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Sugarcane value chain Bolivia and Nicaragua

Top-7 global FMCGs would lose 0.5% of profit for a living wage

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About this report

This report has been commissioned by CNV Internationaal.

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Summary

Worldwide, people working in the sugarcane plantations and the local cane sugar industry are paid salaries well below a living wage. This study, commissioned by CNV Internationaal, reveals the profit earned in the downstream segments of the cane sugar value chain. The increasing revelations about the low salaries in the upstream segments contrast with the earnings generated downstream, often by (global) brands and large companies. The focus is on where the profit value is generated within Bolivia and Nicaragua's cane sugar supply and value chains. This is embedded in the global context of the leading downstream companies profiting the most from the cane sugar trade.

Global sugarcane and cane sugar production and consumption. In terms of production and area of cultivation, there has been little change since 2019. Globally, sugarcane harvest amounted to 1.9 billion tons, with Brazil and India as the largest producers. In 2022/2023, global cane sugar production amounted to 138 million, nearly 80% of global sugar production. Around 37% of the produced sugar (cane and beet) is traded, while the rest is consumed locally. In Bolivia and Nicaragua, comprising less than 1% of global sugar production, sugarcane production has slightly increased since 2019, to 10.0 million tons in 2021 and 7.1 million tons in Nicaragua, respectively. In 2022/2023, Bolivia and Nicaragua produced respectively 525,000 tons and 748,000 tons of cane sugar. In 2022/2023, world consumption rose to 176 million tons, a 1.6% increase from the previous year. Nicaragua consumes 37% of its sugar production, and Bolivia consumes 85%. As ethanol is not included in the number, domestic use is slightly higher.

Disrupting factors. Global sugarcane production and consumption declined between 2019-2021 because of the effects of the COVID-19 pandemic and Russia's invasion of Ukraine. Furthermore, weather-related production shortfalls in major producing countries due to climate change and crude oil price volatility remain significant sources of uncertainty in the global sugar market. At the same time, sugar cane production is expected to continue growing, driven by population growth, particularly in developing countries.

Price developments. Since November 2022, international sugar prices have generally increased and reached the highest level since 2011, following reduced production expectations in China, the European Union, India, Mexico, and Thailand.

Top consumer companies and traders. Globally, five firms control a fourth of the international trade in raw and refined cane sugar. This is based on an annual production volume of 175 million tons of sugar (cane and beet). These traders are Wilmar, Alvean, Sucden, ED&F Man, and Czarnikow.

A major part of the two-third of local sugar from domestic wholesale, and the one-third of global traders will be sourced by seven FMCGs and ingredient companies. ABF, Coca-Cola, Nestlé, PepsiCo, Unilever, Kellanova and Diageo are the top seven global sugar sourcing consumer companies. In total, these seven companies accounted for around 16.3 million tons of cane sugar consumption in 2021, which is an estimated combined share of around 12% of global cane sugar production.

Links with Nicaragua and Bolivia. While neither traders nor FMCGs are transparent at all about where they source their sugar, some links were found. Out of the seven, only Nestlé and Coca Company publish a list of tier 1 sugar suppliers, though Nestlé's list is outdated (2020). For Coca-Cola, Diageo, and Bacardi, links could be identified with the sugar sector in either Bolivia or Nicaragua. There are possible links for ABF, Unilever and Nestlé, but none were identified for PepsiCo and Kellanova. Traders Wilmar, ED&F Man, Sucden and – to a lesser extent - Czarnikow could be linked with both countries as well as with either Coca-Cola or Diageo. No links could be established with Alvean. For both traders and FMCGs, it does not mean that no links exist. Some sugar is not traceable to individual mills due to decentralised production models.

Revenues and profitability in Bolivian and Nicaraguan sugar sectors in 2022. In Bolivia, the four mills generated net revenues of US$ 379 million. The total gross profit (revenues minus input costs of raw materials) was US$ 98 million, and the operating profit (gross profit minus operating expenses, including salaries/wages) was US$ 58 million. The total wage sum in the sugarcane sector is US$ 288.5 million. This was 80.3% of the revenues. The unskilled wage was 85% of the living wage level.

