies literature and programming over the past few decades, where gendered access to and control over resources, decision-making and workloads have been identified as key pathways through which household nutrition can be improved (Kerr *et al.* 2016). Nonetheless, recent systematic reviews find increasing evidence on the role of women's empowerment and gender equality in improving maternal and child nutrition outcomes (Quisumbing *et al.* 2021). Women are seen to be disproportionately affected by malnutrition such as micronutrient deficiencies due to inequities in access to food diversity and poorer quality diets compared to men (Johnston *et al.* 2015). Other axes of marginalisation based on social stratification (geography, ethnicity, age, migration status, disability etc.)

and broader underlying material and structural inequities appear less frequently in the agriculture and nutrition literature despite recent calls for a greater focus on these aspects (Karlsson *et al.* 2018; Nichols 2020). Similarly, how these different axes of inequity interact and intersect to produce inequalities (such as being an elderly, disabled woman) – often referred to as ‘intersectionality’ – remain underexplored (Bauer 2014).

As noted in the previous section, some evidence points to the role of AC processes and interventions in driving greater social inequities and power imbalances rather than reducing them (Von Braun and Kennedy 1994; Nichols 2020). Such power imbalances and inequities can be seen to occur at multiple levels, from micro intrahousehold level – for example through inequitable resource and labour allocations (Quisumbing 2013) – to macro/regional and national level, such as through discriminatory policies and institutional frameworks (de Janvry and Sadoulet 2010).

The widely cited UNICEF Framework for ‘Determinants of Nutrition’ (UNICEF 1990) was the first conceptual framework to adopt a ‘social lens’ that recognised the importance of more proximal ‘basic’ and ‘underlying’ causes of malnutrition in addition to the obvious immediate causes (e.g. dietary intake), which up until that point had remained the key focus of nutrition interventions and policies. These broader causes include care and health services/environments and the political economy of resources.

A few recent papers (e.g. Harris and Nisbett 2018; Nisbett *et al.* 2022; Salm *et al.* 2020) have proposed more comprehensive, integrated approaches to conceptualising and framing nutrition equity, which can be applied within the context of agricultural development or commercialisation. These build on existing frameworks including the UNICEF determinants framework as well as other concepts and theories drawn from public health, development studies, feminist studies and other disciplines incorporating aspects of food justice, politics, and sovereignty. Central to these frameworks is an emphasis on the multiple interactions between structural determinants of inequity through processes of **social injustice, distributional unfairness**, and **social and political exclusion** described in and adapted from some of the wider literature on equity and justice (Karlsson *et al.* 2018; Nichols 2020). Social injustice focuses on discrimination against individuals or groups due to social norms deeming them less valued. Distributional unfairness is about how resources and opportunities are distributed unequally amongst different groups and individuals. Exclusion concerns inadequate representation, participation, and accountability. Driven by socio-political contexts (comprised of different institutions, actors, and cultural and social norms) and social stratification (based on social position and capital) these three factors form the ‘engine of inequity’ that determine individuals’ experience

of inequity. Whilst these components of inequity are represented in the conceptual framework presented in Figure 2, they are not considered as separate themes for analysis in this review but rather incorporated as part of the three main levels of inequity.

2.4 Conceptual framework

The conceptual framework developed for this review is considered a key tool to inform and guide the key concepts, theories, relationships, and assumptions explored (Maxwell 2005). It attempts to summarise the key inequitable pathways and processes through which AC can be seen to influence unequal food security and nutrition outcomes.

Based on a review of the literature it was apparent that there was a need to develop a new conceptual framework to provide an appropriate theoretical lens for this study, illustrated in Figure 2 below. This was used as the basis for screening and analysing the literature.

The new framework draws substantively on Nisbett *et al.*'s (2022) social determinants of nutrition framework and Harris *et al.*'s (2021) earlier paper, which build on existing frameworks including the PROGRESS+ and WHO Social Determinants of Health frameworks. The equity definitions and components of the framework are also drawn and adapted from Kabeer (2000), Karlsson *et al.* (2018), Salm *et al.* (2020); and Ogutu, Gödecke and Qaim (2020).

Broadly speaking, the conceptual framework considers three intersecting levels of inequity, which represent different stages along the AC–FSN causal pathway:

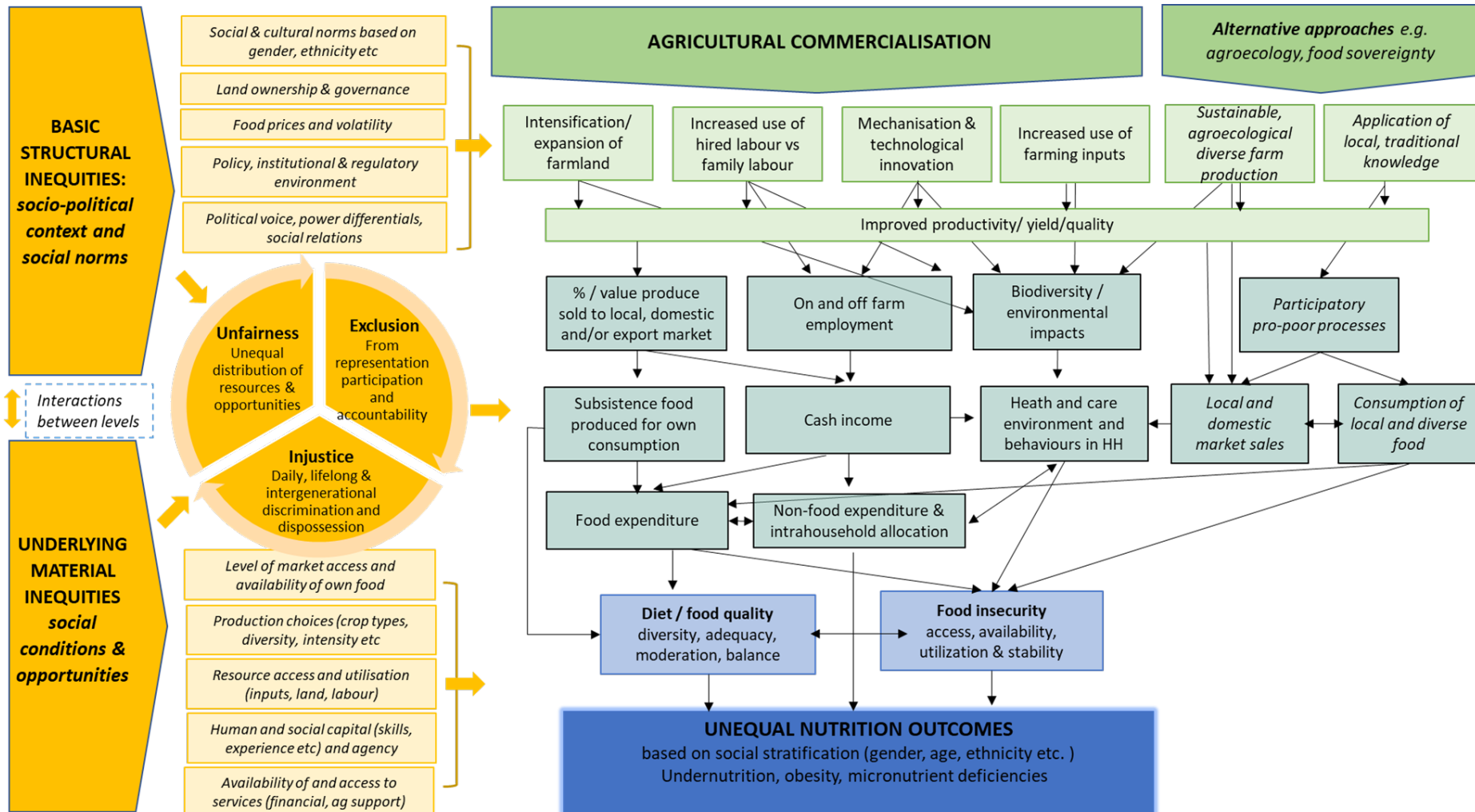
1. **Unequal nutrition outcomes** based on social position/stratification (e.g. gender, age, ethnicity, disability, geography etc.).
2. **Underlying material circumstances or 'intermediate causes' shaping outcomes** including *social conditions* (differential resource ownership and access, market access, access to labour and education etc.), *behaviours and practices* (everyday actions to meet health and wellbeing, food and nutrition needs, health-seeking behaviours etc.) and *personal food, care, and health environments*.
3. **Basic-level 'structural causes and interactions'** including the *socio-political context* (social norms and values, institutions, governance, market systems, power differentials between different actors and interests, commercial contexts etc.) and *social stratification* (perceived social position and human and material capital and potential) seen to influence underlying circumstances and outcomes.

Interactions between the different levels and components of the framework, rather than the individual components themselves, are considered critical in driving systemic inequities that lead to unequal outcomes (Nisbett *et al.* 2022). These interactions are represented through notions of social **injustice**, distributional **unfairness**, and social and political **exclusion**, which act as the 'engine' of inequity.

The commercialisation–nutrition linkages reflected in the framework are drawn largely from Von Braun and Kennedy (1994), Pingali and Rosegrant (1995), and Carletto *et al.* (2017). AC is conceptualised in accordance with the mainstream production and technology-oriented model as this is what the bulk of social science research in this area focuses on, although it is recognised that other alternative models of production such as agroecology or food sovereignty may still mirror many of these same pathways and therefore can to some extent map onto this framework.

The focus is primarily on inequity pathways seen to influence diet and food security directly at the individual or household level as opposed to more proximal policy or institutional-oriented influences, which may also play a broader role. The framework is one-directional in that the end focus is on food and nutrition outcomes. The multidirectional relationships within levels and feedback loops are acknowledged but are not a central focus this review.

Figure 2 Conceptual framework for FSN-related inequities in agricultural commercialisation



Source: Author's own.

