

Gender inequality in the Cocoa value chain in Ghana: a literature review

Research Practice Report
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Content

1. Introduction.....	1
2. Methodology:.....	3
2.1 Data collection	3
2.2 Data selection.....	5
2.3 Descriptive analysis	7
3 Results and Discussion	9
3. 1 Manifestations and reasons of Gender Inequality.....	10
3.1.1 Land Rights.....	10
3.1.2 Labor relationship	12
3.1.3 Economic Rights.....	13
3.1.4 Social norms.....	13
3.1.5 Facilities.....	14
3.1.6 Educational Right.....	14
3.1.7 Information and Policy	15
3.2 Recommendations for Addressing Gender Inequality	15
3.2.1 Policy support	15
3.2.2 Organization Support.....	16
3.2.3 Research Support	16
3.2.4 Education support	16
3.2.5 Economic Support.....	17
3.2.6 Cultural Support.....	17
4 Conclusion	17

1. Introduction

Gender inequality is a pervasive issue worldwide, especially in agriculture (Kini, 2022). Women face constraining conditions in agri-food value chains worldwide that undermine the achievement of equality and inclusiveness (de Leth & Ros-Tonen, 2022). This is particularly true for developing countries, where 43% of labor force in agriculture is constituted of women who face more severe restrictions e.g. on access to resources than men (SOFA Team, 2011). Land right is one of the areas where women are particularly disadvantaged. A recent Food and Agriculture Organization (FAO) report shows that based on the statistics result from FAO gender and land rights database, it is more challenging for women to obtain a legal document proving ownership of their plots than for men (Food and Agriculture Organization of the United Nations, 2018). The lowest proportion of female landowners is found in the Middle East and North Africa (5%), while globally, fewer than 15% of landowners worldwide are women (Food and Agriculture Organization of the United Nations, 2018). Across the world, gender norms tend to allocate labor within the family to women and labor outside the family that is responsible for earning income to men (DESA, 2009; King & Mason, 2001). Deeply entrenched gender relations of production have led to women being regarded as subordinate in agriculture (Development, 2009). In many sub-Saharan African countries, women account for 70% to 90% of the agricultural workforce, and indicate that rural women bear a greater burden of labor than men, while representing a higher proportion of unpaid household work (SOFA Team, 2011). Furthermore, household work is not counted as labor work. If household responsibilities such as food processing and preparation are considered in labor share, women's labor share could approach 60% in many Asian countries (SOFA Team, 2011). Because many households work require constant care, women face time and distance restrictions when looking for work in the formal labor market. Thus, evidence indicates that they are more likely to choose part-time, flexible jobs that normally pay less and provide lower benefits. These limitations prevent women from accumulating more work experience and learning new job skills, making it difficult for women to engage in higher-paying wage employment (DESA, 2009; King & Mason, 2001; SOFA Team, 2011). Restricted employment opportunities affect income. A 14-developing country data survey revealed that women's average income is 28% lower than that of men in rural areas (Hertz et al., 2008).

Many countries in which agriculture is the main industry are low- and lower-middle-income countries. Reducing poverty is a long-term, sustainable goal (Glavee-Geo et al., 2020). One of the United Nations Sustainable Development Goals, 'Achieve gender equality and empower all women and girls' (SDG 5), points out that gender equality is an important target to achieve sustainable development. FAO indicates that bridging the gender gap could increase farm yield in developing economies by 2.5-4% (Food and Agriculture Organization of the United Nations, 2011). Many African countries are agriculture-based, industrially underdeveloped, and highly dependent on exports of raw materials and labor-intensive industries (Jiabao, 2023, March 4; Kashif et al., 2023). Africa is a major exporter of several cash crops such as cocoa, coffee, tobacco, tea, and oilseeds (Odjo et al., 2023). When it comes to cocoa, Ghana is the second-largest producer of cocoa worldwide (Danso-Abbeam et

al., 2020; Dery & Dongzagla, 2020) and has produced 18%-20% of the world's cocoa in the last decade (ICCO, 2020). Cocoa production plays a huge role in sustaining Ghana's macroeconomic balance, providing about 1.8% of GDP and the livelihoods of almost four million households (Jamal et al., 2021; Service, 2017). Although cocoa provides farmers with access to sustainable livelihoods, surveys in 2014-2015 show that about 45% of cocoa farmers were living below the World Bank poverty line (\$1.9 per capita) (van Paassen et al., 2022). In addition, data from the International Cocoa Organization showed that cocoa production in Ghana is lower than that in other cocoa-producing countries, such as Cote d'Ivoire and Brazil (ICCO, 2020). The productivity of cocoa farms in Ghana is also low, reaching only 40% of their potential yield (Barrientos, 2014). Gender inequality has emerged as a crucial challenge limiting the development of Ghana's cocoa sector, besides small holding farms and low productivity of cocoa (Danso-Abbeam et al., 2020).

Female cocoa farmers perform an essential role in both labor contribution and cocoa quality. Research on technical efficiency in Ghanaian cocoa farms shows that cocoa farmers play an important role in cocoa production, involving 63% of cocoa production chains (Danso-Abbeam et al., 2020). Furthermore, in Ghana and Cote d'Ivoire, 25% of cocoa farmers are female, and they contribute to almost 68% of cocoa production's labor force (Bank, 2015). Meanwhile, interviews in Ghana reveal that: cocoa buyers indicated that under the same needs given support, they preferred to work with female suppliers because they offered higher-quality cocoa than men (Chan, 2010). Many studies point out that women are crucial in producing high-quality cocoa because of their careful early crop care and the fermentation and drying phases of this delicate care (Barrientos, 2014; Barrientos & Bobie, 2016; Doherty, 2018). Additionally, some studies have shown that female farmers increase their yields more than male farmers for the same inputs, and their production potential almost exceeds that of men (Adaku et al., 2023).

