Raising the bar: Evaluating the potential and limitations of living-income strategies for the cocoa sector

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1. Introduction

The producers of agricultural commodities, including cocoa, coffee and many others, in developing countries are often poor. This is why a 'living income' is increasingly seen as a critical metric for assessing human rights compliance within agricultural global supply chains (GSCs) and beyond. This concept aims to establish a measurable benchmark for assessing the ability of the individuals and households involved in GSCs to generate sufficient income from their production activities: that is, to achieve a decent standard of living. The European Union's Corporate Sustainability Due Diligence Directive (CSDDD) states that 'companies should also be responsible for using their influence to contribute to an adequate standard of living in chains of activities. This is understood to include a living wage for employees and a living income for self-employed workers and smallholders, which they earn in return for their work and production' (European Parliament and Council, 2024). What constitutes an 'adequate standard of living' and who determines that is a matter of debate. One possible answer to these questions in practice – at least in the cocoa sector – has been the 'living income' approach, understood as the 'income required for a household in a particular place to afford a decent standard of living for all [its] members [including] food, water, housing, education, healthcare, transport, clothing, and other essential needs including provision for unexpected events' (van Vliet et al., 2021).

The cocoa sector is a focal point in discussions about achieving living incomes (van Vliet et al., 2021), as poverty remains a significant issue for smallholder farmers – particularly in West Africa, which produces about 57 per cent of the world's cocoa as of 2022 (Tabe-Ojong et al., 2024). Despite the global demand for the latter and the profitability of the chocolate industry, many cocoa farmers continue to live below the (living income) poverty line (Boysen et al., 2023; Hütz-Adams et al., 2017). Yet, cocoa farmers may still fare better than peers engaged in the cultivation of other cash crops (Ruml et al., 2022). Various initiatives, including certification schemes, subsidies and efforts to increase GSC transparency, have been launched to enhance farmer productivity and income in recent

decades. However, these endeavours have yet to result in widespread, sustainable improvements for cocoa growers (Boysen et al., 2023; Fountain and Hütz-Adams, 2022; Waarts et al., 2021). One possible explanation for a lack of progress may be the broader structural constraints inherent to rural areas and agricultural systems in producing countries, rather than ones specific to the cocoa sector.

The primary objective here is to bridge the gap between cocoa farmers' current earnings and their defined living income. This involves tackling systemic issues, such as ensuring fairer cocoa prices and improving productivity sustainably (Hütz-Adams et al., 2017). The approach can thus be seen as 'raising the bar' or increasing relevant targets, without necessarily being obliged to introduce fundamentally new tools to address inequality or poverty. One important exception is the multistakeholder initiatives (governments, research institutes, non-governmental organisations, retailers and manufacturers) which have endorsed the living-income approach.[1] A diverse array of market actors is involved herein, having committed to fostering fairer economic conditions for cocoa farmers. In addition to Fairtrade and the Rainforest Alliance, major chocolate manufacturers have increasingly come to recognise the ethical implications of their sourcing practices and are adopting living-income commitments as integral components of their corporate social responsibility strategies (Boysen et al., 2023; VOICE, 2023).

One key element in these living-income strategies involves addressing the procurement practices of companies, particularly by raising farm-gate prices. Doing so aims to ensure that farmers receive fair compensation for their produce, enabling them to enjoy a decent standard of living (Kuijpers et al., 2024). Yet, it is also understood that income diversification and alternative opportunities to earn will help to avoid overproduction and cushion against risks from specialisation. Further, when cocoa becomes more attractive compared to other rural-based income opportunities, there are potential risks associated with higher income levels – including unintended consequences such as deforestation, the increased use of child labour and environmentally harmful practices. All these are practices that sustainability certification and due-diligence regulations are meant to help counter. Moreover, raising prices above market equilibrium disproportionately benefits larger, more productive farms, exacerbating existing inequalities and leaving the poorest households further behind. This strategy, focused on a single commodity, may also prove costly and inefficient in addressing poverty within a sector marked by deep-rooted structural challenges (Kuijpers et al., 2024).

This chapter contributes to the debate by critically evaluating the potential

[1] Examples are the German Initiative on Sustainable Cocoa, the Sustainable Cocoa Initiative and the Cocoa & Forests Initiative.

and limitations, as well as unintended consequences, of seeking to achieve a living income for cocoa farmers, with a focus on raising producer prices. To begin, the concept of 'living income' is briefly introduced (section 2). Based on survey data on cocoa-farming households from Ghana (collected in the context of an impact evaluation of related certification programmes in 2016 and 2018), poverty rates are also compared using different income thresholds in investigating systematic differences between households depending on how far they are from reaching the living-income benchmark. Section 3 then provides some background information on cocoa prices and introduces the so-called living income reference price (LIRP). We then illustrate the potential and limitations of regulated cocoa-price increases through descriptive examples of hypothetical adjustments to both that and productivity (section 4). Next, possible unintended consequences are explored (section 5). In closing, finally, the living-income concept is discussed more broadly (section 6).

2. A brief critical assessment of the living-income approach

The living-income concept defines a benchmark extending beyond the internationally recognised 'poverty line', aiming herewith to determine the income level necessary for (farm) households to secure a dignified and sustainable livelihood. According to the Living Income Community of Practice (LICoP), a living income is defined as: 'The net annual income required for a household in a particular place to afford a decent standard of living for all members of that household' (LICoP, undated). The living-income approach thus considers the resources needed to ensure a 'decent quality of life' (Waarts et al., 2021). Some argue that this is in contrast to poverty-line metrics, which focus solely on the minimum expenditure 'required for basic subsistence and survival' (LICoP, undated). This is not exactly true, since 'absolute poverty' is typically understood as the inability to attain socially acceptable minimum consumptions levels. The poverty line therefore varies according to average living standards in a given society. In cocoa-growing countries like Côte d'Ivoire and Ghana, such a minimum living standard extends well beyond what is needed for bare survival. While the World Bank's poverty line allows for global comparability, the living-income concept seeks to develop region- and sector-specific strategies based on local conditions and calculations (German Initiative on Sustainable Cocoa, 2024; Rainforest Alliance, 2023).