3. Methods

The primary research question guiding the focus of this paper is: what are the different forms and processes of inequity seen to influence food security and nutrition pathways in the context of agricultural commercialisation in sub-Saharan Africa? To address this question, a narrative literature review approach is used. This type of review attempts to offer a critical reflection on some of the key narratives in the literature and provide a scholarly summary along with interpretation and critique, thereby contributing to deepening understanding (Greenhalgh, Thorne and Malterud 2018). Given the exploratory nature of the research question, the limited existing conceptual framings and relatively recent growth in social science literature that cuts across these topic areas, this review method – where the primary focus is on interpretation and induction for the purpose of advancing theoretical understanding – was considered a good fit.

A systematic step-by-step method for conducting a narrative review was used for searching, screening, and analysing the papers included (Green, Johnson and Adams 2006). To minimise selection bias, a systematic database search of keywords and a screening process was used to identify articles of relevance for inclusion in the review in an attempt to reflect a broad, diverse and non-biased set of articles from multiple disciplines (as opposed to purposively selecting articles based on snowballing from existing papers identified).

This review purposively draws and builds on findings from Harris *et al.*'s (2021) recent agriculture, nutrition and health (ANH) equity scoping review, although noting some important conceptual and methodological differences. Conceptually, there is an explicit focus on aspects of agricultural *commercialisation* (as opposed to agriculture more broadly) and the geographic focus is on sub-Saharan Africa (as opposed to all low- and middle-income countries).

The two databases selected – Web of Science (WoS) and Medline – were chosen as this combination was considered suitable for capturing a broad range of complementary social science and health-focused literature without too much duplication. Other selection criteria included the time period (year 2000 onwards) and the type of document (articles only).

Given that this topic is relatively newly explored in the literature, and the focus is on identifying new conceptual pathways and relationships, it was not considered appropriate to quality assess or rank the rigour of methods applied by different articles. Therefore, summary findings presented in this paper represent a broad range of disciplinary and methodological approaches.

3.1 Identification and screening process for papers

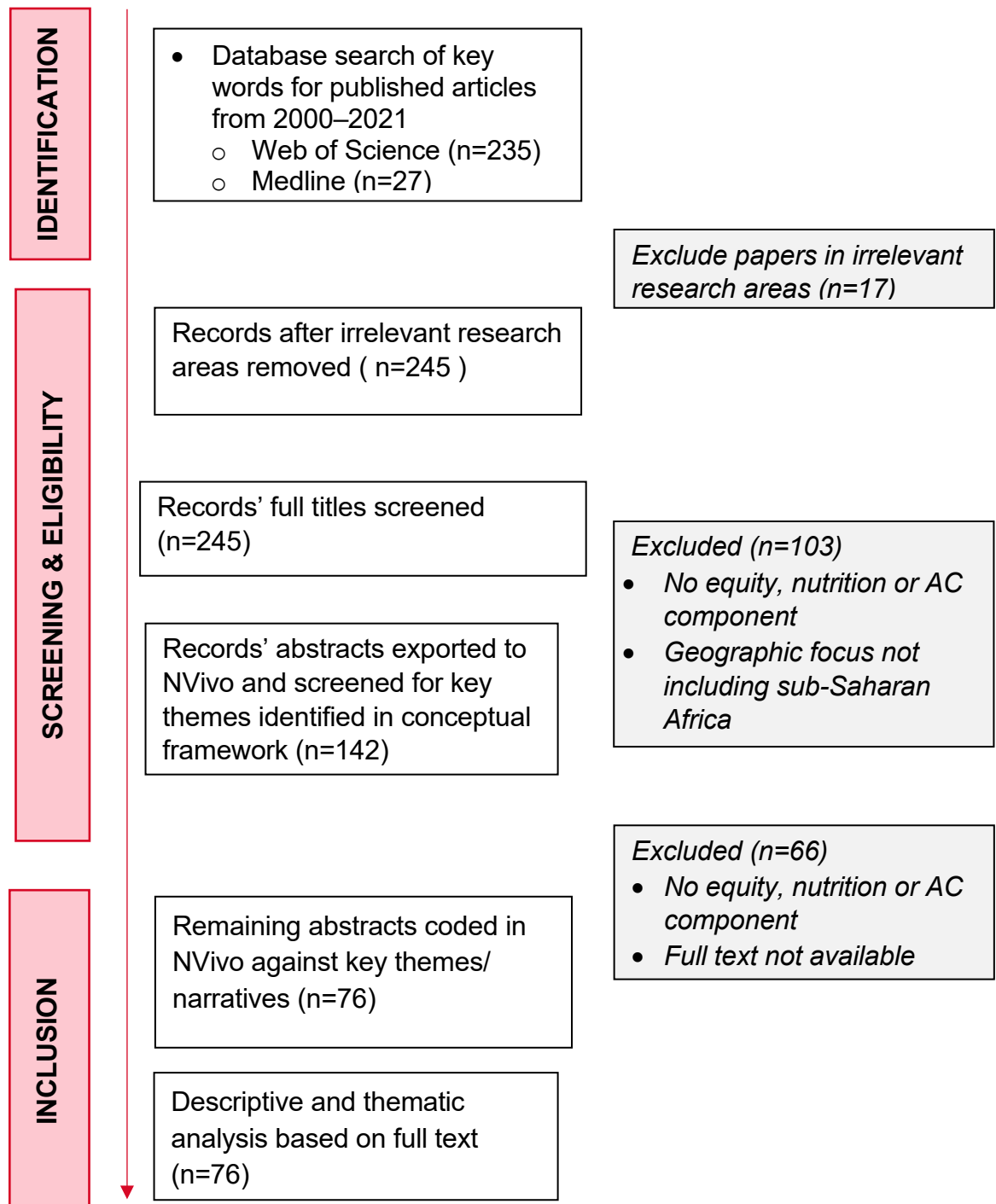
The process undertaken to identify, screen and analyse papers included the following steps:

1. Identified keywords³ to include in database searches under the three core themes based on a review of existing literature and conceptual frameworks identified and pre-testing of search terms;
2. Ran database searches in Web of Science and Medline databases based on keywords (see Annexe 3, table of full set of results in Annexe 4);
3. Excluded irrelevant research disciplines as categorised by WoS platform;
4. Screened full titles and excluded any that did not meet all four inclusion criteria areas (see Annexe 1);
5. Imported remaining article abstracts into Zotero reference management software and NVivo qualitative data analysis software;
6. Screened abstracts of articles using NVivo coding themes against predetermined inclusion criteria (see Annexe 1), excluded any that didn't meet all four criteria;
7. Analysed and coded shortlisted abstracts against mapping criteria (deductive) and new additional themes (inductive);
8. Categorised and counted papers according to key characteristics (geographic scope, year of publication, methods, discipline, and product/production focus) to conduct descriptive analysis;
9. Inductive coded and analysed articles' full text based on research question, core themes and conceptual framework;
10. Analysed key themes and narratives based on coded abstracts and full text analysis.

The full list of the 76 shortlisted articles included in the review analysis is in Annexe 2. The results of the full screening and paper selection process resulting in the final set of papers is illustrated in the Figure 3 flowchart below.

³ These include "agri* commerciali*" OR agri* develop* OR "farm* commerciali*" OR "agri* market*" OR "farm growth" OR "smallholder market*" OR "agri* income OR "crop commerciali* OR "agri* intensification" AND Diet* OR nutrition* OR Food OR Undernutrition AND Equity OR Equality OR Gender* OR Ethnicity OR Marginalis* OR Marginaliz* OR Discriminat* OR Empower* OR Disempower* OR Disparit* OR Inequity OR Inequities OR Inequality OR Inequalities OR Disability OR Disabilities. Note that the terms unfairness, injustice and exclusion were not included in the search as these were identified and added during the analysis phase.

Figure 3 Flowchart of paper screening process



Source: Author's own.

3.2 Synthesis and analysis

Analysis involved a two-step process. Firstly, a descriptive analysis was carried out, which involved categorising and counting papers according to key characteristics, including geographic scope, year of publication, methods, discipline, and product/production focus. Findings from the descriptive analysis are summarised in Annexe 5. This first step was designed to provide the contextual backdrop for step two, which comprised a detailed narrative synthesis of key themes. For the narrative synthesis, a framework-based analysis of qualitative data was used to conduct reviews by developing an initial set of thematic codes based on the primary research question, conceptual framework, and review inclusion criteria (Dixon-Woods 2011). Thematic synthesis carried out involved deductive and inductive coding using NVivo software into descriptive themes and analytical themes to capture the spread and frequency of existing and emergent topics of relevance to the review based around the three levels of inequity identified. These were then compared to the conceptual framework as well as themes expressed in the wider literature to situate the review findings within the wider evidence base.

3.3 Methodological considerations

Whilst the review was guided by predetermined criteria and frameworks identified in the literature and other recent reviews, it is acknowledged that the screening, selection, and analysis processes may have been influenced by the reviewer's own understanding and interpretations as well as through decisions made about the design of the screening process itself. For instance:

- The author's understanding of equity and agricultural commercialisation was guided by previous frameworks but there remains potential for inherent bias in selecting and interpreting the inclusion criteria. In some cases, the author rereviewed and changed the inclusion decision for specific papers during the course of the review in light of ongoing analysis of the literature.
- Obesity, overweight and NCDs were not included as explicit search terms due to time constraints and as they were not included as a primary pathway in the conceptual framework – this is reflected in the low number of reports examining these outcomes.
- Coding papers to specific categories, particularly according to the three different levels of inequity, at times proved to be complex. For example, food security was in some cases included as an aspect of material circumstances in terms of access to markets, as well as an outcome of agricultural commercialisation. In some cases, studies

were coded to multiple levels of inequity or different categories of agricultural commercialisation and food security and nutrition.

- Given the exploratory and cross-disciplinary nature of this review, no attempt was made to assess study quality.
 - The two databases selected – Web of Science and Medline – were selected to capture a range of social science and medical related literature; however they yielded a particular set of papers that may not be representative of the wider literature in this area.
 - The regional focus on SAA allows for exploration of the key themes and narratives from the literature concentrating on this priority region that are important for influencing future research and policy in these countries. However, it is recognised that by excluding literature from other regions this limits the external validity of the review's findings to other geographic contexts.
-

4. Thematic synthesis

This section presents a critical narrative review of the 76 shortlisted papers, including a summary of common inequity themes and narratives explored and variation in findings.