Ghanaian women farmers are facing gender inequality in cocoa production. Studies noted that Ghanaian women have very low levels of economic control and intra-household decision-making power (Kaschek, 2021) and they suffer labor exploitation during work, such as non-payment and violence (LeBaron & Gore, 2020). Furthermore, evidence indicates that women spend the same time as men in cocoa production while also being responsible for domestic chores (Dery & Dongzagla, 2020). Local Ghanaian women are trapped in intertwined unequal relationships, including severe labor exploitation, limited choice for productive activities, asymmetries of power within the family, and restricted land autonomy (LeBaron & Gore, 2020). Meanwhile, there is significant female participation in the cocoa industry (Kaschek, 2021) and there are many studies on gender inequality in cocoa agriculture. Studies also pointed out that bridging the gender gap in women's financial and productive resources is necessary to increase the productivity of the cocoa industry (Danso-Abbeam et al., 2020).

Bridging the gender gap requires the combined efforts of business, researchers, the government, and other sectors of society. Many studies on gender inequality in cocoa value chains can be integrated. The aim of this study is to consolidate the current knowledge and studies relative to gender inequality in the cocoa value chain in Ghana, understand its causes, and indicate recommendations.

Main research question:

How is gender inequality defined and addressed in the literature when it comes to the cocoa value chain in Ghana?

Sub research questions:

1) Where and why does gender inequality appear in cocoa supply chain in Ghana?

2) What are the recommendations provided by the literature that address gender inequality issues in the cocoa supply chain in Ghana?

2. Methodology:

In this study, a qualitative approach was used, namely the systematic literature review. It was performed to investigate how gender inequalities manifest in the literature regarding the cocoa value chain in Ghana. A systematic literature review was conducted to collect and summarize related data in the research field (Baumeister & Leary, 1997; Grant & Booth, 2009). This study analyzed studies on gender inequality in the cocoa value chain in Ghana from two aspects: the manifestations and reasons of gender inequality in Ghana's cocoa value chain and the recommendations provided by the literature that address gender inequality issues in the cocoa value chain in Ghana.

2.1 Data collection

At the data collection stage, online databases of scientific literature, Web of Science, Scopus, and Google Scholar (Bongomin et al., 2020; Mengist et al., 2020; Testa et al., 2021) were used to collect the literature. Web of Science and Scopus are academic paper databases, and Google Scholar has diverse literature types. In addition to academic research, many studies have been conducted on gender inequality in the cocoa value chain in Ghana by organizations and institutions such as Oxfam, Harvard University, Cornell University, and the Global Development Institute. To avoid omitting this type of data, Google Scholar was used to ensure the diversity and comprehensiveness of the data types. The last search was carried out on 24th September 2023, and literature published after 24th September 2023, was excluded from this study. The searching scope of this topic is specific; the main searching keywords are 'cocoa,' 'Ghana,' "Ghanaian," "gender," "female," "women," and "woman." The sub-searching keywords is "inequality", "value chain", and "supply chain." To ensure the comprehensiveness of this study, 'supply chain' was included as a sub-search keyword to avoid leaving out related literature. Because of the differences in search rules according to different databases, the format of the search terms used by different databases will be slightly different. The search terms and results are listed in Table 1.

Table 1 The searching terms used and the total number of publications from each database.

Databases	Searching string and searching terms	No of articles	Date of acquisition	
Web of Science	Main searching terms-using All Fields	“cocoa” AND (“Ghana” OR “Ghanaian”) AND (“wom?n” OR “female” OR “gender”)	80	24.9.2023
	Secondary searching terms-using All Fields	“cocoa” AND (“Ghana” OR “Ghanaian”) AND “inequality”	5	24.9.2023
		“cocoa” AND (“Ghana” OR “Ghanaian”) AND “value chain”	38	24.9.2023
		“cocoa” AND (“Ghana” OR “Ghanaian”) AND “supply chain”	28	24.9.2023
Scopus	Main searching terms-using Article title, Abstract, Keywords	“cocoa” AND (“Ghana” OR “Ghanaian”) AND (“wom?n” OR “female” OR “gender”)	93	24.9.2023
	Secondary searching terms-using Article title, Abstract, Keywords	“cocoa” AND (“Ghana” OR “Ghanaian”) AND “inequality”	11	24.9.2023
		“cocoa” AND (“Ghana” OR “Ghanaian”) AND “value chain”	44	24.9.2023
		“cocoa” AND (“Ghana” OR “Ghanaian”) AND “supply chain”	32	24.9.2023
Google Scholar	Main searching term- using in the title of the article	“cocoa” “Ghana” “gender”	9	21.9.2023
		“cocoa” “Ghana” “female”	4	21.9.2023
		“cocoa” “Ghana” “women”	1	21.9.2023
		“cocoa” “Ghana” “woman”	0	21.9.2023
		“cocoa” “Ghanaian” “gender”	2	24.9.2023
		“cocoa” “Ghanaian” “female”	0	24.9.2023
		“cocoa” “Ghanaian” “women”	1	24.9.2023
		“cocoa” “Ghanaian” “woman”	0	24.9.2023
	Secondary searching term-using in the title of the article	“cocoa” “Ghana” “inequality”	3	21.9.2023
		“cocoa” “Ghana” “gender” “inequality”	2	21.9.2023
		“cocoa” “Ghana” “female” “inequality”	1	21.9.2023
		“cocoa” “Ghana” “women” “inequality”	0	21.9.2023
		“cocoa” “Ghana” “woman” “inequality”	0	21.9.2023