The living-income threshold is conceptually very similar to a poverty line, with 'poverty' being defined here as not being able to achieve a 'decent' standard of living. In poorer contexts particularly, the living-income threshold tends to be much higher than national or international absolute-poverty lines. This is because it assumes greater universality in the elements making up a decent standard of living across countries (for example, in terms of what is considered decent housing; see Faitrade, 2022). This is in contrast to concepts like the World Bank's 'absolute poverty line', which is an average of national poverty lines among the world's poorest countries (the Int$2.15) or lower-middle-

income (Int$3.65) and upper-middle-income ones (Int$6.85), respectively.[2] These poverty lines ultimately rest on national poverty lines, i.e. how different societies understand and define poverty.[3]

The calculation of the living-income benchmark is premised on the ad hoc methodology proposed by Anker and Anker (2017) for determining what constitute living wages. Basically, it considers average local outgoings regarding such essential needs as nutrition, housing, education and clothing, while accounting for 'unexpected costs' met via a certain proportion of this expenditure. This approach is interpreted by some as a 'normative standard' for a decent living which goes beyond mere survival (Smith and Sarpong, 2018). Anker and Anker (2017) offer detailed descriptions on how to compute the different components of a living income and the data to be used to capture local conditions and prices. Some of the methodology's both explicit and implicit assumptions may be challenged; while the approach is used in practice, it has not been endorsed by the scientific community concerned with welfare and poverty measurement. This is probably because of its normative premises, which blur the distinction between absolute and relative understandings of poverty. This is not to deny some of the approach's merits and acknowledge that it yields empirically relevant estimates of a basic but decent standard of living. There has been no systematic research on the differences between living-income thresholds and conventional poverty lines.

To assess and judge poverty and living standards, the choice of threshold obviously matters. Below, we apply different poverty lines to a sample of Ghanaian cocoa-farming households. The country's cocoa sector is an important contributor to the national economy. As of 2018, it accounted for approximately 25 per cent of the country's foreign-exchange earnings and supported the livelihoods of approximately 800,000 smallholder farmers (Ameyaw et al., 2018). Table 1 shows three thresholds: the living-income line as well as the international extreme and low-middle-income poverty lines, respectively. Note that the Ghanaian statistical agency also uses these frameworks in their own assessments of national poverty. They thus seem to adequately reflect the different understandings of poverty relevant in the Ghanaian context. What is noteworthy here is that the living-income threshold exceeds the upper national poverty line by more than 70 per cent.

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[2] All adjusted to 2017 purchasing power parity (PPP) values for global comparability.

[3] See Joliffe and Prydz (2021) for an informative summary on (international) poverty lines. It goes beyond the scope of this chapter to thoroughly outline the differences between the respective approaches. In practice, the living-income threshold will probably yield similar results to the societal poverty line for middle-income countries. The societal poverty line comprises a fixed threshold value for all countries, and it is in part a relative line which varies with the income or consumption level of each country (see Baah et al., 2024).

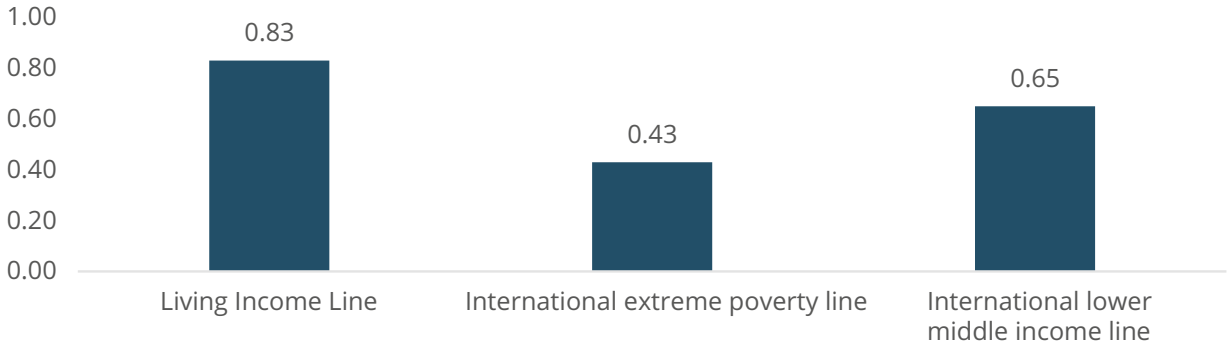
Table 1: 2017 Poverty lines person/day (in Int$)

Living-Income Line	International and National Poverty Line	
	Extreme poverty / lower national	**Lower middle income / upper national**
6.22	2.15	3.65

Source: Authors' own compilation.
Notes: The living-income line used in this comparison is publicly available via the Align Tool and is based on benchmark studies by the Global Living Wage Coalition and the LICoP, employing the Anker method. Smith and Sarpong (2018) provide a detailed report on the calculation of the living-income benchmark for Ghana's cocoa-growing regions. For updated calculations, see Medinaceli et al. (2024). Reference points are the cocoa-producing regions of Ghana. The national poverty line refers to that country. This line was set in 2013 and adjusted using inflation rates from Statista. All values are in 2017 PPP.

