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Understanding Labour Dynamics and Challenges in Ghana's Cocoa Farming Sector

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***Abstract*— Despite the crucial role of human labour in Ghana's cocoa farming sector, the industry grapples with pressing challenges that threaten its sustainability and productivity. This study considers the intricate dynamics of labour scarcity and rising costs, focusing on the Tafo District, Ghana. We specifically collected data from 100 cocoa farmers who have been farming for over 20 years in the Tafo District using the purposive sampling method, and selected 10 cocoa labourers using a snowball technique. We conducted a descriptive analysis of the data using SPSS and Excel spreadsheet. Labour scarcity, attributed to 'galamsey'[1] and 'okada'[2]activities, was acknowledged by 95% of respondents, and 84% noted high labour costs. Farmers pointed out that labour shortages affect the timing and frequency of their farm operations. With labour scarcity attributed to illegal mining and commercial motorcycle transportation, effective government intervention to regulate these activities in agricultural areas will be required.**

Keywords*— *Cocoa farm operations, Effect, Labour concerns, Perceptions

I. INTRODUCTION

Ghana, the world's second-largest cocoa producer, is notable for its population of over 800,000 smallholder farmers, each cultivating an average of 2–4 hectares of land [1]. Furthermore, Ghana maintains a significant government presence through the Ghana Cocoa Board (COCOBOD), and its trade policy, while partially liberalized, differs from that of Côte d'Ivoire, the largest producer. Côte d'Ivoire has relatively few smallholders and a fully liberalised trade policy [2, 3]. Despite the significant presence of COCOBOD, companies from the Global North primarily regulate ethical consumption and sustainability concerns in Ghana's cocoa industry through various sustainability programmes [3,4,5]. Furthermore, an increasing number of young farmers perceive alternative opportunities as more promising and are inclined to abandon cocoa farming [6]. Additionally, labour fragmentation [7] and a significant portion of unemployed youth disinterested in cocoa farming [8] further impact Ghana's cocoa industry.

Diverse forms of non-regular labour, such as communal labour support, landowner-caretaker relationships, sharecropping labour arrangements, hired labour, and contract farming, predominantly organise labour on smallholder farms in the Global South [9, 10, 11]. Since 1910, the use of unpaid family labour, time- and activity-based hired labour, and the establishment of linkages between landowners and caretakers have played significant roles in the advancement and expansion of cocoa production in southern Ghana [12]. Cocoa farms' management has historically relied predominantly on migrant workers, with hired labor and the dynamics between landowners and caretakers playing a significant role [12, 13, 14, 15, 16].

In Ghana's cocoa industry, "Abunu" and "Abusa" are verbal agreements that establish the relationship between landowners and caretakers. "Abunu", which means "splitting into two," refers to the division of responsibilities. The person in charge of the land takes on complete financial responsibility for the costs associated with cultivating unused agricultural land. Furthermore, the caretaker and the landowner divide the profits from cocoa sales equally, maintaining a strict 1:1 ratio. Only the harvest of additional staple food crops, cultivated alongside cocoa, benefits the "Abunu" sharecropper, who enjoys full independence in making production decisions. "Abusa", on the other hand, refers to the action of dividing holdings into three equal parts. This method assigns a caretaker to oversee the operations of a mature cocoa plantation for a specific period. The landowner receives two-thirds of the funds, while the caretaker receives the remaining one-third. Within this particular framework, the landowner is responsible for financing all production costs and has the power to make production decisions [12, 17]. Since achieving independence in 1957,