“cocoa” “Ghanaian” “inequality”	1	24.9.2023
“cocoa” “Ghanaian” “gender” “inequality”	1	24.9.2023
“cocoa” “Ghanaian” “female” “inequality”	0	24.9.2023
“cocoa” “Ghanaian” “women” “inequality”	0	24.9.2023
“cocoa” “Ghanaian” “woman” “inequality”	0	24.9.2023
“cocoa” “Ghana” “value chain”	15	21.9.2023
“cocoa” “Ghana” “gender” “value chain”	1	21.9.2023
“cocoa” “Ghana” “female” “value chain”	0	21.9.2023
“cocoa” “Ghana” “women” “value chain”	0	21.9.2023
“cocoa” “Ghana” “woman” “value chain”	0	21.9.2023
“cocoa” “Ghanaian” “value chain”	0	24.9.2023
“cocoa” “Ghanaian” “gender” “value chain”	0	24.9.2023
“cocoa” “Ghanaian” “female” “value chain”	0	24.9.2023
“cocoa” “Ghanaian” “women” “value chain”	0	24.9.2023
“cocoa” “Ghanaian” “woman” “value chain”	0	24.9.2023
“cocoa” “Ghana” “supply chain”	17	21.9.2023
“cocoa” “Ghana” “gender” “supply chain”	2	21.9.2023
“cocoa” “Ghana” “female” “supply chain”	0	21.9.2023
“cocoa” “Ghana” “women” “supply chain”	0	21.9.2023
“cocoa” “Ghana” “woman” “supply chain”	0	21.9.2023
“cocoa” “Ghanaian” “supply chain”	1	24.9.2023
“cocoa” “Ghanaian” “gender” “supply chain”	0	24.9.2023
“cocoa” “Ghanaian” “female” “supply chain”	0	24.9.2023
“cocoa” “Ghanaian” “women” “supply chain”	0	24.9.2023
“cocoa” “Ghanaian” “woman” “supply chain”	0	24.9.2023

2.2 Data selection

After data collection, all data inclusion and exclusion criteria were applied. Literature that meets the inclusion criteria was selected for further examination and content assessment. Literature that fulfilled both the inclusion and exclusion criteria was excluded. The predefined inclusion and exclusion criteria for this systematic literature study are presented in Table 2. The literature selection process was based

on the guidelines provided by Mengist et al. (2020). The flow of selecting relevant literature and the general screening process are shown in Figure 1. In the identification stage, 392 records were found (151 from the Web of Science, 180 from Scopus, and 61 from Google Scholar). After removing 162 identical records and articles published prior to 2000, the number of studies was reduced to 230. The eligibility stage had the following four criteria: Fifty-nine articles unrelated to cocoa production in Ghana and 110 articles not relevant to inequality were excluded. Subsequently, 61 pieces of literature remained for further selection. Eight articles dealing with children and youth were excluded from the investigation, and seven inaccessible articles were excluded. Ultimately, 46 works of literature have remained for further mapping.

Table 2 Inclusion and exclusion criteria for gender inequality in Ghana cocoa value chain systematic literature review

Criteria	Decision
When the predefined keywords exist as a whole or at least in title, keywords or abstract section of the paper	Inclusion
The paper published in a scientific peer-reviewed journal	Inclusion
Papers that are gray literature and book chapter	Inclusion
The paper should be written in the English language	Inclusion
Papers that focus on unrelated research topic	Exclusion
Papers that are not accessible	Exclusion
Papers that are duplicated within the search documents	Exclusion
Papers that got published before 2000	Exclusion