These respective thresholds translate into different poverty rates for a sample of Ghanaian cocoa farmers, as depicted in Figure 1 below.[4] While 83 per cent of the sampled households fall below the living-income line, 43 per cent are classified as living below the international (national) extreme-poverty line. Meanwhile, 65 per cent are considered poor according to the upper poverty line. These results are close to previous estimates on cocoa farmers. For example, Tyszler et al. (2018), in their LICoP study, found that 83 per cent of 2,807 surveyed households in the 2016/2017 season did not achieve a living income. By 2021, Boysen et al. (2023) reported that this figure had risen to 90 per cent. Similarly, van Vliet et al. (2021) observed that across different datasets and time periods, 70–90 per cent of households remained below the living-income threshold.

Figure 1: Cocoa-household shares living in poverty according to respective thresholds



[4] Data were collected during the 2015/2016 and 2017/2018 seasons as part of an impact evaluation of an outgrower scheme. The study covered a region of approximately 8,600 square kilometres, primarily within the Ashanti Region, with smaller portions in Brong Ahafo, Central and Western Regions. The analysis pools panel data from 2,807 households to evaluate living-income and poverty lines corresponding to the survey seasons.

We now categorise households based on their proximity to the living-income benchmark. This classification aims to illustrate the systematic differences across groups. It also emphasises the diversity within the 'living-income poor' category. By examining these variations, we can gain a deeper understanding of the challenges faced by different groups, recognising that factors such as farm size and productivity play significant roles in their financial circumstances. Table 2 below details household and farm characteristics across four groups categorised according to how far away they are from reaching the living-income benchmark.[5]

The latter threshold sees the vast majority of Ghanaian cocoa farmers as situated below the income levels needed to afford a decent standard of living. Yet, these individuals are a very heterogeneous group, which can be seen when we compare the characteristics of households across different income strata as a share of living income (Table 2). The poorest households (<50 per cent of living-income) tend to be made up by larger families, suggesting a negative correlation between household size and the ability to achieve a living income for every member. In contrast, households closer to or above the living-income benchmark have significantly larger farms and more land dedicated to cocoa cultivation. Households earning more than a living income also have more diversified sources of earning and rely less on cocoa growing. Specifically, 18 per cent of the households earning more than 110 per cent of a living income meet the benchmark even without their cocoa-related revenues, while 70 per cent meet the benchmark only via the latter. The increases required to meet a living income among groups 1 and 2 vary greatly: households earning 50–90 per cent of a living income would need to increase their earnings by 107 per cent on average, while those bringing in less than 50 per cent of a living income would require a nearly sixteenfold increase. Importantly, this group makes up 65 per cent of the households in this sample.

[5] Equivalent scales adjust income or expenditure to account for household size and composition, allowing for more accurate comparisons of living standards. These scales reflect varying needs within a household by assigning different weights. Here, in line with the Align Tool: 1 for the first adult; 0.5 for the second adult; and, 0.3 for each child. This method helps standardise poverty assessments and income comparisons, ensuring that different household types are evaluated in a more consistent manner.

Table 2: Proximity to the living-income benchmark per household and cocoa-plot characteristics

	1 <50% LI	2 50–90% LI	3 90–110% LI	4 >110% LI
Household characteristics				
Sample share	0.65	0.21	0.05	0.09
Household size	5.44 (2.32)	4.80 (2.40)	4.29 (2.17)	3.92 (2.39)
Cocoa income share	0.79 (0.26)	0.80 (0.25)	0.80 (0.25)	0.75 (0.31)
Total farm size (in acre)	10.34 (7.94)	13.95 (9.64)	16.13 (11.48)	22.00 (16.89)
Total cocoa area (in acre)	9.20 (7.03)	12.90 (8.80)	14.50 (9.87)	20.25 (16.05)
Share of earning LI without cocoa (=1)	n.a.	n.a.	0.000	0.18 (0.38)
Share of earning LI only with cocoa (=1)	n.a.	n.a.	0.17 (0.38)	0.70 (0.46)
Required cocoa income increase to achieve LI	15.91 (131.55)	1.07 (2.16)	0.06 (0.30)	n.a.
Cocoa-plot characteristics (averages across plots)				
Average productivity (kg/acre)	108.84 (90.77)	176.07 (127.52)	208.49 (124.78)	221.34 (151.23)
Average price per 64kg bag (2016)	425.69 (1.73)	425.92 (1.94)	425.73 (1.78)	425.77 (1.81)
Average price per 64kg bag (2018)	477.05 (6.06)	478.70 (7.78)	481.18 (9.31)	479.27 (8.23)
Fertiliser expenditure per acre (GHS)	27.48 (77.44)	47.03 (89.71)	50.24 (78.65)	41.40 (65.16)
Hired-labour expenditure per acre (GHS)	39.48 (78.77)	38.51 (72.97)	39.05 (61.80)	44.90 (84.11)
Sales value per acre	770.08 (636.99)	1246.51 (914.43)	1486.33 (887.26)	1560.99 (1057.43)
Profit per acre	603.44 (495.47)	1129.01 (866.94)	1370.71 (900.61)	1479.23 (983.09)
Observations	**1837**	**586**	**130**	**254**

Notes: LI = living income; GHS = Ghanian cedi. Households in column 1 earn less than 50 per cent of the LI; in column 2, between 50–90 per cent of the LI; in column 3, close to or slightly above the LI (i.e. between 90–110 per cent); in column 4, more than 110 per cent of the LI.

Another important finding is the strong relationship between land productivity and achieving a living income. Households at or above the latter exhibit nearly double the productivity rates of the poorest households. While price regulation keeps farm-gate prices similar across groups, and differences in fertiliser use and hired-labour expenses are not pronounced, these variations in land productivity led to notable differences in sales values and profits.

3. Raising the bar by raising the price

Raising cocoa prices and establishing a LIRP is a central part of many approaches aimed at achieving a living income for the crop's growers. Higher regulated prices are seen as a direct mechanism to help farmers and workers achieve a living income, ensuring they receive a fairer share of the value generated in the GSC. In addition, regulating prices aims to provide greater stability in an industry marked by significant fluctuations therein (Rainforest Alliance, 2023; Veldhuyzen, 2019; VOICE, 2023).