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Ghana has implemented a system known as “Nnoboa”, which entails the provision of labour on cocoa fields through verbal agreements. This type of labour exchange entails neighbouring farmers providing mutual aid in chores such as removing weeds, gathering crops, and opening cocoa pods [12]. However, a recent study has shown a significant decline in the use of Nnoboa due to certain members engaging in opportunistic behaviour, such as not returning the favour in labour exchanges or demanding excessive payment beyond the agreed-upon limitations. For example, some individuals within the Nnoboa group may demand payment or expect a higher level of work than they are willing to provide. This leads to disagreements and strains in relationships among the farmers [7]. The aforementioned acts have resulted in a decline in trust among the individuals involved [2]. Empirical studies have demonstrated that labor use, technology (improved and hybrid varieties), land tenure (area expansion), enhanced input use (mainly fertiliser, insecticide, and seedlings for replanting), and appropriate agricultural practices primarily drive Ghana's cocoa productivity in terms of output per hectare (kg/ha). However, we cannot overemphasize the interlinked and concurrent impacts of labour in realising the potential of these factors [18, 19].

The subject of labour in cocoa farming is garnering increased attention from cocoa-producing countries around the world. Several studies have expressed concern about labour shortages and the ageing of cocoa farmers [7, 20, 22, 23, 24, 25, 26, 27]. Previous studies have focused more on examining vertical solutions (i.e., the role of lead firms from the Global North) than on horizontal solutions (i.e., the inclusion of governments and local actors from the Global South) for addressing labour conditions [21a, 22, 23, 24]. However, recent studies have begun to consider horizontal solutions to labour appropriation in agriculture, especially in rural ecosystems [25, 26–27]. [28] have reported that the ageing cocoa farmers may need to rely on hired labour for their farm work.

The shortage and high cost of labour, as highlighted in the various studies, pose significant challenges to cocoa farmers, potentially hindering efforts to achieve sustainable cocoa production. Despite the increase in research from a horizontal perspective, literature has focused more on the labour relations and working conditions of workers in a plantation and commercial farm context than on those of workers in a smallholder farm context [41b, 29–30].

These apprehensions have prompted the study to investigate the current labour concerns in cocoa farming communities and their perceived potential effects on cocoa farmers' farming operations in the study area. Addressing these labour challenges is critical for ensuring cocoa production's sustainability and improving the well-being of smallholder farmers in Ghana and the Global South. The study's primary goal was to investigate current labour concerns and their perceived effects on cocoa farmers' farm operations. The study specifically aims to assess current labour concerns such as availability, affordability, and drift. It also assesses farmers' perceptions of the effects of labour availability, affordability, and drift on cocoa farm operations, identifies the challenges faced by cocoa farmers and labourers, and identifies the strategies adopted by farmers to retain and maintain labourers on their cocoa farms.

II. RESEARCH METHODOLOGY

A. Study Area

We conducted the study in two distinct communities (Tontro and Obodanase) within the Tafo cocoa district. The district is located in the central portion of the Eastern Region, with an approximate total land area of 725 km2. The district shares a boundary with the Fanteakwa and New Juaben North Districts. The predominant vegetation type found in the district is semi-deciduous forest, which supports the growth of cocoa, oil palm, food crops, and vegetables. Geologically, the communities are located on flat plains without hills or mountain patches. The first rainy season is from May to June, while the second season is from September to October. Temperatures are high, ranging from 26 oC in August to 30 oC in March. Relative humidity is high throughout the year.

B. Research Design

A well-constructed research design is essential for guiding the entire research process, from the formulation of research questions to the collection and analysis of data. It serves as a roadmap, outlining the steps and procedures that researchers will follow to systematically investigate and address the research problem [44]. This study adopted a quantitative methodology to ensure a robust study that minimises biases and collects relevant data. This study used a cross-sectional survey design.

C. Study Population, Sample Size and Sampling Procedure

The study's population consisted of 1) all cocoa farmers with over twenty years of experience in cocoa farming, and 2) cocoa laborers from the two sampled communities. We estimated the population to be about 600 farmers with over 20 years of farming experience and 50 farm labourers.

We determined the sample size for this study using a sample size table [31]. We normally use the table to determine the minimum sample size for a given population size when collecting continuous and categorical data [32]. Therefore, we selected 100 cocoa farmers and 10 cocoa laborers.