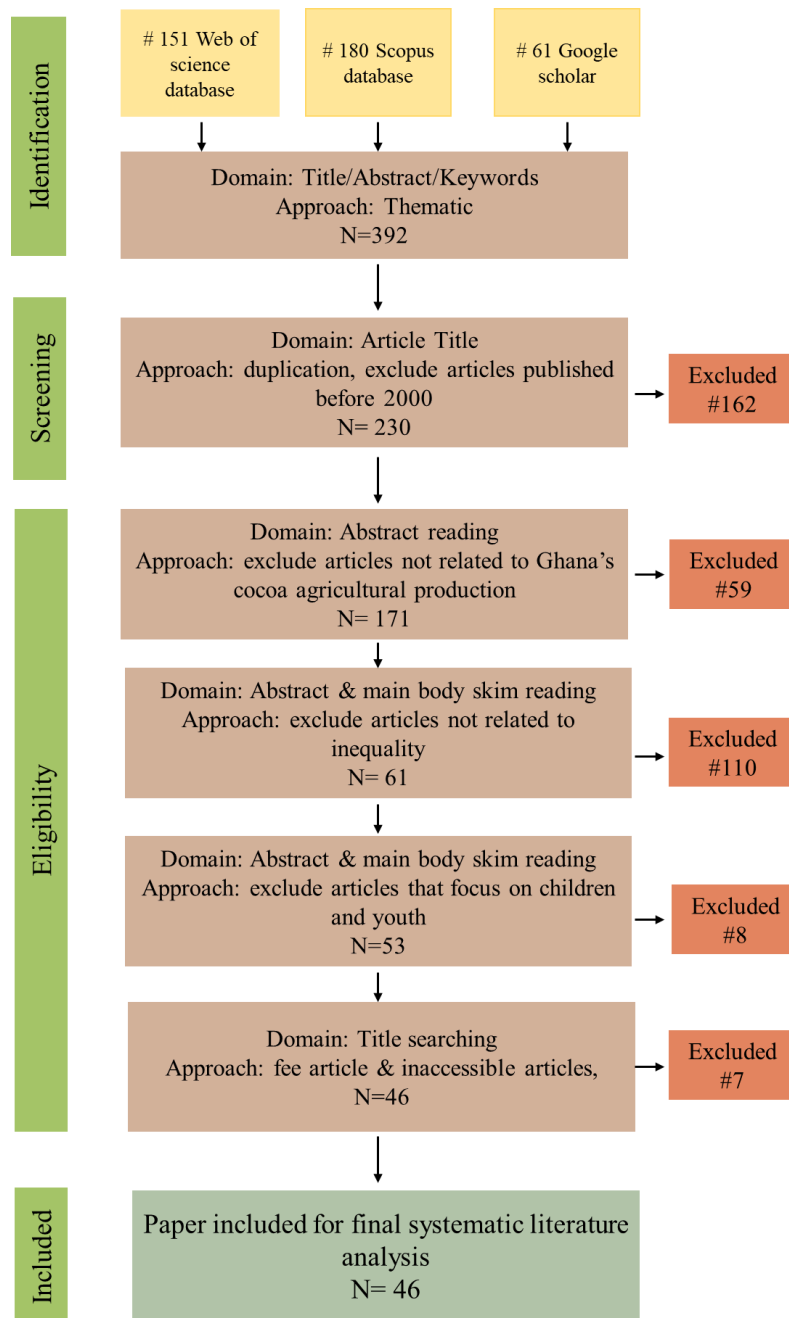


Figure 1 The flow diagram of the systematic literature review

2.3 Descriptive analysis

To conduct a systematic literature review, specific information was extracted from 46 studies. Six codes were used to extracted information. Four of these codes were selected based on the general characteristics of publications and the remaining two specific codes were based on research questions, which were women's inequality and recommendations for women's inequality in the cocoa value chain in Ghana. The 6 codes are listed in Table 3.

Table 3 The criteria used for the extraction of information from the selected articles

No	Criteria	Justification
1	Year of publication	To describe the temporal trend of the studies
2	Name of the journal	To describe the field of studies
3	Source of data	To specify access to data
4	Types of data	To clarify the quality of the data
5	Women inequality	To explore the manifestations and reasons of women inequality in the cocoa value chain
6	Recommendations to women inequality	To explore the recommendations from different studies on addressing women's inequality in the cocoa value chain

There are 46 written works summarized in this study, consisting of 33 journal articles, 5 reports, 2 books chapter, 2 working papers, 3 master's theses, and 1 review (Figure 2A). In terms of database source, 10 studies were from Scopus, 22 were from Web of Science, and the remaining 14 were from Google Scholar (Figure 2B). The temporal trend of the publications showed an increase after 2019. The number of publications after 2019 accounted for 53% of the total number of publications.

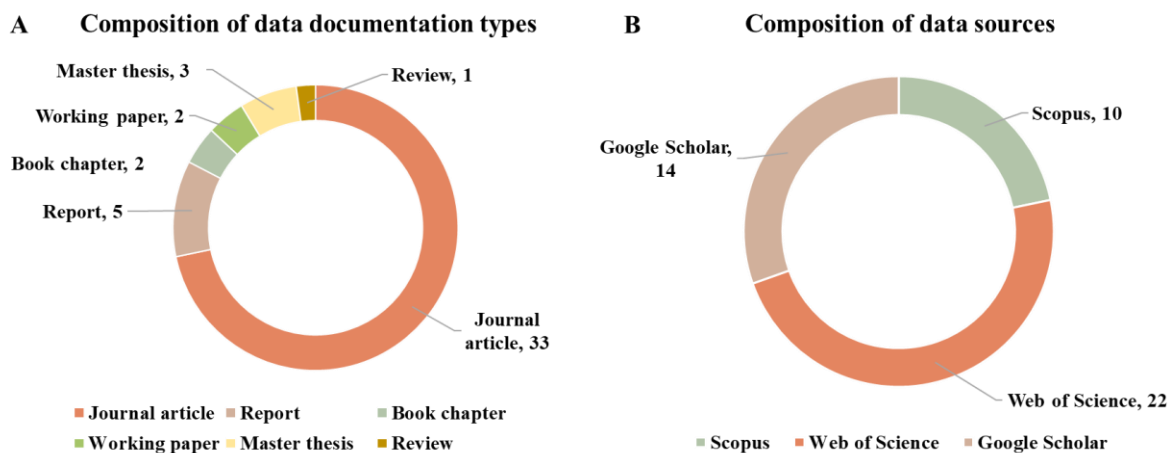


Figure 2 A: The composition of data documentation types. Different colors represent different document types. B: The composition of data sources. Different colors represent different online databases.

According to the source, this report found that the most relevant journals were Regional Studies (3 articles), Cogent Food and Agriculture (2 articles), and Climate and Development (2 articles). The result shown is Figure 3A. The most relevant subject areas included Economics (indicated by 9 journals), Development Studies (indicated by 6 journals), Environmental Science (indicated by 6 journals), and Social Science (indicated by 5 journals). The result was visualized in Figure 3B. Economics is studied most often in conjunction with other subjects.