The Fairtrade Living Income Strategy is one initiative emphasising the role higher cocoa prices can play in helping achieve a living income. Higher prices are seen as liable to prompt companies to adopt sustainable purchasing practices, cultivate long-term relationships and offer fair compensation (Fairtrade, 2022). Central to this strategy is the Fairtrade LIRP, which is the price which would need to prevail to lift a farm household above the living-income threshold – albeit under certain assumptions about yield and land cultivated for cocoa. For 2023 and 2024, for example, this price was $2.12 per kilogram for Ghana, based on a benchmark yield of 800kg per hectare (in line with the productivity target of the Ghana Cocoa Board, COCOBOD) and a 'viable' farm size of 3.3 ha (Fairtrade, 2024; Veldhuyzen, 2019).[6] Note that actual average yields are more or less half of 800kg per ha, but that farms – at least in our sample – are much larger than 3.3. ha. The 2023 Living Income Progress Report highlights the success of the Living Income Learning Project, which collaborates with companies such as Tony's Chocolonely and Ben & Jerry's. Through this initiative, the

[6] To date, Fairtrade country-level reference prices have been established for cocoa in two countries, coffee in seven countries, vanilla in two countries and coconuts in one country. Additionally, supply chain-specific reference prices have been developed for various products and places of origin, including cashews, oranges for juice, robusta coffee and fine-flavour cocoa, tailored to companies and their supplying cooperatives (Fairtrade, 2023).

report claims, farmers received an average of 15 per cent higher farm-gate prices, with 21 per cent of participating households achieving a living income within the first year (Fairtrade, 2023; Myers, 2024).[7]

A similar approach is the Living Income Differential Policy (LID), implemented in 2019 by the governments of Côte d'Ivoire and Ghana. Under this policy, buyers are required to pay an additional premium of $400 per ton of cocoa on top of the world-market price. This premium is redistributed to farmers through a higher minimum farm-gate price set by both governments (Fountain and Hütz-Adams, 2022; Gilbert, 2024). Furthermore, part of the LID budget is allocated to a stabilisation fund to support farmers when market prices fall below a certain threshold. During periods of strong prices, these funds are directed towards development projects which benefit cocoa farmers, such as infrastructure improvements and educational initiatives. The policy has garnered support from several large chocolate manufacturers committed to enhancing the lives of smallholders within their GSCs (Boysen et al., 2023; VOICE, 2023).

Figure 2 below illustrates the farm-gate prices established by COCOBOD, alongside the Fairtrade LIRP and the world-market price for context. Notably, cocoa prices have surged significantly since late 2023, with the regulated farm-gate price exceeding the Fairtrade LIRP. A particularly sharp increase occurred in April 2024, when the Ghanaian government raised the farm-gate price by 58.26 per cent. This recent spike in cocoa prices can be primarily attributed to a significant decline in cocoa-bean production from major supplier countries, particularly in West and Central Africa. Such a surge has been driven by significantly reduced yields due to the spread of pests and diseases caused by erratic rainfall and higher temperatures in cocoa-growing regions, themselves a consequence of climate change and the El Niño phenomenon. In addition, the West African cocoa sector is increasingly facing structural issues, including aging trees and insufficient replanting. Moreover, in Ghana land use in some cocoa-growing regions is shifting towards artisanal gold mining, with farmers renting out their fields for small-scale mining operations, further constraining the crop's production (Tabe-Ojong et al., 2024).

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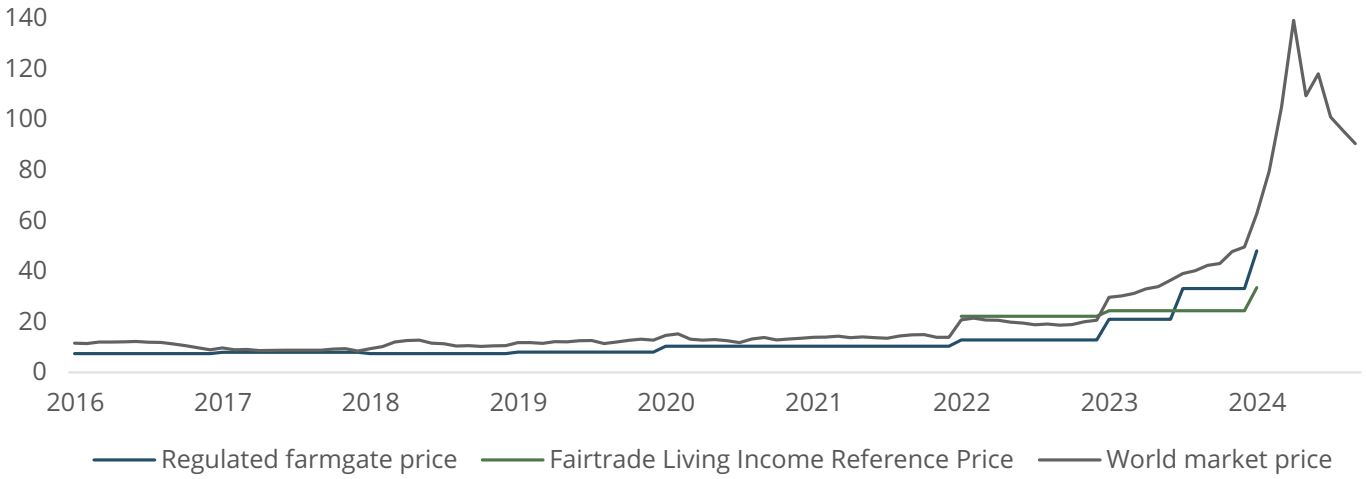
[7] This report presents findings from the first two years of the Living Income Learning Project, conducted in collaboration with Tony's Open Chain, Ben & Jerry's and six cocoa cooperatives in Côte d'Ivoire. The initiative focused on enhancing farm profitability through improved cocoa yields, crop diversification and cost efficiency, alongside the companies' commitment to paying the LIRP. Based on detailed farm records from a representative sample of 1,200 households, data on expenditure, labour, production and sales were collected, analysed and compared with the assumptions underlying the LIRP's calculation. However, due to limited information on the implementation of project activities and the lack of a control group (or the application of another rigorous method to establish a credible counterfactual), it remains unclear whether the observed outcomes can be attributed solely to the initiative at hand.