The process for selecting respondents in this study followed a systematic approach aimed at ensuring representation and diversity within the sample population. Firstly, we chose the study area using a simple random sampling technique. This involved assigning each potential study area within the Eastern Region a numerical identifier and then using a balloting method to select the Tafo district at random. This approach eliminated bias and ensured an equal chance of selection for any other area within the district [45]. Secondly, we took a further step within the Tafo district to select ten communities using the same simple random sampling method. We assigned a numerical identifier to each community and used simple random selection (balloting) to select ten communities from the district pool. This ensured a representative sample of communities within the study area [46]. We employed a snowball sampling technique for the selection of cocoa labourers. We used this method to initially identify the first labourer, who then directed us to the next labourer. We repeated this process until we had a complete sample of laborers. We used this approach because we realised that getting the laborers by ourselves was going to be difficult [45, 46]. Additionally, we used purposive sampling to select cocoa farmers with at least 20 years of farming experience from the ten

communities previously identified. Purposive sampling involves deliberately selecting individuals who possess specific characteristics or attributes that are of interest to the study. In this case, the researchers chose to focus on cocoa farmers with extensive experience (20 years) to gain insights into their perspectives and practices. Overall, by combining random sampling techniques with snowball and purposive sampling approaches, the study aimed to achieve a balance between randomness and specificity in selecting respondents [45].

D. *Type of Data, Data Collection Instrument and Data Collection Procedure*

The study used only primary data. We directly collected primary data from cocoa farmers and cocoa laborers, gathering information about their demographics, farm characteristics, current labor issues in cocoa farming, the challenges they face, the perceived impact of labor issues on farmers' farm operations, and the strategies they employ to retain cocoa laborers.

The data collection tools used for this study were an interview guide and a questionnaire. We used an interview guide to conduct a focus group discussion (FGD) and gather the necessary information for formulating the formal questionnaires. We designed and pre-tested a questionnaire, as recommended by [32], with a small group of farmers to eliminate any ambiguities. We put the structured questionnaire into an ODK application and administered it to the sampled farmers.

We conducted the data collection activity in September 2023. It involved interviewing the respondents in their homes using the 'Twi' language. We spent at least thirty minutes with each respondent during the interview session. We trained four National Service personnel to assist in the data collection activities. We gathered in-depth information on the topic under study. The questionnaire and its objectives were explained to the respondents before they were made to answer. We informed them of their rights and privacy and obtained their verbal consent [53].

E. *Data Analysis*

Emery et al.'s (2003) perspective on the transformation of data into actionable information aligns with the rigorous approach taken in this study. The data collection process involved tablets, and the subsequent transformation and analysis of this data played a pivotal role in extracting meaningful insights for decision-making. Leveraging advanced tools such as the Statistical Package for the Social Sciences (SPSS version 22) and Microsoft Excel exemplifies a commitment to employing robust analytical techniques. The choice to use descriptive analysis, which includes frequencies, percentages, means, and standard deviations, shows that many factors were carefully looked at, such as demographics, farm features, and current labour concerns. The use of a five-point Likert scale for respondents' viewpoints adds a nuanced layer to the analysis, providing a comprehensive understanding of the spectrum of perspectives. Overall, the meticulous methodology employed in organising, analysing, and presenting the data ensures that the study's findings are not just data points but valuable information for informed decision-making.

III. RESULTS AND DISCUSSION

A. *Demographic and farm characteristics of respondents*

Table 1 displays the summary of the farmers' demographic and farm characteristics respectively.