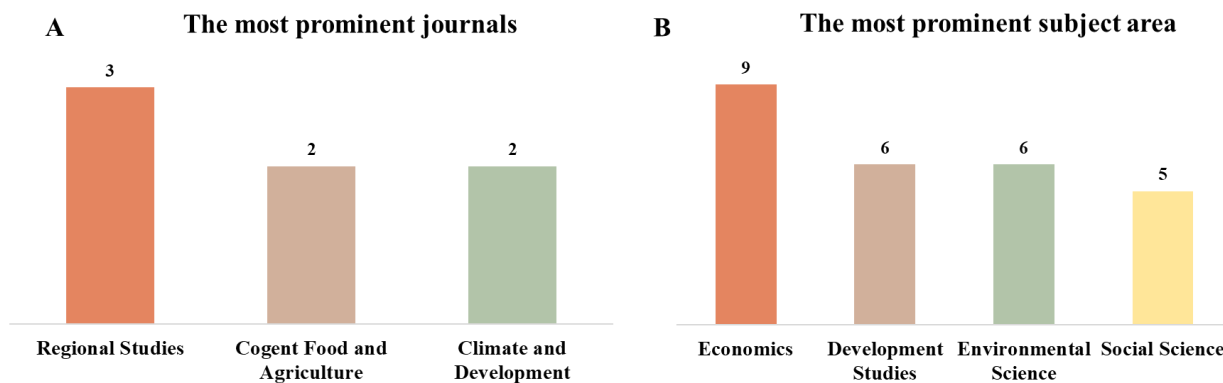


Figure 3 A: The most prominent journals among report collected data. Different colors represent different journals.
 B: The most prominent subject area among report collected data. Different colors represent different subject area.

3 Results and Discussion

Based on data analysis, the collected studies described gender inequality from three different perspectives in terms of the content of the literature. In some cases, 15 papers used gender as a lens to specifically understand women’s access to different resources, such as land rights, financial services, and training. This group directly and specifically provided information on disadvantaged situations that Ghanaian women faced. The second group comprised 16 papers, and these studies used the Ghana cocoa industry as a case to test new methodologies to understand the gender effect. These studies tend to analyze female inequality in Ghana through a specific theory and present gender inequality information from a particular research perspective. The third group consisted of 15 papers. In this group, gender was only a control variable, and the studies were not specifically centered on women or inequality. These studies provided indirect evidence of the inequalities experienced by women in Ghana.

In the results and discussion section, this report presents findings in the order of the research questions. First, the different manifestations and reasons for gender inequality experienced by Ghanaian women were examined. Then, recommendations to improve inequalities in response were also summarized. According to the two codes “women inequality” and “recommendations to women inequality”, related information was extracted from the collected data. Based on the “women inequality”

code, information showed the dilemma of Ghanaian women's struggle to gain access to resources and voice in the context of weak land rights and social norms. Based on the “recommendations to women’s inequality” code, different recommendations on policy, activity practices, research methods, and social norms given by researchers were collected.

3. 1 Manifestations and reasons of Gender Inequality

It has been documented that female cocoa farmers are disadvantaged in Ghana cocoa farming (Dery & Dongzagla, 2020; Kaschek, 2021; Maguire-Rajpaul et al., 2020). Using the Women’s Empowerment in Agriculture Index as an analysis tool, Egyir’s research took place in the forest areas of the rural Ashanti Region located in southern Ghana, and found that women were disempowered in all the domain areas under study, namely production, resources, income, leadership, and time (Egyir et al., 2018). A report from Oxfam stated that women face dilemmas in relation to their access to resources, finance, land, disadvantaged social norms, and insufficient knowledge of the value of their time (Ahrin, 2022). Other studies have added that the severe and widespread exploitation of women is the result of the intersection of multiple disadvantages (LeBaron & Gore, 2020). In addition, the reason of gender inequality in Ghana’s cocoa value chain is also complex since it is a result of the interplay and overlap of many factors. In this section, manifestations and reasons of women’s inequality were presented from women’s land rights, labor rights, economic rights, social norms, facilities, education, information, and policy.

3.1.1 Land Rights

Women are disadvantaged in terms of access to land rights. They face many challenges on obtaining land rights and suffered from weak land tenure system and ineradicable social norms.

The land tenure system in Ghana is complex and is governed by a combination of customary and statutory rules and regulations (Addaney et al., 2022; Barrientos, 2014). There are three main ways for women to acquire land, inheriting land from family, receiving land as gift from husband/father and purchasing of land (Addaney et al., 2022; Ahrin, 2022; Duncan, 2010). In Ghana, matrilineal and patrilineal societies exist simultaneously, and their specific measures for land distribution are slightly different. In a typical matrilineal society, such as the Akan family, women could only acquire land through gifts and temporary allocation. Land rights acquired through the last method are weak, and temporarily allocated family lands are not allowed to be planted (Duncan, 2010). However, completely different situations also occur. Women in the matrilineal society of the Municipality prefer to transfer their land to their daughters (Addaney et al., 2022). In some patrilineal societies, land must pass on male line, which means that daughters only have lifetime temporary usage rights, and the land must pass to other male relatives in this family (Duncan, 2010). In matrilineal and patrilineal societies, women’s access to land normally depends on the nature of their relationships with their male relatives (Duncan, 2010). Ghana's laws relating to land are under development. The Intestate Succession Law (ISL; PNDCL 111) enacted in 1985 provided that surviving spouses could inherit three-sixteenths of

the land and the common interpretation of this is that a spouse could receive one-third of the land (Duncan, 2010). Land tenure is controlled by both the customary and statutory rules. These applied customaries and practices tended to influence the gendered land tenure arrangements, which have not been fully addressed though the Land Act 2020 (Act 1036) was passed (Addaney et al., 2022).