In Nicaragua, there is no public data on the various companies' profit and loss and balance sheets. Based on sugar sales, energy sales and molasse sales, total revenues by sugar millers are estimated at US$ 650 million. Based on the weighted average margins of Bolivia and Peru, the total gross profit of the group is estimated at US$ 228 million, and the operating profit is US$ 145 million. The total wage sum is estimated at US$ 289 million. This is 44.5% versus revenues. The sugar sector wage is 36% of the basic needs. For cane harvesters, the monthly salary in the harvesting season covers 57% of the Basic Basket.

In three years' time, profits surged in the sugarcane chain. FMCGs and supermarkets still earned the majority of profits. The total value generated in the global cane sugar supply chain, is estimated at US$ 491 billion (2022). The chain generated a total gross profit of US$ 153 billion. The operating profit was US$ 44 billion. This was much more than in 2019 (US$ 27 billion). This is due to higher global sugar prices and margins for the millers, and strong pricing power for the downstream companies (based on their brands' strength). Compared to 2019, embedded cane sugar increased substantially for millers (US$ 10.9 billion, or +215%), biofuel companies (US$ 1.1 billion, or + 493%), and all downstream actors (>24%).

The downstream sector takes a major part of the gross profit, 68%. They earned 54% of the operating profit, of which 40% by FMCGs, 12% by supermarkets and 2% by foodservice. In 2022, the high sugar price and high operating margins will have led to a relatively high profit share for millers (35.9% of operating profit). Local wholesalers globally will have earned 5.4% of the operating profit, global traders 2.1% and biofuel companies 2.9%. In 2022, the pricing-up has been from an index of 100 (millers' input price) and world price level, to 446 for the top brands sold by retailers.

Table 1 Profit distribution and Price-setting in embedded sugarcane chain

	Profit Distribution* (%)	US$/ton 2022	Index 2022
World market price		412	100
Millers	35.9%	518	126
Local wholesalers	5.4%	727	176
Global traders	2.1%	483	117
Biofuels	2.9%	457	111
FMCGs + other manufacturers	40.3%		
Global		1312	318
Top Brands		1636	397
Supermarkets	11.5%		
Global		1640	398
Top brands sold by retailers		2045	496
Foodservice/others	1.9%	1640	398

Source: Profundo; *) Based on cane sugar-based operating profit

The 10 companies that generate most operating profit on (embedded) cane sugar, earned 10% of the total gross profit in all chains and 11% of the operating profit. Six out of 10 are FMCG companies, there are three traders and one large fuel company. Coca-Cola is the company with the highest operating profit linked to embedded cane sugar, US$ 2.7 billion.

Bolivia and Nicaragua: wages versus Basic Basket level in perspective; the top-10 companies in cane sugar sourcing would need to raise prices by 0.08% to pay for living wages in the two focus countries. A wage rise to the living wage level would require US$ 49 million in Bolivia and US$ 220 million in Nicaragua. Compared to sugarcane millers' operating profit, this is 279% and 814%, respectively. This means that the local sugarcane sectors, despite the strength of the (global) sugar price, would face a significant challenge in paying for a wage increase to the living wage level.

If the top-10 companies would pay up in sugar sourcing costs to fund a wage rise in the local Bolivian and Nicaraguan sugarcane chains, the US$ 269 million extra wage bill would significantly exceed the top-10's profits on embedded sugarcane. It would amount to 604% of the embedded sugarcane operating profit. However, it must be considered that the sourced sugarcane is spread in a large part of the global product portfolio of the top-10 companies. Compared to global profit, the percentage is 0.39%. If only the FMCGs in the top-10 would pay higher sugar prices, this would be 0.08% versus revenues and 0.45% versus profit. In other words, these FMCGs would need to raise prices by 0.08% to pay Bolivian and Nicaraguan sugar workers a wage in line with a living wage level.