TABLE I. DEMOGRAPHIC AND FARM CHARACTERISTICS OF RESPONDENTS

Discrete Variables	Frequency	Percent (%)
Sex		
Male	82	82.0
Female	18	18.0
Level of Education:		
No Formal education	12	12.0
Primary Education	15	15.0
Middle School/Junior High	43	43.0
Senior Secondary	16	16.0
Tertiary	8	8.0
Marital Status		
Married	87	87.0
Divorced	1	1.0
Single	7	7.0
Widow/ Widower	5	5.0
Main Occupation		
Farmer	90	90.0
Civil Servant	6	6.0
Trader	4	4.0
Residential status		
Native	41	41.0
Settler	59	59.0
Ownership Status		
Owner	39	39.0
Abunu Sharecropper	47	47.0
Abusa Sharecropper	14	14.0
Continuous Variables	Min (Max)	Mean (SD)
Age of respondent	33 (79)	53.39 (10.28)
Household size	2 (14)	5.82 (2.50)
Experience in cocoa farming.	20 (50)	24.2 (7.26)
Number of farms managed	1 (7)	2.56 (1.49)
Size of all cocoa farm(s) managed (Acres)	1 (35)	7.97 (5.71)
Total production last cocoa season (bags)	1 (42)	9.15 (8.55)

Source: Field Data, 2023

Most (82%) of the respondents were males, and 18% were females, indicating male dominance in cocoa farming in Ghana. The perceived drudgery of cocoa farming has made its activities less appealing to the female population, leading to a decrease in female participation. This result validates the findings of other writers who have observed a bias towards male participation in cocoa farming in Ghana [28, 34, 35]. The majority (87%) of the respondents are married, about 7% are single, and 5% are widowed. The result is consistent with other writers' assertions that marriage among farmers in Ghana is a common phenomenon [28, 35]. Results from the study show that some (15%) made it up to the primary school level, and a few (12%) have not obtained formal education. Forty-three percent (43%)

of the respondents have received education up to the junior high school level, and 22 percent have obtained either senior high or vocational and technical education. However, this result shows a positive trend, as the majority (73%) had received junior, senior, vocational/technical, and tertiary education (Table 1).

The respondents' average age was 53 years, with a minimum age of 33 years and a maximum age of 79 years. The Ghanaian cocoa industry has been concerned about ageing, but this study specifically targeted farmers with 20 years or more of experience in cocoa farming, excluding those with less than 20 years. The respondents' average household size was six (6); this indicates that farmers have a larger household size [36]. 90% of the farmers identified cocoa farming as their primary occupation. The characteristics of the farmer here encompass the total number of cocoa farms under their management, the total amount of cocoa produced, and their level of experience in the field. The study's results show that, on average, cocoa farmers managed three farms with a minimum of one (1) and a maximum of seven (7). The respondent managed an average cocoa farm size of eight (8) acres, suggesting that Ghanaian cocoa farmers operate on a small scale. This study aligns with the findings of previous research [28]. Concerning experience in cocoa farming, the result indicates that, on average, the respondents have been in cocoa farming for 20 years, and the average cocoa production in the last cocoa season was nine (9) bags (576 kg). In terms of farm ownership status, the majority of respondents (47.0%) were involved in "Abunu" sharecropping, 39.0% were owners, and 14% were "Abusa" sharecroppers.

B. Labour drift situation

TABLE II. LABOUR DRIFT SITUATION

Labour drift situation	Frequency	Percent
Have you noticed labour drift in your community		
Yes	76	76.0
No	24	24.0
Is labour drifting into the community or from the community		
Into the community	22	28.95
From the community	54	71.05
Perceived reasons for labour drift		
Galamsey operation	13	17.11
Non-lucrative nature of cocoa labourer work	22	28.95
Better jobs (okada) elsewhere	41	53.94

Source: Field Data, 2023

Table II presents insightful data regarding the district's labor drift situation. A significant majority of respondents, comprising 76%, reported that they have indeed noticed instances of labour drift occurring within their communities. This acknowledgement illustrates the prevalence of labor drift in the study area. However, it is noteworthy that a sizable minority, constituting 24% of respondents, indicated that they had not observed any instances of labour drift, suggesting potential variations in awareness or experiences among community members.