Analysis focuses on unfair, exclusionary and/or unjust features and processes of inequity embedded in agricultural commercialisation processes and contexts seen to influence unequal nutrition outcomes. Analysis is presented according to the three predefined levels of inequity, namely (1) unequal food security and nutrition outcomes based on social position, (2) underlying material circumstances and (3) basic structural factors as they relate to AC as a context/process. Whilst distinguishing between these three areas, the complex and intersecting relationships between inequities at these different levels are recognised and highlighted as appropriate. The final part of this section (4.4) summarises some of the alternative models for more equity-sensitive approaches to agricultural development advocated by major critiques of the mainstream AC focus on productivity, yield and increased sales and income.

The thematic synthesis conducted finds that topics covered in the shortlisted papers cut across all three levels of inequity relatively evenly. Overall the second inequity level of underlying material circumstances was the focus of the most papers, followed by the first level of unequal outcomes and then structural determinants.

4.1 How social position shapes unequal food and nutrition outcomes

This section explores findings centred around the first level of inequity based on social position. It starts by describing the broad inequalities in FSN outcomes identified in the literature, before summarising how these are linked specifically to AC within the literature surveyed.

Papers examining themes at this first level of inequity look at how food and nutrition outcomes differ for different groups who may be marginalised (e.g. men versus women, wealthy versus poor, rural versus urban). Articles cover a range of outcomes of interest including measures of food security and hunger and to a lesser extent nutrition measures such as body mass index (BMI) and anthropometry. The rationale for selection of particular outcomes is reflected by the differing impact pathway assumptions linking commercialisation to unequal FSN outcomes. Comparing differences in dietary diversity at household and individual level is a common approach used, as this is seen as a proxy for improved nutrition, although other measures of food security such as the

household hunger scale and household food security index are also featured. Few papers report on BMI and anthropometric measurements such as stunting and wasting, which may reflect resource or capacity constraints associated with measuring these types of indicators as well as the small number of public health papers included in the review (e.g. Kerr *et al.* 2016; Komatsu, Malapit and Balagamwala 2019), which tend to measure these types of indicators.

Geographic-based inequities, such as disparities between rural and urban areas or different agroecological climatic zones, are a key theme explored, alongside gender and wealth. A central narrative common across articles exploring geographic-based FSN disparities is how geographic location can play a critical role in determining FSN outcomes for farming households due to a combination of geological, infrastructure and socio-political factors. These are collectively seen to influence affordability of and access to diverse, affordable food and functioning markets, dietary diversity, food security, and nutritional status. Review findings underscore the importance of rural versus urban characteristics and associated inequitable processes that tend to result in poorer food and nutrition security outcomes for rural farming households in particular. Reasons cited for this include the fact that rural farmers often face poorer access to financial and commercial markets, geographic isolation due to weaker infrastructure and connectivity, poorer economic employment opportunities to diversify income as well as land tenure insecurity (Brummett *et al.* 2011). Findings also suggest that increased vulnerability to climatic variables, particularly in the context of climate change where irregular precipitation and more extreme weather patterns are more common, means farmers dependent on rain-fed agriculture face additional constraints on productivity (Tibesigwa and Visser 2016; Bernet *et al.* 2018).

In contrast to these findings, articles focusing more on challenges facing urban agriculture suggest that urban farmers can face similar barriers relating to land insecurity, lack of adequate government support and limited access to productive factors, which lead to inequality of food security (Houessou, van de Louw and Sonneveld 2020). These findings suggest the need for interventions and policies targeting nutrition-sensitive agriculture to better differentiate across geographic areas in order to mitigate against these pre-existing inequities.

Only a few articles consider inequitable FSN outcomes based on **age, class** and **household position** and there is a clear omission of papers considering disability or ethnicity at this level despite these being explicit keywords included in the review screening process.

Analysis of how different axes of marginalisation interact to produce specific forms of inequity – for example comparing food security outcomes of rural versus urban male- and female-headed households – features in several articles.

Whilst **gender** is examined as a cross-cutting axis of inequity in a significant number of papers reviewed, gender-disaggregated disparities in food and nutrition outcomes specifically are not found to be a central feature of many papers. This may in part be explained by the fact that food and nutrition outcomes are often measured and analysed at the household level. For example, the 'household dietary diversity score' (HDDS) is used widely in national food and nutrition surveys as an indicator of diet quality, which is seen to influence nutrition outcomes (see Gillespie, Harris and Kadiyala 2012; Kihui and Amuakwa-Mensah 2021), and 'household hunger score' (HHS) is used more recently in food security surveys (Asitik and Abu 2020). Alternatively, papers that measure at the individual level often focus on sub-groups of interest such as women and/or children, rather than comparing across groups, for example between individual male and female household members (Nisbett *et al.* 2022). As a result, this often overlooks gender dynamics, division of responsibilities and inequities related to food security within the household.

An important narrative described by some of the articles examining this aspect is the central role women are seen to play in determining household-level food security due to their tendency to focus on agricultural production for home consumption and investment of a greater proportion of their income on consumption of different food groups compared to men (Kihui and Amuakwa-Mensah 2021). This is considered to reflect a combination of resource constraints and social norms (Reynolds *et al.* 2020).

Comparison of FSN outcomes between male-headed versus female-headed commercialised farming households is an approach adopted by some papers in their analysis (e.g. Tibesigwa and Visser 2016; Reynolds *et al.* 2020), which helps illuminate some of the gender-associated determinants of food security and nutrition and in some cases challenge previous assumptions about gender roles and division of responsibilities within the household. A key related finding here is the significant gap in food security status observed between male- and female-headed households, with male-headed households faring much better. This may in part be explained by the evidence that female-headed households tend to rely on agriculture more for household food security than male-headed households.

Whilst the majority of the literature in this area has tended to emphasise traditional gender-specific roles in agriculture where households are selling a proportion of output for sale, a few recent studies included in this review (Aberman and Roopnaraine 2020; Reynolds *et al.* 2020) provide alternative evidence drawing on quantitative survey data from East and West Africa which challenges the common notion that women tend to produce crops for household food security and men concentrate on market-oriented cash crops. Instead, they claim that decision-making dynamics are more diverse and complex.

Nevertheless, authors highlight that this type of analysis still masks the nutrition security of individuals disaggregated by gender within the household.

In the few cases where gender inequities comparing men and women at the outcome level are examined, it is reported that women members of farming households tend to have poorer FSN outcomes than men. This, it is argued, is the result of a combination of their material and structural marginalisation, which includes unequal access to land and capital, and gendered social norms around food access and distribution (discussed further in sections 4.2 and 4.3).

Literature looking specifically at approaches to women's empowerment in agriculture underscores that initiatives in this area have positive causal effects on women's health status (Asitik and Abu 2020). This is linked to autonomy in agricultural production as well as improved access to and decisions on credit, group membership, ownership of assets and leisure time (Tsige, Synnevåg and Aune 2020).

Exploration of 'intersecting' axes of inequity is another key theme that emerges in the literature. This concept is rooted in feminist thinking, in particular in considering how specific types of discrimination, for example based on ethnicity and gender, can intersect and interact to produce even more extreme forms of marginalisation (Crenshaw 1989). Amongst the papers reviewed, the multiplier effect of gender combined with geographic- or age-based inequities is the most common theme examined. For example, Tibesigwa and Visser (2016) document how gender inequalities in food security compare between urban and rural smallholder farming communities in South Africa, showing that rural female-headed farming households face the greatest food insecurity challenges. Age and gender are also intersecting sources of inequity commonly explored, which together are seen to influence decision-making abilities related to access to land and food within the household, with younger wives culturally expected to be more submissive compared to older women.

Disparities in FSN outcomes based on **wealth or poverty levels** is another axis of social difference explored. A central critical narrative discussed centres on the tendency for agricultural commercialisation to rely on increasing purchase of additional or improved quality of inputs such as fertiliser, machinery, irrigation, or new seed varieties that usually cost substantially more than traditional tools, organic fertilisers, or seed varieties. As a result, it is often only the wealthier, well-established portion of farming households within farming communities who are able to afford these investments (Javdani 2012; Bouwman, Andersson and Giller 2021). This in turn can foster greater disparities in productivity and yield, incomes and food security between wealthy and poor households (these factors are discussed more in the next section in relation to underlying material inequities). Taking this one step further, some articles (e.g. Ogutu and Qaim 2019) warn there is a risk of focusing too exclusively on the effects of AC on

income poverty whilst ignoring other equally important dimensions of living standards such as education and health, suggesting it is more useful to focus on multidimensional poverty measures.

Only a few articles look at **age**-related FSN inequalities within the AC context, pointing to evidence of children being more severely undernourished compared to adult male and females. A few articles look at how individuals' **position within the household** (e.g. household head) affected their nutrition security (Akerele 2011).

4.2 How underlying material circumstances affect unequal food and nutrition outcomes

Just under half of the papers reviewed include analysis of inequities at the second level of material circumstances, which focuses on underlying aspects of equity that shape individuals' outcomes, including everyday social conditions, behaviours around health and eating, and access to food, health, care and physical environments. In the context of agricultural commercialisation, these are seen to include a broad range of interacting features related to: market access and the food environment; access to and utilisation of farming technologies and inputs; rights and access to agricultural land; and quality of agricultural extension support received. These inequities are often analysed collectively as they are seen to interact together to impact on outcomes.

Market access and the wider food environment is a dominant theme investigated in papers looking at underlying factors of inequity, where it seen to affect inequities at the individual and group level. This is understandable given the importance of market-orientation for commercialised agriculture, which in turn can impact substantially on food purchasing and consumption patterns and nutritional outcomes. As one paper highlights, 'For crop production and/or income generation to translate into food security and/or economic well-being, markets are essential' (Brummett *et al.* 2011).

Access to well-functioning markets and high-value food and non-food supply chains is considered critical for improving farmers' profitability as well as ability to purchase more diverse nutritious foods resulting in improved dietary diversity outcomes (Kihui and Amuakwa-Mensah 2021). Farmers without sufficient access to functioning markets are thereby unable to benefit from these FSN improvements. Poor market integration is also associated with other material circumstances, for example in equitable access to irrigation technologies and practices (Lefore *et al.* 2019). In the context of small-scale aquaculture farming in Cameroon, as market access increases – both in terms of sales and input purchases – so does intensification of farming systems, measured by the number of innovations and quantity of inputs used. Conversely, as market

isolation increases, so does home consumption of own production (Brummett *et al.* 2011).

