



JANUARY 2025

# Fairtrade Living Income Reference Prices for Cocoa from Ghana & Côte d'Ivoire

EXPLANATORY NOTE



## A brief history of Living Income Reference Prices

**Fairtrade's Living Income Reference Prices** were first established for cocoa from Ghana and Côte d'Ivoire in 2018, following a large-scale household income study conducted in Côte d'Ivoire.

In 2019, Fairtrade revised the reference prices after publication of two comprehensive living income benchmark studies that were conducted in cocoa growing regions of Ghana and Côte d'Ivoire, commissioned by the Living Income Community of Practice (LICOP) for the cocoa sector. Apart from adopting the new living income benchmarks for the reference price calculation, Fairtrade worked closely together with Tony's Chocolonely, who share the ambition of a cocoa industry where farmers earn a living income, in order to align on the assumptions underlying the price model, compare values for the various parameters, and agree on final Living Income Reference Prices for both countries.

The COVID crisis, followed by the Ukraine war, tremendously inflated costs of living as well as production costs, demanding an **inflation correction for the reference prices in October 2022**. For this, updated living income benchmark figures published by LICOP and increased fertiliser costs, as well as exchange rate variations, were taken into consideration.

The new Living Income Reference Prices presented in this document are the result of an extensive, in-depth review of the variables. Producer representatives and in-country technical experts generated the primary input and analysis during roundtable workshops held in November 2023<sup>1</sup>. Additional inputs and feedback on the preliminary findings were collected through broad stakeholder consultation. Relevant research sources were consulted to cross-check our findings<sup>2</sup>, in order to arrive at a final proposal. In November 2024, the proposed values were presented for approval to the validation committees, composed of producer representatives and government regulator delegates in Ghana and Côte d'Ivoire.

LIRPs are reviewed and updated periodically to ensure their continued relevance. With growing acknowledgement of LIRP being a core aspect of responsible procurement in the cocoa sector, Fairtrade aims to incorporate internal and external expertise and seeks broad alignment on the target values used in the LIRP equation through stakeholder consultation.



**The revised LIRPs are: USD 2.68 per kilo of cocoa for Ghana and EUR 2.65 (USD 2.80) per kilo for Côte d'Ivoire** (valid from October 2025).

## What is a Fairtrade Living Income Reference Price?

**Fairtrade's Living Income Strategy** consists of three interdependent components: responsible procurement, sustainable production and an enabling environment. Living Income Reference Prices (LIRP) play a central role in responsible purchasing practices. They indicate the farmgate price a full-time farmer needs to receive in order to be able to invest in sustainable agricultural practices and secure a living income for their family, when meeting the set target yield. While not guaranteeing living incomes for all farmers, LIRP payment is an essential enabler for realising living income goals.

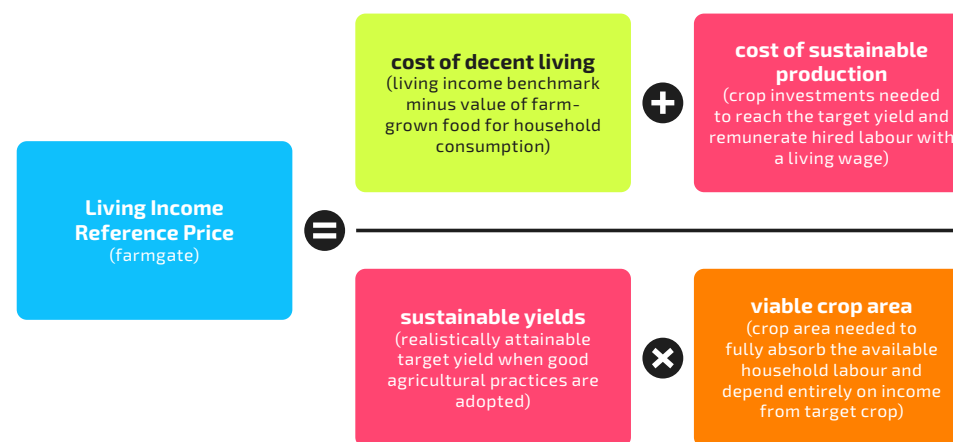
The price model is based on **two key principles**:

- The Universal Human Right to a just and favourable remuneration for everyone who works, ensuring an existence worthy of human dignity for themselves and their families<sup>3</sup>. This means that farm work, regardless whether it is carried out by family or hired labour, should be remunerated with a living wage. And thus, a full-time farmer has the right to earn a living income from the farm proceeds and a hired worker on a smallholder farm should be paid a living wage.
- Achieving living incomes is a shared responsibility by all supply chain actors. While farmers themselves are primarily responsible for adopting good agricultural practices in order to achieve a realistic sustainable yield level, their buyers are responsible for paying a price which makes that possible, enabling farmers to invest in their farms and achieve living incomes.

The holistic LIRP model is an equation with **four key variables**:

- **Cost of decent living or living income**
- **Sustainable yields**, attainable when good agricultural practices are implemented
- **Cost of sustainable production** to attain the target yield
- **Viable crop area**, based on fully employed household labour

**Figure 1: Fairtrade's Living Income Reference Price model**



## Variable 1: Cost of decent living or living income

Fairtrade adopts internationally accredited living income benchmarks for calculating reference prices. For Ghana and Côte d'Ivoire, comprehensive studies of the cost of decent living in cocoa growing regions were commissioned by the Living Income Community of Practice in 2018 and these benchmarks were updated in 2024<sup>4</sup>. Inflation corrections based on the latest available Consumer Price Index statistics<sup>5</sup> were applied for the most up-to-date costs of decent living. Furthermore, adjustments were made based on OECD equivalency scales to reflect the actual household sizes, as presented in Tables 1 and 2.