Further analysis of the data reveals the directionality of labour drift, with respondents providing insights into whether labour is drifting into or from the community. Among those who acknowledged labour drift, a minority of 28.95% noted that labour is moving into the community. Conversely, a much larger proportion, comprising 71.05% of respondents, indicated that labour is drifting away from the community. This discrepancy in directionality sheds light on the dynamics of labour mobility within the community and may have implications for local economic activities and workforce composition. Multiple factors, including youth migration in pursuit of better opportunities, the pursuit of education, and efforts against child labour, all contributed to the scarcity of labour, leading to this decline [37].

Additionally, the survey sought to uncover the perceived reasons behind labour drift, offering valuable insights into the underlying factors driving this phenomenon. Notably, respondents identified multiple factors contributing to labour drift, including "Galamsey" operations, the non-lucrative nature of cocoa labourer work, and the availability of better job opportunities elsewhere, particularly in the "okada" business. Specifically, 17.11% of respondents cited "Galamsey" operations as a factor influencing labour drift, highlighting the impact of illegal mining activities on local labour markets. Moreover, 28.95% of respondents pointed to the less-than-attractive remuneration associated with cocoa labourer work, underscoring the economic challenges faced by agricultural workers. Most significantly, a substantial majority (53.94%) attributed labor drift to the allure of better-paying jobs available outside the community, emphasizing the pivotal role of economic incentives in driving labour mobility.

C. Labour accessibility

TABLE III. LABOUR ACCESSIBILITY

	20 years ago			Current Situation	
	Frequency	Percent		Frequency	Percent
Perceived labour accessibility condition					
High	78	78.0	High	5	5.0
Low	22	22.0	Low	70	70.0
Rare	0	0.0	Rare	25	25.0
Sex of labourers mostly used					
Male	71	71.0	Male	90	90.0
Both (male and female)	29	29.0	Both (male and female)	10	10.0
Type of labourers engaged					
Contract	6	6.0	Contract	3	3.0
Hired	35	35	Hired	93	93.0
Nnoboa	19	19	Nnoboa	3	3.0
Family	37	37	Family	1	1.0
Abusa	3	3	Abusa	1	1.0
Labour charges					
High	13	13	High	84	84.0

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Moderate	59	59	Moderate	11	11.0
Low	28	28	Low	5	5.0
Efficiency in labourer delivery			Efficiency in labourer delivery		
Highly efficient	85	85	Highly efficient	32	32.0
Lowly efficient	15	15	Lowly efficient	68	68.0
Use of children as cocoa labourers			Use of children as cocoa labourers		
Widespread	71	71	Widespread	1	1.0
Rare	29	29	Rare	99	99.0

Source: Field Data, 2023

Table III provides a comparative analysis of labour issues between two time periods, 20 years ago and the current situation, offering valuable insights into shifting trends and practices within the community.

It is evident that there has been a substantial shift over the past two decades, with 78% of respondents indicating high labour accessibility conditions twenty years ago compared to a stark decline to only 5% in the current situation. Conversely, the proportion of respondents reporting low labour accessibility conditions has surged from 22% to 70%, highlighting a concerning trend of diminishing access to labour resources within the community.

Regarding the sex of labourers mostly employed, the data indicates a consistent preference for male labourers, with 71% of respondents predominantly utilising male labourers both twenty years ago and in the current scenario. However, there has been a slight decrease in the proportion of respondents employing both male and female labourers, dropping from 29% to 10% over the specified time period [47].

In terms of the types of labourers engaged, there has been a notable shift towards hiring labourers, with the proportion of respondents opting for hired labourers increasing substantially from 35% to 93%. Conversely, family labor utilization has experienced a significant decline, plummeting from 37% to merely 1% in the current situation. This shift suggests a transition away from traditional family-based labour arrangements towards a more formalised hiring system [48]. Furthermore, the data reveals significant changes in labour charges, with a notable increase in the perception of high labour charges from 13% to 84% between the two time periods. This escalation in farm labour costs faced by cocoa farmers is a significant issue that highlights the economic challenges within the cocoa industry. One of the main reasons for the increase in farm labour costs is the growing demand for cocoa products worldwide, leading to higher prices for cocoa beans and subsequently higher labour costs for farmers. Additionally, labour shortages in cocoa-producing regions can also drive up wages as farmers compete for workers [49].