Physical proximity to markets is observed as a key important determinant of market access, with farmers living in peri-urban areas reported to maintain higher productivity and profitability levels compared to more rural, isolated farming units. Poor transport and road conditions are a major constraint to commercialisation of agricultural products, especially for perishable fresh fruit and vegetables (Ollenburger *et al.* 2016). Urban agriculture initiatives have been designed to take advantage of ease of market access to improve livelihoods and social integration of disadvantaged groups (such as female-headed households, immigrants, unemployed youth) in an effort to reduce social inequalities. Nonetheless, as one paper focused on urban agriculture in Benin highlights, physical proximity to markets does not necessarily overcome market access constraints and in fact a range of other social conditions and personal capabilities can limit market access. In some contexts this can include social capital limitations including lack of farmer cooperation and competition which often results in farmers having weak bargaining capacities with market players (Houessou *et al.* 2020).

In terms of access to **farming technologies** associated with AC, a common pattern observed as with other material inequities is that as mechanisation advances, only those farmers with capital to invest in these technologies (e.g. tractors) are able to benefit, whilst smaller farms continue to rely on draft animals or contracting equipment from larger farmers (Ollenburger *et al.* 2016).

The use of irrigation technologies is cited as a core strategy to improve crop yield and reduce dependency on rain-fed irrigation. The use of irrigation has the potential to provide significant benefits to small-scale farmers including improved income, employment and nutrition and food security; however, many face barriers to access due to multiple inequalities in social structures embedded in institutions and markets. Inequitable access to irrigation technologies and practices specifically is frequently cited as the primary constraint to small-scale irrigation expansion (Lefore *et al.* 2019).

Gender-related inequities in technology access, adoption and utilisation are a central focus of many of the papers focusing on this level. Whilst technology and mechanisation have the potential to reduce drudgery and improve farming efficiency, numerous studies have found that women have unfair access to agricultural technology compared to male farmers due to a combination of factors including less contact with agricultural extension, lower level of awareness, and less input into decisions around adoption, production and marketing (e.g. O'Brien *et al.* 2016; Theis *et al.* 2018). Labour-saving technologies for sowing, weeding, threshing and so on may also reduce income opportunities for poor women who often traditionally fulfil these roles. Gender

inequities in technology use are also seen to interact closely with structural gender inequities (discussed more in section 4.3) linked to cultural norms around technology use. In some cultural contexts social norms inhibit women from using machinery, which means increasing AC through mechanisation reduces women's opportunities in agriculture (Beuchelt and Badstue 2013)

In terms of **access to and utilisation of resources**, a key feature of marginalisation explored by several studies is unequal access to productive resources such as agricultural inputs and land as well as financial resources such as credit facilities, both of which are important for market-oriented agriculture. As with technology access, a central narrative discussed in a significant number of articles (e.g. Quisumbing 2013; Asitik and Abu 2020; Reynolds *et al.* 2020) revolves around gender-based inequities, pointing to evidence of women facing additional barriers and cultural and contextual factors that limit their access to and utilisation of resources important for crop production.

Various studies have shown that financial inclusion – i.e. universal access to formal financial services – has significant positive effects on agricultural economic growth and welfare (Adegbite and Machethe 2020). **Access to financial services and resources** such as formal bank accounts and loans are referred to as a feature of central importance to farmers looking to commercialise, allowing them to invest in better machinery, inputs and so on. However, these are often only available to particular groups or individuals because of their advantageous physical or social capital. For example, even within the rural context, because rural finance institutions are often concentrated in regional or district capitals individuals living in more extreme remote areas are unable to access them. In addition, in some country contexts such as Ghana, high interest rates make loans unaffordable anyway, making investment in new technologies unprofitable. Another issue is that even in contexts where loans are widely available (in Ethiopia up to 20% of rural households can access loans) those on offer to smallholder farmers tend to be small and low risk with short repayment timeframes, making investment in larger-scale technologies such as irrigation extremely difficult (Lofore *et al.* 2019). One study (Adegbite and Machethe 2020) focusing on the financial inclusion gender gap (FIGG) in smallholder farming communities in Nigeria finds that increasing FIGG rates – from 7% in 2011 to 24% in 2017 – were associated with a combination of socioeconomic, sociocultural, institutional, legal and regulatory factors that limited both the demand and supply of financial services for women. This gender gap was linked to reduced capability for female farmers to hire labour during peak farming periods and purchase modern machinery, and had a negative influence on their aspirations to improve quality standards to earn higher economic returns.

Access or use rights to agricultural land is a particularly contentious issue in the context of AC given its central importance for crop production and livelihood security as well as competing pressures over its ownership and use. This applies both to processes of land 'intensification' and 'extensification' as part of efforts to increase yield and production. Increasing population pressure and extreme weather patterns due to climate change are mentioned as two factors that further exacerbate these inequities. Some articles observe that this increased pressure can lead to increased incidences of conflict between and within farming communities and consolidation and appropriation of land by more powerful farmers, leaving less powerful farmers even more marginalised and unable to access land previously relied on for cultivation. One article comparing commercialisation models in Ghana (Yaro *et al.* 2017) concludes that plantation and medium-scale commercialised farming areas often have more unequal distribution of land amongst populations compared to smallholder outgrower areas. This is due to investors purchasing land for intensive farming, which crowds out local farmers. More commercialised areas are also reported to have significant numbers of local landless workers and unemployed migrant landless workers. Women's access or use rights to agricultural land is critical to improving gendered livelihood outcomes and food security yet many national policies and strategies fail to recognise this. Tsige *et al.* (2020) point out in their article focused on gender mainstreaming in agricultural development in Ethiopia, that despite national efforts to mainstream gender and development approaches in their food security strategy, including ensuring gendered land tenure security and employment support schemes, in reality household heads are often culturally accepted as the official landowner, which limits women's use rights over agricultural land. Indeed, women themselves often aren't aware of or don't acknowledge their legal rights over land and even if they do, they lack the time, confidence, and resources to access legal services.

In contrast to this narrative, another important theme discussed highlights the fact that increasing commercialisation may not always be the preferred choice for smallholder farmers, but due to increased population density and urbanisation they may in some cases be forced to cultivate their plots more intensively or on smaller plots of land, becoming more dependent on cash income from food sales to pay for necessities such as agricultural inputs, tools and taxes. This cash dependency contradicts the ideal expressed in some traditional cultures of food security representing self-sufficiency and market dependency being seen as extravagant or wasteful (Whyte and Kyaddondo 2006).

Access to and use of agricultural extension support in the form of provision of fertilisers, improved seeds, credit, and training is another material aspect of inequity covered by several papers. Certain farmers are seen to be excluded from extension services due to inequitable approaches to government provision and targeting of extension services, which are often implemented with a 'top-

down' approach that considers farmers as passive recipients and is not tailored to individual needs and priorities. Because extension workers often lack critical awareness of existing local power relationships, groups that are already marginalised – due to existing social hierarchies, for example – may feel unable to voice their views, needs and preferences relating to improving farming techniques, knowledge and so on. As with technology access, several articles highlight the marginalisation that poor farmers, especially women farmers, face in accessing extension services. Some authors suggest that women farmers are not deemed a priority to extension workers as they are often less educated and therefore require greater investment of time and resources to gain the necessary knowledge and skills to undertake new agricultural practices (Beuchelt and Badstue 2013; Tsige *et al.* 2020). Excluding women in male-headed households from extension services is highlighted as a common practice in some cultures because crop cultivation and technology access is linked to the household head in the extension delivery system.

Another important theme highlighted is **access to government subsidies** to support production-oriented investments. Reports highlight that in many cases access to subsidies is unequal across farming communities due to features of their conditionality (e.g. only covering a fixed percentage of the value of new expensive machinery, with farmers having to cover the remainder), meaning again only the largest and wealthiest farmers can utilise these (Ollenburger *et al.* 2016).

A few papers reviewed (e.g. Tsige *et al.* 2020) examine aspects of **human capital, potential and agency**, including how some farmers can access relevant technical skills, knowledge and experience, and capacity to utilise these. These aspects contribute to farmers' important choices around crop selection (including type, variety, diversity etc.) as well as decision-making on what proportion of their total production to sell versus retain for home consumption, which is critical for FSN outcomes (Aberman and Roopnaraine 2020). A 'value chains for nutrition' (VCN) approach – which focuses on increasing supply and demand for nutrient-dense foods – is advocated as one way to support commercialisation whilst reducing the inherent risks for farmers exposed to volatile market prices, and at the same time supporting improved diet and nutrition outcomes. However, prevailing social norms around gendered decision-making means that commercialisation has implications for women's control over income and assets and fewer benefits overall compared to men (Aberman and Roopnaraine 2020)

Building **social capital** through collective marketing and mutual support via either formal membership-based farmers' organisations or other more informal channels is considered an important means for farmers to manage risks associated with production and sales of agricultural produce, particularly in the context of competitive high-value horticultural and commodity crop supply chains

(Thompson *et al.* 2009). It is also considered an important means of increasing smallholder farmers' relative power and competitiveness compared with other larger-scale operators and when negotiating with market traders.