Figure 2: Cocoa price in Ghanaian cedi/kg



Source: Author's own illustration, based on data from Fairtrade International (2024), COCOBOD Ghana and the International Cocoa Organization (ICCO).
Notes: Regulated farm-gate process and Fairtrade prices are specific to Ghana. World-market prices are converted to GHS using average annual exchange rates from Statista and Exchangerates.org.

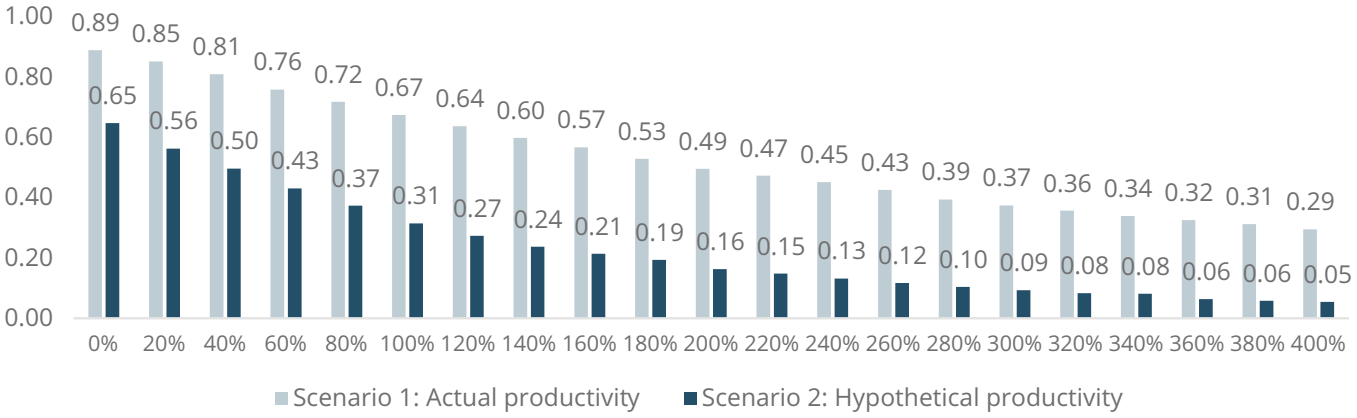
Although cocoa farm-gate prices for Ghanaian farmers have been on the rise in recent years, the graph clearly shows a growing disparity between the world-market and the regulated farm-gate price, with the latter significantly outpacing the former. Additionally, since 2023 the Fairtrade LIRP has consistently been below the regulated farm-gate price. There are no studies which have looked into what the welfare implications of these recent price hikes are. While higher prices translate into increased cocoa-related earnings, reduced yields, as mentioned before, will have mitigated this effect and many farmers are likely to have seen limited if any gains at all (Tabe-Ojong et al., 2024).

4. Understanding potential and limitations through micro-level data illustrations

To illustrate the potential of fixing higher farm-gate prices on cocoa incomes, Figure 3 below presents the shares of households existing below the living-income threshold across a spectrum of hypothetical price increases, ranging from 20 to 400 per cent. These shares are calculated based on two scenarios: (1) the current productivity levels of households and (2) a hypothetical one where all households achieve the same average land productivity as the high-income group 4 at around 221kg/acre. Scenario 2 implies a productivity target of roughly 550kg/ha, which is still substantially below the COCOBOD and Fairtrade figure of 800kg/ha here. This approach enables us to illustrate the effects of price increases on household-income levels.

Figure 3 shows that although higher farm-gate prices can help growers move closer to achieving a living income, the impact is more muted than anticipated. A price increase of around 200 per cent would reduce the share of households situated below the living-income threshold from 89 to 49 per cent. Even with a 400 per cent price increase, however, about 29 per cent of our sample would still remain below said threshold. At higher productivity, price increases have a larger effect: a 200 per cent increase in the cocoa price would now see 16 per cent of households earn less than a living income, with that figure standing at 5 per cent on the back of a 400 per cent price increase.[8] Even without any price adjustments, higher productivity reduces the share of households so positioned to 65 per cent. These findings are in line with those of van Vliet et al. (2021), who show that yields of 1500kg/ha, which are agro-ecologically feasible, would leave only 13–20 per cent of their sample households below the living-income line without any price increases. This highlights that achieving a living income through cocoa production, even with higher producer prices, remains unattainable for many households – a conclusion supported by Waarts et al. (2021). In addition to low productivity, a significant factor here is that many households below the living-income threshold do not own or cultivate enough land.

