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Special Issue - Food Justice and Food Sovereignty in the context of the Right to Food

GENDER ROLE IN FOOD RIGHTS AND SOVEREIGNTY IN WEST AFRICA: A RAPID REVIEW

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ABSTRACT

Recognizing the critical role gender plays in food systems within West Africa, this review paper explores the contributions women make throughout the food value chain and the challenges they face in achieving food and nutrition security. A search across the databases; Hinari, Ovid MEDLINE, Scopus and Web of Science targeted peer-reviewed articles reporting on studies published between 2000 and 2023 in English or French and focused on women in West Africa. Data were extracted using a predefined form in Covidence and a narrative synthesis was used to summarize women's roles and challenges within food systems. Thematic analysis of 69 peer-reviewed articles out of a total of 9,789 screened revealed West African women as central figures in regional food systems. Beyond their well-documented roles in land preparation, planting, and harvesting, women actively engage in processing, distribution, marketing and household consumption of diverse food crops (fruits, vegetables, grains and tubers) across rural and urban agri-food systems. This multifaceted engagement extends far beyond production, demonstrably impacting key socio-economic and nutrition metrics including food security, food sovereignty, and sustainable livelihoods of countless communities across the region. Nonetheless, women are disproportionately affected by challenges such as unequal access to resources, limited decision-making power, and restrictive cultural norms and education. These factors hinder their participation in different activities within the food system. To address these gendered disparities and promote equitable food systems, targeted interventions are crucial. These interventions must prioritize education and training to equip women with knowledge, skills, and modern technology. Additionally, policy changes are necessary to promote equitable access to resources, financing and land ownership. Furthermore, dismantling discriminatory cultural norms and promoting gender equality are essential steps along with implementing infrastructure and technologies that address women's specific needs. By prioritizing women's empowerment through a combination of education, policy changes, technological upgrades, and collaborative efforts with stakeholders, West Africa can strive towards a more sustainable and equitable food system for all.

Key words: food sovereignty, food rights, food systems, gender dynamics, West Africa

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INTRODUCTION

Achieving the 2030 Agenda for Sustainable Development Goals (SDGs) hinges on gender equality and women's empowerment, particularly regarding food security, nutrition and food sovereignty [1, 2]. Women are crucial players in agricultural value chains and the entire food system, exhibiting the ability to engage in production, processing, marketing, distribution, food provisioning and household nutrition [3, 4]. They form the backbone of West African agriculture, constituting nearly half of smallholder farmers and producing 70% of the continent's food [1]. Women's essential roles and contributions in the West African agri-food systems are not adequately recognized, which hinders the implementation of interventions aimed at increasing women's participation in the food value chain and shaping food systems and sovereignty [1, 2]. Gender disparities persist in West African food systems, limiting women's full participation and access to food rights and sovereignty. These disparities manifest in unequal land ownership including unfavourable land inheritance laws, limited financial resources and technology access, unpaid or undervalued labour, and restricted representation in policy and decision-making processes among others [1, 2, 3]. Such disparities hinder women's abilities to access, utilise, control, and contribute to sufficient, safe, and nutritious food, impeding their achievement of food rights and sovereignty in the region. Considering these persistent challenges, a rapid review is necessary to synthesize existing evidence, identify best practices and successful interventions, and inform future research. Primarily, this review aims to explore the specific roles women play alongside their male counterparts in West Africa's food systems, and to identify and analyse the challenges specific to women. By consolidating and analyzing research on existing gendered roles and challenges, this review provides a comprehensive understanding of these issues in the West African region. Furthermore, this review will inform future effective strategies, ultimately promoting a more equitable West African food system where women can fully participate and thrive.

MATERIALS AND METHODS

The purpose of this rapid review was to identify and map the extent, nature and gaps in the existing literature on promoting gender in food rights and sovereignty in West Africa, emphasizing the roles and constraints faced by women in their activities within the food system. This includes: (1) examining women's contributions in production, processing, marketing, and consumption across the value chain, (2) identifying barriers women face such as limited land and credit access, inadequate education and training opportunities, and discriminatory cultural norms and practices, and (3) identifying areas where further research is needed to investigate gender, food rights and sovereignty in West Africa.

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Definition of Terms

In this study, gender refers to the socially constructed roles and expectations of women and men in West Africa's food systems, encompassing various stages from production to consumption. Food sovereignty and food rights focus on the rights and entitlements of individuals, particularly women, to control and access food systems, promoting sustainable approaches and equitable access to sufficient, safe, and nutritious food.

Inclusion and Exclusion Criteria

Quantitative and qualitative studies were eligible if they were peer-reviewed, focused on women of reproductive age (15-49 years), conducted in West Africa between 2000 and 2023, and published in English or French. Only studies that reported on outcomes associated with key roles of women in the food systems were included. Studies with results that were inconclusive, contradictory, or difficult to interpret due to incomplete information were excluded.

Search Strategy and Screening

A comprehensive search was conducted in relevant academic databases, including Hinari, Ovid MEDLINE, Scopus and Web of Science. The search strategy incorporated keywords related to women, food systems, West Africa, and the countries of interest (Supplementary Table 1). Filters were applied to narrow the search results to the specified time frame and language requirements. Following the database search, Covidence was employed as a screening and data extraction tool in a two-stage screening process. Titles and abstracts were screened to exclude studies that did not meet the inclusion criteria, followed by assessing eligibility of full-text articles based on the predefined inclusion and exclusion criteria. The screening process involved two independent reviewers, with any discrepancies resolved through discussion or consultation with a third reviewer.

Data Extraction and Synthesis

Data from the selected studies were extracted using an adapted data extraction form on Covidence software. The extracted information included the authors, publication year as well as study characteristics, such as country of study, study design, sample size, key outcome variables, and reported challenges associated with women's roles in the food systems. A narrative synthesis approach was employed to summarize and analyze the findings across the included studies. Themes related to women's roles, challenges, and associated factors were identified, facilitating a comprehensive understanding of the current state of knowledge.

Ethical Considerations

Given that this review involved the analysis of previously published data, ethical approval was not required.

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RESULTS AND DISCUSSION

The initial search process yielded a total of 9,789 records. After removing duplicates, 1,990 studies remained for further evaluation through title and abstract screening. From this screening process, 225 documents were identified as potentially eligible and were subsequently subjected to full-text screening. Upon careful assessment, 158 records were excluded as they did not meet the predetermined inclusion criteria, leaving a final selection of 69 records to be included in the review (Figure 1).

Reviewed Papers' Characteristics

The review synthesized findings from 69 studies across 10 West African countries, providing a comprehensive perspective on women's roles in the region's food systems. The studies, spanning Benin, Burkina Faso, Gambia, Ghana, Ivory Coast, Mali, Niger, Nigeria, Senegal, and Sierra Leone, highlighted women's significant contributions at various stages of the food system. While 23 studies focused on women's contributions to farm activities including planting of crops, weeding, and other agricultural tasks like harvesting, 43 studies explored their roles beyond the farm gate. These studies emphasized women's key participation in food processing, sales, marketing, and distribution (22 studies) in addition to their traditional roles of caring for children, ensuring family meals are prepared and supporting household socio-economic needs for adequate nutrition and well-being (21 studies). This synthesis supports evidence for reimagining of gender roles within the West Africa region, highlighting women's indispensable contributions at every stage, from cultivating diverse crops to managing sales and distribution, and contributing to household food security. The multifaceted roles that women play call for targeted policies and interventions that amplify women's vital role, empowering them and providing conducive environments and spaces for women to contribute more efficiently to the agriculture value chains.

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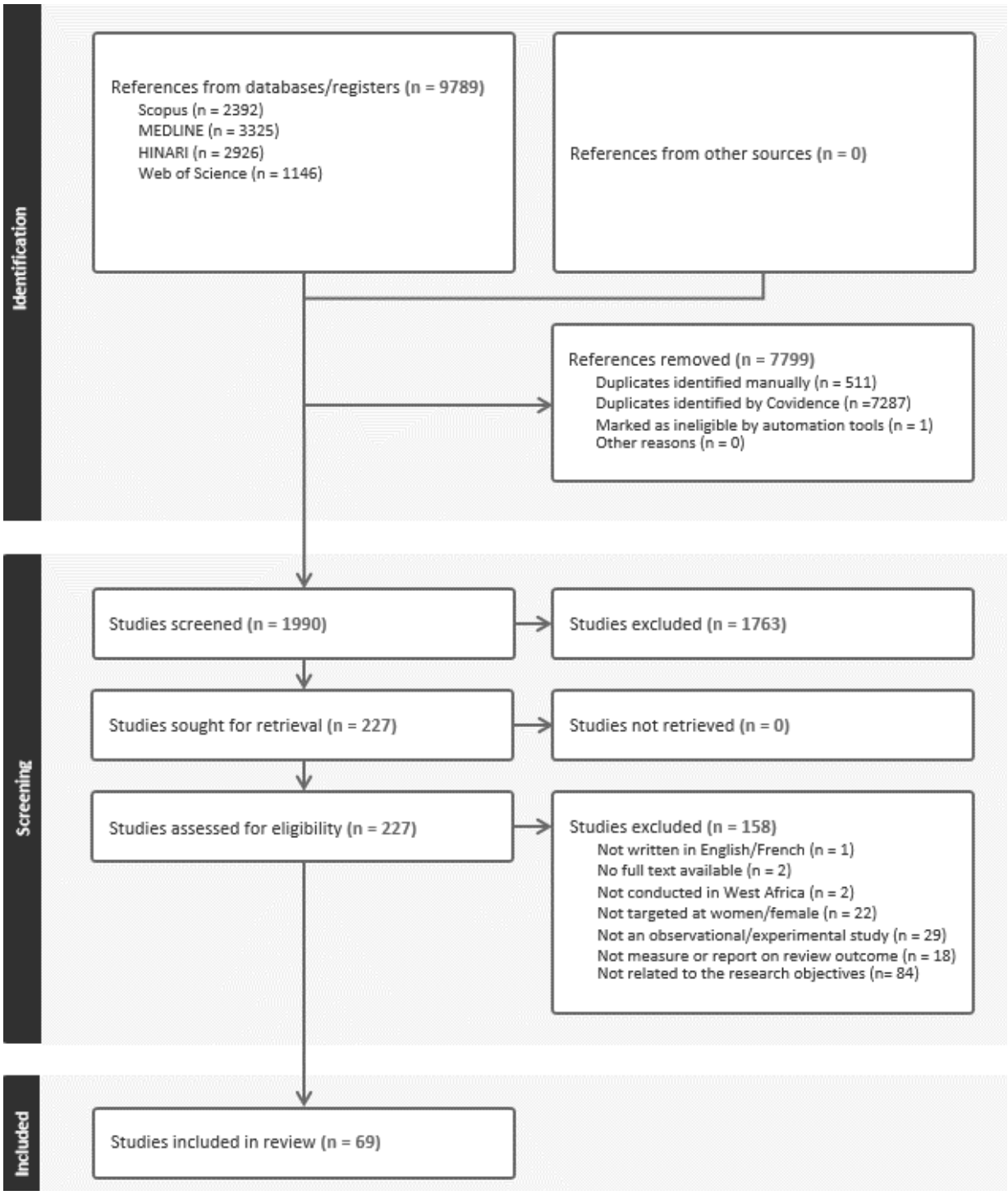

Figure 1: PRISMA flow diagram for the selection of studies on gender in food rights and sovereignty

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Gendered roles in food production, processing, marketing and consumption

Food Production

Research conducted across West Africa reveals that women play a crucial role in agricultural production (Table 1). A Nigerian study, for example, showed that women make up 71.5% of the agricultural workforce, exceeding men's participation by a substantial margin [5]. Similar findings emerge from Burkina Faso, where women dedicate 2 to 3.3 hours more per day to farm work than men [6]. Even in urban settings like Ziguinchor, Senegal, women dominate the sector, accounting for 85% of operators in vegetable farming and marketing [7]. Women play pivotal roles, including livestock rearing, cultivating various crops, land clearing, planting, weeding, and harvesting [8, 9]. According to Torvikey *et al.* [9], 63% of the labour force and 70% of production unit workers comprise women who contribute substantially to out-grower farms where they are contracted by large agricultural enterprises to produce crops or livestock. In contrast, the garden production system in Ghana exhibits a division of labour in the Savannah zones, with men primarily handling land preparation and transportation and women manage the remaining food crop production activities, while gendered responsibilities are equally shared in the forest agro-ecological zones [10]. In Benin, women dominate in home gardening, particularly with herbs and shrub-based systems [11]. The diversity of crops cultivated by women underscores their critical contributions to the food system. From staple grains and root tubers in Nigeria [12] to soybean and maize in Ghana [13, 14], women ensure a steady supply of essential food varieties. Their involvement extends beyond traditional crops, encompassing a diverse array of fruits and vegetables. Additionally, women play key roles in aquaculture, owning ponds [15]. The sheer volume of work women undertake, from land preparation to harvesting, and animal rearing demonstrates women's substantial contributions to food production. In rural Ghana, women played a central role in boosting agricultural productivity by participating in the out-grower farms [9], an innovative system that connects unorganized smallholder farmers with domestic and international buyers. In urban agriculture settings of Ziguinchor in Senegal, women play a key role in the local agricultural value chain by combining several production sites, showing women's ability to thrive in diverse environments and contribute to food production [7]. Benin's context further emphasizes this point, with women actively involved in home gardening and cultivating a wide range of crops, particularly food crops contributing to household food security [11]. Overall, the evidence confirms the critical role women play in West African agriculture. Their active participation, diverse skill sets, and dedication to various agricultural domains are essential for ensuring food security and sovereignty as well as sustaining the livelihoods of countless communities across the region.