In the case of **employment opportunities**, a few papers cite recent research showing that influxes of new large-scale farmers and private investors can displace existing small-scale farmers without generating new local job opportunities, which results in a surplus of landless unemployed. Articles report that agricultural wage labour, which represents an important off-farm source of income for many farming households in SSA, tends to be concentrated amongst the wealthiest rural smallholders (Tschirley and Benfica 2001). Another common pattern reported is that as wealthier farmers become more commercialised, they tend to rely less on family labour and more on hired labour, which can alter intrahousehold relationships and responsibilities. For example, in farming households where both men and women engage in farming activities, some women farmers are found to receive less share of family farming income as commercialisation and income increases due to men's fears around their wives' expectations of how income is distributed. This can often push women into alternative activities such as cultivating their own cash crops, working as labourers on neighbouring farms or moving to off-farm trading activities. This progressive process of 'semi-proletarianisation' is seen to lead to increased livelihood and food insecurity for disadvantaged groups (Yaro *et al.* 2017). However, one paper (Krumbiegel, Maertens and Wollni 2020) presents a more positive story with 'feminised employment patterns' promoted through labour intense export-oriented plantation farming structures in Ghana actually leading to increased women's empowerment. Their data shows a statistically significant positive impact of women's employment in horticulture on household income, female income share, income and asset ownership and a negative effect on reproductive workload. Nonetheless, the paper also highlights the importance of considering men's relative participation in the labour market as these changes don't address pre-existing norms and inequalities around household-level decision-making, for example on how income is spent on food or other goods.

Diversification or 'stepping out' of agriculture altogether is one pathway that farmers may choose as their opportunities for alternative livelihoods increase, or indeed the only choice for those most marginalised and landless may be to 'drop out' of farming and become fully dependent on non-farm income (Matita *et al.* 2021).

4.3 How basic structural determinants affect material circumstances in turn affecting food and nutrition outcomes

This section examines the key themes documented at the third level of inequity, basic structural determinants, which looks at wider social and cultural norms and values, and institutional, political and governance factors. It is the least commonly explored level of equity in papers reviewed. Whilst harder to measure and establish direct causal links with changes in individual level FSN outcomes (which may explain the historic lack of research exploring these linkages specifically and the limited number of studies focusing on these aspects in the papers reviewed) the limited evidence presented in these studies suggests that these often long-term, discriminatory processes occurring at the macro level can have significant negative implications at the individual micro level.

The most common determinant of inequity highlighted at this level is the role of **social norms**, especially those related to expectations around longstanding gender-specific roles that influence farm ownership, agricultural production, childcare and other household responsibilities, which result in unfair differential access to agricultural and food resources and opportunities (many of these are touched on in section 4.2 in relation to underlying material circumstances). Patriarchal gendered norms that construct men as superior to women remain entrenched in many cultures, assuming that only men can be considered owners or managers of family farms despite the fact that women may work just as much as men on these farms and may be equally capable of taking on these responsibilities (Yaro *et al.* 2017). In addition, in some societies cultural norms and practices limit or even ban interactions between male extension workers and women who are not related to them (Beuchelt and Badstue 2013), which acts as a barrier to women farmers improving their knowledge and skills alongside male farmers. Similarly, the persistence of patrilineal inheritance systems referred to in several papers underscores the temporal nature of intergenerational inequities accounting for the low position of women across many different farming models (Yaro *et al.* 2017).

Nonetheless, a few articles (e.g. Vercillo 2020) challenge these assumptions and point to evidence of men and women's roles being far more varied and nuanced and not necessarily conforming to these prevailing stereotypes. These misconceptions about context-specific gender roles can have unanticipated negative consequences. For example, a few papers (e.g. Nchanji *et al.* 2021; Beuchelt and Badstue 2013) find evidence that women's contribution to agricultural production is frequently underestimated or overlooked in national policy or extension support, particular when it relates to aspects of production dominated by women such as home storage, small-scale processing and food production.

The nature of **land ownership, governance and tenure arrangements** is another related theme highlighted in the literature reviewed, which is of central importance to agricultural production, expansion and intensification. Papers report that in some cases agricultural commercialisation has been seen to exacerbate land tenure insecurities leading to increased marginalisation, poverty and food insecurity for those not benefiting from market-oriented intensification (Dawson, Martin and Camfield 2019). In such cases where land has been protected via customary agreements, enforcement is often not possible due to unequal power dynamics. This can lead to a pattern of ‘accumulation by some’ and ‘dispossession for others’ (Yaro *et al.* 2017). Indeed among the poorest farming households inadequate land may in itself act as a disincentive to adopt innovative technology that might otherwise be a means out of extreme poverty (Kangmennaang *et al.* 2017). Commercialisation can also lead to rapid changes in traditional sharecropping systems and land inheritance norms, with family heads opting to increase financial returns by selling land to external investors rather than divide it out to family members, particularly in the context of increasing land prices.

Greater pressure to increase commercial production has in some cases fuelled appropriation of communal lands, affecting not just longstanding social norms around environmental resource management but also customary land governance as well as access to wild harvested foods often relied on most by the poorer and landless households in rural communities (Kansanga *et al.* 2020). As one article explores, these shifting land tenure arrangements are seen to increase conflict between traditional and legal land tenure arrangements (Ollenburger *et al.* 2016).

Another important theme explored in the papers is how **different farming production structures** affect local livelihood opportunities and outcomes differently. The large-scale plantation model of production is broadly shown to generate more employment opportunities than smallholder or outgrower models, and wages are on average reported to be higher; however, the nature of contracts for local workers have at the same time tended to become increasingly casual and temporary, with senior-level permanent roles commonly given to high-skilled staff from urban areas (Yaro *et al.* 2017). This narrative relates to issues around access to employment discussed in the previous section. In a study looking at how corporate-led agricultural investments in plantations have affected social relations of women’s food access in Ghana and Cameroon (Fonjong and Gyapong 2021), the rapid commodification of land has been seen to generate ‘a new system of control, inequality and the reconfiguration of existing land relations’.

A few papers suggest that broader **policy, institutional and regulatory environments** can also be seen to play an important role in maintaining and

promoting unequal food and nutrition outcomes that disadvantage particular groups and individuals (Hanjra and Gichuki 2008; Yidu and Dzorgbo 2016; Adegbite and Machethe 2020). These can be seen to interact with material inequities (discussed in the previous section) that exacerbate individuals' experience of marginalisation. This includes, for example, the role of state policies in facilitating unequal access to agricultural production components – such as biased land title registration certification policies that guarantee land security, expansion in farm size and increased productivity to particular groups (Yidu and Dzorgbo 2016). An important related narrative explored is that many African countries have followed the neoliberal ideology of designing agricultural policies around increasing their competitiveness in globalised markets but have neglected to join this up with separate efforts to mitigate poverty experienced by some members of the population, for example through food aid distribution or developing local and domestic markets. Consequently, other more systemic drivers of food challenges for the poorer members of society such as high and volatile food prices have been neglected, which has resulted in further polarisation of outcomes (Siebert 2020).

To address existing inequities and prevent further differentiation of FSN outcomes, several papers call for greater recognition of social differentiation in agricultural policies and extension support geared around market-oriented agriculture, with particular recognition of gender-based norms and practices, which require a more tailored and targeted approach.

4.4 Alternative, equity-focused approaches to agricultural development

In contrast to the majority of papers calling for market-oriented production processes and interactions to address specific sources of discrimination faced by particular groups, a few claim that other or a diversity of approaches are needed to overcome these inequities (e.g. Jiren *et al.* 2020). Such proponents point to the need for a fundamental transition away from neoliberal, capitalist productivity-oriented approaches to AC, which are seen to uphold and reinforce material and structural inequities. Instead, alternative, more interdisciplinary, human rights-based approaches to agricultural development are proposed that can be seen to address social inequalities and inequities. These include food sovereignty approaches, which focus on the rights of populations to define and control their own food and agriculture systems and access safe, healthy, sustainable foods. Recognising the unequal power dynamics associated with globalised supply chains, some advocates of this approach place particular emphasis on the importance of local marketing and closed market systems that protect local, small-scale production from external competition. A food sovereignty approach used in urban areas of South Africa has provided an

important alternative counter-exclusionary approach to addressing food insecurity for the poor (Siebert 2020). Other papers explore agroecological approaches, which emphasise sustainable management of diverse food systems that respect local knowledge and biodiversity (Kangmennaang *et al.* 2017; Tsigie *et al.* 2020). These point to the benefits of agroecological approaches in improving food security and livelihoods for small-scale, family farming structures alongside environmental sustainability.

Some of these alternative approaches are already starting to be embedded in national agricultural extension and food security policies, reflecting the increasingly widespread acceptance of these alternative models for promoting more equitable agricultural development and economic growth. However, the coexistence of multiple approaches to agricultural development that have contradictory objectives can make wider food security governance challenging (Jiren *et al.* 2020), suggesting a need for better institutional cross-sector coordination and integration of different stakeholders' interests within specific contexts in order to ensure sustained food security for all.

5. Discussion

Findings from this review point to a broad and diverse set of interwoven narratives and themes. These cut across features and processes of inequity at multiple levels, suggesting that AC is an important determinant of individual farmers' FSN outcomes. The extent to which inequities are aggravated, or in some cases reduced, through AC, depends a lot on the specific material and structural contexts within which farmers navigate various pathways to increasing market orientation.

At the first level of the inequity framework, focused on unequal FSN outcomes, findings point to a range of axes of inequitable outcomes observed, most notably according to geography, gender and income. Analysis based on age, ethnicity, religion, or other axes of inequity is lacking, which suggests more research is needed to understand these aspects. Evidence from the wider literature and other contexts outside of SSA (e.g. India) suggests that this lack of focus on these aspects does not mean these factors don't have an important role to play in shaping inequitable FSN outcomes. Rather, this may reflect engrained cultural and political sensitivities inhibiting research into these aspects.

Some papers explore intersecting inequities, for example based on geographical and gender-based differences, which are seen to interact in various ways to affect individuals' FSN outcomes in different ways. Such findings suggest that AC initiatives need to be cognisant of these intersections and ensure that policies or approaches targeting specific groups (for example women, or rural farmers) are aligned and where possible integrated. Nonetheless, the extent to which intersectionality is reflected in the literature reviewed is quite limited, suggesting the need for a greater focus on this in the context of AC in SSA.