Figure 3: Poverty shares relative to hypothetical price increases

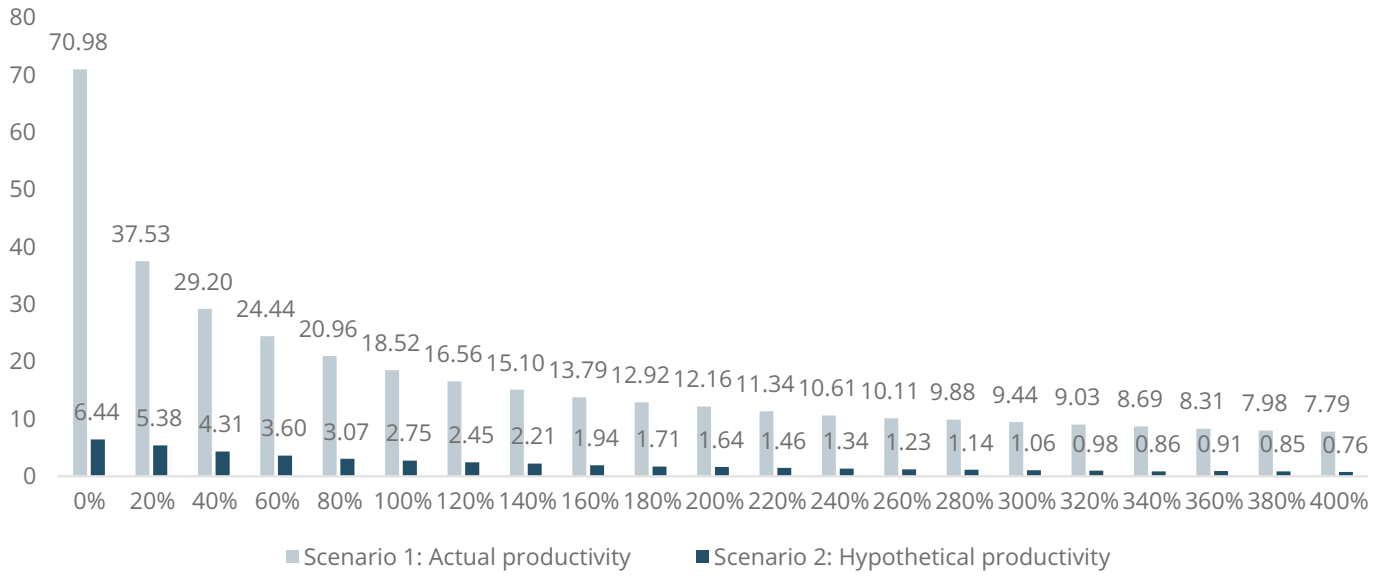


Source: Author's own illustration, based on data from Fairtrade International (2024), COCOBOD Ghana and the International Cocoa Organization (ICCO).
Notes: Regulated farm-gate process and Fairtrade prices are specific to Ghana. World-market prices are converted to GHS using average annual exchange rates from Statista and Exchangerates.org.

[8] Although the actual regulated farm-gate price nominally increased fivefold between 2017/2018 and 2024, this does not imply that living-income poverty declined accordingly, as other market prices (e.g. for agricultural inputs) likely fluctuated during this period. The high prices are linked to the supply challenges and shortages previously described. Additionally, the nominal price increase implies a real increase of 90.5 per cent after adjusting for inflation.

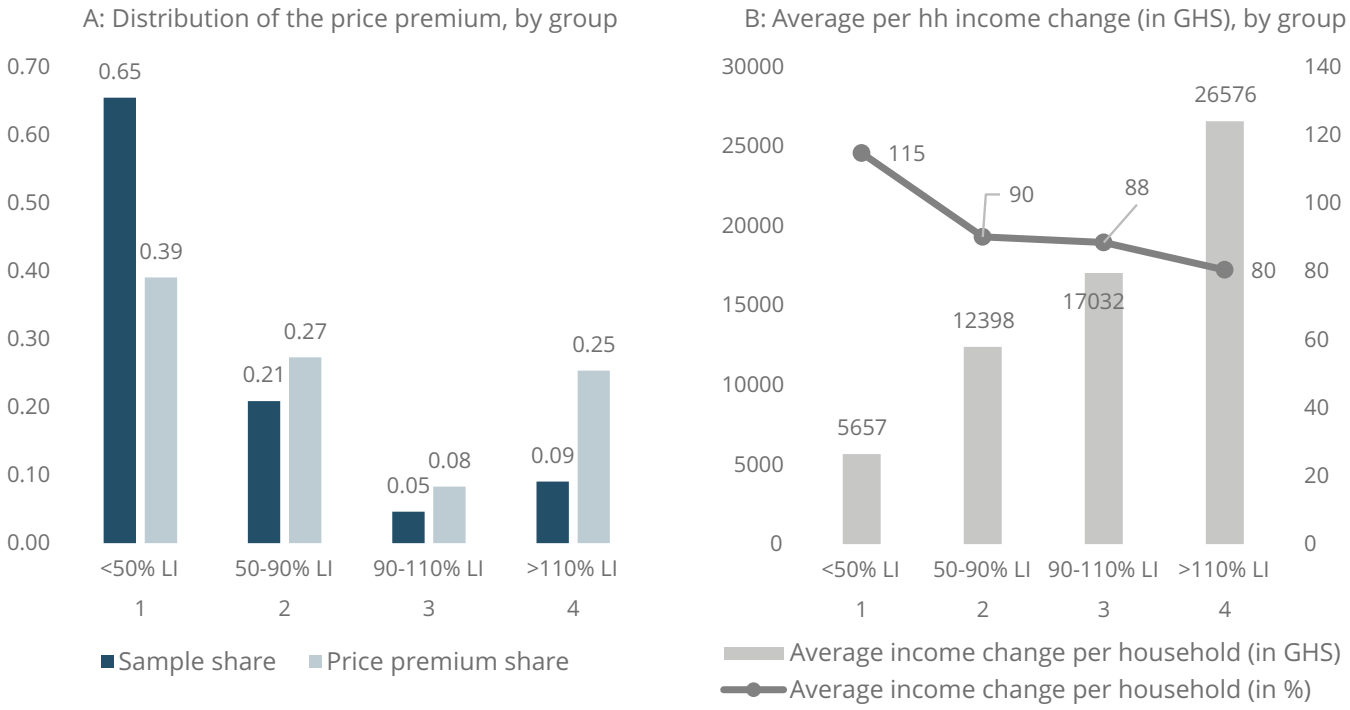
Figure 4 below illustrates this 'land gap' for the households remaining below the living-income line despite price increases. With a 20 per cent one, for instance, these households would need an additional 37.53 acres of cocoa land on average to reach a living income given their current productivity level. Should the latter increase, the land gap remains substantial at 5.38 acres. This scenario assumes all farmers receive the same (increased) price and have uniform productivity, underscoring that inadequate land size remains a key barrier even under higher cocoa prices.