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Processing, Sales and Distribution

The data show a diverse and central role for women that transcends food production or on-farm tasks (Table 2a). Notably, women are key players in the cassava value chains in Nigeria and Ghana, dominating in marketing and processing of raw cassava into various products [16-18]. In Nigeria, women's participation rate (79.3%) in cassava processing and sales surpasses that of men [16]. Ghana's gari (cassava granules) processing is predominantly done by rural women highlighted in a range of activities, including peeling, washing, roasting and sales. Mechanized processes like milling, pressing, and bagging, however, tend to lean towards male involvement [17, 18]. The roles of women agri-food entrepreneurs in Benin are paramount in processing diverse crops such as soybeans, maize and cassava, reflecting their substantial economic contributions [19]. Similarly, women-led microenterprises in Benin participated in cowpea processing and atta (wheat flour) production, efficiently managing the raw material supply [20]. Niger's context reveals women street vendors as traditional sellers of kossaï (black-eyed peas fritters), a crucial economic activity supporting their families [21]. Within the Ghanaian pineapple value chain, women primarily engage in tasks such as washing and packaging, whereas roles involving technical expertise and administrative responsibilities tend to be dominated by male workers [22]. Notably, the dominance of women in cassava value chains in Nigeria and Ghana [16, 17] demonstrates their ability in marketing and processing of raw cassava into various products, indicating specialized skills that contribute to value addition. The role played by women in cassava processing, a pivotal regional staple, and control over food processing, confirms their invaluable role. Similarly, their substantial presence in the processing of diverse crops like soybeans, maize, and cassava in Benin, as discussed by Dossou *et al.* [19], showcases their adaptability and economic contributions.

Gender divisions within the fishery, poultry and meat sectors further underscore women's significant roles in the food value chain activities. Certain stages are dominated by women, as seen in studies on Ghana's marine fish processing industry, where women are in charge of processing, preservation, storage and selling of fish once brought ashore by men [15]. In Ghana, women play a pivotal role in the meat processing, sales and distribution [23]. Although men dominate Nigeria's meat value chain, women are actively involved in specific stages, such as processing, packaging and sales [24]. The Senegalese study by McKune *et al.* [25] displayed diverse engagement levels in the livestock vaccine value chain. Poultry activities were predominantly women's domain, including their role as poultry animal health workers [26]. Conversely, men were more engaged in rearing and sales of larger animals like cattle and horses, while women concentrated on small ruminants [24-26]. Further echoing these patterns, studies conducted in Burkina Faso, Mali,

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and several other West African countries emphasize the distinctive roles women play in gum Arabic sorting, cowpea cultivation, and rice value chains, respectively [27, 28, 29]. In the context of meat value chains in Nigeria, Grace *et al.* [24] emphasized the dynamic nature of women's participation, even within sectors traditionally dominated by men. Furthermore, women's multifaceted involvement in processing, sales and distribution within various value chains demonstrates their essential role in shaping the entire food value chain. These observations challenge traditional gender norms and underscore women's diverse capabilities and contributions. The division of labour within these value chains reflects not only gendered roles but also specialized skill sets attributed to each gender. These gendered roles may stem from historical, cultural, or economic factors, reflecting the unique contributions that women and men bring to different stages of the value chain.

Food Provision, Consumption, Nutrition and Household Needs

Across West African nations, gender roles intricately shape the food provision and consumption landscape (Table 2b). In Ghana, Rahman *et al.* [29] highlighted that women often take on the roles of homemakers and primary caregivers of children, with the responsibility of household chores and childcare. Similarly, Nigeria's study by Ene-Obong *et al.* [5] highlights women's dominance in food preparation, with 91.4% engaged in tasks like collecting firewood, cooking and dishwashing. Torvikey *et al.* [9] emphasized women's feeding responsibilities in addition to their substantial contributions to out-grower farms in Ghana. Women's active participation in horticulture has linkages to improved income, dietary diversity (DD), and body mass index (BMI). Alaofe *et al.* [31] emphasized the contribution of women's involvement in solar gardening to household DD and additional income for supplementary food items, despite challenges related to nutrition education and bioavailability of nutrients [31]. Alaofe *et al.* [32] also reported a positive association between women's empowerment scores and their DD and BMI [32], while Alaofe *et al.* [33] demonstrated that engagement in hand-watered horticulture led to increased vegetable, fruit and protein consumption among women [33]. In Burkina Faso, Bliznashka *et al.* [34] research on nutrition-sensitive agricultural initiatives showed their influence on women's nutrition and knowledge [34]. Heckert *et al.* [35] and Heckert *et al.* [36] emphasized women's empowerment and education as key drivers of household food security. Economic empowerment of women in processing enterprises is also evident, as seen in Ghana's pineapple value chain where female workers contributed more to the household's expenditure [22]. These gendered food dynamics, complexly tied to socio-cultural contexts, showcase the multifaceted impact of women's roles.

The active participation of women in horticultural activities drives an increased consumption of fruits and vegetables while concurrently generating supplementary

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income for essential food and non-food items. These roles performed by women have profound implications for income, DD and BMI [31] as well as women's empowerment and overall household resilience [32, 33]. Beyond the immediate nutritional benefits, research findings by Alaofe *et al.* [32] highlight how empowering women through horticultural activities goes beyond improving their dietary habits; it catalyzes the cultivation of economic agency, thereby stimulating overall household resilience. Research by Bliznashka *et al.* [34] in Burkina Faso emphasized the importance of nutrition-sensitive agricultural initiatives in influencing women's nutrition and knowledge [34]. Moreover, the role of women's empowerment and education is crucial for ensuring household food security [35, 36]. The interplay between gender dynamics, education and empowerment becomes evident in the enhancement of nutrition, food security and sovereignty. These insights highlight the key role of recognizing and nurturing women's agency, extending beyond individual well-being to impact the broader socio-economic landscape. The study underscores the far-reaching implications of empowering women, positioning them not just as recipients of change but as architects of transformative shifts in societal dynamics.

Gendered Challenges in Food Production, Processing, Marketing and Consumption

The studies reviewed highlight multifaceted and deeply interconnected difficulties that women face in discharging their roles within the food system. These challenges cover different areas like economics, lack of access to resources and opportunities, not having enough time and labour, traditional customs and practices, problems with infrastructure, insufficient support from institutions and skills as well as issues related to inadequate nutrition, limited variety in diets, and not having enough food (Tables 1, 2a and 2b).

Economic Challenges

Economic challenges emerged as a recurring theme in various agricultural domains, where women are faced with limited income due to caregiving roles hindering women's engagement in income-generating and profitable activities [11, 13, 16, 36-43]. Moreover, as rural wage labourers, women contend with lower wages than their male counterparts, constraining their capacity for skill acquisition and development, and upward mobility in employment [37]. In rice farming, for example, women earn substantially less than men across productivity [29]. These financial inequalities permeate various sectors, discouraging other women from entering industries where women's earnings remain unattractive [20]. Financial constraints further hinder women from investing in cash crop cultivation, particularly due to the delayed profitability, especially when cultivating tree crops such as cashew [42].

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Limited Access to Resources, Assets and Opportunities

Access to opportunities and productive resources such as land and assets constitutes another major challenge, inhibiting women's ability to engage effectively in their agricultural activities [44, 45]. Women in Benin encounter barriers in accessing credit and training opportunities in cowpea processing microenterprises, and unequal distribution of resources in agricultural and rural development services, highlighting the limited access to skill acquisition and support for women [20, 46]. Women's limited access to credit facilities hampers their ability to invest in farming activities and adopt modern technologies [47, 48]. There are also apparent gender disparities in various roles within off-farm activities. In the meat value chain, for instance, committee membership and leadership positions are often occupied by men though women attend meetings more frequently than men [24]. Furthermore, the gender gap is evident in the veterinary sector, with limited female representation and imbalanced vaccination decision power [25]. Work categories also demonstrate gender imbalances, with men dominating technical and administrative roles [22]. These role disparities contribute to unequal income distribution between genders.

Land ownership and access also poses significant obstacles for women, with unequal entitlement to economic resources leading to restricted opportunities for cultivation and livelihood diversification and impacting their chances of improving food security and nutrition [7, 8, 11, 12, 14, 38, 42, 48, 49]. Women often face challenges in accessing land for agricultural activities [11, 50]. A significant portion of women in Senegal (about 65%) face restricted land access for production activities in the bovine and caprine value chains [51]. Land acquisition patterns reflect gender imbalances, as 82.5% of women farmers in Nigeria acquire farmland primarily through their husbands [12]. According to Yokying and Lambrecht [49], women have significantly lower land ownership rates compared to men in Northern Ghana (-1.715 ± 0.230, $p<0.01$). Concerns also arise regarding land scarcity in Ghana's Brong Ahafo region, especially for future food crop cultivation, as family lands are increasingly being converted to cashew farms mostly cultivated by men [42]. Furthermore, inheritance laws in many ethnic groups across West Africa contribute to the inequity, despite women's efforts and their crucial role in the food system. These laws limit the ability of women to own lands in West Africa. This disparity affects women's decision-making power, financial status and overall empowerment within the agricultural sector.

Decision-making and Empowerment

Cultural norms and social expectations play a role in restricting women's engagement in agriculture and value chains, resulting in limited decision-making power in farming-related matters [13-14, 38, 40, 44, 49, 50]. Persistent gender norms and limited access to resources hinder women's ability to achieve empowerment

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and participate in decision-making [34, 43, 52]. This is compounded by challenges such as societal norms, constraints on group participation, and cultural acceptance of domestic violence, leading to unequal power dynamics [52]. Insufficient access to education and skill development programs restrict women's ability to engage in higher-paying and technical agricultural roles [42, 50]. Financial dependency on husbands and limited income-generation opportunities for women hinder their autonomy and decision-making power [39, 40]. In Nigeria, those with low education face difficulties accessing training and skill development opportunities [16]. The capacity-building needs identified for women encompass value addition to raw food products [26], crafting product variants for diverse buyers, and enhanced packaging [23], necessitating targeted technical training [20, 25, 46, 53, 54].

Labour and Time Constraints

Women often bear the responsibility of both agricultural activities and domestic chores, leading to time constraints and workload challenges [11, 39]. Balancing agricultural activities with child care and feeding poses challenges for women, and often lead to unhygienic feeding practices and a lack of nurturing interactions [55]. Wood *et al.* [55] also identified challenges related to workload and time constraints, affecting women's traditional roles and their involvement in household food consumption decisions [56]. Certain off-farm activities, such as manual food processing, disproportionately burden women. For instance, in Benin and Niger, the labour-intensive process of manually producing atta or kossaï from whole cowpeas demands significant time and energy [20, 21]. Processing only 1 kg of cowpeas into the atta takes 100 to 200 minutes, yielding about 70 pieces of atta dough [20]. Labour and time constraints were evident, as women faced high domestic workloads that impeded their farming and economic activities. Gendered division of labour exists with men engaging in more profitable activities [14, 48, 51]. Labor-intensive tasks such as manual processing and extensive exposure to smoke during food processing result in physical fatigue and health challenges [57].

Restrictive Cultural Norms and Practices

Cultural norms and practices influence women's roles, responsibilities, and decision-making power in agriculture and involvement in food-related activities [14, 50, 58]. For instance, inheritance practices often favour men in land ownership, restricting women's access to productive land for agricultural activities [2, 50]. The prevalence of a patriarchal system, discriminatory attitudes, and economic dependence restrict women's engagement in food processing activities [19]. Moreover, gender-based disparities in education, along with traditional beliefs opposing women's aspirations, hinder their potential [59]. Additionally, men having higher decision-making powers and a lack of female representation in important decision-making processes underscore gender imbalances [33].

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Lack of Infrastructure Institutional and Technical Support

Additionally, traditional agricultural practices and limited access to improved technologies and inputs hinder agricultural productivity. Lack of proper storage facilities exposes harvested crops to spoilage, reducing the value of their produce and contributing to food wastage [31]. Insufficient post-harvest processing facilities limit the value addition that women can achieve on their products [13]. Institutional and policy support are insufficient, leaving women with limited access to training and agricultural information, and gender disparities in extension services and financial resources persist [25, 47, 49]. Women often face challenges in accessing agricultural extension services, limiting their exposure to new techniques and technologies [55].

Nutrition, Dietary Diversity and Food Security

Inadequate knowledge about nutrition, limited access to diverse foods, and lack of coordination with other interventions, as highlighted by Alaofe *et al.* [31] and Custodio *et al.* [60] contribute to challenges in achieving proper nutrition and dietary diversity [31, 60]. Women often earn less income than men, limiting their ability to afford nutritious foods [41]. Women with lower incomes are more likely to have underweight children [61]. This is further exacerbated by low education levels, household food insecurity, and insufficient food stocks [57, 60]. Environmental factors, such as climate shocks and concerns over land scarcity, further complicate women's agricultural endeavours, for example adapting to climatic changes essential for sustainable agriculture [56].