**Table 1: Living Income Benchmark update Ghana**

Living Income Benchmark Ghana			March 2018 (original study)		June 2024 (Anker update)		November 2024 (own update)	
household size & composition	OECD equivalency		GHS	USD	GHS	USD	GHS	USD
Monthly Living Income per household (original study)	5 (2 adults + 3 children)	2.4	1,464	329	4,305	300	4,638	293
Monthly Living Income per household	5 (3 adults + 2 children)	2.6	1,586	356	4,664	325	5,024	317
<b>Yearly Living Income per household</b>	<b>5 (3 adults + 2 children)</b>	<b>2.6</b>	<b>19,032</b>	<b>4,277</b>	<b>55,965</b>	<b>3,903</b>	<b>60,292</b>	<b>3,806</b>
of which food costs (51.7%)	5 (3 adults + 2 children)	2.6	9,840	2,211	28,934	2,018	31,171	1,968
<b>Daily living wage per income earner</b>	<b>5 (3 adults + 2 children)</b>	<b>2.6</b>	<b>38.45</b>	<b>8.64</b>	<b>113.06</b>	<b>7.88</b>	<b>121.80</b>	<b>7.69</b>
Consumer Price Index			76.99		226.40		243.9	
Inflation rate					2.941		3.168	
Exchange rate to USD (average of past quarter)			4.45		14.34		15.84	

**The costs of decent living for a typical 5 member household with 3 adults and 2 children in Ghana is currently (Ghanaian cedis) GHS 60,292, equivalent to USD 3,806 per year.**

**The costs of decent living for a typical 7 member household with 4 adults and 3 children in Côte d'Ivoire is currently (West Africa CFA franc) XOF 4,899,628 or approximately USD 8,039 per year.**

The significant difference in the cost of living between the two countries (USD 1.93 per person per day for Ghana versus USD 2.91 in Côte d'Ivoire) is primarily due to the strong devaluation of the Ghanaian cedi, compensating for the steep inflation rates in the country.

**Table 2: Living Income Benchmark update Côte d'Ivoire**

Living Income Benchmark Côte d'Ivoire			March 2018 (original study)		June 2024 (Anker update)		August 2024 (own update)	
household size & composition	OECD equivalency		CFA	USD	CFA	USD	CFA	USD
Monthly Living Income per household (original study)	6 (2 adults + 4 children)	2.7	262,056	454	323,941	531	324,240	532
Monthly Living Income per household	7 (4 adults + 3 children)	3.4	329,996	572	407,926	669	408,302	670
<b>Yearly Living Income per household</b>	<b>7 (4 adults + 3 children)</b>	<b>3.4</b>	<b>3,959,957</b>	<b>6,860</b>	<b>4,895,108</b>	<b>8,031</b>	<b>4,899,628</b>	<b>8,039</b>
of which food costs (47.5%)	7 (4 adults + 3 children)	3.4	1,880,980	3,259	2,325,177	3,815	2,327,323	3,818
<b>Daily living wage per income earner</b>	<b>7 (4 adults + 3 children)</b>	<b>3.4</b>	<b>6,000</b>	<b>10.39</b>	<b>7,417</b>	<b>12.17</b>	<b>7,424</b>	<b>12.18</b>
Consumer Price Index			103.29		127.2		127.8	
Inflation rate					1.236		1.237	
Exchange rate to USD (average of past quarter)			578.81		609.52		609.52	

Roughly half of the households' costs of living – as calculated in the benchmark studies – are food costs and therefore the food that is produced on the cocoa farm for household consumption represents a significant in-kind income. The roundtables discussed what percentage of a household's food needs can be produced in association with cocoa, saving on the household's food expenses and thus reducing the (financial) costs of decent living.

Initial LIRP estimations that 25% of a nutritious diet could be grown on a typical farm in Ghana were reconfirmed in the review, **representing an in-kind income of roughly GHS 7,800 per year.**

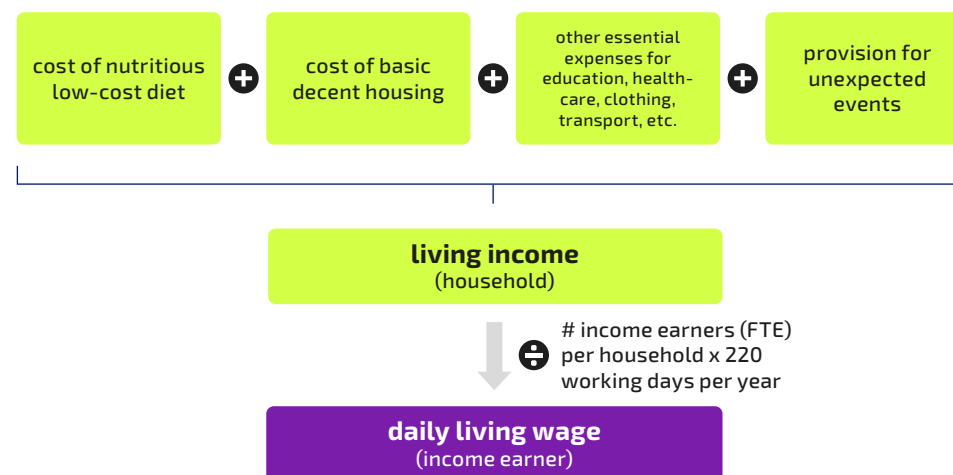
The LIRP for Côte d'Ivoire originally factored in a potential 50% of household food needs being farm-grown, which was considered to be unrealistic in the review.

A lower target of 30% **with a value of nearly XOF 700,000 per year** was suggested by producers and found to be in line with farm record data collected in Côte d'Ivoire.

The daily living wage for income earners – be it self-employed on the farm or hired externally – is derived from the living income benchmark for a household by dividing the annual income by the number of available working days in a household. As a rule of thumb the equivalent of 75% of the working age adults is considered to be available for farm work for 220 working days per year<sup>6</sup>, so that the available household labour would be  $2.25 \times 220 = 495$  days in Ghana and  $3 \times 220 = 660$  days in Côte d'Ivoire. This results in a **daily living wage of GHS 121.8 for Ghana** and **XOF 7,424 for Côte d'Ivoire**, to be factored into the cost of production.