Figure 4: Land gaps for the living-income poor with hypothetical price and productivity changes (in Acres)



Because these price premiums are tied to the volume of cocoa produced, larger and more productive households intuitively benefit disproportionately (Kuijpers et al., 2024, Waarts et al., 2021). Panel A of Figure 5 illustrates the distribution of the price premium generated by a 100 per cent price increase across four household groups, categorized by their proximity to the living income line. Group 1, comprising households earning less than 50 per cent of the living income, receives 39 per cent of the total price premium despite accounting for 65 per cent of the sample population. Consequently, the share of the price premium allocated to this group is significantly lower than their representation within the sample. In contrast, the other three household groups receive a disproportionately larger share of the price premium. This is most pronounced in Group 4, which includes households earning more than 10 per cent above the living income. Although this group represents only 9 per cent of the sample, it receives 25 per cent of the total premium. Panel B shows that the price increase is even slightly progressive in relative terms, as the percentage income gains are highest (115%) for the poorest and largest

Figure 5: Price premium distribution and income change of a 100 per cent increase by proximity to the living income line



group of cocoa households. However, as this group's incomes are so low their average income increases by 5,657 GHS per household in absolute terms. With 26,576 GHS per household, this absolute gain is about 4.7 times higher for the 9 percent richest households.

5. Potential unintended consequences

While raising producer prices can enhance cocoa farmers' livelihoods to some extent, as illustrated above, the approach is not without significant risk of unintended consequences. Fixing farm-gate prices above market equilibrium risks exacerbating inequalities within and beyond the cocoa sector. Wealthier farmers, with larger plots and higher yields, benefit more from price increases than smallholder peers, thereby intensifying income disparities (Bymolt et al., 2018). We were able to show above that better endowed households capture a disproportionate share of the total premium paid.

Disparities between agricultural sectors will likely grow as well, between cocoa farmers and producers of other cash crops like cassava, maize and oil palm, whose prices are not similarly regulated. Cocoa is – at least under the prices of the past few years – already among the more profitable crops (Ruml et al., 2022), something readily known by farmers (van Vliet at al., 2021). Higher prices would hence incentivise growers of other cash crops to divert their resources away from essential staples towards cocoa production (Kuijpers et al., 2024). While ensuring living incomes for cocoa-producing households in Ghana is a legitimate objective, these

farmers are generally in a better economic position compared to those cultivating other food and cash crops. Research by Ruml et al. (2022), based on three rounds of the Ghana Living Standard Survey (2006, 2013, 2017), reveals that cocoa farmers are less prone to impoverishment compared to households cultivating crops like cassava, maize or oil palm. This difference is due to prices and poverty-level changes among cocoa farmers being more pronounced than for peers. Yet, it is also explained by the fact that the sector attracts more policy support (e.g. stabilised prices, subsidies and coordinated GSCs). With a poverty rate (moderate poverty line) of 18 per cent in 2006, cocoa growers were as poor as other farmers (19 per cent). Rural poverty worsened in 2013, but less so for cocoa producers (20 per cent) than for other farmers (25 per cent). By 2017 – that is, approximately around the time when we collected the data used above – moderate poverty among cocoa-farming households stood at a figure of 15 per cent compared to one of 21 per cent for other agricultural households.

Higher cocoa prices are likely to stimulate an increase in supply, which could, in turn, lead to deforestation and other environmental issues. As farmers seek to expand their cocoa farms to capitalise on higher prices, deforestation may intensify (Kuijpers et al., 2024). Especially so in regions like West Africa, where clearing forests is more cost-effective than rehabilitating old plantations (Boysen et al., 2023). Similarly, harmful agricultural practices – such as increased agrochemical use – may also increase. A greater demand for workers resulting from expanded cocoa farms might unintentionally worsen the issue of child labour, as farmers could depend more on family members, to meet the higher labour requirements (Waarts et al., 2021). Habraken et al. (2023) indicate that while higher incomes are often associated with reduced child labour, this relationship only holds once a household exceeds the living-income threshold. Below this benchmark, increased income correlates with higher child labour, likely due to rising demands on the impacted households. This suggests that strategies like intensifying cocoa production may inadvertently increase (hazardous) child labour.

All these unintended consequences could, in principle, be mitigated if increased supply came just from farms complying with (human rights and environmental) standards and regulations and that export to markets where such compliance matters. However, this cannot be taken for granted. It may well be the case that the supply response happens on the 'unregulated margins' where all of the above-mentioned undesirable practices remain commonplace.

A supply response to higher prices could eventually drive the latter down if demand does not grow at the same pace. Research on the LID, including studies by Boysen et al. (2023), van Vliet et al. (2021) and Waarts et al. (2021), suggests that while its premiums may provide limited short-term income increases their overall impact on poverty reduction may remain low. Boysen et al. (2023) highlight that supply-side adjustments and manufacturer behaviour significantly influence the LID's long-term repercussions, stressing the need for robust supply management. Without it, setting

higher prices could prompt buyers to shift to cheaper sources, reducing the benefits for farmers. Ghana's large and economically important cocoa sector would be vulnerable to such an outcome. Additionally, the broader market response, including reactions from other cocoa-exporting countries, plays a critical role in determining the effectiveness of such price interventions (Adams and Carodenuto, 2023; Kuijpers et al., 2024). Thus, the long-term supply response remains uncertain, complicating the sustainable benefits of higher regulated cocoa prices.