Implications and Future Directions

Understanding women's roles and challenges is crucial for achieving equitable and sustainable development in West Africa's food systems. Addressing these challenges requires context-specific and gender-responsive approaches. Economic empowerment, access to resources, education, and technical training are key areas that need focused attention. Policies and interventions should aim to dismantle gender norms that limit women's participation and decision-making in agriculture. Improving access to credit, training and modern technologies can enhance women's productivity and economic outcomes. Moreover, ensuring women's participation in decision-making processes, both within households and at larger institutional levels, is vital for driving positive change.

Strengths and Limitations

The strengths of this review include the inclusion of quantitative and qualitative studies in English or French and broadening the scope of the literature analyzed. A rigorous search strategy utilizing reputable databases ensured a comprehensive exploration of the topic while minimizing bias. However, limitations arise from study

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availability and quality, excluding review papers, reports, and policy documents, potentially causing coverage gaps. Additionally, the exclusion of pre-2000 studies could limit comprehensiveness. The diverse methodologies of included studies pose challenges for synthesis and comparison, possibly impacting the robustness of the conclusions.

CONCLUSION AND RECOMMENDATIONS FOR DEVELOPMENT

Overall, the results suggest that women's versatility in agricultural domains reflects their roles that extend into diverse stages of the food system. They play vital roles in West Africa's food value chain, contributing to production, processing, marketing and consumption. Their involvement is key to achieving food rights and sovereignty. This review has highlighted the complex interaction of societal norms, occupational choices, and income distribution that shape gender dynamics in the food system. This understanding is crucial for creating effective policies and interventions to promote gender equity, empower women and foster sustainable food systems in West Africa. However, challenges remain, including limited income, resource access, and gender-based disparities in programs. Addressing these issues and promoting gender equality in the food system is essential for achieving equitable and sustainable food security. The findings underscore the need for gender-responsive policies and interventions that tackle the obstacles faced by women in agriculture. Empowering women through better access to education, resources, and training can enhance their involvement in decision-making, improve agricultural productivity, and contribute to food security and development. Recognizing and valuing women's contributions in different agricultural value chains is crucial for building more inclusive and equitable agricultural systems.

To address the challenges identified in West Africa's food systems, it is imperative to implement a multifaceted approach that promotes gender equality, economic empowerment and sustainable development. Policymakers should prioritize initiatives that provide women with access to resources, training, credit and modern technologies, thereby enhancing their productivity and economic independence. Additionally, efforts should be made to challenge traditional gender norms and discriminatory practices that limit women's decision-making power and opportunities. Integrating women's perspectives and needs into policy formulation and program design is essential for achieving equitable and resilient food systems in the region. The enhancement of West Africa's food systems necessitates a comprehensive strategy that centres on women's empowerment, education and technological advancements. To achieve shared responsibilities, policymakers and implementers should institute gender-focused training, information campaigns, and sensitization initiatives targeting both men and women. Investing in girls' and

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women's education, including literacy and vocational training, is crucial to bolster their roles in agriculture. The adoption of institutional and organizational gender mainstreaming, particularly through the deployment of women extension agents, should be prioritized to facilitate effective extension services delivery to women. Expanding the scope of extension training to address the needs of women's off-farm engagements and providing specialized training in climate change response, agro-biodiversity conservation and nutrition education are essential. Efforts should also focus on women's access to productive resources, such as land, credit, and technologies, and promoting their engagement in agribusiness. Furthermore, inheritance laws contribute to the inequity and despite women's efforts and crucial role in the food system, they cannot own the land. Integrated approaches, supported by effective policies, institutional collaboration, and technological upgrades, are necessary to transform West Africa's food systems while ensuring gender equality, resilience and sustainable development.

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Supplementary Table 1: The databases used and the corresponding search strategy

1. Ovid MEDLINE
Search #1 Women/ or (wom#n or female* or gender*).mp. exp Food supply/ or exp Gardening/ or exp Malnutrition/ or (hunting or fishing or gardening or farm* or agricultur* or "community garden*" or "growing vegetables" or traditional food* or "country food" or (wildlife adj3 harvest*) or (sustainab* adj3 harvest*) or malnourish* or undernourish* or "under nourish*" or underfed or ((nutrition* or dietary) adj3 (securit* or safety or insecurit* or inadequa*or adequa*)) or ((food or nutrition*) adj3 (policy or policies or subsid*)) or (food adj3 (accessib* or adequa* or autonom* or availab* or unavailab* or control or country or cultur*or democra* or determination or desert or deserts or inadequa* or insecur* or indigen* justice or local* or native or safety or sovereignty or sustainab* or scarcity or secur* or sharing* or supply or supplies or unsustainab*))).mp exp "Western Sahara"/ or ("West Africa*" or Benin or "Burkina Faso" or "Cape Verde" or "The Gambia" or Gambia or Guinea or "Guinea-Bissau" or "Ivory Coast" or Ghana or Liberia or Mali or Mauritania or Niger or Nigeria or Senegal or "Sierra Leone" or Togo).mp. 1 and 2 and 3 limit 4 to (yr="2000 -Current" and (english or french)) limit 5 to humans = 1651 articles Search #2 that captures value chain and food systems Women/ or (wom#n or female* or gender*).mp. exp Food supply/ or exp Gardening/ or exp Malnutrition/ or (hunting or fishing or gardening or farm* or agricultur* or "value chain" or "community garden*" or "growing vegetables" or traditional food* or "country food" or (wildlife adj3 harvest*) or (sustainab* adj3 harvest*) or malnourish* or undernourish* or "under nourish*" or underfed or ((nutrition* or dietary) adj3 (securit* or safety or insecurit* or inadequa*or adequa*)) or ((food or nutrition*) adj3 (policy or policies or subsid*)) or (food adj3 (accessib* or adequa* or autonom* or availab* or unavailab* or control or country or cultur*or democra* or determination or desert or deserts or inadequa* or insecur* or indigen* justice or local* or native or safety or sovereignty or sustainab* or scarcity or secur* or sharing* or supply or supplies or unsustainab* or process* or production or marketing or system*))).mp. exp "Western Sahara"/ or ("West Africa*" or Benin or "Burkina Faso" or "Cape Verde" or "The Gambia" or Gambia or Guinea or "Guinea-Bissau" or "Ivory Coast" or Ghana or Liberia or Mali or Mauritania or Niger or Nigeria or Senegal or "Sierra Leone" or Togo).mp. 1 and 2 and 3 limit 4 to (yr="2000 -Current" and (english or french)) limit 5 to humans = 1674 articles
2. Scopus
(TITLE-ABS-KEY (women OR wom#n OR female* OR gender* AND "value chain" OR "food process*" OR "food production" OR "food marketing" OR "food system") AND TITLE-ABS-KEY ("Western Sahara" OR "West Africa*" OR benin OR "Burkina Faso" OR "Cape Verde" OR "The Gambia" OR gambia OR guinea OR "Guinea-Bissau" OR "Ivory Coast" OR ghana OR liberia OR mali OR mauritania OR niger OR nigeria OR senegal OR "Sierra Leone" OR togo)) AND PUBYEAR > 1999 AND (LIMIT-TO (LANGUAGE , "English") OR LIMIT-TO (LANGUAGE , "French")) AND (EXCLUDE (LANGUAGE , "German")) hunting or fishing or gardening or farm* or agricultur* or "community garden*" or “traditional food*” or "country food" or malnourish* or undernourish* or "under nourish*" or underfed or nutrition* or dietary or “food securit* or “food safety” or “food insecurit*” or “food inadequa*” or “food adequa*” or “food policy” or “food policies” or “food subsid*” or “food accessib*” or “food adequa*” or “food autonom*” or “food availab* or “food unavailab*” or “food control” or “food cultur*” or “food democra*” or “food determination” or “food desert” or “food deserts” or “food inadequa*”or “food indigen*” or “food justice” or “food sovereignty” or “food sustainab*” or “food scarcity” or “food secur*” or “food sharing*” or “food supply” or “food supplies” = 2392 articles

3. HINARI (Research4Life/PubMed Search strategy)

#1 (((wom?n[Title/Abstract]) OR (female*[Title/Abstract])) OR (gender*[Title/Abstract])) OR (("Gender Equity"[Mesh]) OR ("Women"[Mesh] OR "Women's Rights"[Mesh]))

((food supply[Title/Abstract]) OR (gardening[Title/Abstract])) OR (malnutrition[Title/Abstract])) OR (hunting[Title/Abstract])) OR (fishing[Title/Abstract])) OR (farm*[Title/Abstract])) OR (agricultur*[Title/Abstract])) OR ("value chain"[Title/Abstract])) OR ("community garden"[Title/Abstract])) OR ("growing vegetables"[Title/Abstract])) OR ("traditional foods"[Title/Abstract])) OR ("local foods"[Title/Abstract])) OR ("country food"[Title/Abstract])) OR (livestock[Title/Abstract])) OR (harvest*[Title/Abstract])) OR (sustainable harvest*[Title/Abstract])) OR ("sustainable agriculture"[Title/Abstract])) OR (malnourish*[Title/Abstract])) OR (undernourish*[Title/Abstract])) OR (under nourish*[Title/Abstract])) OR (underfed[Title/Abstract])) OR ("nutrition adequacy"[Title/Abstract])) OR ("adequate nutrition"[Title/Abstract])) OR (dietary securit*[Title/Abstract])) OR ("food safety"[Title/Abstract])) OR (food insecurit*[Title/Abstract])) OR (food inadequa*[Title/Abstract])) OR (food adequa*[Title/Abstract])) OR (food polic*[Title/Abstract])) OR (nutrition polic*[Title/Abstract])) OR (food subsid*[Title/Abstract])) OR (food accessib*[Title/Abstract])) OR (food autonom*[Title/Abstract])) OR (food availab*[Title/Abstract])) OR (unavailab*[Title/Abstract])) OR (food control[Title/Abstract])) OR (food cultur*[Title/Abstract])) OR ("land tenure"[Title/Abstract])) OR (food democra*[Title/Abstract])) OR ("food determination"[Title/Abstract])) OR ("nutrition determination"[Title/Abstract])) OR (indigeneous food*[Title/Abstract])) OR (food justice[Title/Abstract])) OR (native food*[Title/Abstract])) OR ("food sovereignty"[Title/Abstract])) OR (food sustainab*[Title/Abstract])) OR (food scarcity[Title/Abstract])) OR ("food sharing"[Title/Abstract])) OR (food distribution[Title/Abstract])) OR (food process*[Title/Abstract])) OR (food production[Title/Abstract])) OR (food system*[Title/Abstract])) OR (food marketing[Title/Abstract])) OR ("food services"[Title/Abstract])) OR ((((((("Social Justice"[Mesh]) OR "Food Assistance"[Mesh]) OR "Food Industry"[Mesh]) OR "Food Security"[Mesh]) OR "Food Insecurity"[Mesh]) OR "Food Supply"[Mesh]) OR "Access to Healthy Foods"[Mesh])

("Africa South of the Sahara"[Mesh]) OR ((Angola[Title/Abstract]) OR (Benin[Title/Abstract])) OR (Botswana[Title/Abstract])) OR ("Burkina Faso"[Title/Abstract])) OR (Burundi[Title/Abstract])) OR ("Cabo Verde"[Title/Abstract])) OR ("Cape Verde"[Title/Abstract])) OR (Cameroon[Title/Abstract])) OR (Cameroun[Title/Abstract])) OR (Chad[Title/Abstract])) OR (Comoros[Title/Abstract])) OR (Congo[Title/Abstract])) OR ("Cote d'Ivoire"[Title/Abstract])) OR ("Ivory Coast"[Title/Abstract])) OR (Djibouti[Title/Abstract])) OR (Eritrea[Title/Abstract])) OR (Eswatini[Title/Abstract])) OR (Swaziland[Title/Abstract])) OR (Ethiopia[Title/Abstract])) OR (Gabon[Title/Abstract])) OR (Gambia[Title/Abstract])) OR (Ghana[Title/Abstract])) OR (Guinea[Title/Abstract])) OR (Kenya[Title/Abstract])) OR (Lesotho[Title/Abstract])) OR (Liberia[Title/Abstract])) OR (Madagascar[Title/Abstract])) OR (Malawi[Title/Abstract])) OR (Mali[Title/Abstract])) OR (Mauritania[Title/Abstract])) OR (Mauritius[Title/Abstract])) OR (Mozambique[Title/Abstract])) OR (Namibia[Title/Abstract])) OR (Niger[Title/Abstract])) OR (Nigeria[Title/Abstract])) OR (Rwanda[Title/Abstract])) OR ("Sao Tome"[Title/Abstract])) OR (Principe[Title/Abstract])) OR (Sahara*[Title/Abstract])) OR (Sahel[Title/Abstract])) OR (Senegal[Title/Abstract])) OR (Seychelles[Title/Abstract])) OR ("Sierra Leone"[Title/Abstract])) OR (Somalia[Title/Abstract])) OR (Sudan[Title/Abstract])) OR (Tanzania[Title/Abstract])) OR (Togo[Title/Abstract])) OR (Uganda[Title/Abstract])) OR (Zambia[Title/Abstract])) OR (Zimbabwe[Title/Abstract]))