We also assessed the efficiency of laborer delivery, observing a decline in the perception of highly efficient laborer delivery from 85% to 32%. Conversely, the perception of lowly efficient labourer delivery has increased substantially from 15% to 68%, indicating potential inefficiencies or disruptions in labour supply chains.

Most notably, the use of children as cocoa labourers has significantly decreased, with the proportion of respondents indicating widespread use declining from 71% to merely 1%. Conversely, the perception of the rare use of children as labourers has surged from 29% to 99%, reflecting evolving attitudes towards child labour and potential shifts in societal norms and practices. The study's findings contradict those of [42, 43], which reported alarming statistics of child labour in Ghana's cocoa industry. The present study highlights a positive and progressive departure from these earlier trends. This could suggest that government regulations, education policies, and international pressure have contributed to measurable impacts [38].

D. Labour charges

TABLE IV. AVERAGE COST OF "BY DAY" LABOUR

Average cost of a by-day labourer (GHS)	Minimum	Maximum	Mean	Std. Deviation
	50	80	60.00	8.493

Source: Field Data, 2023

The results from Table IV provide valuable information regarding the average cost of hiring by-day laborers in the study area, offering insights into the area's economic dynamics. Firstly, the observed range of costs, from a minimum of 50 GHS to a maximum of 80 GHS, indicates variability in labour pricing across different contexts. Local economic conditions, labour market dynamics, and the specific skills or tasks required of the labourers could influence this variability. The average cost of 60 GHS serves as a central measure, indicating the typical expenditure associated with hiring a by-day labourer in the study area. This average cost provides a benchmark for cocoa farmers and stakeholders to gauge the affordability and competitiveness of labor within their respective areas. We observed an increasing expense associated with labour for cocoa production [39, 49].

E. Perceived causes of the labour changes

TABLE V. RESPONDENTS' PERCEIVED CAUSES OF LABOR CHANGES

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Perceived Change	Mean	Std. Dev.
Migration in search of greener pastures	3.49	0.41
People exploring the option of education	3.83	0.25
Influence of child labour education	4.82	0.90
Scarcity of labourers	3.89	0.83
The adoption of mechanised farming techniques and agricultural machinery	4.10	0.19
Changing cultural attitudes towards child labour and family farming practices	4.08	0.37
International initiatives, certification programmes, and partnerships aimed at promoting sustainable agriculture	4.01	0.06

Table V presents respondents' perceived causes of labor changes. The mean scores indicate the average level of agreement among respondents regarding each perceived cause, while the standard deviations provide insights into the consistency or variability of responses.

Firstly, migration in search of greener pastures received a mean score of 3.49, suggesting moderate agreement among respondents regarding the impact of migration on labour dynamics. This suggests that respondents perceive migration, likely from rural to urban areas or other regions offering better economic opportunities, as a significant factor contributing to changes in the local labour pool. Second, respondents rated education relatively highly, with a mean score of 3.83, indicating strong agreement regarding the influence of education-seeking behavior on labour availability. This suggests that individuals, particularly younger generations, may prioritise education over traditional agricultural labour, leading to a decline in the available labour force.