It has been suggested that land tenure arrangements have transformed from the ownership by the extended family to individualized ownership (gift or purchases) (Addaney et al., 2022; Forson, 2013). Many studies have suggested that, in the case of the combination of sociocultural practices in property ownership, land access, land acquisition, inheritance and other customs, women still receive gender discrimination and more limited land rights (Addaney et al., 2022; Ahrin, 2022). Men's priority in land acquisition can be explained by the opening of land. Clearing forest is often used to establish land rights in Africa. Forest clearance requires great effort and is often completed by men (Hill & Vigneri, 2014). The physical strength of males gave them a head start in acquiring land. Landowners normally believe that women lack initial economic and physical strength (Ahrin, 2022). However, other studies have suggested that under individualized ownership systems, women have better access to land since it gives women more opportunities to acquire land (Forson, 2013).

Women still face disadvantages when it comes to gaining access to land. In Ghana, women only comprise 20% of cocoa farm operators or managers, and their land holdings are, on average, half the size of men's and might be less fertile and more distant from the homestead (Friedman et al., 2019; Hill & Vigneri, 2014). Another study argued that the predominance of male participants means that men are more likely to have access to land (Denkyirah et al., 2017). Meanwhile, Oxfam report pointed out that Ghanaian women expressed that it is difficult for them to obtain land documentation and men have easier access to land when they under same personal condition (Ahrin, 2022; Dery & Dongzagla, 2020; Forson, 2013). The poverty of females blocks their ability to purchase land, and poor education levels and a lack of information also block females from accessing formal land process (Forson, 2013). Although women face many constraints, poor land conditions have not affected their land productivity. There are data suggesting that there was no significant difference in land productivity and land yield between men and women (Adaku et al., 2023; Barrientos, 2014; Hill & Vigneri, 2014). However, the literature also pointed that male farm managers had higher technical efficiency (Hill & Vigneri, 2014).

The ownership of land is an important part of cocoa farming. The landownership could increase the possibility of opening accounts for women. There is an institutional bias that households with a title could receive economic service (Hill & Vigneri, 2014). The landownership could also help women access credits for inputs (Ahrin, 2022). Furthermore, the landownership means a female cocoa farmer could be regarded as a "formal" cocoa farmer and have the same identity as male cocoa farmers, acquiring access to training, extension services, finance, and a possessing selling passbook (Barrientos & Bobie, 2016).

With globalization, the mode of cooperation between international companies and farmers is changing, and contract-farming has become a new mode of cooperation. Contract-farming is a special supply chain model in which companies enter into legally binding agreements with farmers in order to

ensure receiving demanded agricultural products (Callahan, 2019). Callahan (2019) noted contract-farming may reinforce women's disadvantaged position since women have less likely to have land. The reason shows as follows: first, most female cocoa farmers cannot benefit from contract farming because they don't have land. Second, buyers may want participants in cooperative or farmer's organizations which women are less likely to have access to and make decision about. Third, the signing of contracts may lead to changes in the actual distribution of labor within the household. Contract-farming may lead to the disempowerment of women by shifting household resources to cash crops, resulting in a reduction in the number of household crops over which women were previously in power (Callahan 2019).

3.1.2 Labor relationship

Apart from working on family farms, women do other jobs as well. An Oxfam report indicated that Ghanaian female cocoa farmers have three identities: mothers, moneymakers, and farmers (Dery & Dongzagla, 2020). Majority of literatures mentioned that cocoa is labor-intensive cash crop and regarded as "male crop" (Doherty, 2018; Hill & Vigneri, 2014). There are more male cocoa farmers in Ghana (Ankuyi et al., 2023; Anning et al., 2022; Jamal et al., 2021). It seems that women lack the predisposition to do a great deal of work in labor-intensive cocoa agriculture (Ankuyi et al., 2023; Denkyirah et al., 2017)

LeBaron and Gore (2020) pointed out that the productive labor pattern of women cannot be understood without their relationships and responsibilities for social reproduction. The woman's domestic labor squeezes the time she spends working on the farm (Hill & Vigneri, 2014). The gender inequality women face in the family could be divided into unpaid family labor and reproduction responsibility (Barrientos, 2014). It was estimated that women contribute up to 45% of labor input (Barrientos & Bobie, 2016) and tend to spend more productive time on their husband's farm than husbands do (Duncan, 2010). With time, females' work on farms has become varied and time-consuming, whereas males' work concentrated in the beginning stages and gradually decreased as the plant matured (Duncan, 2010). Besides family work, women are expected to complete most domestic chores (Amuzu et al., 2022; Maguire-Rajpaul et al., 2020). Data showed women spend 1.5 times more time average per week than their male counterparts on housework (Hill & Vigneri, 2014).

There are several identities in the cocoa farm labor market: caretaker, leaseholders, and contract labor. In LeBaron's (2020) study, none of the female participants were leaseholders, which also reflected gendered inequalities in access to land. They also found women are centered on precarious forms of employment in the cocoa industry. During their work, female cocoa workers experienced exploitations including underpayment, nonpayment, and the withholding of payment by farm owners, and sometimes these exploitations came with verbal abuse, threats, and coercive labor.