#4 #1 + #2 + #3

Filter: Publication Date 2000/01/01 – 2023/12/31

= 2,926 articles

4. Web of Science

(TITLE-ABS-KEY (women OR wom#n OR female* OR gender* AND "value chain" OR "food process*" OR "food production" OR "food marketing" OR "food system") AND TITLE-ABS-KEY ("Western Sahara" OR "West Africa*" OR benin OR "Burkina Faso" OR "Cape Verde" OR "The Gambia" OR gambia OR guinea OR "Guinea-Bissau" OR "Ivory Coast" OR ghana OR liberia OR mali OR mauritania OR niger OR nigeria OR senegal OR "Sierra Leone" OR togo)) AND PUBYEAR > 1999 AND (LIMIT-TO (LANGUAGE , "English") OR LIMIT-TO (LANGUAGE , "French")) AND (EXCLUDE (LANGUAGE , "German"))

hunting or fishing or gardening or farm* or agricultur* or "community garden*" or "traditional food*" or "country food" or malnourish* or undernourish* or "under nourish*" or underfed or nutrition* or dietary or "food securit* or "food safety" or "food insecurit*" or "food inadequa*" or "food adequa*" or "food policy" or "food policies" or "food subsid*" or "food accessib*" or "food adequa*" or "food autonom*" or "food availab* or "food unavailab*" or "food control" or "food cultur*" or "food democra*" or "food determination" or "food desert" or "food deserts" or "food inadequa*"or "food indigen*" or "food justice" or "food sovereignty" or "food sustainab*" or "food scarcity" or "food secur*" or "food sharing*" or "food supply" or "food supplies"
=1146 articles

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Table 1: Characteristics of studies on gender roles in on-farm activities included in the rapid review under the sub-theme - Food production (land ownership, clearing and preparation, weeding, planting, harvesting)

Study identifier	Country(ies) of study [Year]	Study design or approach	[Sample size] Participants characteristics	Outcome measures	Specific activities performed by women [sort, frequency, duration]	Challenges [sort, frequency, duration]
Adekanye [62]	Nigeria [2022]	Cross-sectional	[105] Rural women who are traditional gari processors in the Fasola and Elere villages in Ibadan area, Oyo State of South-western Nigeria.	Economics of traditional processing of gari	- Physical farm activities of production - Off-farm activities of processing and in trade	- Use of old technologies in traditional processing. - Transportation longer distances to marketplaces coupled with bad roads. - Gender-based ownership disparity; women lacked resources like graters. - Factors for limited access to loans from public credit sources for women: husband (30.1%), children (20.0%), other relatives (20.2%), women's groups (18.3%), banks (0.2%), cooperatives (0.3%), Ministry of Agriculture (0.9%), hired labour (10%).
Adesiji *et al.* [48]	Nigeria [2010]	Cross-sectional	[150] Female farmers	Type of farming activity of women Sources of agricultural information for women	- Food processing (94%) - Crop production (54%) - Goat raising (47.33%) - Poultry keeping (14.67%	- Lack of information from agricultural extension officers. - Time limitations for training. - Primary sources of information: husbands (63.33%), women's personal experience (48%), and other farmers (34.67%). - Absence of land ownership or access. - Lack of credit facilities. - Requirement for husband's permission. - Transportation challenges. - Illiteracy. - Distance to resources or markets. - Religious restrictions.
Akinbami *et al.* [63]	Nigeria [2013]	Mixed methods	[265] Rural female entrepreneurs involved in garri	Operational hazards associated with the production	- Production of gari - Processing of palm oil	- General increase in body temperature due to smoke inhalation from frying pans, leading to fatigue, aches, and pains.

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Study identifier	Country(ies) of study [Year]	Study design or approach	[Sample size] Participants characteristics	Outcome measures	Specific activities performed by women [sort, frequency, duration]	Challenges [sort, frequency, duration]
			and palm oil production in six selected communities	processes of gari and palm oil	- Sales of finished products - Processing and sales of other farm products	- Intensive exposure to firewood burning and open fires for extended periods daily (up to 6 hours) and annually (e.g., gari processing – 250 days/1,500 hours, palm oil processing – 90 days/540 hours).
Asante *et al.* [38]	Ghana [2023]	Cohort study	[661] 400 rice farm households and 261 consumers across 20 communities	Production Socioeconomic information, Gendered adoption and gendered trait preference in the rice value chain	- Men (66.5%) dominated rice production, with significantly higher education compared to women ($p < 0.01$). - 34% of women are involved in off-farm activities, while 41% of men engage in income-generating activities. - Access to agricultural extension services: 58% of women, 61% of men. - Men as primary farm owners lead to increased participation in farm-related activities compared to women.	- Land ownership: Women often have limited ownership or access to land for agricultural activities - Deeply rooted cultural practice in Ghanaian society: Men are often considered household heads and key decision-makers in the household. - Lack of access to credit: Women face challenges in accessing financial resources and credit facilities.
Burrone *et al.* [64]	Senegal [2023]	Cross-sectional	[1337] Women rice producers in Casamance	Food security; income reduction Rice investment propensity	Rice production is traditionally a female activity carried out by women on small farmers	- Limited physical access to the market due to movement restrictions imposed during the Covid-19 pandemic. - Decreased investment in rice production and farming activities, leading to potential food security issues. - Deterioration of food security, particularly in terms of income reduction, as a consequence of the Covid-19 pandemic.
Compaoré *et al.* [40]	Burkina Faso [2021]	Qualitative	[86] Men and women from eleven	Barriers to optimal nutrition of	- Farming and food production for their families in increasingly difficult conditions.	- Gender inequality affects resource access and decision-making for women.

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Study identifier	Country(ies) of study [Year]	Study design or approach	[Sample size] Participants characteristics	Outcome measures	Specific activities performed by women [sort, frequency, duration]	Challenges [sort, frequency, duration]
			communities in the Nanoro Health district of Burkina Faso.	mothers and children related to community factors	- Paying for children's schooling, clothing, and healthcare - Women's social and domestic roles, such as taking care of the family.	- Financial dependency on husbands limits women's income generation. - Poverty restricts food and healthcare access. - Cultural gender roles can hinder women's and children's nutrition. - Limited access to nutritious food and healthcare services due to affordability and availability constraints.
Das *et al.* [65]	Nigeria [2023]	Cross-sectional	[11691] Aspiring agribusiness entrepreneurs (5469 men and 6222 women)	Norms and socio-emotional skills	- Among the 11 agricultural value chains offered in the government program, 54% of applicants chose the poultry value chain. - Women were more inclined to select the poultry value chain compared to men.	- Restrictive gender norms in Northern Nigeria states hinder women's participation in agricultural value chains with higher profit potential. - Women experienced in male-dominated value chains may face challenges and lower self-efficacy when trying to operate within nontraditional value chains.
Diedhiou *et al.* [7]	Senegal [2018]	Qualitative	[378] Urban farmers and vegetable vendors in the city of Ziguinchor	Role of women in agricultural activities and their inclusion in the urban market	- Women are vital in local agriculture, involved in production and commerce. - Women form 85% of agricultural operators, while men make up 15%.	- Land acquisition methods for women: Loan (63%), Inheritance or purchase (16%), Rental (12%), Free access (6%), Sharecropping (3%).
Fabiyi *et al.* [8]	Nigeria [2007]	Cross-sectional	[60] Women farmers from six villages	Role of women in Agriculture Constraints faced by women	- Women engaged in various farm tasks, including crop planting, animal rearing, and poultry keeping. - Women were actively involved in tasks like land clearing (58%), planting (72%), weeding (80%), transportation (82%), harvesting (93%), processing (93%), and marketing (88%).	- Insufficient land, restricted credit access, and delayed expensive input delivery. - Among 60 women, none inherited land, 50% acquired it through husbands and relatives (freehold), 32% through leasing, and others purchased land for farming. - Women's income sources for farming: Bank loans (13%), salaries (21%), farm output (23%), cooperative societies' assistance (33%), and borrowing from friends or relatives.

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Study identifier	Country(ies) of study [Year]	Study design or approach	[Sample size] Participants characteristics	Outcome measures	Specific activities performed by women [sort, frequency, duration]	Challenges [sort, frequency, duration]
					- Women with personal farms mainly cultivated groundnut (62%), soybean (57%), rice (40%), cowpea (28%), maize (25%), and vegetables (10%). - Livestock ownership by women included pigs (48%), goats (23%), sheep (17%), and poultry (3%).	
Fonjong and Gyapong [47]	Ghana Cameroon [2021]	Case Study	[148] Actors, including corporate management, government officials and local community members	The dynamic, processes, and implications of large-scale land acquisitions on women and food security	- Women farm workers: 60% have primary education or lower, compared to around 30% of men. - 70% of men work as casual labourers, while the number is 90% for women. - In the off-peak oil palm season, which coincides with the dry season, more women than men are laid off due to limited opportunities for transitioning from harvest tasks to general farm maintenance.	- Compensation focused on crops creates a misleading divide between 'cash' and 'food' crops, resulting in gender-related consequences. - Compensation typically favours traditional cash crops (like cocoa, oil palm, and citrus) & certain wild crops, largely managed by men. - Despite women's involvement in intercropping vegetables on family farms, these crops are often overlooked and unrewarded. - Structural factors and patriarchal norms regarding resource allocation contribute to women's exclusion from compensation.
Gbedomon *et al.* [11]	Benin [2015]	Cross-sectional	[470] Home garden owners and non-owners.	Socio-economic variables Plant diversity and structure within HGs	- Women tend to engage in home gardening at a younger age, often favouring herb-based or herb and shrub-based gardens. - Herb-based or herb and shrub-based home gardens are typically owned by women. - In the age group < 30, young women have a higher likelihood of owning gardens compared to young men.	- Women typically work alongside their husbands or hire small pieces of land for their activities - As tenants, women are restricted from establishing perennial crops like fruit trees and are encouraged to cultivate short-cycle crops instead.

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Study identifier	Country(ies) of study [Year]	Study design or approach	[Sample size] Participants characteristics	Outcome measures	Specific activities performed by women [sort, frequency, duration]	Challenges [sort, frequency, duration]
					- The average plant diversity value was 9.81 ± 0.46 species for women who own home gardens, while it was 10.48 ± 0.59 species for men.	
Habanabakize *et al.* [51]	Senegal [2022]	Cohort study	[50] Female in the bovine milk value chains (BMVC), caprine milk value chain (CMVC) and goat milk value chain (GMVC)	Women's role in production, processing and marketing	100% production of bovine milk 25% processing curdled milk 100% produced goat milk 50% selling curdled milk 80% marketing	- Challenges in the CMVC included remoteness, equipment shortages, and cultural biases. - BMVC participants experienced difficulties due to fluctuations in milk prices. - Women involved in both faced obstacles related to land access, government subsidies, and managing domestic responsibilities. - In the BMVC & GMVC, > 65% of interviewed women reported lacking access to land for their production activities.
Kinkingninhoun *et al.* [37]	Burkina Faso Ivory Coast Madagascar Sierra Leone [2020]	Cross-sectional	[642] Men, women, and youths involved in rice farming in the selected villages, 308 male and 334 female respondents	Socio-demography characteristics Challenges and opportunities related to the roles of men and women in rice farming	- Women engage in rice farming, processing and marketing - Women exceptionally dominate in rice parboiling. - Women have reproductive activities (household activities, caring for children, and elderly household members)	- Unequal burden of reproductive activities, affecting women's economic engagement. - Responsibilities for household tasks and caregiving, limiting women's opportunities. - Lower wages for women in rural wage labour compared to men. - Limited access to education and skill development for women. - Narrow scope for women to transition to higher-paying work.
Mariwah *et al.* [42]	Ghana [2019]	Qualitative	[60] Diverse community members of different genders, and generations owning cashew	Gendered and generational tensions Commercializa-tion of land	- Cashew cultivation was often linked to "men's work," with men handling tasks like land preparation and pruning, while women and children participated in planting, weeding, and harvesting.	- The expansion of cashew cultivation contributes to land scarcity, potentially jeopardizing the future food crop cultivation for women and young individuals. - Women and youth face challenges in accessing the necessary financial, social, and environmental resources for engaging in

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Study identifier	Country(ies) of study [Year]	Study design or approach	[Sample size] Participants characteristics	Outcome measures	Specific activities performed by women [sort, frequency, duration]	Challenges [sort, frequency, duration]
			plantations of varying sizes	Livelihood diversification Household food security	- Women primarily engage in the sale of food crops and horticultural products.	cashew cultivation or alternative livelihood options. - Women's land access remains uncertain, often receiving smaller land allocations compared to men who dominate both land ownership and cashew income.
Nnadi [39]	Nigeria [2023]	Cross-sectional	[300] Male and female farm household heads	Adaptation strategies used by men and women-headed households Households' challenges in use adaptation strategies	Women-headed households used more livelihood diversification (X^2 =18.17) than their male counterparts.	- Women lack access to enhanced farming knowledge compared to men. - Men face obstacles due to inadequate technological advancements and mechanization. - Women have limited opportunities for human capital development through training, in contrast to men ($p < 0.05$). - Key challenges that disproportionately affect women's households include 1. Insufficient knowledge 2. Lack of institutional support 3. Reliance on traditional agricultural practices 4. Poor water quality 5. Limited access to economic resources 6. Household roles that restrict response 7. Limited government support.
Olaniyan	Gambia [2017]	Qualitative & Content Analysis	Stakeholders in the livestock sector	Livestock production Climate-related challenges & adaptation	Livestock rearing Sales of food products	- Dual reproductive and productive roles make women livestock farmers vulnerable. - Inadequate adaptation strategies could increase poverty among women, widening the gender gap in livestock farming.