### Figure 2: Relation between a living income for a household and a living wage per fulltime equivalent (FTE) worker, either hired or as a self-employed farmer

Any work needs to be remunerated with a living wage so that a living income for the household is earned when the household's available labour is fully employed.





## Variable 2: Sustainable yields

The original sustainable productivity target was set at 800 kg per hectare (ha) for both countries. Whether this target yield is realistic has since been widely debated, with agronomists' opinion that much higher yields can be achieved on one hand, versus actual figures on the other hand, which show only slow improvement, affected by adverse climatic conditions and proliferation of diseases, to around 500-600 kg/ha currently.

In order to arrive at an agreed position, Fairtrade further defined what to consider as realistic, remaining true to the principle of co-responsibility underlying the price model:

- the target yield should be reachable **within 2 years**
- **for farmers investing in their farms** and implementing the recommended practices, including intensive pruning
- which should be **feasible for at least 50% of farmers receiving LIRP**, in terms of access to adequate technical assistance, required labour services and climatic conditions. The Fairtrade Premium paid to the cooperatives in addition to the LIRP at farmgate represents an important resource for producer organisations to facilitate these services to their members.

The yield targets therefore took into account a timeline of two years for good agricultural practices, and particularly crop rehabilitation through quality pruning, from a baseline of current productivity levels reported by Fairtrade cooperatives, company and governmental programmes and recent independent research.



Backed by the very low actual yields (under 400 kg/ha reported in the recent cocoa household income study (CHIS)<sup>7</sup> for Ghana), **a feasible intermediate target for Ghana was agreed at 600 kg/ha (240 kg/acre).**

Farmers in Côte d'Ivoire have a higher baseline, with reported yields currently between 550 and 750 kg/ha and promising results from pruning programmes conservatively showing yearly yield increases of around 20%<sup>8</sup>. Similarly, ANADER trainings have resulted in a median productivity of 850 kg/ha amongst its beneficiaries<sup>9</sup>. Based on these figures it was agreed that **800 kg/ha remains a realistic target for Côte d'Ivoire.**

It is important to note that a continuous crop renovation cycle of 25 years is recommended, meaning that 20% of the viable cocoa area should be rejuvenated every five years and is not or is hardly productive, while the remaining 80% of the land reaches the target yield. When taking crop renovation into account, **the effective productivity expected for the entire viable cocoa area would therefore reduce by 17% to approximately 500 kg/ha (200 kg/acre) for Ghana 664 kg/ha for Côte d'Ivoire.**

### Variable 3: Cost of sustainable production

The input and labour requirements associated with implementing good agricultural practices in order to attain the sustainable yield level were identified. Subsequently, the costs of sustainable production were calculated based on this analysis, for a scenario in which the available household labour is optimally utilised. This assumes that household members are assumed to do the work themselves when possible, and hired labour is only utilised for specialised practices, such as pruning and spraying. Tables 3 and 4 below and in Annex A present an overview of the required practices and costs.

**Table 3: Overview of good agricultural practices considered to calculate the costs of sustainable production**

Practice	Description
<b>weeding</b>	3 rounds of manual weeding per year
<b>mulching</b>	soil covering with organic matter from the farm, twice a year
<b>fertilization</b>	application of 8 bags of granular fertiliser per hectare (3 bags/acre) for 3 consecutive years, followed by a year break, using foliar fertiliser and/or compost
<b>pruning</b>	heavy pruning by fully equipped labour brigade + phytosanitary pruning throughout the year
<b>pest management</b>	integrated pest management (sanitary harvesting throughout the year + minimal fungicide + insecticide application)
<b>shade management</b>	planting and maintenance of 25 shade trees per hectare
<b>rejuvenation</b>	20% crop renewal every 5 years with density of 1320 cocoa trees/ha in Côte d'Ivoire or 450 trees/acre in Ghana + gap filling for 25% mortality rate in subsequent years
<b>harvest</b>	harvesting, pod gathering and pod breaking with community labour (18 rounds in Côte d'Ivoire; 6 rounds in Ghana)
<b>fermentation</b>	18 / 6 harvest rounds x 6 days of fermentation
<b>drying</b>	18 / 6 rounds x 7 days of drying
<b>bagging &amp; transport</b>	transport of beans to collection centre each harvest round
<b>administration</b>	administrative tasks, participation in trainings & various
<b>food production</b>	tending to food crops

**Table 4: Summary of the costs of sustainable production**

Average yearly costs of production	Ghana (GHS)	Côte d'Ivoire (XOF)
input costs per land unit	GHS 960 / acre	XOF 119,600 / ha
hired labour days* per land unit	8 days / acre	17 days/ ha
hired labour costs** per land unit	GHS 974 / acre	XOF 126,000 / ha
other variable costs per land unit	GHS 300 / acre	XOF 24,100 / ha
<b>Total variable costs per land unit</b>	<b>GHS 2,234 / acre</b>	<b>XOF 269,900 / ha</b>
<b>fixed costs***</b>	<b>GHS 2,160</b>	<b>XOF 91,200</b>

\* based on maximized deployment of household labour, excluding harvest;

\*\* outsourced labour is factored in at a daily living wage of GHS 121.8 (Ghana) / XOF 7284 (Côte d'Ivoire)

\*\*\* includes catering for community labour during harvest & pod breaking



## Variable 4: Viable crop area

A viable cocoa area for a farmer household to be entirely reliant on cocoa income and the food grown in association is calculated on the basis of available household labour being fully utilised on the farm. The labour requirements for each agricultural practice per area unit were analysed in the workshops and subsequently cross-checked with Agri-logic field record data of farmers reaching yields of 800+ kg per hectare.<sup>10</sup> The number of household workdays needed for sustainable cocoa production – including tending to food crops grown in association with cocoa – totalled 180 days per hectare (72 days/acre) per year in Ghana and 172 days per hectare in Côte d'Ivoire. (See Annex A for a detailed overview.)