In terms of FSN outcome indicators of primary interest at this level, the vast majority of papers focus on dietary diversity, though some look at other measures of food security and just a few focus on anthropometric measurements. Dietary diversity is broadly considered a useful proxy indicator of overall diet *quality*, which is an important determinant of nutrition outcomes (Hoddinott and Yohannes 2002; Fischer and Qaim 2012). However, there remains some debate in the wider literature on which indicators are most relevant to focus on in relation to inequity specifically. In the context of nutrition and inequity, choice of indicators is important as it relies on causal assumptions about influential processes further back along the impact pathway that can be challenging to measure, particularly through standardised quantitative approaches – for example sociocultural norms and power dynamics. Nutrition as a sector has been criticised by nutrition policy research (e.g. Nisbett *et al.* 2014; Harris and Nisbett 2020) for failing to acknowledge the importance of political

economy and equity-sensitive approaches, and nutrition outcome data has largely failed to disaggregate across these multiple dimensions of social characteristics vital to understand features of inequity.

Very little attention is given to obesity, overweight, and NCDs despite wider recognition of the 'double burden' of malnutrition now affecting many countries in SSA (Holdsworth *et al.* 2020). Whilst this might be indicative of the omission of these terms as keywords in the initial review screening process, it may also reflect a wider lack of recognition of how AC pathways might have a critical role to play in influencing Africa's changing dietary patterns and nutrition transition, aggravating the coexistence of obesity alongside malnutrition.

Articles focused on this first level pay a lot of attention to how gender differences affect FSN outcomes, with women members of farming households tending to have poorer outcomes than men overall. In this way, findings also speak to the other two levels of inequity identified in the conceptual framework, particularly at the basic structural level where the role of gendered social norms is perceived to be critical. Gender dynamics and norms at the intrahousehold level, including division of responsibilities as well inequities related to food security within the household, have received some attention in recent research. Nonetheless, as some authors argue, a more gender-sensitive lens and explicitly gender inequity-driven policies and approaches in agriculture are needed to target the differing needs, roles and expectations of men and women farmers at the household level (Malapit and Quisumbing 2015; Tsige *et al.* 2020). Only then, it is suggested, can improvements in access to adequate and appropriate diets and FSN outcomes be achieved at the household level and for individual men and women within the household.

A counternarrative opposing traditional assumptions around distinct male versus female roles in commercial-oriented farming (farming for cash income versus for household food production, for example) suggests that these roles are in fact far more nuanced and complex. Wider literature in this area has largely continued to support traditional narratives around male versus female roles, although broad generalisations are problematic when the evidence demonstrates that this is very much dependent on context-specific cultures, histories, and practical constraints. Findings also highlight the longstanding recognition of the additional barriers women face in the agricultural sector resulting in a recent explosion of agriculture and nutrition-related policy and research focused on 'gender mainstreaming' and aspects of women's empowerment in agriculture. This includes development of indices such as the Women's Empowerment in Agriculture Index (IFPRI 2012; FAO 2015). Analysis also illustrates how gender is a cross-cutting issue in the context of AC and FSN with multiple inequitable processes and culturally embedded gendered social norms seen to influence food insecurity and nutrition outcomes (O'Brien *et al.* 2016).

Inequities associated with farmers' geographic location are another central theme explored in the papers. Rural farmers are found to face multiple additional barriers to commercialisation compared to those in closer proximity to urban centres and functioning markets, although some evidence suggests farmers in urban areas can still face challenges to market access. Geographic inequities at this level are closely interrelated with unfair and exclusionary processes related to land access, inheritance and governance documented at the basic underlying level of inequity (explored in section 2.3). These are heavily influenced by AC-oriented pressures on areas of land considered particularly valuable for market-oriented crop production, for example due to their proximity to markets or favourable agroecological conditions.

The role of rural agriculture for improving household livelihood and food security is already well documented and reflected in the rural bias in agricultural policies in much of SSA (Tibesigwa and Visser 2016). However, in part due to rapid rates of urbanisation in many countries in SSA over the past few decades, there has been increasing emphasis placed on the importance of urban agriculture for improving FSN outcomes. Despite this, approaches and policies to support urban agriculture remain inconclusive, even less so when comparing differences between rural and urban areas (Poulsen *et al.* 2015).

Papers exploring the role of AC in exacerbating income-based FSN inequalities, also reflected in wider critical pro-poor narratives expressed over the past few decades, criticise AC for spurring rural income growth, employment opportunities and poverty reduction only for the wealthier portion of farming communities, or certain types of farming structures. The bias in mainstream AC policies towards wealthier individuals is seen to worsen existing income inequalities and fail to improve outcomes for the poorest and most marginalised individuals. In this way, it creates clear 'winners and losers' (Von Braun and Kennedy 1994; Wiggins *et al.* 2011; Andersson Djurfeldt 2017). The causal assumption reflected in some of the articles reviewed that increased income leads to better diets and nutrition has been consistently challenged in recent years (Ogutu and Qaim 2019; Harris *et al.* 2022). In fact, some wider evidence suggests that in some cases it may even lead to a shift towards a less nutritious diet (e.g. Mcdonell 2016).

Articles exploring the second level of underlying material determinants of inequity, which make up the majority of papers, cover a broad range of intermediate context-specific and systemic issues and barriers as reflected in the conceptual framework for this study (Figure 2), including those relating to access and ownership, utilisation, and capacity, which are perceived to marginalise particular farmer groups or individuals in different ways. The recent high-profile Rural Development Report (IFAD 2021) prepared for the UN Food Systems Summit, which has a strategic focus on inclusive and equitable transformation of global food systems, echoes many of the themes presented in these findings at

this level and at the first level of unequal outcomes discussed above. Examining pathways to transform food system outcomes, the report observes that at the micro household level, the degree of household diversity (gender, age, ethnicity etc.) together with local material context affecting livelihood options available (access to infrastructure, skills training etc.) can be seen to intersect to determine farmers' individual options and capacity to take up opportunities. Again this supports the multi-layered, interrelated processes of unfairness, exclusion and injustice represented in the conceptual framework for this paper.

Many of the papers reviewed infer (often implicitly in their choice of focus) that as part of international and national efforts to scale up commercialised agriculture, for example through targeted agricultural extension support to modernise and intensify production methods, mainstream narratives are reinforcing underlying social inequities through what has been termed in the wider equity literature as 'cognitive' or 'epistemological injustice' (Nichols, 2020). In the context of globalised supply chains – the effects of which permeate even to the most remote, marginalised farmers in SSA – this occurs when forms of traditional, local knowledge are replaced by dominant, mainstream understandings of knowledge, crops, diets and so on, which are considered important for market-oriented agriculture. In contrast to this mainstream, industrialised approach, alternative farming production models based on agroecological or food sovereignty principles are mentioned, which might offer a more farmer-centred or 'pro poor' approach whilst also upholding environmental sustainability practices. This mirrors the rapid growth in popularity of these alternative approaches as part of global development narratives around a more sustainable, equitable approach to agricultural development.

Whilst efforts are made in many papers to disaggregate by different farmers' characteristics, for example wealth, gender and so on, less emphasis is placed on comparing the trajectories of different farmers based on their individual human capital, motivations, skills, and situations driving them. This is an area of the conceptual framework that remains underexplored and requires further research to unpack in relation to AC pathways.

The increasing importance of other diverse forms of livelihood and sources of income off-farm to meet rural people's needs alongside farming is another key theme investigated at this level. Again this reflects wider discourse advocating for commercialisation approaches to recognise individuals' multiple roles aside from being identified as a farmer, and potential for improving their situation that looks beyond farming. This might include casual work in the small and medium-sized enterprise sector or as a paid employee. Farming households may also be partly dependent on remittances from family members (for example who have moved to urban areas and are earning higher incomes) or social protection measures designed to support poorer households (IFAD 2021). Again, these

multiple factors influencing farming households' degree of agency and capacity to choose a particular AC pathway emphasise the importance of understanding basic structural causes and interactions of inequity alongside underlying circumstances affecting human and social capital.

Less emphasis is given in the articles reviewed to themes exploring inequity features at the third basic, structural level. This is consistent with findings in Harris *et al.*'s 2021 recent scoping review mapping the research base on ANH-related equities. Social norms and behaviours, particularly around gender-based cultural norms and expectations, are exhibited as part of everyday farming activities and division of household roles and responsibilities. Some studies draw attention to aspects of land tenure and governance, farming production structures (e.g. small-scale versus plantation), broader agricultural policies, and infrastructure seen to influence farmers' commercialisation trajectories. Features reflected in this paper's conceptual framework that are largely absent from the literature reviewed include the role of food price volatility, private sector involvement and political marginalisation. This may be in part due to the review's keyword screening process, which did not incorporate these terms or concepts specifically, at least not in relation to inequity or agricultural commercialisation. This suggests the need for further reviews to identify and build on existing literature in these areas.

Whilst many of the papers reviewed focus on mechanisms through which farmers have either actively chosen or felt pressured into shifting towards greater market-oriented agricultural production of increasing scale, others warn that these frequently corporate-driven processes of commercialisation have undermined or dismissed the importance of small-scale farming operations for home consumption for food security. Similarly some of the wider literature points to the discriminatory effects of dominant policy discourse around modern food systems and farming practices, which incentivise farmers to cultivate new and different crop varieties whilst neglecting traditional varieties that may in fact be nutritionally superior (Nichols 2020). This highlights the need for national and global policy to build in better regulatory frameworks that protect farmers against the negative impacts of large-scale agricultural land development and support multiple forms of production so as not to worsen existing inequities.

6. Conclusions

This review set out to explore **the different forms and processes of inequity seen to influence unequal food security and nutrition outcomes in the context of agricultural commercialisation in sub-Saharan Africa**. Offering a novel conceptual framework to examine the available published literature that cuts across the intersecting topics of agricultural commercialisation, food security and nutrition, and inequity, it provides a useful synthesis of some of the central narratives and themes explored in the literature centred around three distinct yet interrelated levels of inequity. In doing so, the review furthers theoretical understanding on FSN-related inequities within the context of agricultural commercialisation, and agricultural development more broadly in SSA.

The review findings point to a rich and diverse set of literature exploring aspects of inequity in relation to agricultural commercialisation, food security and nutrition in sub-Saharan Africa. These cut across multiple geographic contexts, methodological approaches, disciplines and product supply chains (see Annexe 5).