Abbreviations and terms

Basic Basket	Living wage excluding several items like housing
Bs	Bolivian pesos
COGS	Cost of goods sold
C$	Nicaraguan Córdoba
Embedded sugar	Sugar that is mixed in other products and difficult to recognise as refined sugar
FMCGs	Fast-Moving Consumer Goods companies
Gross (profit) margin	Gross profit as % of revenues
Gross profit	Revenues minus COGS (cost of goods sold)
Net profit	Profit after tax payment
Operating (profit) margin	Operating profit as % of revenues
Operating profit	Revenues minus operational costs
Pricing-up	COGS plus gross profit
YoY (growth)	Year-on-year (growth)

Introduction

Worldwide, people working in the sugarcane plantations and the local cane sugar industry are paid salaries probably well below a living wage. To address this situation, CNV Internationaal intends to support local unions with research and knowledge about the profit that is earned in the downstream segments of the cane sugar value chain. The increasing revelations about the low salaries in the upstream segments, contrast with the earnings generated downstream, often by (global) brands and large companies. This should raise the consciousness of large companies and their owners and financers. In this context, they should take accountability for paying higher wages in upstream segments of the chain and reduce salary differences between companies. For instance, Coca-Cola might source from companies with very low wages, while competitors are sourcing from companies with better wages.

For this report, the cane sugar supply and value chains in Bolivia and Nicaragua have been analysed. **The focus is on where the profit value is generated within these countries' value chains and embedding this in the global context of the main downstream companies profiting the most from the cane sugar trade.** This report builds upon the knowledge, methodologies, and relevant data that have been developed and collected in the 2021 report "*The Sugarcane Value Chain in Latin America and Asia*". That report is referred as the 'Basic 2021 Report'.[1]

1

Methodology

This report applies various methodologies in supply chain analysis, and profit distribution analysis. This section explains the methodologies.

1.1 Supply chain links with large global downstream companies

First, the supply chain links with global downstream consumers of cane sugar have been investigated: links for cane sugar between key upstream processors in Bolivia and Nicaragua and downstream (branded) Fast-Moving Consumer Goods companies (FMCGs). With a few exceptions, most FMCGs are still not transparent about where and from whom they source sugar. Therefore, links had to be established through a variety of methods. Apart from suppliers' lists, other sources used to map connections included shipment data, company websites, annual and sustainability reports of traders, FMCGs, and market reports.

Data and statistics about global production, trade, and consumption volumes were found in annual and sustainability reports, and databases with trade statistics (USDA, FAO).

1.2 Bolivia and Nicaragua update on living wages, wage level, and profits

Local consultants have collected updated information on:

- Current wages for sugarcane workers/agricultural sector workers and local sugarcane processors/processing industry. The total wage sum and number of employees, and/or the average wage per employee, or the wage paid per worker.
- Revenues, gross profits, operating profits in the various levels of the local sugarcane supply chain.
- In addition to the global supply chain work by Profundo, the local consultants have searched for info on supply links between the sugarcane processors and which plantations they source from. This information has been looked for in annual reports, or annual press, or other data (all public data).

1.3 The profit distribution model: update

The profit distribution model has a crucial position in this report. This part of the analysis first focusses on how key players in the sugarcane chain add value to the processed or embedded sugarcane product. Subsequently, the field-to-fork price setting can be calculated, and conclusions can be drawn on the actors in the chain that benefit most from the trade of sugarcane and its products.

The underlying calculation is based on the estimated embedded sugarcane or cane sugar volume multiplied by the sourcing price in the relevant part of the chain. In each step of the supply chain, value is added to the sourcing price. This results into a sales price per ton embedded material that is higher than the input price per ton. As a consequence, embedded sugar faces an escalation in value during its journey through the supply chain. Companies are not accounting for gross profits and operating profits on every sourced ingredients (of which cane sugar is only one). Therefore the gross margins and the operating margins of the whole companies have been applied to calculate the gross profit on embedded sugarcane for each company and for each level in the supply chain.