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Study identifier	Country(ies) of study [Year]	Study design or approach	[Sample size] Participants characteristics	Outcome measures	Specific activities performed by women [sort, frequency, duration]	Challenges [sort, frequency, duration]
Olawepo and Bola [12]	Nigeria [2012]	Cross sectional	[200] Farmers women involved in food production and other agricultural-related functions	Roles of women in food productivity	- 99.5% (199) of women farmers provide household food. - Major crops: Yam 31.1%, Cassava 21.6%, Maize 17.8%, Guinea corn 16.2%, Beans 2.1%, Rice 0.8%, Sweet Potatoes 6.2%, Fruits/Vegetables 4.1%. - Livestock: Goats 33.5%, Sheep 14.5%, Poultry 29.5%, Turkeys/Duck 8.5%, Rabbit 1.5%, Piggery 7.5%, Pigeon 5.0%. - Pond ownership: 6.5%. - Fish processing: Fish Drying 15.5%, Fish Smoking 7.5%, Non-fishing functions 75.5%.	- 82.5% of women farmers acquired their farmland through their husbands. - Majority of women farmers (66%) cultivate small farms of < 1 hectare. - 33.3% of women work on their farms without any assistance, while others receive help from family members or hired labourers, mainly for more strenuous tasks.
Onah *et al.* [13]	Nigeria [2022]	Qualitative	[38] Married women of reproductive age across two socio-economic groupings (women who work only at home and those who worked outside their homes)	Availability of food items produced or cultivated, and purchased; Food items considered too expensive to purchase; Consumption frequency of expensive food items;	- All women grew staple grains and/or root tubers. - 30% cultivated pulse food items, 10% grew vegetables, and only 2% produced nuts, seeds, meat, fish, or other fruits. - Women working at home and on farms (n=22) were more likely to find items too expensive to consume (50% for grains and tubers, 90% for legumes and pulses, 40% for nuts and seeds, 100% for flesh proteins) compared to 20%, 50%, 30%, and 90%, respectively, for women working outside the home.	- Women engaged in economic activities outside their homes had more control over food choices and better dietary diversity. - Limited income from these activities restricted women's decision-making power in food choices, preventing them from affording certain foods. - Women frequently needed spousal approval to purchase expensive food items due to financial limitations and fluctuating prices. - Inadequate income hinders women's ability to diversify their diets.

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Study identifier	Country(ies) of study [Year]	Study design or approach	[Sample size] Participants characteristics	Outcome measures	Specific activities performed by women [sort, frequency, duration]	Challenges [sort, frequency, duration]
Quaye [14]	Ghana [2019]	Qualitative	[592] Smallholder farmers in selected communities in Northern Ghana	Access to improved technology e.g. seeds, tractors, extension services etc.	- Women primarily cultivate soya bean farms and to a lesser extent maize. - They support their husbands in tending to family farms. - Women also play the role of aggregators.	- Male farmers had better extension access due to finances, larger farms, and mobility. - Limited funds hindered women's input and technology adoption. - Weeding challenges affected both genders, more for women due to time and cost. - Women's seed decisions were tied to men, limiting autonomy. - Women supported husbands on farms, leading to smaller plots on marginal land. - Land tenure and inheritance disadvantages restricted women's control. - Cultural norms limited women's land ownership and expansion. - Sociocultural norms prevented machinery use by women. - No land ownership hindered tractor use for small plots, especially in some areas.
Ragetlie *et al.* [15]	Benin [2022]	Cross-sectional	[300] Married women in the Atacora region of northwestern Benin	Food production Intimate Partner Violence (IPV), categorized into three types: physical, sexual, and emotional abuse.	- On average, women reported having 5.2 dependents and cultivating 6.7 different crops on relatively small farms, with almost half (48%) cultivating less than 3 hectares of land.	- 47% of women face physical IPV, 75% emotional IPV, and 38% sexual IPV. - Most women (74%) lack formal education, with only 5% having education beyond primary level. - Women with primary education have lower odds of physical IPV than those without education (OR = 0.30 [0.15, 0.60], $p < .01$). - Insufficient food production is linked to higher odds of physical violence (OR = 4.90 [2.19, 10.97], $p < .01$). - Larger farm size reduces the likelihood of physical IPV (OR = 0.55 [0.31, 0.99], $p < .05$).

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Study identifier	Country(ies) of study [Year]	Study design or approach	[Sample size] Participants characteristics	Outcome measures	Specific activities performed by women [sort, frequency, duration]	Challenges [sort, frequency, duration]
Rogé *et al.* [50]	Mali [2017]	Qualitative	[72] Farmers across the sorghum-growing region of Mali	Division of agricultural labour Choice of crops	- Women play a critical role in restoring soil fertility on dryland plots during the rainy season. - 2/3 of women's labour is dedicated to male plots, while women contribute to 28% of the labour for soil cultivation and 58% of the labour for other tasks on female plots.	- Dryland plots are allocated based on male elder decisions, following patrilineal inheritance, with the most fertile lands controlled by men. - Women farmers raise issues about livestock, water access, and resource constraints on the farm. - Men usually decide on crop rotations.
Torvikey *et al.* [9]	Ghana [2016]	Qualitative	[34] Key informants	Gendered differentials of employment in the out-growers scheme	- Women constitute the majority of out-grower farm workers. - Women comprise 63% of the total labour force and 70% of production unit employees. - Women participate in tasks such as weeding, planting, harvesting, and fruit transportation. - Among 60 casual farm labourers, 45 were women.	- Patriarchal gender norms limit women's access to production factors, hindering fruit production. - Women's out-grower farm work is undervalued, reflecting wider undervaluation of women's labour. - Female casual labourers often receive minimal or non-existent compensation, sometimes in kind. - Exploitation and wage protection issues arise from women's lack of unionization.
Van den Bold *et al.* [6]	Burkina Faso [2021]	Non-randomised experiment	[1088] Women with young children aged (3-12 months)	Associations between changes in women's time use and women's and children's nutritional outcome	Women in both intervention and control villages work more hours than men in agricultural production. [2 to 3.3 hours more per day than men]	- About 26% of women faced conflicts between garden care and other activities such as cooking, childcare, and housework. - Women spent <1 hour per day on average caring for poultry, with 9% facing conflicts with housework.
Yiridoe and Anchirinah [10]	Ghana [2005]	Cross-sectional	[300] Garden producers	Land preparation	- Land preparation, typically a male activity, had little male involvement in some regions.	- Women focus on vegetable and leguminous crops, while men cultivate cereals, cash crops, and fruit trees.

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Study identifier	Country(ies) of study [Year]	Study design or approach	[Sample size] Participants characteristics	Outcome measures	Specific activities performed by women [sort, frequency, duration]	Challenges [sort, frequency, duration]
					- Women invest more time in garden operations compared to men.	
Yokying and Lambrecht [49]	Ghana [2020]	Cross-sectional	[4410] Farming households	Land ownership, agency and achievement in agriculture		- Women have significantly lower land ownership rates compared to men (-1.715±0.230, p<0.01). - Women who are primary landowners are more likely to engage in decisions regarding agricultural input purchases and crop choices. - Women without primary land ownership are less likely to participate in decisions related to agricultural activities, input purchases, crop types, and income use, compared to men. - Lack of primary land ownership for women doesn't significantly relate to membership in agricultural groups or high workloads. - Men's primary land ownership is positively linked to decision-making on input purchases and crop types.

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Table 2a: Characteristics of studies on gendered roles in off-farm activities included in the rapid review represent as sub-theme – *Food processing, preparation, sales and distribution*

Study identifier	Country(ies) of study*	Study design or approach	[Sample size] Participants characteristics	Outcome measures	Specific activities performed by women [sort, frequency, duration]	Challenges [sort, frequency, duration]
Anning-Dorson [18]	Ghana [2023]	Qualitative	[57] Rural women in two gari processing districts in Ghana	Demand for, production and consumption of cassava	- Processing, marketing, and distribution of gari - Female dominated roles include manual processing (peeling, washing, breaking up mash, serving, roasting) and sales - Male dominated roles include mechanized milling, pressing to dewater and bagging.	- Instability in buyer availability leading to reduced profits. - Price fluctuations due to cassava seasonality, hindering planning. - Adverse working conditions straining health. - Limited funding, and insufficient storage impacting income. - Climate disruptions impacting cassava production costs.
Apata [16]	Nigeria [2019]	Mixed methods	[300] Cassava growers and processors	Gender participation in cassava value chain enterprise	- Women process raw cassava into other forms, and market or sell them. - 79.3% of female respondents participated in cassava value chain enterprise, while 36.7% were males	- Limited income due to caregiving roles. - Training access for low-educated individuals. - Challenges in market and financial information management.
Donkor et al. [17]	Nigeria [2022]	Cross sectional	[620] 400 farmers (smallholders and medium-scale), 120 processors, & 100 traders in the cassava value chain in the Oyo State	Main actors in the cassava value chain Income distribution patterns among actors Socioeconomic and institutional factors affecting their profits	Men dominate production; and women in processing or marketing.	- Limited credit access for value chain actors. - Unequal extension service availability favoring farmers. - Exclusion of women processors and traders from extensions. - Men's higher income share, generating 56.7% from production. - Women's income share at 43.2% from production.
Dossou et al. [19]	Benin [2023]	Cross-sectional	[365] Young women agri-food processing business owners between 15 and 40 years old	Dependent Variable: Business Performance Independent Variables - Entrepreneurial orientation (EO)	Women process various agricultural products (for example, soybeans, maize, cassava, peanuts, pineapples, cowpeas, millet, sorghum, rice, yams, bananas, palm fruits, tomatoes, fish, etc.) which represent a major income source for them.	- Social constraints: Patriarchal system, discriminatory attitudes, economic dependence. - Socio-cultural barriers: Family responsibilities, norms, customs, religion. - Business limitations: Hindered performance under Entrepreneurial orientation.

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				- Social & business barriers		
Ene-Obong et al. [5]	Nigeria [2017]	Cross-sectional	[287] Households (HHs) with mother and children between the ages of 1 and 5 years in Ohafia	Gender roles Family relationships Food security Nutritional status	- Women hold the family's feeding responsibility. - Female engagement in agricultural tasks: 71.5% vs. 28.5% for men. - Diverse agricultural activities: land preparation, planting, weeding, harvesting, processing, etc. - Women's involvement in food preparation: 91.4% vs. 8.6% for men. - Varied food-related tasks: collecting firewood, water, cooking, and dishwashing.	- Limited access to productive resources, income opportunities, safety nets, extension services, information, credits, labour, and time-saving devices. - High postharvest losses due to insufficient capacity in food processing, storage, and preservation. - Low utilization of locally available foods and biodiversity.
Forkuor et al. [23]	Ghana [2018]	Mixed methods	[360] Women in the marine fish processing industry	Processing, preservation, storage and sale of the fishes.	- Men bring fish ashore; women take over tasks. - Women handle fish processing, preservation, storage, and sales. - Fish processing includes descaling, washing, and arranging on a smoking board. - Smoking of fish is a key preservation method.	- Challenges for women in marine fish industry processes. - Issues with fish acquisition, hygienic handling, and oven types. - Smoking process challenges, health issues from smoke, packaging. - Storage difficulties, especially in lean seasons. - Sales-related challenges in the industry.
Grace et al. [24]	Nigeria [2012]	Cross-sectional	[269] Meat processors or retailers in Bodija	Characterization of meat processing and selling Social and gender aspects of processing and selling meat	- Men dominate activities, but women contribute significantly. - Women play vital roles in processing and sales. - Involvement in tasks like water fetching and meat cleaning. - Exclusion from slaughtering activities. - Women exhibit superior food safety practices compared to men.	- Poor environmental working conditions in the Bodija market. - Gender differences in meat consumption: women – low-value offal, men – high-value muscle meat. - Committee membership: similar men (22%) and women (18%) - Women's higher regular meeting attendance: 98% vs. 87% of men ($p<0.009$) yet men occupy leadership positions - No significant gender gap in food safety knowledge and attitude.
Ibro et al. [21]	Niger [2009]	Cross sectional	[100] Women street vendors in Niger who traditionally prepared and sold kossaï	Perceptions of the cowpea flour Potential impacts of cowpea flour on	Women street vendors in Niger traditionally prepared and sold kossaï, which was an integral part of the economy and supported their families	- Labor-intensive process of preparing kossaï batter from whole cowpeas. - Significant time and energy demands for batter preparation (particularly in taking the