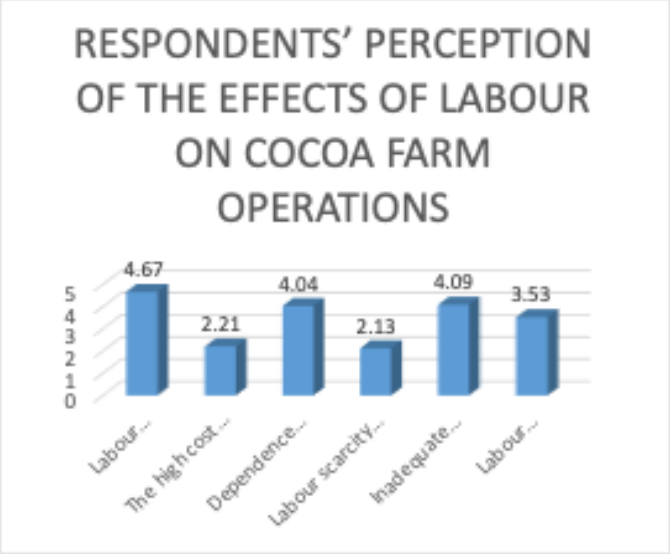
Additionally, the influence of child labour education received a mean score of 4.82, indicating moderate agreement among respondents regarding the impact of educational initiatives aimed at combating child labour. This suggests that efforts to raise awareness and enforce regulations against child labour may be influencing labour practices in cocoa-growing communities [50, 51].

Moreover, respondents rated the adoption of mechanized farming techniques and agricultural machinery highest, with a mean score of 4.10, indicating strong agreement regarding the significant impact of mechanization on labor patterns. This suggests that technological advancements in agriculture, such as the use of machinery, have led to a reduction in the demand for manual labour, contributing to changes in labour dynamics.

Furthermore, changing cultural attitudes towards child labour and family farming practices received a mean score of 4.08, indicating substantial agreement among respondents regarding shifting societal norms regarding child labour and traditional farming practices. This suggests that cultural shifts and evolving perceptions of child labor may influence labor practices in cocoa-growing communities [51].

Lastly, international initiatives, certification programmes, and partnerships aimed at promoting sustainable agriculture received mean scores above 4.01, indicating strong agreement among respondents regarding the influence of such initiatives on labour dynamics. This suggests that external factors, such as certification requirements and sustainability initiatives, may be driving changes in labour practices within cocoa-growing communities.

F. Perceived effects of labour concerns on cocoa farm operations



Source: Field Data, 2023

Fig. 1. Respondents' Perception Of The Effects Of Labour On Cocoa Farm Operations

The use of the Likert scale to assess farmers' opinions, as described by [40], provides a structured approach for capturing subjective perceptions regarding labour-related challenges in cocoa farming. The responses from cocoa farmers regarding the effects of labour shortages and high labour costs on cocoa farm operations reveal nuanced perspectives on the intricate dynamics of labour challenges in the cocoa industry.

First, fig. 1 reveals a unanimous consensus among respondents regarding the significant impact of labor shortages on critical farm operations, with an average mean score of 4.67. This indicates a widespread acknowledgment of the adverse effects of labour scarcity, which extend beyond individual farms to impact overall productivity within the cocoa sector [52]. Additionally, respondents highlighted the financial implications of high labour costs, with an average mean score of 2.21. This suggests that the exorbitant expenses associated with labour compromise the financial viability of cocoa farming operations, potentially limiting profitability and economic sustainability. Furthermore, we noted that relying on hired labour diminishes the sense of ownership and commitment among workers, thereby impacting their performance (mean = 4.04). This finding shows the importance of fostering a sense of ownership and responsibility among labourers to enhance productivity and operational efficiency on cocoa farms.

Moreover, we observed that labour scarcity increased reliance on family members for farm labour, potentially straining household resources and affecting their well-being (mean = 2.13). This highlights the interconnectedness between

labour dynamics on cocoa farms and the socio-economic welfare of rural households. Once again, researchers identified inadequate labour availability as a factor contributing to the quality deterioration of cocoa beans due to delayed harvesting and processing (mean = 4.09). This highlights the critical role of labor in maintaining product quality and market competitiveness within the cocoa industry. Finally, the perception of labour shortages heightens vulnerability to external factors like weather fluctuations and pest infestations, thereby exacerbating production risks (mean = 3.53). This underscores the multifaceted impact of labor concerns on cocoa farm operations, which extends beyond internal operational challenges to external environmental pressures [52].