Subsequently, when the crucial companies in each supply chain are covered, the outcomes have been estimated for the rest of the sector in each level of the supply chain. The result is a model with different levels of Gross and operating profit margins for each level of the supply chain. This methodology, which was developed by Profundo, has been applied previously to assess other international value chains and it was approved by three peer reviewers.[2] Summarising, most important components for this analysis are:

- Volume of (embedded) sugarcane or cane sugar in each part of the value chain.
- Local price of sugar in 2022, and world market price.
- Net revenues, gross profit, and operating profit in each part of the chain.

For the current report, Profundo has updated the profit distribution model. The 2022 turnover, gross profit, and operating profit has been analysed, and the pricing-up ratios have been updated.

1.4 Integration upstream and downstream data

The next step: the data from the local consultants and the global analysis of the different levels of the supply chain have been integrated. This results into various tables that show how the total profit in the sugarcane supply chain is divided between upstream and downstream. Furthermore, it results in a complete picture how global sugar prices have escalated through the pricing-up and value-adding processes in the whole supply chain.

1.5 Opportunities to raise upstream wages

This part includes an analysis on the impact of an increase of sugarcane workers' (and eventually sugar mill workers') salaries/payments to a living wage level on the global downstream/FMCGs finances as well as the finances of the local milling companies. The gaps between the local sugar sector wages and the living wage are calculated. The result is a total additional wage sum that is needed to raise the local sectors' wages to clos ethe gap to a living wage. This sum is compared with:

- The total revenues and operating profits of the local/upstream sugar sector.
- The revenues and profits of the Top-10 sugar sourcing multinationals.
- The revenues and profits of the FMCGs in this group of top-10.

Subsequently, an estimate has been made for how much the sales prices of leading downstream actors need to rise to pay for higher sugar sector wages in Bolivia and Nicaragua.

2

The global sugar context

This section provides a global overview of the global sugar market and zooms in on sugarcane production as the key sugar crop. It furthermore looks at key characteristics of the global sugar market, market developments since 2019 and since the Basic 2021 Report, as well as the top actors involved in the production, trade, and processing globally.

2.1 Global sugar production: not much change

Sugar is produced from two main crops: sugarcane and sugar beet. About 110 countries globally produce sugar from either cane or beet, and eight countries produce sugar from both cane and beet. Sugarcane, on average, accounts for nearly 80% of global sugar production and it's the focus of this report.[3] In contrast to the annual sugar beet, sugarcane is a perennial crop that grows mainly in the tropical and sub-tropical regions of the world.

In terms of production and area of cultivation, there has not been much change since 2019. Globally, sugarcane was cultivated on 27 million hectares in 2021, resulting in a sugarcane harvest of 1.9 billion tons, as was the case in 2019. The largest producers of sugarcane are Brazil and India, with shares of respectively 38% and 22% of global production in 2021. These percentages have not much changed 2019.[4] In 2022/2023, global sugar production amounted to 175 million tons, of which 138 million cane sugar and 36 million beet sugar. A year earlier, 2021/2022 global cane sugar production was 142 million tons.[5]

Looking at the top-10 sugar producing countries, China and Pakistan bypassed Thailand regarding production volume. Production in Colombia saw a dramatic fall of almost a third since 2019.

The volume of sugar (beet and cane) exported globally in 2022/2023 reached 64.3 million tons, a decline of 4.9 million tons from the previous year's 64.8 million tons.[6] This means that around 37% of the produced sugar is traded, while the rest is consumed locally. No distinction could be made between cane and beet sugar.