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				respondents' businesses		soaked and dehulled cowpeas to a local mill for grinding).
Kpossilande et al. [20]	Benin [2020]	Cross-sectional	[27] Women-headed microenterprises (cowpea processing units that produce atta) in 22 streets distributed across 13 districts of the city	Financial performance indicators, including added value, net operating income, financial rate of return, and rate of family labour turnover	- Women play a pivotal role in cowpea processing microenterprises. - Women predominantly lead these enterprises and employ female labour.	- Limited credit access - Absence of training and government recognition. - Manual processing makes it labour-intensive. Processing 1 kg of white cowpeas takes 100 to 200 minutes. - Low productivity: around 70 pieces of atta dough from 1 kg of cowpea flour. - Women often reside far from production and sales locations. - Unattractive profits dissuade young individuals from entering the sector.
Krumbiegel et al. [22]	Ghana [2020]	Case control study	[420] Female workers in the pineapple sector selected from 420 married households, living in areas of large-scale pineapple plantations in Ghana	Indicator of women's empowerment	- Horticultural engagement of women boosts household income by around 30% - Women in pineapple plantations earn ~915 GHS more than non-engaged peers. - Women in Ghana's pineapple sector exhibit greater control over household assets like vehicles, radios, and TVs.	- Most women are engaged in washing and packaging of pineapples or field maintenance including soil preparation and weeding. - Other work categories are more male dominated such as chemical application. - More men also work in technical and administrative jobs.
McKune et al. [25]	Senegal [2021]	Qualitative	[84] Actors in the vaccine value chain (VVC); experts from the public and private sector, government, and international donors; animal health workers and livestock keepers	Stakeholders mapped Stakeholders' roles	- Men and women's engagement differ by value chain - Poultry is widely viewed as a woman space - Women to serve as poultry animal health workers. - Most men keep cattle, horses/donkeys, and small ruminants (mostly sheep), while women keep poultry and small ruminants.	- Centralized decision making, mainly by men, for vaccine production and importation. - Wide catchment areas and lacking cold chain facilities. - Limited female representation among veterinarians. - Gender-based education and training disparities. - Gender norms affecting women's roles as relais. - Men possess more vaccination decision power, while women seek recognition.
Mensah-Bonsu et al. [26]	Ghana [2019]	Cross-sectional	[203] Poultry value chain (VC) actors	Actor identification, Roles of men and women at various	- Men dominated most production activities except grading of eggs that were almost evenly distributed (52.3% men, 47.7% women).	Male value chain actors add higher value than females due to operating on larger scales.

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				stages of the value chain, Value addition at each stage of the poultry value chain	- Activities such as brooding, medication, vaccination, feed-milling, feeding, disposal, culling, records keeping, dressing, packaging, selling, and loading were mainly done by men.	
Nzeakor and Ukoha [41]	Nigeria [2020]	Qualitative research	[120] Women farmers	Socioeconomic factors Food processing technologies Key influencing factors	- Staple crop production (rice, wheat, maize, etc.). - Post-harvest tasks: storage, handling, and grain processing. - Women contribute significantly to the labour-intensive aspects of these activities.	- Access to credit from financial institutions - Initial capital for business setup - Ensuring sustainable food security
O'Brien et al. [59]	Senegal [2022]	Mixed methods	[1147] Women processors and retailers, farmers, and medical personnel involved in the food processing value chain in Touba	Perceived impacts of value chain development Women's empowerment Women's income Women's nutrition	- Women engage in food processing and retailing activities - We found that the number of Senegalese women working as processors and retailers for TDS has grown nearly tenfold from 115 at the project's inception in 2016 to 1147 in 2020.	- Gender norms and cultural barriers restrict girls' education and women's work in Touba. - Lack of education limits women's support and mobility, hindering opportunities. - The absence of electricity in certain areas affects women's safety during nighttime travel. - Traditional beliefs may oppose women's aspirations for external work. - Overall, limited opportunities hinder women's employment and financial autonomy.
Olayiwola [53]	Nigeria [2019]	Randomized controlled trial	[180] Women who engaged in off-farm economic activities	Roles of women in food productivity	- Sales of provisions - Food processing (grains) - Sales of cooked/fried food - Tailoring - Livestock rearing - Weaving/Knitting - Sales of vegetables - Cow milking for sales - Sales of locally brewed drinks (Zobo, kunu, ginger drinks) - Sales of locally made cosmetics (pomade, soap) - Sales of water	- Inadequate extension training - Inadequate infrastructure - Poor access to credit - Inadequate finance
Opata et al.	Nigeria [2020]	Cross-sectional	[2520]	Women's and men's income distribution.	- Increasing women's income share correlated with higher budget allocation for food preparation,	- Gender inequality - Food insecurity

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			400 households constituting 2520 participants	Household decision-making on household expenditures.	planting, weeding, processing, and storage. - Elevated men's income share was associated with increased budget allocation for clearing and cultivation.	- Poverty among rural farm households.
Osunbitan et al. [69]	Nigeria [2000]	Cross-sectional	[93] Women agro-processors in Osun and Ondo state	Capacity needs Technology needs	- Women engage in cassava and palm fruit processing. - Women operate processing machines. The gender of machine operators depends on engine type (women for petrol, men for diesel).	- Female post-harvest processing employment is minimal, mainly in routine tasks. - Processing centres lack infrastructure and suffer from water scarcity, affecting hygiene. - Poor operational practices shorten equipment lifespan. - Inadequate material transportation limits processing capacity.
Quisumbing et al. [4]	Benin Malawi Philippines Bangladesh [2021]	Cross-sectional	[1200] 703 Women 497 Men The sample included both program trainees as well as a comparison group	Empowerment scores	Women participated in soy, rice and poultry processing	- Household food security. - Women's rights to agricultural productive resources. - Gender inequality in education. - Women's unpaid domestic labour. - Women's decision-making and empowerment.
Shackleton et al. [27]	Burkina Faso Ethiopia Zambia [2011]	Qualitative & secondary data	[1710] Women working in a State-owned gum Arabic sorting and exporting company	Harvesting (picking) Processing (sorting)	- Women participate in gum collection and sorting - Women are often valued as inexpensive labour for gum processing	- Women less involved in profitable product sales, often dominated by men; pay disparity - Gender-based asset disparity, social stigmas (e.g., women not biking)
Smale et al. [28]	Mali [2022]	Cross-sectional	[2887] Farming households cultivating cowpea	Gendered access to land in use rights that are allocated to cowpea. Relative importance of cowpea as a crop for women farmers The volume of cowpea or sold, or income from sales	- 89% of cowpea vendors in Mali's local markets are women. - 99% of vendors selling processed cowpea products are women. - Women primarily sell sho frou-frou, while men focus on boiled cowpea. - Women handle processing up to flour production at home, final stages in markets. - Fresh cowpea leaves are exclusively sold by women. - Cowpea fodder is sold by both genders.	- Gender impacts land area when cowpea is intercropped with staple cereals. - Women have limited involvement in cowpea plot management. - Cowpea is a secondary, not primary, crop on women's plots.

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				earned by women as compared to men	- Women do door-to-door sales in urban areas.	
Uduji et al. [46]	Nigeria [2023]	Cross-sectional	[768] Rural women	Level of gender participation Knowledge scores Gender differences in global memorandum of understanding interventions	- Men hold roles as custodians of seeds, food, and traditional climate change knowledge. - In agricultural and rural development services, men received 12%, compared to women's 5%. - Skill acquisition: Men gained 19%, while women received around 14%. - Women's share in fishing and seafood provisions interventions was 12%, lower than men's 16%.	- Discriminatory practices - Low productivity - Limited entrepreneurship and leadership skills - Inadequate training - Insufficient management experience - Lack of information - Inadequate infrastructural development - Lack of strategies for financial literacy development - Restricted access to external loans for business sustainability - Insufficient family support
Walther et al. [29]	Benin Niger Nigeria [2019]	Cross-sectional	[490] Entrepreneur in the rice value chain.	Structural importance of an actor in a network Economic performance measured by monthly profit	- Men constitute 76.9% and women 21.5% in the rice network. - Women are more prevalent in irrigated rice cultivation. - Women also serve as retailers, purchasing small rice quantities from wholesalers for resale in rural and urban markets. - Men earned more than women High Earner Men (61%) vs. Women (7%) Low Earner Men (39%) vs. Women (93%)	- Women's income is significantly lower than men's after accounting for various factors (age, experience, education, religion, matrimonial status). - Gender-based income disparities are evident, with men's average annual income being ~5x higher than women's. - Firms led by men are larger, with an average of 5 employees, compared to women-led firms with an average of 2.7 employees. - Women's income sources are less diversified compared to men, with a smaller proportion selling additional products (e.g., rice, cereals). - Gender plays a significant role in income distribution, with more women falling into the low-earner category.

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Table 2b: Characteristics of studies on gendered roles in off-farm activities included in the rapid review represent as sub-theme – Food provision, consumption and nutrition

Study identifier	Country(ies) of study*	Study design or approach	[Sample size] Participants characteristics	Outcome measures	Specific activities performed by women [sort, frequency, duration]	Challenges [sort, frequency, duration]
Abdul-Rahman *et al.* [30]	Ghana [2019]	Cross-sectional	[250] Consumers (200) and processors (50) of guinea fowls in the Tamale metropolis	Constraints to consumption of guinea fowl.	Women are more likely to take on the role of homemakers and primary caretakers of children. They often bear the responsibility of household chores and childcare.	- Unemployment - Low incomes - Price fluctuation - Male heads of households used guinea fowl meat more regularly than female heads of households ($p<0.05$). On weekly basis 42% in males and 21% in females
Addai *et al.* [66]	Ghana [2022]	Analysis of secondary data set	[900] Smallholder farm households in Northern Ghana	Disparities in welfare outcomes (food poverty, vulnerability, and food consumption inequality) across male and female household heads	Male household heads (MHHs) showed significantly higher mean food consumption expenditure per capita and household dietary diversity (HDDS) scores than Female household heads (FHHs. Food Consumption Expenditure per Capita: FHHs 62 vs. MHHs 8.83; Difference of 28.2%	- Male heads (MH) had larger average farm sizes in hectares compared to female heads (FH). - Farm Size: FH 0.62 vs. MH 0.65; - MH achieved higher rice yields than FH. - Rice Yields: FH 4.26 vs. MH 3.98; - HDDS: FHHs 5.20 vs. MHHs 6.42; - FHs had significantly longer farm-to-market distance in km compared to their male counterparts.
Alaofe *et al.* [31]	Benin [2016]	Randomized controlled trial	[214] Women in 4 villages: 2 treatment villages and 2 matched-pair comparison villages.	Diversity of vegetables and fruits produced from the solar garden. - Household food consumption - Household dry season food purchases	Contribution to household dietary diversity - additional income to buy supplementary food items, Contribution to household expenditures - additional income spent on health care, education, and clothing Caregiving: preparing family meals and feeding children	- Integrated approaches needed to tackle food supply challenges. - Lack of nutrition education hampers optimal use of extra income for nutritious foods. - Insufficient strategies for enhancing vitamin and mineral bioavailability impact SMG outcomes.

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				- Household income - Utilization of income generated from the sale of garden products by the household.	Diversity of vegetable (fruit) production: - SMG + WG: 26% (55%) increase (P = 0.03) - None WG: 5% (50%) increase - Comparison WG: 10% (29.6%) increase Comparison none WG: 13.4% increase, 27% decrease in fruits	- Lack of coordination with other interventions affects deficiency mitigation. - Additional strategies like deworming, iron and vitamin A supplementation, and home fortification are absent.
Alaofe *et al.* [32]	Benin [2017]	Cross-sectional	[767] Woman-child pair from each household where the woman was not pregnant but of childbearing age (15-49 years)	Women: Dietary diversity score (DDS) and anthropometry (BMI) Children: DDS, WHZ, WAZ, and HAZ	Significant and positive association between women's composite empowerment score, and their DDS and BMI 3. Leadership domain associated with maternal DDS (P = 0.008) and BMI (P = 0.06).	- Low dietary diversity and undernutrition - Higher rates of poverty - Less diverse production portfolios.
Alaofe *et al.* [33]	Benin [2019]	Quasi-experimental design	[1737] Non-pregnant women of childbearing age (15-49 years)	Household consumption of individual food groups; Household diet diversity; Mother's intake of individual food groups and diet diversity; Mother's BMI	Engaged in hand-watered horticulture for women who were part of the local women's farming groups - SMG intervention led to a significant increase in vegetable, fish, fruit, egg, and root and tuber consumption in the SMG WG compared to other groups. - SMG WG showed higher overall dietary diversity (HDDS) and women's dietary diversity (WDDS-10) scores. - Mothers in the SMG WG had a greater increase in mean BMI compared to other groups.	- Lack of knowledge regarding nutrition-enhancing crop selection. - Insufficient understanding of proper preservation and cooking of irrigated crops within nutrition education programs.
Bliznashka *et al.* [34]	Burkina Faso [2022]	Cluster-randomized controlled trial	[134] 82 women who participated in the	Women's empowerment	- Engagement in nutrition-sensitive agriculture	- Persistent gender norms affecting decision-making.