Dividing the available household labour (see variable 1) by the number of days needed per area unit results in a **viable productive cocoa area of 2.75 hectare (6.9 acres) for Ghana and 3.84 hectares for Côte d'Ivoire** for farmer households to have their time fully taken up with cocoa production (see Table 5). This is therefore also the area that should enable the household to generate a living income from the cocoa they produce (minus the value of food produced for household consumption, see variable 1).

**Table 5: Labour requirements per land unit and derived viable cocoa area**

	Ghana	Côte d'Ivoire
labour required per productive land unit	200 days/ha	189 days/ha
of which: household labour*	180 days/ha	172 days/ha
household size	5	7
# adults in household	3	4
available household labour**	2.25 FTE (495 labour days)	3 FTE (660 labour days)
full employment productive area	2.75 ha (6.9 acre)	3.8 ha
full employment total cocoa area (considering renovation)	3.3 ha (8.3 acre)	4.6 ha

Defining a viable land size to rely solely on cocoa income does not mean that farmers should not or could not diversify their land with other crops. However, it assumes that any other use of the land should generate a similar income for the household as it would growing cocoa, and thus a proportional share of a living income is expected from cocoa sales and other crops. Modelling with varying levels of household labour deployment in cocoa production – and corresponding dependency on cocoa revenues – illustrates how the viable cocoa area reduces with increased income diversification Table 6 shows the interplay between the percentage of cocoa income dependency and viable cocoa area.

**Table 6: Level of income diversification in relation to the viable cocoa area to absorb the available household labour**

	cash income from cocoa	cash income diversification	in-kind income farmgrown food	viable productive cocoa area	viable cocoa area (incl. renovation)
Ghana	100%	0%	25%	2.75 ha	3.3 ha
	80%	20%	20%	2.2 ha	2.7 ha
	67%	33%	17%	1.8 ha	2.2 ha
	50%	50%	12.5%	1.4 ha	1.7 ha
Côte d'Ivoire	100%	0%	30%	3.8 ha	4.6 ha
	80%	20%	24%	3.1 ha	3.7 ha
	67%	33%	20%	2.6 ha	3.1 ha
	50%	50%	15%	1.9 ha	2.3 ha

Although recent reports show an average farm size of 5.25 hectares with 3.4 hectares of productive cocoa in Ghana<sup>11</sup> and around 5.8 hectares with an average of 3.3 hectares of cocoa for Côte d'Ivoire<sup>12</sup>, it needs to be acknowledged that many cocoa farms are smaller than the required size to be fully dependent on cocoa income. For those farmers it will be necessary to complement their farm income with other income sources to reach a living income. Since the available household labour isn't fully occupied on these farms, the remaining household labour would need to generate a proportional share of a living income.



## Living Income Reference Prices

For Ghana, the new LIRP is established at **GHS 42.4 per kilo of cocoa at farmgate, or USD 2.68 per kilo** (see Table 7). Due to the steep inflation of costs in local currency and the continuous devaluation of the Ghanaian cedi against the US dollar, the reference price is converted to USD<sup>13</sup> in order to compensate for future inflation losses.

**Table 7: Old and new Living Income Reference Price variables for Ghana**

		2022	2025
<b>LIRP cocoa Ghana</b>	% of food needs produced on farm	25%	25%
	% cash income from cocoa	100%	100%
viable cocoa area	Ha	4.0	3.3
(A) productive cocoa area	Ha	3.3	2.75
sustainable yield of total viable area	kg/ha	664	500
(B) sustainable yield per productive area	kg/ha	800	600
cost of agricultural inputs	GHS/ha	2,608	2,400
hired labour cost	GHS/ha	658	2,436
other costs (eg. transport, tools & materials)	GHS/ha	355	750
total variable costs x ha	GHS/ha	3,620	5,586
fixed costs	GHS		2,160
<b>(C) cost of sustainable production</b>	<b>GHS</b>	<b>14,480</b>	<b>17,522</b>
value of home-grown food	GHS	4,330	7,793
<b>(D) living income share from cocoa</b>	<b>GHS</b>	<b>29,170</b>	<b>52,500</b>
<b>(C+D/AxB) Living Income Reference Price</b>	<b>GHS/kg</b>	<b>16.5</b>	<b>42.4</b>
	<b>USD*/kg</b>	<b>2.12</b>	<b>2.68</b>

\*exchange rate average Sept-Nov 2024: 15.84

For Côte d'Ivoire, the new LIRP is established at **XOF 1,736 per kilo of cocoa at farmgate, or the equivalent of EUR 2.65 per kilo** (see Table 8). Unlike for Ghana, this price is not affected by exchange rate fluctuations, as the West African CFA franc is pegged to the euro with a fixed exchange rate.

**Table 8: Old and new Living Income Reference Price variables for Côte d'Ivoire**

		2022	2025
<b>LIRP cocoa Côte d'Ivoire</b>	% of food needs produced on farm	50%	30%
	% cash income from cocoa	100%	100%
viable cocoa area	hectare	5.3	4.6
(A) productive cocoa area	hectare	4.4	3.8
sustainable yield of total viable area	kg/ha	664	664
(B) sustainable yield per productive area	kg/ha	800	800
cost of agricultural inputs	XOF/ha	331,150	119,600
hired labour cost	XOF/ha	5,850	126,203
other costs (eg. transport, tools & materials)	XOF/ha	37,430	24,100
total variable costs x ha	XOF/ha	454,430	269,903
fixed costs	XOF		91,200
<b>(C) cost of sustainable production</b>	<b>XOF</b>	<b>1,999,492</b>	<b>1,126,873</b>
value of home-grown food	XOF	1,149,300	698,197
<b>(D) living income share from cocoa</b>	<b>XOF</b>	<b>3,639,500</b>	<b>4,201,431</b>
<b>(C+D/AxB) Living Income Reference Price</b>	<b>XOF/kg</b>	<b>1,602</b>	<b>1,736</b>
	<b>USD/kg</b>	<b>2.39*</b>	<b>2.80</b>
	<b>EUR/kg</b>	<b>2.20</b>	<b>2.65</b>

## Alternative LIRP modelling

The level of **income diversification** has a slight impact on the reference prices. Annex B displays the variations in the price outcome for different income diversification scenarios. The price increase linked to reduced levels of cocoa income dependency is small and therefore the above LIRP values are considered to be applicable for a broad scope of diversified cocoa farmers.