In both Bolivia and Nicaragua, sugarcane production slightly increased since 2019. For Bolivia, sugarcane production increased from 9.6 million tons in 2019 to 10.0 million tons in 2021. In Nicaragua, this increased from 7.0 to 7.1 million tons. Together, those two countries represent less than 1% of global sugar production.[7] In 2022/2023, Bolivia and Nicaragua produced respectively 525,000 tons and 748.000 tons of cane sugar.[8]

Global sugarcane production declined between 2019-2021 because of the effects of the COVID-19 pandemic, but it rebounded mainly due to increased production in India and Thailand.[9] Also Brazil, which saw a firm decline in production between 2020 and 2022, has been restoring production since.[10]

Despite market disruptions due to the pandemic and Russia's invasion of Ukraine, sugarcane production is expected to continue growing to meet rising demand, particularly in developing countries.[11]

2.2 Global sugar consumption

Sugar consumption is primarily driven by population growth, incomes, sugar prices and alternative sweeteners, as well as health concerns, energy prices and fuel demand. The pandemic has been another influencing factor, reducing consumption as a result of worldwide lockdowns.[12]

In 2022/2023, world consumption rose to 176 million tons, a 1.6% increase from the previous year. Significant markets are India, EU-27, China, the United States of America, Brazil, Indonesia, Russia, Pakistan, Mexico, and Egypt.[13] Domestic sugar consumption in Nicaragua amounted to 278,000 tons, and 445,000 tons in Bolivia in 2022/2023. This would mean Nicaragua consumes 37% of its produced sugar volumes and Bolivia 85%. As ethanol is not included in the number, domestic use is slightly higher.

Global sugar consumption is forecast to continue increasing, mainly in Africa and Asia, driven by population and income growth. At the same time, this growth forecast will be limited due to reduced global economic growth in 2023 and high world sugar prices.[14]

2.2.1 Key developments in last two years

Some notable developments have affected the global sugar market. Russia's invasion of Ukraine, weather-related production shortfalls in major producing countries due to climate change, and crude oil price volatility remain significant sources of uncertainty in the global sugar market.[15] Energy (petroleum and gas) and fertilizer prices have risen, affecting sugarcane growers through increased input costs, leading to lower fertiliser usage.[16]

Since November 2022, international sugar prices have generally increased and reached the highest level since 2011. Prices rose from USD 386.8 per ton in October 2022 to USD 560.0 per ton in May 2023, following reduced production expectations in China, the European Union, India, Mexico and Thailand. In Thailand, reduced sugarcane harvest in 2020/2021 resulted from widespread drought but was followed by a rebound in 2022 because of good rainfall. Added to this, Brazil - the world's largest sugar producer and exporter - had a slow start to the 2023 harvest due to heavy rains. A volatile Brazilian currency further affected export demand.[17]

However, this price hike is limited due to decreased international crude oil prices since mid-2022, driving the demand for sugarcane and increasing supplies.[18]

2.3 Main traders of sugarcane products

Globally, five firms control an estimated fourth of the international trade in raw and refined cane sugar. These traders are Wilmar, Alvean, Sucden, ED&F Man and Czarnikow. Table 2 provides an overview of the estimated volumes they trade.

Table 2 Top global sugar traders

Company	Headquarter	Ownership	Sugar volume (million tons)	Source
Wilmar	Singapore	Listed	15 (raw and white sugar, 2022), 3.2 sugar milling	19
Alvean (50/50 JV Cargill & Copersucar)	Switzerland	Private	>12 (2020/21), 4.9 traded sugar (21/22)*	20
Sucres et Denrées (Sucden)	France	Private	11.4 (included > 6 raw + refined) **	21
ED&F Man	UK	Private	5.6 sugar and sugar products	22
Czarnikow	UK	ABF	>4	23