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			2-year EHFP program	Knowledge about breastfeeding	- Grow micronutrient-rich vegetables, fruits, and animal-source foods	- Limited access to resources and influential networks. - Ongoing misinformation and cultural beliefs. - Insufficient community support for proper breastfeeding practices.
Crookston *et al.* [52]	Burkina Faso [2021]	Longitudinal Quasi-experimental design	[751] Female members of savings groups and their husbands or main male household member	- Input in decisions - Group membership - Influential group membership - Attitudes towards domestic violence - Income control - Work balance.	- Women were more empowered in productive decisions, group membership, and influential groups; men in domestic violence attitudes, income control, and work balance. - The treatment group reported higher average adequacy in empowerment indicators; comparison group's average adequacy decreased (p=0.002), after controlling for age, sex, and education level.	- Limited input in decisions due to gender roles. - Constraints on group participation due to societal norms. - Exclusion from influential groups due to structural barriers. - Cultural acceptance of domestic violence affecting attitudes. - Limited control over income due to traditional norms. - Difficulty balancing work and domestic responsibilities.
Custodio *et al.* [60]	Burkina Faso [2020]	Cross sectional	[12745] Women who participated in the Food and Nutrition Vulnerability on Urban Environment survey	The prevalence of minimum dietary diversity for women (MDD-W) and its association with socioeconomic factors, food security, and purchasing practices	- Home-based food preparation - Informal food vending	- Women living in urban Burkina Faso consumed at least five food groups out of the ten predefined food groups to measure MDD-W - Low education; levels nearly 46% had not received any education - Severe household food insecurity; >50% of women lived in severely food insecure - Lack of food stocks in households; >30%
Debpuur *et al.* [57]	Ghana [2021]	Qualitative research	[84] Men & women living in rural communities in the Kassena-Nankana Districts	Factors affecting maternal and child nutrition - Socio-economic Poverty	-Small-scale farming and animal rearing -Petty trading -Child care and feeding	-Socio-economic barriers to nutritious food access. -Poverty and poor farm yields. -Limited access to water for agriculture.

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			of Northern Ghana	- Perceived lack of male support		-Lack of male support for women and children's nutrition
Heckert *et al.* [35]	Burkina Faso [2019]	Randomized controlled trial	[2093] Women with children aged 3 to 12 months old	Women empowerment Child nutritional status	- Women's empowerment contributed to a 1.9% reduction in wasting out of the total 7.5% decrease.	- Low-income women experience a higher prevalence of underweight children.
Heckert *et al.* [36]	Burkina Faso [2023]	Randomized controlled trial	[1763] Households in western Burkina Faso	Empowerment of men and women using the women's Empowerment in Agriculture Index (pro-WEAI)	- Men are more likely than women to achieve empowerment across all 12 indicators. - Both genders generally have adequacy in productive decisions, land and asset ownership, respect within the household, and control over income.	- Both genders lack access to financial services, group membership, and influential groups. - Early marriage is common among women, with a median age at first marriage of 17.8 years. - Women's education rates are low, with 73.9% having never attended school and only 22.5% being literate, compared to 59.3% and 37.6% of men. - Acceptance of wife-beating is present, with 43.5% of women and 34.1% of men considering it acceptable. - A significant gender gap exists in work balance, with about 30% of women experiencing it compared to 75% of men. - Disempowerment is primarily attributed to limited access to financial services, work balance, and influential group membership for both genders.
Lockett and Grivetti [58]	Nigeria [2000]	Cross-sectional	[100] Elderly Fulani men and women are known for	Nutrition-related disease and illness Food procurement strategies	- Women sacrifice cattle once in their lifetime, typically after their first child's birth.	- Adult Fulani men rode to distant markets on bicycles, while women walked to the market and in some

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			their expertise in local food practices and edible wild plants.	Dietary customs and taboos	- After childbirth, spiced chicken is served to the mother. - At weddings, men cook large amounts of meat in butter and share it with guests.	instances expended 3200 kcal/day engaging in this activity - Meat from the sacrificed cattle during naming ceremonies is served to guests. -Nutrition-related disease and illness
Michalscheck *et al.* [44]	Ghana [2020]	Case study	[54] Smallholder farmer households	Land allocation and land negotiation style	While the male household head was the key decision maker acting as a strategic gatekeeper in a funnel-like process, the wife and the son had a significant influence on his decision i.e. the household-level land negotiation outcome.	- Unfavorable land use decisions that disproportionately disadvantage women. - Limited negotiation skills among women.
Nordhagen and Klemm, [67]	Burkina Faso Ivory Coast Senegal Tanzania [2018]	Cross-sectional	[7808] households with women and children under 5 years of age	% of women keeping chickens % (of chicken keepers) with ≥10 adult chickens % (of chicken keepers) producing ≥1 egg in past 2 weeks Nutrition practices: egg consumption in households, past 7 days for young children, past 24 hr for women	Burkina Faso: 92% kept chickens, 88% had ≥ 10 adult chickens, 89% produced ≥ 1 in the past 2 weeks. Côte d'Ivoire: 56% kept chickens, 77% had ≥ 10 adult chickens, 65% produced ≥ 1 in the past 2 weeks. Senegal: 59% kept chickens, 100% had ≥ 10 adult chickens, 96% produced ≥ 1 in the past 2 weeks. - Self-produced chicken consumption: 31% to 52%. - Children's consumption (prior 7 days): 25% to 80%. - Women's egg consumption (24 hr prior): 13–35%.	- Women were widely engaged in chicken rearing, yet their control over poultry product revenues was limited. - Efforts to increase women's decision-making on revenue use faced challenges in Cote d'Ivoire and Tanzania. - Negative trends in women's decision-making ability over time in two countries suggested men's benefit "capture." - These findings impact women's empowerment, nutrition, and broader implications.
Nyantakyi-Frimpong [55]	Ghana [2021]	Qualitative	[33] Smallholder farmers in Ghana's Upper West Region	Socio-demographics Perceptions about climate variability Agricultural workload Family environment	Women engage in various agricultural activities Have the responsibility of child care, food preparation and feeding	- Mothers leaving infants for farm work rely on neighbours or siblings for care, impacting proper feeding. - These children often lack adequate breast milk or nutritious foods due to maternal absence.

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				Socio-cultural factors influencing infant and young child feeding (IYCF)		- Food preparation and child care get compressed into limited time frames. - Taking infants to the farm leads to unhygienic feeding environments, lacking nurturing interactions. - Distant fields lack diverse food, resulting in feeding strategies like carrying babies and offering unhealthy snacks.
Olney *et al.* [54]	Burkina Faso [2015]	Randomized controlled trial	[55] Villages randomly assigned to a control group and 2 treatment groups	Changes in agricultural production Knowledge enhancement Adoption of optimal infant and young child feeding (IYCF) practices Improvement in household dietary diversity	- Women engage in agricultural production. - Responsible for infant, and young child feeding and care.	- Limited knowledge of IYCF practices. - Low levels of formal education among household heads and mothers. - Food insecurity. - Poor hygiene and sanitation practices.
Olney *et al.* [61]	Burkina Faso [2016]	Randomized controlled trial	[1767] Mothers with children aged 3 to 12 months at baseline	Enhanced-homestead food production Mothers' nutrition Mothers' empowerment	- Engaging in seasonal agricultural production on dedicated land. - Using provided inputs and training for nutrient-rich food production. - Planting and nurturing crops using distributed resources. - Raising chicks for increased animal source food production. - Participating in training for optimal agriculture practices. - Active engagement in enhancing household dietary habits.	- Women's nutrition is inadequate, affecting their health. - Inadequate dietary intake - High prevalence of underweight among children. - Women have limited decision-making abilities in various aspects.

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Pierre-Louis *et al.* [45]	Mali [2007]	Cross sectional	[65] Mother-child pairs	Maternal time use Child anthropometry Maternal food production Dietary intake Parasitic infection Household, maternal, and child determinants of child nutritional status	- Women integrate caregiving and breastfeeding with domestic work and income-generating activities. - Mothers breastfed babies in the fields, balancing work and childcare. - Women cared for their own and others' children, including older siblings' children (45.7%). Mothers (45.7%) and grandmothers (8.6%) were significant caregivers.	Limited access to land and asset by women
Rahman [43]	Nigeria [2008]	Cross-sectional	[230] 230 women selected from 180 farm households in 18 villages in Kaduna State	Size of household farms - Household size Women's share of farm income Educational status Credit Cooperatives Women's involvement in farm decisions Accessibility of productive resources Level of satisfaction in agriculture	- Defined gender roles: Men responsible for farm decisions and work, women focus on domestic chores.	- Limited involvement in farm decisions (41.53%). - Inadequate access to productive resources (11.25% of women had adequate access). - Poor financial status and limited access to credit. - Dependence on husbands' approval for decisions. - Husbands' control over family finances. - Dissatisfaction due to labour scarcity. - Low overall satisfaction in agriculture (5.91% had high satisfaction, 53.74% had low satisfaction).
Samuel *et al.* [68]	Nigeria [2019]	Cross-sectional	[572] Cassava value chain households and non-cassava value chain households in selected communities.	Household Dietary Diversity Score Minimum Dietary Diversity for Women of Reproductive Age	A higher percentage (68.3%) of female-headed households were involved in the cassava value chain within the study population.	- Poor food consumption pattern - Dietary gap observed between women's and households' food consumption - Lack of integrated value chain interventions with nutrition-focused behaviour change communication.

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Wood *et al.* [56]	Mali [2021]	Qualitative	[41] Participants	Household decision-making on food consumed	- Elderly women use off-farm income to buy extra food and seasonings for the household. - Younger women are responsible for meal preparation and follows the guidance of older women. - Younger women contribute their earnings to older women, who then invest it in household food.	- Equipment and human capital are cited as the main obstacles to food production. - Climate-related stress results in crop shortages, with limited decision-making power for farming changes. - Women's traditional tasks are now more time-consuming due to intensified climate effects. - Young women lack decision-making authority in responding to changing climate patterns.

*For studies conducted in multiple locations, only data from countries in West Africa were extracted

REFERENCES

1. **The Food and Agriculture Organization of the United Nations.** FAO Policy on Gender Equality 2020–2030. Rome. 2020. Available from: https://www.fao.org/3/cb1583en/cb1583en.pdf *Accessed August 2022.*

2. **Gnisci D** Women's Roles in the West African Food System: Implications and Prospects for Food Security and Resilience, West African Papers, No. 3, OECD Publishing, Paris. 2016. https://doi.org/10.1787/5jlpl4mh1hxn-en

3. **Turner KL, Idrobo CJ, Desmarais AA and AM Peredo** Food sovereignty, gender, and everyday practice: The role of Afro-Colombian women in sustaining localised food systems. *J. Peasant Stud.* 2022; **49(2):** 402-428.

4. **Quisumbing A, Heckert J, Faas S, Ramani G, Raghunathan K and H Malapit** Women's empowerment and gender equality in agricultural value chains: evidence from four countries in Asia and Africa. *Food Secur.* 2021; **13(5):** 1101-1124.

5. **Ene-Obong HN, Onuoha NO and PE Eme** Gender roles, family relationships, and household food and nutrition security in Ohafia matrilineal society in Nigeria. *Matern Child Nutr.* 2017; **13(3):** e12506.

6. **van den Bold M, Bliznashka L, Ramani G, Olney D, Quisumbing A, Pedehombga A and M Ouedraogo** Nutrition-sensitive agriculture programme impacts on time use and associations with nutrition outcomes. *Matern Child Nutr.* 2021; **17(2):** e13104.

7. **Diedhiou SO, Sy O and C Margetic** Urban agriculture in Ziguinchor (Senegal): on-farm consumption practices supporting growth of sustainable urban supply chains. Population, settlement and agriculture in sub-Saharan Africa. 2018; **3.**

8. **Fabiyi EF, Danladi BB, Akande KE and Y Mahmood** Role of women in agricultural development and their constraints: A case study of Biliri Local Government Area, Gombe State, Nigeria. *Pak J Nutr.* 2007; **6(6):** 676-680.

9. **Torvikey GD, Yaro JA and JK Teye** Farm to factory gendered employment: The case of Blue Skies Outgrower Scheme in Ghana. *Agrar. South.* 2016; **5(1):** 77-97.

10. **Yiridoe EK and VM Anchirinah** Garden production systems and food security in Ghana: Characteristics of traditional knowledge and management systems. Renew. *Agric. Food Syst.* 2005; **20(3):** 168-180.

11. **Gbedomon RC, Fandohan AB, Salako VK, Idohou AFR, Kakai RG and AE Assogbadjo** Factors affecting home gardens ownership, diversity and structure: a case study from Benin. *J. Ethnobiol. Ethnomedicine*. 2015; **11:** 56.

12. **Olawepo RA and B Fatulu** Rural women farmers and food productivity in Nigeria: an example from Ekiti Kwara, Nigeria. *Asian Soc. Sci.* 2012; **8(10):** 108-117.

13. **Onah MN, Hoddinott J and S Horton** Qualitative exploration of the dynamics of women's dietary diversity. How much does economic empowerment matter? *Public Health Nutr.* 2022; **25(6):** 1461-1471.

14. **Quaye W, Fuseini M, Boadu P and NY Asafu-Adjaye** Bridging the gender gap in agricultural development through gender responsive extension and rural advisory services delivery in Ghana. *J. Gend. Stud.* 2019; **28(2):** 185-203.

15. **Ragetlie R, Sano Y, Amoussa Hounkpatin W and I Luginaah** Association between poor food production and intimate partner violence among smallholder farmers in northwestern Benin. *Glob Public Health.* 2022; **17(11):** 2737-2751.

16. **Apata TG** Analysis of cassava value chain in Nigeria: Pro-poor approach and gender perspective. *Int. J. Value Chain Manag.* 2019; **10(3):** 219-237.