On the other hand, the **attainable yield level** has a major impact on the price. Fairtrade is conscious of the fact that the reference price discovery process is biased towards the reality of Fairtrade producers engaged in living income projects, who may have relatively higher yields due to better access to support services such as technical assistance and well-equipped labour brigades than other cocoa farmers.

We therefore explored alternative scenarios in Annex C (Ghana) and D (Côte d'Ivoire). Based on current productivity levels and actual farm sizes, with corresponding low crop investments by farmers surveyed in recent household income studies (SWISSCO-COCOBOD joint CHIS study in Ghana and Fairtrade commissioned study in Côte d'Ivoire), Fairtrade recalculated the reference prices. Interestingly the outcomes aren't very different from the aspirational yield with high farm investment scenarios.

Nonetheless, for farmers with yields below these averages it will take longer to reach a living income. For instance farmers who are not part of well-run cooperatives or female-headed households relying on hired labour would require higher prices in order to escape poverty.

## Implementing Living Income Reference Prices

By establishing Living Income Reference Prices, Fairtrade quantifies the gap between market-based and living income-based prices at farmgate level, and emphasises the need to address price as a crucial factor to attain sustainable supply chains that enable farmers to earn a living income. The new Living Income Reference Prices apply from 1 October 2025.

In the course of this review process, international cocoa prices have skyrocketed and the internal farmgate prices are currently exceeding the revised LIRPs. The Ghanaian regulator more than doubled its farmgate price from GHS 20.9 per kilo in the 2023/24 harvest season to GHS 49.6 in the current season. Similarly, the Ivorian regulator increased the minimum farmgate price to XOF 1,800 per kilo, up from XOF 1,000 the previous year.

While this is a positive development, there is no certainty that these cocoa prices will hold. **It is therefore important that Living Income Reference Prices are embedded in long-term sourcing commitments**, so that producers can continue to count on a sustainable price when market prices come down again. This way, LIRPs would serve as a guaranteed floor price, regardless of market fluctuations, and provide stability for farmers to secure a return on their crop investments. Price volatility makes farmers risk averse and the uncertainty of future prices prohibit the longer-term investments needed to improve productivity.

However, it must be stressed that the **Living Income Reference Price is just one tool, which – in combination with other interventions – is needed to close the income gap**. It is not a guarantee that all farmers will earn a living income, even if they are paid that price. Nonetheless, payment of a Living Income Reference Price and long-term sourcing agreements are considered essential purchasing practices that buyers are responsible for to enable living incomes for farmers in their supply chains. On the other end, farmers are equally responsible for adopting the sustainable agricultural practices to meet the productivity target.

**Fairtrade recommends that the mandatory Fairtrade Premium is not counted towards the Living Income Reference Price, but is paid on top to the producer organisation.** The Fairtrade Premium is an important source of income for cooperatives to cover operational costs, including adequate service delivery to their members. For instance, technical assistance on the implementation of sustainable agricultural practices or the setup of well-equipped labour brigades that can provide quality pruning services are critical for rejuvenating farms and improving the productivity. Empowered producer organisations play a crucial role in supporting their members to increase yields, reduce costs, add value, diversify income sources and enhance farm resilience, all of which contribute to achieving living incomes.

Finally, most buyers do not purchase all the cocoa produced by a cooperative and thus the Living Income Reference Price will only be received for part of the sales. This means that the price differential will get diluted over the total volumes, if not all buyers commit to paying the Living Income Reference Price. **Hence, this is a call to the cocoa industry to jointly commit to sustainable prices, so that living incomes can become a reality for cocoa farmers.**