As cocoa is labor-intensive crop and regarded as a male crop, physical strength, unsuitable agricultural tools, and social norms where women are not supposed to do men's work lead to many

female farmers facing labor shortages (Amuzu et al., 2022; Dery & Dongzagla, 2020; McCarthy & Muthuri, 2018). Additionally, they face the hardest hit when resource are delayed (Dery & Dongzagla, 2020) since labors will work on their own farms first.

3.1.3 Economic Rights

Ghanaian women also face gender inequality in economic aspects, represented mainly in the control of income and access to credit (Jamal et al., 2021).

In many Ghanaian families, men control the monetary gains from cocoa and other cash crops (Friedman et al., 2019). Women need the approval of their husbands to make investments (Dery & Dongzagla, 2020). If women work as farm labors with her husband, her payment is received through their spouse and their spouse determines how much they receive, which is not usually fair (LeBaron & Gore, 2020).

There was data indicating that female cocoa farmers earn 25% less than their male counterparts (Doherty, 2018), which is confirmed by other research indicating a percentage of 25-30% (Hiscox & Goldstein, 2014). There are two possible reasons for this. In Ghana, the tasks associated with women tend to be less paid than those assigned to men since social bias assumes that women do not work as well as men (Kissi & Herzig, 2023; LeBaron & Gore, 2020). Meanwhile, because of the housework, women have limited time to do paid work (LeBaron & Gore, 2020) and some off-farm works are regarded as “inappropriate” for women, which also constrains women’s income (Maguire-Rajpaul et al., 2020).

Access to credit and bank accounts is a huge barrier for female cocoa farmers. The Oxfam report showed that from 2021-2022, women are 20% less inclined to take out loans and 50% less likely to have a bank account (Ahrin, 2022). In addition, a case study from Harvard University also found that from 2013-2014, compared with men, the possibility of women receiving a loan and having a bank account decreased by 25% and 40%, respectively (Hiscox & Goldstein, 2014). The Cadbury study showed that men are easier to access credits (Barrientos, 2014) and weak land rights hinder women’s access to credits and inputs (Hill & Vigneri, 2014). Normally, men have bank accounts and control their passbooks (Dery & Dongzagla, 2020). The reason why some extension agents overlook female farmers’ needs in their program is that female farmers are underrepresented among those better-off farmers (Hill & Vigneri, 2014).

3.1.4 Social norms

Compared to the previous three aspects, gender inequalities in social norms are more invisible and normally appear with other gender inequalities. Based on the collected paper, social norms and inequalities could be divided into within the family and outside the family.

There is a generalized view of marriage in Ghana that women need to complete domestic work and should not expect any reward in land or labor. Women's contribution to the family is seen as a legitimate marital duty (Dery & Dongzagla, 2020; Duncan, 2010). Men have the right to decide whether women can attend a meeting and make investments in their farm (Dery & Dongzagla, 2020). Meanwhile, social norms also constrain women to do off-farm activities, and widows even face more limitations (Maguire-Rajpaul et al., 2020).

As cocoa is regarded as a male crop, according to traditional social norms, women are not regarded as cocoa farmers (Kaschek, 2021). Another study found that men were not culturally comfortable discussing business with female farmers which could weaken women's ability to collect information (Yamoah & Kaba, 2022).

After a long period of cultural discipline, many Ghanaian women have internalized their gender roles (Kaschek, 2021). Women take the role of wives seriously. Research found that if women have opportunity to use equipment or complete men's tasks, most of the women would not do it. Because they feel these things are "unnatural" for them (McCarthy & Muthuri, 2018).

3.1.5 Facilities

Women also face gender inequality in agricultural facilities and resource inputs.

Some studies have found that Ghanaian women expressed that spray machines are too heavy for them to use, and many other farm implements are often inappropriate for women to use (Dery & Dongzagla, 2020; Kaschek, 2021). Simultaneously, many women do not have transportation, so they cannot travel very far or need to rely on their husbands (Dery & Dongzagla, 2020). More importantly, female-headed households are usually at the lowest end of the endowment distribution (Ahrin, 2022; Hill & Vigneri, 2014). The bottom position of allocation and lack of credit leads to women lacking fertilizer and pesticides (Dery & Dongzagla, 2020), and being unable to afford drought-tolerant cocoa varieties (Anning et al., 2022). Due to limited funds, some women can only choose cheap, highly hazardous pesticides, which results in a high security risk (Osei-Owusu & Owusu-Achiaw, 2020).

3.1.6 Educational Right

Educational level is an important factor affecting cocoa farmers. Many studies found that female cocoa farmers have poor levels and percentages of education. Highly hazardous pesticide-related research found that 52% of female participants possess at least primary school education and 48% of them have no formal education, while the number of male participants is 85% and 15%. The low level of education prevents them from reading pesticide instructions or even distinguishing between pesticides (Osei-Owusu & Owusu-Achiaw, 2020). In other research groups, they also found that very few female participants are literate (Hill & Vigneri, 2014). Another study noted that the proportion of male participants who attained primary education is 59% and the proportion for female participants is

only 46% (Jamal et al., 2021). Lack of education leaves them stuck with paperwork when applying for land documents (Forson, 2013).