G. Strategies adopted by respondents to maintain farm labourers

TABLE VI : STRATEGIES ADOPTED BY COCOA FARMERS IN MAINTAINING FARM LABOURERS

Strategies	Frequency	Percent
Increase in wages of labourers	12	12.0
Prompt payment of wages to labourers	46	46.0
Provision of accommodation	5	5.0
Provision of food	28	28.0
Total	100	100.0

Source: Field Data, 2023

Given the current labour concerns of labour shortages, high labour costs, and labour drift from farming communities, we conducted an inquiry to identify the strategies farmers have adopted to retain their labourers for their farm work. Table VI shows that 46% of the farmers motivate their labourers by giving them prompt payment of wages due them. Some (28%) provide the labourers with food in addition to their wages. Few (5%) indicated that they provide accommodation for their laborers as a motivator. Cocoa farmers adopt these strategies as labor-sensitive coping strategies to fully use the limited labor pool at their disposal.

Table VI revealed that the majority of cocoa farmers, striving to eliminate irresponsible and unethical farm labour arrangements like child labour, employed and maintained mature, skilled, and unskilled farm labour through prompt wage payment processes and the provision of food during farm activities. Understanding cocoa production and the motivational factors that cocoa farmers use to address labor issues and conditions is crucial for addressing the sector's labor needs, particularly in rural cocoa ecosystems where traditional and communal labor arrangements appear to be diminishing. The strategies adopted by cocoa farmers also demonstrate how wages, payment modalities, and food needs during work shape current rural labour availability and engagement in cocoa production, depending on the arrangements made. This also brings to light some of the reasons why rural cocoa farmers most often lack skilled and specialised labour to undertake highly technical and specialised labour-driven on-farm and off-farm cocoa activities, as they are not able to meet the wage and food needs of these personnel [20, 41].

IV. CONCLUSIONS

The labour drift situation in the district is a prevalent concern, with 76% of respondents acknowledging its occurrence within their communities. The majority of this labour is drifting away from the community, with 71.05% of respondents indicating outward migration. Factors contributing to labour drift include the allure of better job opportunities elsewhere, particularly in the "okada" business, cited by 53.94% of respondents. Over the past two decades, there has been a decline in labour accessibility conditions, with only 5% of respondents reporting high accessibility compared to 78% twenty years ago. The shift towards hiring labourers has increased substantially, with hired labourers now constituting 93% of respondents, reflecting a transition away from traditional family-based labour arrangements. The perceived causes of labour changes include migration in search of greener pastures, education-seeking behaviour, mechanised farming techniques, and international initiatives promoting sustainable agriculture. Respondents also highlighted the adverse effects of labour concerns on cocoa farm operations, including delays in critical farm operations, increased production risks, and compromised farm profitability. To address labour shortages and retain labourers, cocoa farmers have adopted strategies such as prompt payment of wages (46%), provision of food during farm activities (28%), and accommodation for labourers (5%). These strategies serve as coping mechanisms to maximise the utilisation of the limited labour pool and maintain farm productivity amidst labour challenges.

Stakeholders in the cocoa industry can address labour concerns in cocoa-growing communities by implementing the following recommendations based on the survey findings. Activities like "galamsey" (illegal mining) and "okada" (commercial motorcycle transportation) attributed to labor scarcity necessitate effective government intervention to regulate and potentially eliminate these activities in agricultural areas. This could involve stricter enforcement of laws and regulations, as well as providing alternative livelihood options for individuals involved in these activities. Initiatives such as training and educating farmers on modern farming techniques and technologies, which can boost productivity and decrease the need for manual labour, could tackle the issue of high labour costs and enhance the efficiency of labour utilisation on farms. When transitioning from family and community labour to hired labour, it's crucial to guarantee fair wages and decent working conditions for workers. To address labour shortages impacting farm operations, there is a need for innovative solutions such as the promotion of community labour-sharing arrangements, where farmers collaborate to help each other during peak periods of labour demand. Additionally, promoting the use of labour-saving technologies and practices can help farmers mitigate the impact of labour shortages on farm operations.

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