The majority of papers reviewed emphasise the underlying material features of inequity driving unequal FSN outcomes, such as market and service access, with less focus on unequal outcomes stratified by gender, age or other axes of social difference, as well as basic, structural determinants including social norms, land governance and political voice. Whilst acknowledging the conceptual challenges in examining some of the less 'tangible' drivers of inequitable outcomes, more research that focuses on the role of structural determinants is called for. There also remains a gap in understanding how the different levels of inequity intersect and interact to further marginalise particular groups or individuals.

Inequity as a concept is often not clearly defined, framed, or theorised explicitly in many of the articles reviewed, perhaps in part due to discipline-specific alternative framings that have tended to dominate the agricultural research and policy landscape. Therefore, much of the narrative synthesis undertaken for this paper relies on the author's own conceptual framings based on their understanding of the existing equity-sensitive literature. There is also a calculated rationale for paying attention to *inequities*, rather than *equities*, to highlight areas where challenges and issues exist that can be addressed through future policy and programmes. There remains a need for more cross-discipline consolidation of inequity-associated terminologies and 'lenses' to enable an effective and pragmatic shared policy and research agenda in this area moving forward. In the absence of any existing suitable frameworks, this review provides a first step in defining a conceptual framework that can be used to help analyse

the different forms and processes of FSN-related inequities that can exist at different levels across different agricultural commercialisation contexts, though more work is needed to unpack and develop this further.

Given that market integration forms a core part of many countries' agricultural development strategies, extension support and national policies in SSA, greater attention needs to be paid to inequity considerations to prevent and reverse inequities driven through AC processes. There is also a need for more inequity-focused research to better understand how features and processes of inequity interact and are embedded in food systems pathways and are shaping progress on agriculture for nutrition. This will help uncover the 'winners and losers', whose knowledge and input matters, who is able to participate and how.

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Annexe 1: Inclusion criteria for papers

Core theme	Criteria	Include studies relating to
Equity	Equity general	Core equity terms such as marginalisation, disempowerment or exclusion
	Inequalities of outcomes	Disparities between different income groups, genders, classes, ethnicities, health/disabilities, ages, and locations
	Intersectionality	How any of the above issues of marginalisation intersect or interact to produce additional layers of marginalisation
	Underlying material circumstances	Differential access to resources or capital such as land or water ownership or access, market access, access to financial services, inputs, employment, educational or knowledge disparities, and other material, social, human or natural capital
	Structural determinants	Basic structural determinants of marginalisation including social norms and cultural values, institutional and regulatory environment, political voice, land governance, private sector involvement, power differentials, and the role of ideology in shaping inequity
Agricultural commercialisation	Market sales	Changes in relative or absolute proportion/volume/value of sales of produce to market (vs for own consumption) and associated cash income
	Use of farming inputs	Increased reliance on purchased inputs (fertiliser, seed, herbicide)
	Productivity increase	Increased yields through either expanding or intensifying land use for production for sales/export, for example through specialisation

	Technological innovation	Increased use of machinery, technology, irrigation, genetically modified seeds etc.
	Hired labour	Increased reliance on hired labour (vs family labour, usually unpaid) for farm production
	Alternative models/ approaches to agricultural development	Differing approaches to/models of agricultural development designed to improve productivity/food security, including agroecology, conservation agriculture, kitchen gardens, organic, urban agriculture
Nutrition and food security outcomes	Diet	Dietary outcomes including nutrient content of diet, diversity or quality of diet, or changes in diets over time e.g. animal sources
	Food security	Changes in food availability, access (physical, economic, social etc.) utilisation or stability including consumer purchasing behaviours and food preparation
	Health	Health-related outcomes
	Undernutrition	Undernutrition outcomes, including stunting, wasting, underweight, micronutrient deficiencies, or hunger, in any population
Sub-Saharan Africa		Focus of data collection/review on country/ies within the sub-Saharan Africa region, including those that compare studies in this region with other regions

Annexe 2: Shortlisted articles included in review

1. Aberman, N.-L. and Roopnaraine, T. (2020) 'To Sell or Consume? Gendered Household Decision-Making on Crop Production, Consumption, and Sale in Malawi', *Food Security* 12.2: 433–47, DOI: 10.1007/s12571-020-01021-2
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Annexe 3: Search terms for database searches

Agricultural commercialisation	Food security and nutrition	Equity	Location	Other
"agri* commerciali*" OR agri* develop* OR "farm* commerciali*" OR "agri* market*" OR "farm growth" OR "smallholder market*" OR "agri* income OR "crop commerciali* OR "agri* intensification"	Diet* OR nutrition* OR Food OR Undernutrition	Equity OR Equality OR Gender* OR Ethnicity OR Marginalis* OR Marginaliz* OR Discriminat* OR Empower* OR Disempower* OR Disparit* OR Inequity OR Inequities OR Inequality OR Inequalities OR Disability OR Disabilities	Sub-Saharan Africa OR Angola OR Benin OR Gambia OR Botswana OR Burkina Faso OR Burundi OR Cameroon OR Cape Verde OR Central African Republic OR Chad OR Comoros OR DRC OR Republic of Congo OR Cote d'Ivoire OR Equatorial Guinea OR Eritrea OR Ethiopia OR Gambia OR Ghana OR Guinea OR Guinea-Bissau OR Kenya OR Lesotho OR Liberia OR Madagascar OR Malawi OR Mali OR Mauritania OR Mauritius OR Mozambique OR Namibia OR Niger OR	2000- 2021 English language Document type – article

			Nigeria OR Rwanda OR Sao Tome and Principe OR Senegal OR Seychelles OR Sierra Leone OR Somalia OR South Africa OR South Sudan OR Sudan Or Tanzania OR Togo OR Uganda OR Zambia OR Zimbabwe	
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Annexe 4: Breakdown of WoS search results

Set	Results	Search terms and criteria
#1	1,314,022	AB=(Equity OR Equality OR Gender* OR Ethnicity OR Marginalis* OR Marginaliz* OR Discriminat* OR Empower* OR Disempower* OR Disparit* OR Inequity OR Inequities OR Inequality OR Inequalities OR Disability OR Disabilities)
		Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI Timespan=2000-2021
#2	79,942	AB=("agri* commerciali*" OR agri* develop* OR "farm* commerciali*" OR "agri* market*" OR "farm growth" OR "smallholder market*" OR "agri* income OR "crop commerciali* OR "agri* intensification") AND LANGUAGE: (English) AND DOCUMENT TYPES: (Article)
		Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI Timespan=2000-2021
#3	308,544	AB=(Sub-Saharan Africa OR Angola OR Benin OR Gambia OR Botswana OR Burkina Faso OR Burundi OR Cameroon OR Cape Verde OR Central African Republic OR Chad OR Comoros OR DRC OR Republic of Congo OR Cote d'Ivoire Or Equatorial Guinea OR Eritrea OR Ethiopia OR Gambia OR Ghana OR Guinea OR Guinea-Bissau OR Kenya OR Lesotho OR Liberia OR Madagascar OR Malawi OR Mali OR Mauritania OR Mauritius OR Mozambique OR Namibia OR Niger OR Nigeria OR Rwanda OR Sao Tome and Principe OR Senegal OR Seychelles OR Sierra Leone OR Somalia OR South Africa OR South Sudan OR Sudan Or Tanzania OR Togo OR Uganda OR Zambia OR Zimbabwe)
		Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI Timespan=2000-2021
#4	966,975	AB=(diet* OR nutrition* OR food OR undernutrition)
		Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI Timespan=2000-2021
#1+ #2+ #3+ #4	235	Indexes=SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI Timespan=2000-2021

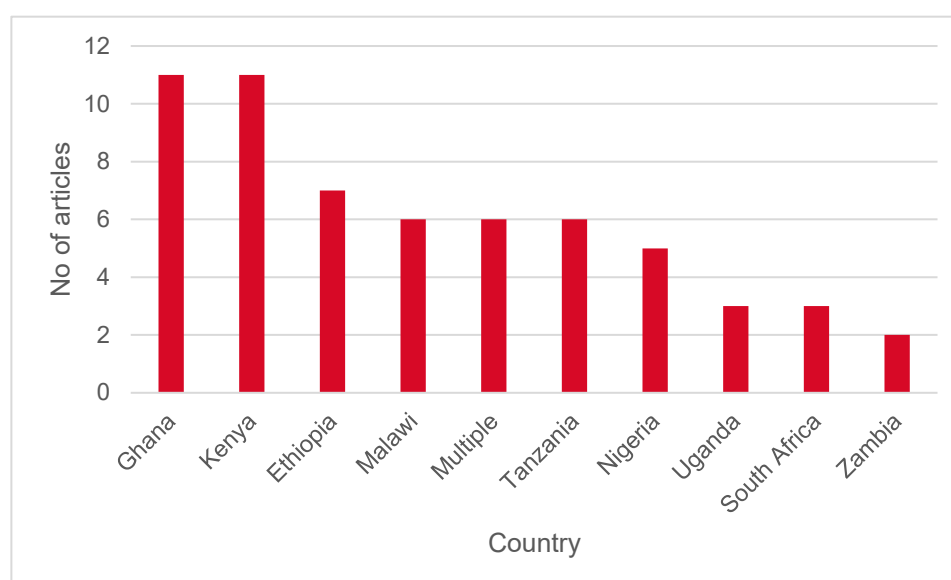
Annexe 5: Descriptive results

This section provides a descriptive overview of the 76 shortlisted articles included in the review, comparing the varying characteristics and scope of the literature and providing context for the analysis presented in section 4 and discussion in section 5.

A5.1 Geographic scope

The majority of articles focus on the East and West Africa region, with Ghana and Kenya the most common (n=11 each) followed by Ethiopia (n=7), then Malawi, Tanzania and 'multiple' (n=6 each). Papers including more than three countries were classified under the 'multiple' category. A large number of countries spanning across all regions of Africa were represented in a single article. This included Benin, Mali, Botswana, Mozambique, Cameroon, Rwanda, Madagascar, Senegal, Burkina Faso and Niger.