## Annex A: Breakdown of cost of sustainable production and labour requirements for Ghana & Côte d'Ivoire

**Table 9: Overview of the costs of sustainable cocoa production in Ghana**

COSP Ghana	input costs per acre		other variable costs		labour requirements per acre			fixed costs		
	input requirements	cost/acre	tools, materials & other expenses	cost/acre	labour activity	household labour days/acre	hired labour days/acre	cost/acre @LW	non-area related costs	fixed cost
<b>crop maintenance</b>		960		100		18	8	974	-	570
<b>weeding</b>			1 cutlass @50; 1 sharpening stone @30 per 2 yrs	40	3 rounds of weeding with machete of 3 days/acre	9			boots	170
<b>mulching</b>				-	soil covering with organic matter from the farm twice a year	1				
<b>fertilization</b>	3 bags of granular fertiliser per acre @400 for 3 consecutive years after which a year break; compost and/or foliar fertiliser during off-year (foliar provided by govt)	800	spraying equipment, protective gear (rented @20 per day)	20	fertilizer application once a year	2	1	122	transport of fertilizer @100	100
<b>pruning</b>				-	4 days of heavy pruning (fully equipped labour brigade); phytosanitary pruning throughout the year	2	4	487	standard pruner	300
<b>pest management</b>	2 rounds of fungicide application @15 per filling (3 fillings/acre) = 90; 2 rounds of insecticides @15 per filling (2 fillings/acre) = 60	150	spraying equipment, protective gear (rented @20 per day)	40	integrated pest management, complemented with 2 days of spraying per acre by fully equipped brigade	2	2	244		
<b>shade management</b>	12 shade tree seedlings (one-off set up cost, divided by 25 yrs)	10			planting and maintenance of shade trees	1				
<b>rejuvenation</b>	20% crop renewal every 5 years for maintaining optimal crop renovation cycle of 25 years: 450 cocoa seedlings + 100 plantain suckers + 6 shade seedlings per acre; gap filling for 25% mortality rate in subsequent years: 112 seedlings per acre per 25 years (all provided by govt for free)				20% renovation every 5yr with hired service to cut down trees and replant @2500/acre (depreciated in 25 yr); subsequent gap filling -5 trees/acre per year	1	1	122		
<b>harvest &amp; post harvest</b>				200		42				980
<b>harvest &amp; pod breaking</b>			2x basket @100 per 3yr; 2x harvesting hook per 5yr @30; 3x cutlass for pod breaking @35 per 5yr	100	6 rounds of 3 days for harvesting, pod gathering and pod breaking per year	18			community labour is used for pod breaking in exchange for food&drink: 6 rounds x 10p per farm @15 per person	900
<b>fermentation</b>					6 harvest cycles x 3 days for fermentation	18				
<b>drying</b>			drying mat @300 per 3yr	100	6 days of drying per harvest round for entire farm (36 days in total for farm)	5				
<b>bagging &amp; transport</b>			jute bags (provided for free)		1 day for bagging and transport to collection centre per harvest round per farm	1			transport to collection centre	80
<b>admin &amp; misc</b>						12				610
<b>administration</b>					14 days per year in total for admin & training events (divided by 7 acre)	2			cooperative dues @60; taxes @200; financial costs @350	610
<b>food crops</b>					4 days per month tending to food crops on 20% renovated cocoa area	10				
<b>total</b>		960		300		72	8	974		2,160

Table 10: Overview of the costs of sustainable cocoa production in Côte d'Ivoire

COSP Côte d'Ivoire	input costs per hectare		other variable costs		labour requirements per hectare			fixed costs		
	input requirements	cost/ha	tools, materials & other expenses	cost/ha	labour activity	household labour days/ha	hired labour days/ha	cost/ha @LW	non-area related costs	fixed cost
<b>crop maintenance</b>		119,600		15,000		35	17	126,208		26,200
<b>weeding</b>			3 machetes @2,500; 5 limes @1,500	15,000	3 rounds of weeding with machete of 5 days/ha	10	5	37,120	2x boots @6,000	12,000
<b>mulching</b>					soil covering with organic matter from the farm twice a year	6				
<b>fertilization</b>	2 x 4 bags of synthetic fertiliser @25,000, applied every second year	100,000			2 applications per year	10			transport of fertilizer: 2 trips per year @6000	12,000
<b>pruning</b>					10 days of sanitary pruning (fully equipped labour brigade)		10	74,240	2 pruning scissors @5,000 per 5 years	2,000
<b>pest management</b>	500 ml of pesticide per ha	13,000			2 days of spraying (fully equipped labour brigade) + sanitary harvesting (done in combination with other activities)		2	14,848		
<b>shade management</b>	25 shade trees (one-off set up cost) - provided by cooperatives for free				general maintenance	3			transport of seedlings by tricycle @5000, one-off cost, divided by 25yr	200
<b>rejuvenation</b>	20% renovation of cocoa area every 5 years + gap filling for 25% of trees: 1650 seedlings @100 per seedling + bag + soil (based on crop density of 1320 trees/ha), divided by 25yr	6,600			replanting 6 days	6				
<b>harvest &amp; post harvest</b>				9,100		117				65,000
<b>harvest &amp; pod breaking</b>					18 harvest rounds per year / 6 cycles of pod breaking	18			catering for community support for pod breaking: 10,000 x 6 cycles; 2 baskets @3000 per 3 yr; 3 buckets @1000	65,000
<b>fermentation</b>					3 days per harvest round (6 days of fermentation requiring stirring every 2nd day)	54				
<b>drying</b>			2 bamboo mats for drying @5000 per 3 yr + tarpaulins 5m @1000 per 3 yr	8,200	7 days of drying per harvest round for entire farm (divided by 4ha)	32				
<b>bagging &amp; transport</b>			3 jute bags @300	900	3 days for bagging and transport to collection centre per harvest round for entire farm (divided by 4ha)	13			transport to collection centre, covered by the cooperative	
<b>admin &amp; misc</b>				-		20				610
<b>administration</b>					administration (included in other activities)	-			cooperative dues @60; taxes @200; financial costs @350	610
<b>food crops</b>					tending to food crops	20				
<b>total</b>		119,600		24,100		172	17	126,208		91,810

## Annex B: LIRP modelling for varying income diversification scenarios

The level of income dependency from cocoa has a minimal impact on the reference price. Below tables show the price variations for different income diversification scenarios and the corresponding viable cocoa areas. Due to the fixed costs remaining unchanged, the production costs per area unit increase when the productive cocoa area is reduced, resulting in a slightly higher price.