3.1.7 Information and Policy

The cash crop, cocoa, is a high-demand crop for information because cocoa needs information to apply improved varieties, adjust new technologies or inputs, and price (Hill & Vigneri, 2014). However, compared with women, men find it easier to access information (Denkyirah et al., 2017). Women hardly receive information from extension services (Hill & Vigneri, 2014), such as Cocobod's extension officers (Maguire-Rajpaul et al., 2020). The Oxfam report pointed out that in supporting and policy aspects, gender concerns are not translated into action because there is no clear gender category in their database (Dery & Dongzagla, 2020). Meanwhile, the absence of women in cooperatives or farmers' organizations and their poor representation in decision-making processes in local government are due to the under-representation of women at higher political levels, which leads to a lack of female voice (Ahrin, 2022).

3.2 Recommendations for Addressing Gender Inequality

Although the gender inequality issue is ingrained, it is necessary to figure it out. Female farmers are significantly involved in cocoa production to ensure the quality and price of cocoa (Barrientos, 2014; Barrientos & Bobie, 2016; Doherty, 2018). Promoting gender equality and increasing women's empowerment can increase the future resilience of the cocoa sector (Doherty, 2018). Recommendations in the literature on gender inequality focus on four main areas: policy, organization, research, education, economy, and culture.

3.2.1 Policy support

Suggestions for policy can be broadly categorized as law-related, female farmer empowerment-related, land-related, and differential needs of women and men topics.

Research suggested clearer strategies are needed at the national level to promote gender equality and women's empowerment. The different needs of men and women need to be taken into account when linking community, regional, and national policy corridors (Doherty, 2018). More research recommended the government to empower female farmers, including improving the recognition of women in cocoa, supporting female cocoa farmers' differential needs by "a best fit," not "one size fits all", especially on credits and training (Doherty, 2018; Donkor et al., 2022), increasing the availability of productivity tools for women (Kaschek, 2021). Some literature recommended that women's access to land needs to be strengthened to improve women's opportunity to acquire land (Addaney et al., 2022; Hill & Vigneri, 2014). Two papers suggested the need to incorporate gender perspectives into climate change adaptation practices (Jamal et al., 2021) and pesticide use policies (Tham-Agyekum et al.,

2023), respectively.

3.2.2 Organization Support

Most of the recommendations for organizations in the literature focus on the form of organizational formation and the functional enhancement of organizations.

A few works of literature recommended the establishment of women-only and women-only cooperatives or organizations to unite the women's community (Barrientos, 2014; Danso-Abbeam et al., 2020; Hill & Vigneri, 2014; Kaschek, 2021). Besides, two studies also emphasize the importance of multi-organizational cooperation, which means problem solving requires the cooperation of multiple organizations (Dery & Dongzagla, 2020; Doherty, 2018). Meanwhile, the presence of women in leadership positions should be ensured (Egyir et al., 2018). Suggestions for organizational functions include the organization of women's time- and place-friendly training (Donthu et al., 2021; Tham-Agyekum et al., 2023), the provision of economic help (Dery & Dongzagla, 2020; Doherty, 2018), and the provision of pesticides (Kaschek, 2021).

3.2.3 Research Support

The research recommendations are the authors' methodological suggestions for subsequent scholars who want to conduct research on gender inequality in cocoa in Ghana. According to a gender study in the cocoa industry in Ghana, Oxfam recommended that female farmers have their own database (Dery & Dongzagla, 2020). Two studies related to natural science recommended using an adaptation practice perspective to analyze experimental factors (Anning et al., 2022; Jamal et al., 2021). A master thesis recommended adopting a participatory approach to develop a clear gender strategy (Kaschek, 2021) and another study reminded us that issues of power, voice and context need to be considered in research design (McCarthy & Muthuri, 2018).

3.2.4 Education support

Education support focuses on how to improve the knowledge level of female cocoa farmers. Three studies recommended training programs, like Farm Field School, take more account of the specific needs of women, such as time and place of classes (Addaney et al., 2022; Doherty, 2018). Another study suggested the government should strengthen equality in education to help women become less dependent on men (Kaschek, 2021). Besides, research recommends promoting radio broadcasts to increase women's access to and capacity for information (Awuah-Frimpong et al., 2023).

3.2.5 Economic Support

The economic recommendations can be divided into two categories: one for increasing credit assistance to women (Dery & Dongzagla, 2020; Doherty, 2018; Hill & Vigneri, 2014) and the other for increasing women's economic knowledge. Research recommended increasing the scope of Farmer Business School (Dery & Dongzagla, 2020) and another research recommended to promoting suitable labor-saving technologies for female cocoa farmers (Egyir et al., 2018).

3.2.6 Cultural Support

In addition to external help, social norm issues also need to be addressed. Two studies recommended that social norms and cultural barriers, deeply internalized gender roles (Dery & Dongzagla, 2020) and unequal power relations need to be addressed (Kaschek, 2021).

4 Conclusion

The gender inequality in the Ghana cocoa industry is a complex issue with temporal and spatial dimensions. Land tenure and social norms bring the oppression of women's rights from the past to the present society and have historical effects on gender inequality. The finance situation, labor division, education level, and information acquisition witness the inequalities experienced by women from different perspectives of contemporary social life. This study consolidates literature related to gender inequality in cocoa in Ghana and summarizes the manifestations and reasons why inequality occurs, and the recommendations given in the literature to address it. For Ghanaian women, the strengthening of their own economic capacity is crucial. This report found there is a research gap in the relationship between the economic status of female cocoa farmers and the off-farm activities they engage in. Whether off-farm activities have the potential to help women access the first funds for land procurement requires future research. Besides, this report also found that except for women who are farmers, women in other sections of the supply chain are rarely studied. Where they work in the supply chain and how they are empowered requires future research.

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