Figure A1 Geographic scope of articles (top 10)

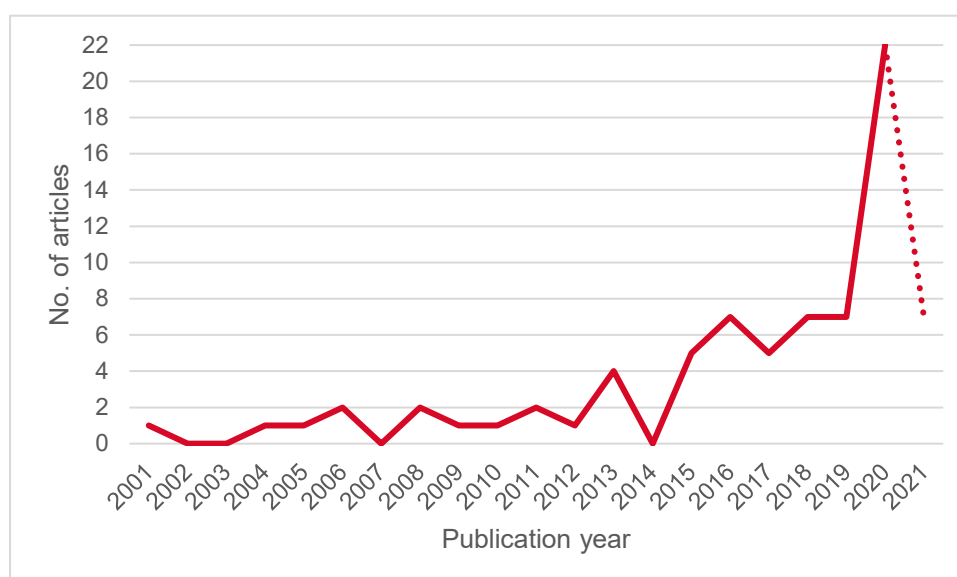


Source: Author's own.

A5.2 Year of publication

Within the article publication timeframe selected for the review (1 January 2000 to 10 May 2021), as illustrated by Figure 6 there has been a gradual increase in the number of papers published in this area per year, with an accelerated increase from around 2012/2013 and a particularly steep increase (214%) between 2019 and 2020. This reflects the increasing level of interest and investment in new research amongst academic scholars in this area, especially over the past couple of years.

Figure A2 Number of articles published over time⁴



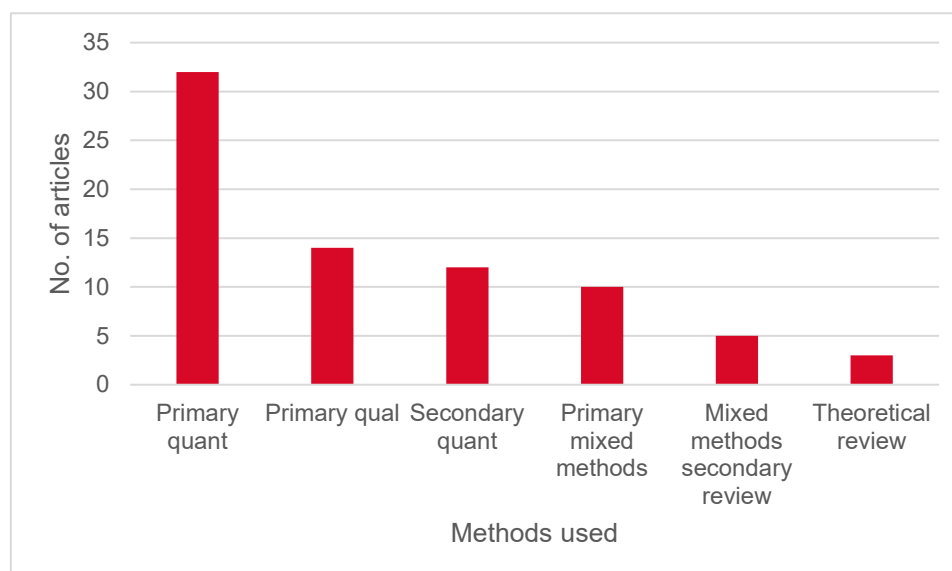
Source: Author's own.

A5.3 Methodological approach

Considering the methodological approaches used for data analysis, the majority of articles (60%) applied primary data collection methods, followed by secondary analysis of existing data (23%) and theoretical papers and literature reviews (4%). Of the primary methods applied, the majority (71%) used quantitative methods such as large-scale cross-sectional household surveys. Of these papers a number of them used statistical analyses to compare characteristics of different groups (e.g. between different geographic areas, or men and women) or features of material or structural inequities (e.g. differential access to training, education, assets etc.).

⁴ Unlike data from all previous years, data for 2021 only reflects the total number of papers published up until May 2021 when the database searches were conducted for this review, so any papers published in the remainder of 2021 are not reflected in this total. This should be taken into account in comparing the 2021 figure with previous years.

Figure A3 Methodological approach

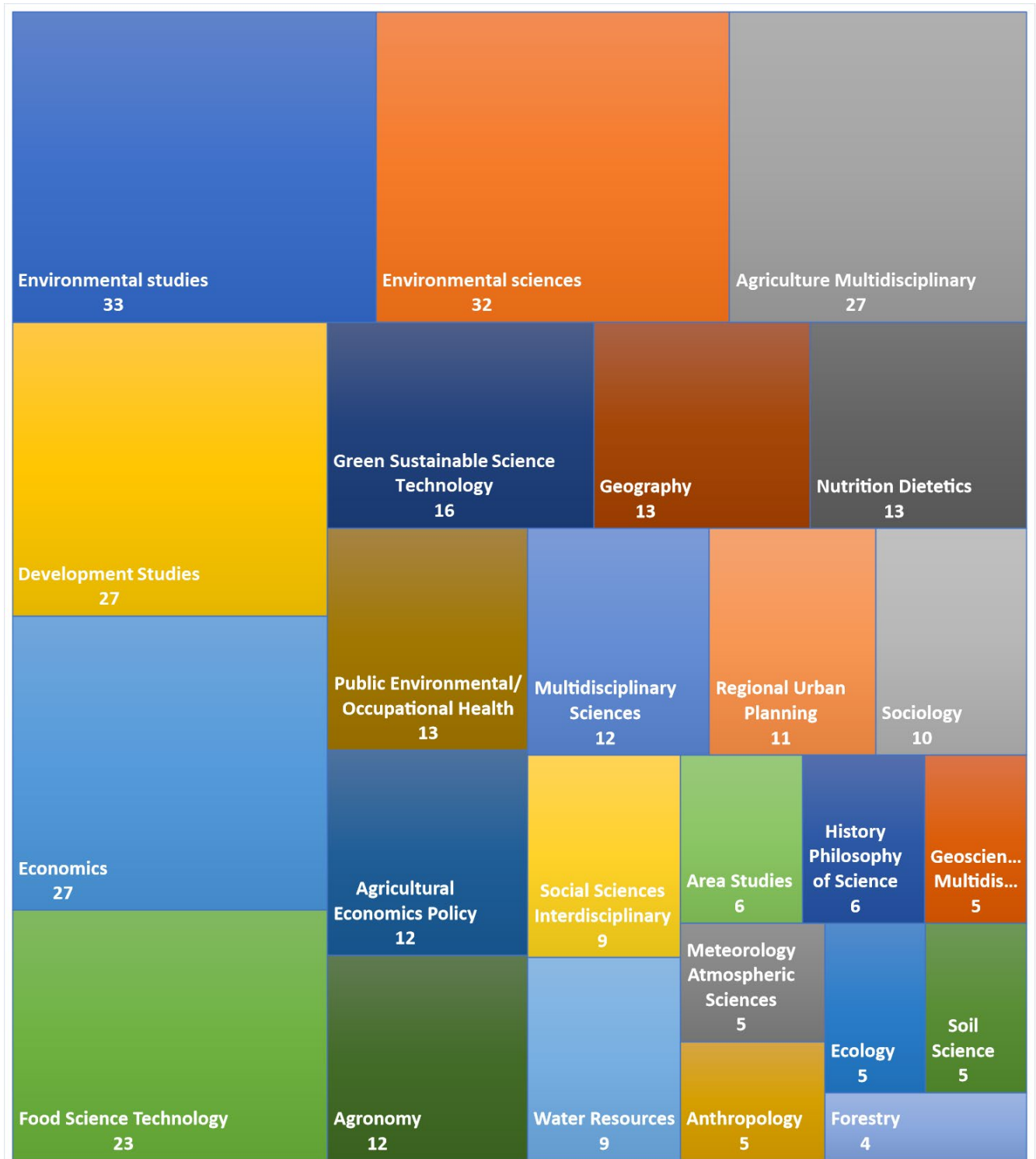


Source: Author's own.

A5.4 Disciplinary approach

The disciplinary approaches used across articles in part reflects the inherent biases of databases selected to conduct the initial article searches. See Figure A4 for a Treemap illustrating how these were categorised. Using the WoS auto-categorisation function, the majority of articles were classified under environmental sciences/studies, agricultural studies, development studies and economics. The Medline search, which yielded a much smaller set of relevant articles, resulted in a slightly different disciplinary spread with environmental science, health and medicine featuring the most. Overall, the combined set of shortlisted articles are considered to represent a broad range of social science disciplines with slightly more emphasis on agricultural and environmental sciences and less on disciplines such as public health and medicine, sociology and anthropological sciences. This is reflected in the methods reported in section 4.3, which shows a broad range of methodological approaches that tend to correspond to disciplinary approach (although this was not analysed in detail as part of the descriptive analysis).

Figure A4 Treemap visualisation of WoS full search results by category prescreening



Source: Author's own.

A5.5 Product focus and production type

An attempt was made to classify articles according to their product focus and production type; however it was found that many articles either were not product-specific (i.e. they covered a range of different produce or didn't look at this level) or they didn't examine a particular production model as part of their analysis. For production type, almost half (48%) focused on smallholder farming, and a moderate proportion covered a range of production models including smallholder, contract farming, medium-scale and/or plantation production (21%) or were not specified as a unit of analysis (20%). Only a few focused specifically on subsistence farming (5%) or plantation production (4%). For type of produce, the majority (64%) covered a mixture of crops, the most popular single crop analysed was maize (8%), followed by mango (2%). Other individual crops analysed included rice, dairy, vegetables, pineapple, coffee and beans.



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