17. **Donkor E, Onakuse S, Bogue J and I de los Rios Carmenado** Income inequality and distribution patterns in the cassava value chain in the Oyo State, Nigeria: a gender perspective. *Br Food J.* 2022; **124(13):** 254-273.

18. **Anning-Dorson T** Cassava-gari value chain participation and rural women's wellbeing: an exploratory study. *African J Food, Agric. Nutr. Dev.* 2023; **23(1):** 22117-22131. https://doi.org/10.18697/ajfand.116.22635

19. **Dossou SAR, Adeoti R, Aoudji AKN and M Djana** Effect of entrepreneurial orientation on business performance of young women agribusiness owners in Benin: do social and business environments matter? *African J. Sci. Technol. Innov. Dev.* 2023; **15(1):** 14-30.

20. **Kpossilande CE, Honfoga BG and T Ferre** Economic potentials of artisanal food processing microenterprises in West Africa: case of "atta" production in Cotonou (Benin). *Agric. Food Econ.* 2020; **8(1):** 1-18.

21. **Ibro G, Seydou R, Saley K, Everhart-Valentin K, Fulton J, Lowenberg-DeBoer J and M Otoo** Testing the market potential for a new value-added cowpea product to improve the well-being of women entrepreneurs in Niger. *J. Int. Agric. Ext. Educ.* 2009; **16(1):** 43-55.

22. **Krumbiegel K, Maertens M and M Wollni** Can employment empower women? Female workers in the pineapple sector in Ghana. *J. Rural Stud.* 2020; **80:** 76-90.

23. **Forkuor D, Peprah V and AM Alhassan** Assessment of the processing and sale of marine fish and its effects on the livelihood of women in Mfantseman Municipality, Ghana. *Environ. Dev. Sustain.* 2018; **20(3):** 1329-1346.

24. **Grace D, Olowoye J, Dipeolu M, Odebode S and T Randolph** The influence of gender and group membership on food safety: the case of meat sellers in Bodija market, Ibadan, Nigeria. *Trop. Anim. Health Prod.* 2012; **44(1):** S53-59.

25. **McKune S, Serra R and A Touré** Gender and intersectional analysis of livestock vaccine value chains in Kaffrine, Senegal. *PLoS ONE.* 2021; **16(7):** e0252045.

26. **Mensah-Bonsu A, Lartey NN and JKM Kuwornu** Gender-segregated analysis of the poultry value chain in Ghana. *Gend Technol Dev.* 2019; **23(2):** 130-164.

27. **Shackleton S, Paumgarten F, Kassa H, Husselman M and M Zida** Opportunities for enhancing poor women's socioeconomic empowerment in the value chains of three African non-timber forest products (NTFPs*). Int. For. Rev.* 2011; **13(2):** 136-151.

28. **Smale M, Theriault V, Allen A and M Sissoko** Is cowpea a 'women's crop' in Mali? Implications for value chain development. *Afr. J. Agric. Resour. Econ.* 2022; **17(2):** 157-170.

29. **Walther OJ, Tenikue M and M Trémolières** Economic performance, gender and social networks in West African food systems. *World Dev.* 2019; **124:** 104650.

30. **Abdul-Rahman II, Angsongna CB and H Baba** Guinea fowl (Numida Meliagris) value chain: Preferences and constraints of consumers. *Afr. J. Food Agric. Nutr. Dev.* 2019; 19(2): 14393-14414. https://doi.org/10.18697/ajfand.85.17335

31. **Alaofe H, Burney J, Naylor R and D Taren** Solar-powered drip irrigation impacts on crops production diversity and dietary diversity in Northern Benin. *Food Nutr Bull.* 2016; **37(2):** 164-175.

32. **Alaofe H, Zhu M, Burney J, Naylor R and T Douglas** Association between women's empowerment and maternal and child nutrition in Kalale District of Northern Benin. *Food Nutr Bull.* 2017; **38(3):** 302-318.

33. **Alaofe H, Burney J, Naylor R and D Taren** The impact of a Solar Market Garden programme on dietary diversity, women's nutritional status and micronutrient levels in Kalale district of northern Benin. *Public Health Nutr*. 2019; **22(14):** 2670-2681.

34. **Bliznashka L, Becquey E, Ruel MT and DK Olney** Four-year effects of a 2-year nutrition and gender-sensitive agricultural program on women's nutritional status, knowledge, and empowerment in rural Burkina Faso. *Food Nutr Bull.* 2022; **43(3):** 364-375.

35. **Heckert J, Olney DK and MT Ruel** Is women's empowerment a pathway to improving child nutrition outcomes in a nutrition-sensitive agriculture program?: evidence from a randomized controlled trial in Burkina Faso. *Soc. Sci. Med.* 2019; **233:** 93-102.

36. **Heckert J, Martinez EM, Sanou A, Pedehombga A, Ganaba R and A Gelli** Can a gender-sensitive integrated poultry value chain and nutrition intervention increase women's empowerment among the rural poor in Burkina Faso? *J. Rural Stud.* 2023; **100:** 103026.

37. **Kinkingninhoun Medagbe FM, Komatsu S, Mujawamariya G and K Saito** Men and women in rice farming in Africa: a cross-country investigation of labor and its determinants. *Front. Sustain. Food Syst.* 2020; **4:** 117.

38. **Asante BO, Frimpong BN, Asante MD, Prah S, Ayeh SJ, Sakyiamah B, Zenna N, Mujawamariya G and HA Tufan** Exploring gender differences in the role of trait preferences among stakeholders in the rice value chain in Ghana. *Sustainability*. 2023; **15(7):** 6026.

39. **Nnadi OI, Lyimo J, Liwenga E and MC Madukwe** Gender perspectives of responses to climate variability and change among farm households in Southeast Nigeria. *Environ Manage.* 2023; **71(1):** 201-213.

40. **Compaore A, Ouedraogo K, Boua PR, Watson D, Kehoe SH, Newell ML, Tinto H, Barker M and H Sorgho** 'Men are not playing their roles', maternal and child nutrition in Nanoro, Burkina Faso. *Public Health Nutr.* 2021; **24(12):** 3780-3790.

41. **Nzeakor FC and JCI Ukoha** Utilization of food processing technologies by women farmers in Umuahia agricultural zone, Abia state, Nigeria. *J. Food Technol. Res.* 2020; **7(2):** 163-170.

42. **Mariwah S, Evans R and KB Antwi** Gendered and generational tensions in increased land commercialisation: rural livelihood diversification, changing land use, and food security in Ghana's Brong-Ahafo region. *Geo: Geogr. Environ.* 2019; **6(1):** e00073.

43. **Rahman SA** Women's involvement in agriculture in northern and southern Kaduna State, Nigeria. *J. Gend. Stud.* 2008; **17(1):** 17-26.

44. **Michalscheck M, Groot JCJ, Fischer G and P Tittonell** Land use decisions: by whom and to whose benefit? a serious game to uncover dynamics in farm land allocation at household level in Northern Ghana. Land Use Policy. 2020; **91:** 104325.

45. **Pierre-Louis JN, Sanjur D, Nesheim MC, Bowman DD and HO Mohammed** Maternal income-generating activities, child care, and child nutrition in Mali. *Food Nutr Bull.* 2007; **28(1):** 67-75.

46. **Uduji JI and EN Okolo-Obasi** Promoting gender-equitable agricultural value chains: the role of corporate social responsibility in Nigeria's Niger Delta. *J. Agribus. Dev. Emerg. Econ.* 2022; 2044-0839.

47. **Fonjong LN and AY Gyapong** Plantations, women, and food security in Africa: interrogating the investment pathway towards zero hunger in Cameroon and Ghana. *World Dev.* 2021; **138:**105293.

48. **Adesiji GB, Ogunlade I and AA Kolawole** Training needs of women farmers: Implications for rural development in Kwara State of Nigeria. *J Rural Dev.* 2010; **29(3):** 367-375.

49. **Yokying P and I Lambrecht** Landownership and the gender gap in agriculture: Insights from northern Ghana. *Land Use Policy.* 2020; **99:** 105012.

50. **Rogé P, Diarisso T, Diallo F, Boiré Y, Goïta D, Peter B, Macalou M, Weltzien E and S Snapp** Perennial grain crops in the West Soudanian Savanna of Mali: perspectives from agroecology and gendered spaces. *Int J Agric Sustain*. 2017; **15(5):** 555-574.

51. **Habanabakize E, Diasse MA, Cellier M, Toure K, Wade I, Ba K, Camara AD, Cortbaoui P, Corniaux C and E Vasseur** Caprine milk as a source of income for women instead of a taboo: a comparative analysis of the implication of women in the caprine and bovine value chains in Fatick, Senegal. *Agric. Food Econ.* 2022; **10(1):** 1-12.

52. **Crookston BT, West JH, Davis SF, Hall PC, Seymour G and BL Gray** Understanding female and male empowerment in Burkina Faso using the project-level Women's Empowerment in Agriculture Index (pro-WEAI): a longitudinal study. *BMC Women's Health*. 2021; **21(1):** 230.

53. **Olayiwola ISSAF** Off-farm economic activities of rural women for household food security in Kaduna State, Nigeria. *J. Agric. Ext.* 2019; **23(3):** 36-49.

54. **Olney DK, Pedehombga A, Ruel MT and A Dillon** A 2-year integrated agriculture and nutrition and health behavior change communication program targeted to women in Burkina Faso reduces anemia, wasting, and diarrhea in children 3-12.9 months of age at baseline: a cluster-randomized controlled trial. *J. Nutr.* 2015; **145(6):** 1317-1324.

55. **Nyantakyi-Frimpong H** Climate change, women's workload in smallholder agriculture, and embodied political ecologies of undernutrition in northern Ghana. *Health Place.* 2021; **68:** 102536.

56. **Wood AL, Rivers L, Sidbé A and A Ligmann-Zielinska** Decision-making capacity to address climate-induced food insecurity within women-led groups in Southern Mali. *Clim Change.* 2021; **164(3-4):** 30.

57. **Debpuur C, Nonterah EA, Chatio ST, Adoctor JK, Dambayi E, Beeri P, Nonterah EW, Ayi-Bisah D, Watson D, Kehoe, SH, Dalaba MA, Ofosu W, Aborigo R, Welaga P, Oduro AR, Newell ML, Barker M and INS Group** Supporting maternal and child nutrition: views from community members in rural Northern Ghana. *Public Health Nutr.* 2021; **24(12):** 3719-3726.

58. **Lockett CT and LE Grivetti** Food-related behaviors during drought: a study of rural Fulani, northeastern Nigeria. *Int J Food Sci Nutr.* 2000; **51(2):** 91-107.

59. **O'Brien C, Leavens L, Ndiaye C and D Traore** Women's empowerment, income, and nutrition in a food processing value chain development project in Touba, Senegal. *Int J Environ Res Public Health.* 2022; **19(15):** 9526.

60. **Custodio E, Kayikatire F, Fortin S, Thomas AC, Kameli Y, Nkunzimana T, Ndiaye B and Y Martin-Prevel** Minimum dietary diversity among women of reproductive age in urban Burkina Faso. *Matern Child Nutr.* 2020; **16(2):** e12897.

61. **Olney DK, Bliznashka L, Pedehombga A, Dillon A, Ruel MT and J Heckert** A 2-year integrated agriculture and nutrition program targeted to mothers of young children in Burkina Faso reduces underweight among mothers and increases their empowerment: a cluster-randomized controlled trial. *J. Nutr.* 2016; **146(5):** 1109-1117.

62. **Adekanye TO** Innovation and rural women in Nigeria: cassava processing and food production. In Technology and Rural Women: Conceptual and Empirical Issues. *Routledge*. 2022; 252-283.

63. **Akinbami CAO and AS Momodu** Health and environmental implications of rural female entrepreneurship practices in Osun state Nigeria. *Ambio*. 2013; **42(5):** 644-657.

64. **Burrone S, Dingacci G, Dia M, Bamba B, Tarchiani V, Grieco E, Zini C, Di Vecchia A and P Vignaroli** The role of staple crop production during the Covid-19 outbreak. Evidence for women small producers in Senegal. *Appl. Econ.* 2023; **55(26):** 3026-3042.

65. **Das S, Delavallade C, Fashogbon A, Olatunji Ogunleye W and S Papineni** Occupational sex segregation in agriculture: Evidence on gender norms and socio-emotional skills in Nigeria. *Agric Econ.* 2023; **54(2):** 179-219.

66. **Addai KN, Ng'ombe JN and O Temoso** Food poverty, vulnerability, and food consumption inequality among smallholder households in Ghana: A gender-based perspective. *Soc Indic Res.* 2022; **163(2):** 661-689.

67. **Nordhagen S and R Klemm** Implementing small-scale poultry-for-nutrition projects: successes and lessons learned. *Matern Child Nutr.* 2023; **14(3):** e12676.

68. **Samuel FO, Akinwande BA, Opasola RO, Azeez LA and AB Abass** Food intake among smallholder cassava value chain households. *Nutr. Food Sci.* 2019; **49(6):** 1051-1062.

69. **Osunbitan JA, Olushina JO, Jeje JO, Taiwo KA, Faborode MO and OO Ajibola** Information on micro-enterprises involved in cassava and palm oil processing in the Osun and Ondo states of Nigeria. *Technovation.* 2000; **20(10):** 577-585.