**Table 11: Diversification scenarios and corresponding price impact for Ghana**

LIRP cocoa Ghana	diversification scenarios			
	% of food needs produced on farm	25%	20%	17%
	% cash income from cocoa	100%	80%	67%
viable cocoa area	Ha	3.3	2.7	2.2
(A) productive cocoa area	Ha	2.75	2.2	1.8
sustainable yield of total viable area	kg/ha	500	500	500
(B) sustainable yield per productive area	kg/ha	600	600	600
cost of agricultural inputs	GHS/ha	2,400	2,400	2,400
hired labour cost	GHS/ha	2,436	2,436	2,436
other costs (eg. transport, tools & materials)	GHS/ha	750	750	750
total variable costs x ha	GHS/ha	5,586	5,586	5,586
fixed costs	GHS	2,160	2,160	2,160
<b>(C) cost of sustainable production</b>	<b>GHS</b>	<b>17,522</b>	<b>14,449</b>	<b>12,401</b>
value of home-grown food	GHS	7,793	6,234	5,221
<b>(D) living income share from cocoa</b>	<b>GHS</b>	<b>52,500</b>	<b>42,000</b>	<b>35,175</b>
<b>(C+D/AxB) Living Income Reference Price</b>	<b>GHS/kg</b>	<b>42.4</b>	<b>42.8</b>	<b>43.3</b>
	<b>USD*/kg</b>	<b>2.68</b>	<b>2.70</b>	<b>2.73</b>

**Table 12: Diversification scenarios and corresponding price impact for Côte d'Ivoire**

LIRP cocoa Côte d'Ivoire	diversification scenarios			
	% of food needs produced on farm	30%	24%	20%
	% cash income from cocoa	100%	80%	67%
viable cocoa area	hectare	4.6	3.7	3.1
(A) productive cocoa area	hectare	3.8	3.1	2.6
sustainable yield of total viable area	kg/ha	664	664	664
(B) sustainable yield per productive area	kg/ha	800	800	800
cost of agricultural inputs	XOF/ha	119,600	119,600	119,600
hired labour cost	XOF/ha	126,203	126,203	126,203
other costs (eg. transport, tools & materials)	XOF/ha	24,100	24,100	24,100
total variable costs x ha	XOF/ha	269,903	269,903	269,903
fixed costs	XOF	91,200	91,200	91,200
<b>(C) cost of sustainable production</b>	<b>XOF</b>	<b>1,126,873</b>	<b>919,738</b>	<b>781,652</b>
value of home-grown food	XOF	698,197	558,558	464,999
<b>(D) living income share from cocoa</b>	<b>XOF</b>	<b>4,201,431</b>	<b>3,361,145</b>	<b>2,798,153</b>
<b>(C+D/AxB) Living Income Reference Price</b>	<b>XOF/kg</b>	<b>1,736</b>	<b>1,742</b>	<b>1,749</b>
	<b>EUR/kg</b>	<b>2.65</b>	<b>2.66</b>	<b>2.67</b>



## Annex C: LIRP modelling based on actual values for Ghana

SWISSCO published an alternative LIRP calculation for Ghana as part of the recent Cocoa Household Income Study (CHIS)<sup>14</sup>, using actual figures for cocoa productivity from the 2022/23 season, productive cocoa area and cost of production, based on data collected across all seven cocoa-growing regions.

The resulting LIRP – presented in scenario i below – is significantly higher than Fairtrade's new reference price, partly due to the very low average yield levels found in the study, but also because income from other sources was not factored in. The report also presents a sustainable yield scenario in alignment with the Fairtrade approach (see pages 27-28 of the CHIS report for details).

The calculation did not take into account any diversified income, although only 55% of the average household income is generated from cocoa and from the available household labour only 0.8 FTE is actually used in cocoa farming. In table 13 below, the COCOBOD-SWISSCO joint study findings were used to recalculate the LIRP, based on the Fairtrade model.

- **Scenario i** reflects the SWISSCO calculation without considering non-cocoa income.
- **Scenario ii** is based on the **actual share of income from cocoa**. The study finds that cocoa income accounts for 55% of an average household income. Maintaining this percentage and assuming that income from other sources would increase proportionally, this results in a lower LIRP of GHS 33.7 /kg
- **Scenario iii** deducts the **actual value of other (non-cocoa) income** currently being generated from the living income (equivalent to 19% of a living income), resulting in a higher LIRP of GHS 47.5 /kg.
- **Scenario iv** is the same as scenario iii, but with a **slightly improved the yield to 370 kg/ha** needed to arrive at the Fairtrade LIRP of GHS 42.4 /kg.

**Table 13: Living Income Reference Price calculations for Ghana, based on the SWISSCO-COCOBOD Cocoa Household Income Study (CHIS) data. Note that the living income benchmark in the table is updated to align with the latest numbers in this report.**

	scenario	actual yield scenarios (CHIS)			
		i	ii	iii	iv
<b>LIRP cocoa Ghana</b>	% other household income	not considered	45%	19%**	19%**
	% cash income from cocoa	100%	55%*	81%	81%
<b>viable cocoa area</b>	Ha	4.1	4.1	4.1	4.1
<b>(A) productive cocoa area</b>	Ha	3.4	3.4	3.4	3.4
<b>sustainable yield of total viable area</b>	kg/ha	274	274	274	307
<b>(B) sustainable yield per productive area</b>	kg/ha	330	330	330	370
cost of agricultural inputs	GHS/ha	480	480	480	480
hired labour cost	GHS/ha	900	900	900	900
other costs (eg. transport, tools & materials)	GHS/ha				
total variable costs x ha	GHS/ha	1,380	1,380	1,380	1,380
fixed costs	GHS	~300	~300	~300	~300
<b>(C) cost of sustainable production</b>	GHS	5,074	5,074	5,074	5,074
value of home-grown food	GHS	n/a	27,132	11,166**	11,166**
<b>(D) living income share from cocoa</b>	GHS	60,292	33,161*	48,837	48,837
<b>(C+D/AxB) Living Income Reference Price</b>	GHS/kg	57.6	33.7	47.5	42.4
	USD/kg	3.64	2.13	3.00	2.68

\* actual percentage of income from cocoa, assumes other income sources increase proportionally

\*\* actual value of current other income, compensated by larger share of cocoa income

## Annex D: LIRP modelling based on actual values for Côte d'Ivoire

Fairtrade collected farm record data from 1200 farmers across six Ivorian cooperatives during 2020-2022 cocoa seasons to monitor progress on living income parameters. Table 14 presents a price calculation based on the actual values of 2021/22 in the first column.