Additionally, raising cocoa prices without promoting income diversification may reinforce dependence on cocoa, a crop that comes with risks only likely to intensify with climate change. Cocoa is highly sensitive to environmental factors like temperature and rainfall, both of which are becoming more erratic due to climatic shifts. Rising temperatures and unpredictable weather patterns, including prolonged droughts and excessive rain, can significantly reduce yields. Thus, raising cocoa prices may counteract climate change adaptation initiatives in the cocoa sector. Additionally, deforestation to expand cocoa farms' size further exacerbates said environmental challenges. Over-reliance on cocoa could therefore lead to economic vulnerability, particularly for smallholders, as climatic impacts worsen crop viability and reduce incomes (Ameyaw et al., 2018; Amfo et al., 2020).

6. Discussion

This chapter has explored the potential and limitations of targeting living incomes for agricultural households by adjusting commodity prices, with a particular focus on cocoa production in Ghana. We discussed the living-income methodology, which can be criticised for its ad hoc approach and because it blurs the distinction between absolute and relative concepts of poverty. We acknowledge the concept's practical merits in terms of approximating a 'decent standard of living'. However, we also show that applying the approach leads to a very high income threshold for Ghana's cocoa-growing regions, one classifying most such farmers' living standards as well below 'decent'. It is not clear whether the concerned farmers would agree: moderate national poverty thresholds, which include many items beyond mere survival, are well below the living-income threshold. This also implies that achieving a living income for all cocoa-farming households represents a very ambitious goal and they would need to fare much better than their rural peers engaged in other forms of economic activity. In our view, the living-income threshold should be more responsive to context-specific operationalisation of what constitutes a decent standard of living based on a scientifically validated and transparent methodology.

The living-income approach combines a range of established strategies – such as increasing productivity, improving market access and expanding social-protection programmes – but emphasises price adjustments through the LIRP or similar. While increasing cocoa prices may seem like a straightforward solution to boosting

farmer incomes, this approach comes with significant limitations as well as risks. As demonstrated, higher prices may lift some households above the poverty line, but many others will remain below the living-income threshold regardless – that due to factors such as limited land availability, as continuing to have an impact even despite improved prices and productivity. Additionally, this strategy is costly and tends to benefit wealthier, more productive households disproportionately. Moreover, unintended consequences such as rising inequality, deforestation, increased child labour and an over-reliance on cocoa production may also arise.

It is crucial that the potential negative repercussions of well-intended regulations and interventions, in particular higher prices, are carefully monitored. This requires rigorous analytical approaches. In particular, it is of the utmost importance that the evaluation of efforts made to improve the situation of cocoa-farming households looks beyond only those compliant with certification schemes. Many of the potential risks outlined – most notably, child labour, the use of harmful chemicals and deforestation – are likely to occur at the hands of non-compliant farmers whose exports may increasingly head to non-regulated markets. Such reallocation effects would massively undermine the effectiveness of European regulatory actions like the CSDDD.

These issues underscore that a more comprehensive strategy is required to achieve sustainable, long-term benefits for cocoa farmers. This should include regulatory action that targets the (European) cocoa supply chain. Yet, such endeavours need to be accompanied by comprehensive support aimed at better GSC management, environmental sustainability and income diversification. The many stakeholder initiatives underway are the right fora to take this support forwards, probably with less focus on prices.

Improving productivity is key, particularly for farmers who have the potential to become high-yield growers. Van Vliet et al. (2021) indicate that smallholder cocoa farms in West Africa, which typically yield around 400kg/ha annually, have the potential to produce significantly more if constraints such as nutrient deficiencies and pest infestations are addressed. Importantly, increased productivity has been shown to deliver the most substantial gains in household-income levels, as detailed above and elsewhere.

The concept of a ‘dual transition’ (Bymolt et al., 2018) is relevant here, where high-potential cocoa-growing households are encouraged to professionalise their farming practices. In contrast, other households – especially those constrained by low productivity or limited (land) resources – may be better off transitioning away from cocoa production entirely. Climate change is expected to accelerate this shift, as it reduces the suitability of growing the commodity in West Africa. For these farmers, transitioning to alternative crops or agroforestry could enhance their resilience by improving food security and income stability (Abdulai et al., 2020; van Vliet et al., 2021). Off-farm income generation can also play a vital role, helping farmers spread risk and make necessary investments in their

operations. Despite cocoa being one of the most profitable crops grown in Côte d'Ivoire and Ghana, diversification strategies are essential for many households to reduce vulnerability. Cocoa dependency alone is weakly correlated with poverty reduction, suggesting that simply improving productivity or prices here may not lead to significant gains vis-à-vis farmer incomes (van Vliet et al., 2021). This underscores the need for tailored interventions, particularly for farmers with limited potential to achieve a living income solely from growing cocoa beans. For these individuals, social-protection programmes, access to healthcare, education opportunities and off-farm income sources become critical (Waarts et al., 2019).

Targeting poverty alleviation within a single agricultural sector, such as cocoa, is inherently limited due to the structural and environmental factors affecting farmers' livelihoods. Poverty is a multidimensional issue, and focusing narrowly on one crop may be to overlook broader issues. A more comprehensive strategy which includes policies supporting off-farm diversification and social safety nets would be more effective in addressing the root causes of poverty. Therefore, while price increases may offer temporary gains, a more diversified and sustainable approach – one addressing both sector-specific issues and broader socio-economic challenges – is crucial for long-term poverty alleviation and resilience in the cocoa sector.

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