More recent data were collected for Fairtrade's third household income study by Impact Institute in 2024. The second and third column present current average values – excluding and including sharecropper costs – as found in this latest study (soon to be released).

Both results show a lower yield scenario combined with low actual farm investments, which when plugged into the LIRP model lead to a very similar price needed for an average farmer to reach a living income.

**Table 14: Living Income Reference Price calculations impact for Côte d'Ivoire, based on actual average values found in recent studies. Note, the values for homegrown food and income share from cocoa are taken from the farm record data.**

LIRP cocoa Côte d'Ivoire	actual average yield scenarios			
	source	Fairtrade farm record books 21/22	Fairtrade Impact Institute household income study 23/24	
% of food needs produced on farm		28%	28%	28%
% cash income from cocoa		80%	80%	80%
<b>viable cocoa area</b>	hectare	<b>4</b>	<b>3.3</b>	<b>3.3</b>
<b>(A) productive cocoa area</b>	hectare	<b>4</b>	<b>3.3</b>	<b>3.3</b>
<b>sustainable yield of total viable area</b>	kg/ha	<b>550</b>	<b>657</b>	<b>657</b>
<b>(B) sustainable yield per productive area</b>	kg/ha	<b>550</b>	<b>657</b>	<b>657</b>
cost of agricultural inputs	XOF/ha		19,680	19,680
hired labour cost	XOF/ha		32,800*	110,200**
other costs (eg. transport, tools & materials)	XOF/ha		34,770	34,770
total variable costs x ha	XOF/ha	124,000	87,250	164,650
<b>(C) cost of sustainable production</b>	<b>XOF</b>	<b>496,000</b>	<b>287,900</b>	<b>543,330</b>
value of home-grown food	XOF	660,000	660,000	660,000
<b>(D) living income share from cocoa</b>	<b>XOF</b>	<b>3,259,602</b>	<b>3259,602</b>	<b>3259,602</b>
<b>(C+D/AxB) Living Income Reference Price</b>	<b>XOF/kg</b>	<b>1,707</b>	<b>1,636</b>	<b>1,754</b>
	<b>EUR/kg</b>	<b>2.60</b>	<b>2.49</b>	<b>2.67</b>

\* hired labour costs without sharecropping arrangements

\*\* hired labour costs including sharecropping arrangements

## Endnotes

- 1 In November 2023, four 3-day technical roundtable workshops were held in Abengourou, Daloa and Divo, Côte d'Ivoire, and in Kumasi, Ghana. During these workshops, producer representatives and other technical experts from local support organisations and government agencies assessed feasible target values and analysed the associated costs of production within the current context in both countries.
- 2 Of particular importance were: the recent Cocoa Household Income Study (CHIS) in Ghana by SWISSCO and COCOBOD in 2024 ([https://www.kakaoplattform.ch/fileadmin/redaktion/dokumente/Studien\\_Themenseiten/CHIS\\_report\\_long.pdf](https://www.kakaoplattform.ch/fileadmin/redaktion/dokumente/Studien_Themenseiten/CHIS_report_long.pdf)); Barry Callebaut's Agri-Logic report in 2023: Farmer yield and income in Côte d'Ivoire: an analysis of Farmer Field Books (FFBs) ([https://www.barry-callebaut.com/system/files/2023-05/Barry%20Callebaut%20Agrilogic%20White%20Paper%202023\\_1.pdf](https://www.barry-callebaut.com/system/files/2023-05/Barry%20Callebaut%20Agrilogic%20White%20Paper%202023_1.pdf)); and the Nestle Income Accelerator Programme progress report by KIT in 2024 (<https://www.kit.nl/institute/publication/nestle-income-accelerator-program-progress-report/>).
- 3 UN Universal Declaration of Human Rights, Article 23.3: <https://www.un.org/en/about-us/universal-declaration-of-human-rights>
- 4 Living Income Community of Practice website: <https://www.living-income.com/tools-resources/publications>
- 5 Ghana Statistical Service Consumer Price Index Bulletin, Nov 2024: [https://statsghana.gov.gh/gssmain/fileUpload/Price%20Indices/Bulletin\\_%20CPI%20November%202024.pdf](https://statsghana.gov.gh/gssmain/fileUpload/Price%20Indices/Bulletin_%20CPI%20November%202024.pdf); Côte d'Ivoire Data Portal: <https://cotedivoire.opendataforafrica.org/acfueab/indice-des-prix-%C3%A0-la-consommation-des-m%C3%A9nages-par-fonction>
- 6 The number of working days per year is based on a five-day working week, excluding an average of 10 public holidays per year, 4 weeks off for holiday and 10 days to compensate for sick leave, following ILO standards and assumptions for self-employed farmers from a Wageningen University & Research report in 2024: Return on household labour: a means to accelerate the path to a living income for smallholder coffee farming households (<https://research.wur.nl/en/publications/return-on-household-labour-a-means-to-accelerate-the-path-to-a-li>)
- 7 Cocoa Household Income Study (CHIS), see note 2.
- 8 Nestlé Income Accelerator Program: Progress Report of the Test-at-Scale Phase, see note 2.
- 9 The Agence Nationale d'Appui au Développement Rural (ANADER) is the rural development agency of the Ivorian government which provides technical assistance to cocoa farmers.
- 10 Kindly made available to Fairtrade by Barry Callebaut.
- 11 Ibid. 7
- 12 Barry Callebaut Agri-Logic report, see note 2.
- 13 The average GHS:USD exchange rate of 15.84 over the past quarter (Sept – Nov 2024) was applied.
- 14 Cocoa Household Income Study (CHIS), see note 2.

The Living Income Reference Price model makes up an integral part of Fairtrade's Living Income Strategy. Fairtrade is constantly testing and improving its model in order to develop a standardized approach for establishing sustainable price levels for smallholder farmers, applicable to a wide range of commodities and regions. We welcome your feedback in this process.

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