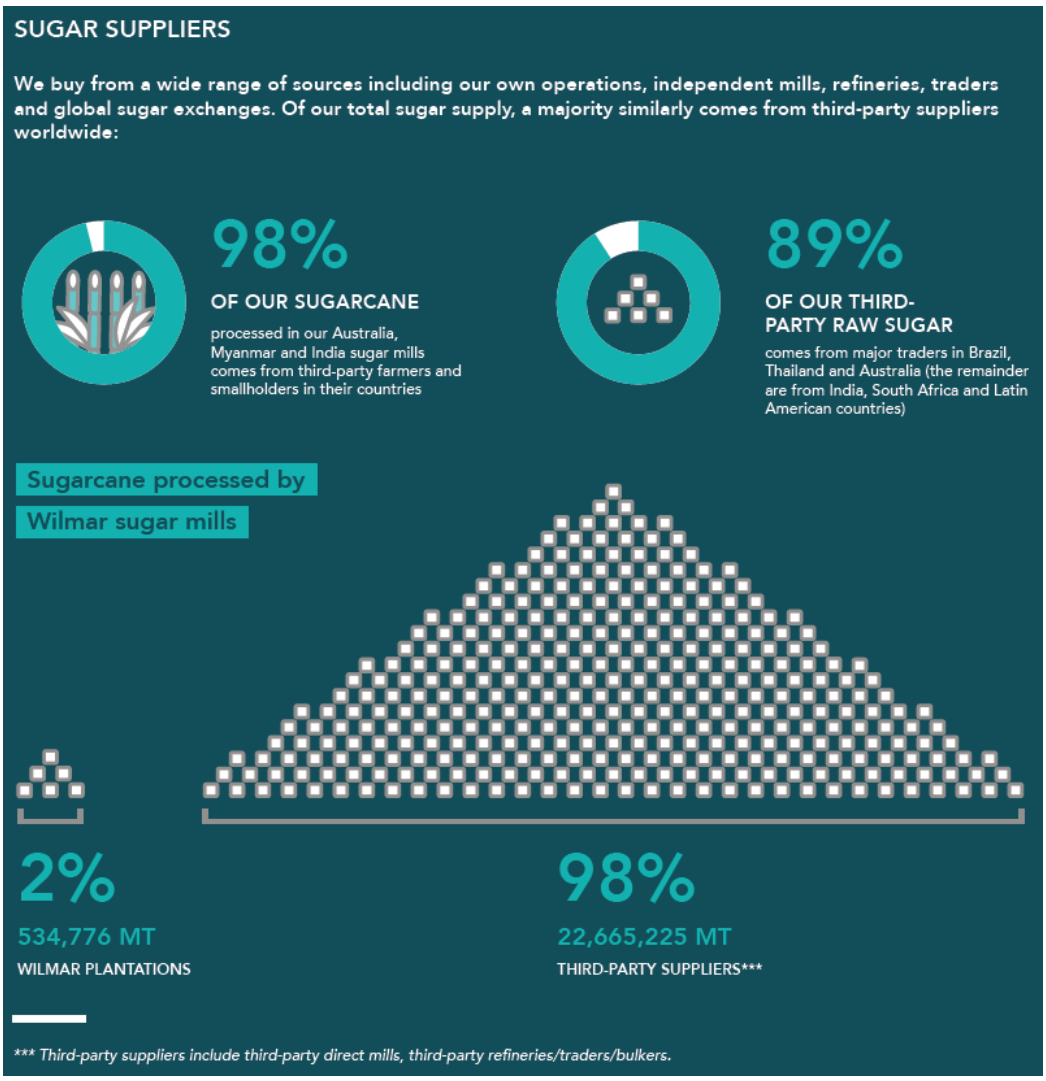
*Alvean is presented as the world's largest ** Sucden states it has approximately 15% global market share in the sugar trade.

Based on an annual production volume of 175 million tons sugar (cane and beet), these estimates suggest that these traders handle at least one-fourth of the global volume.

Wilmar

Wilmar states it is one of the world's top 10 raw sugar producers, producing raw sugar from sugarcane and beet.[24] In total, Wilmar processes 23.2 million tons of sugarcane annually, i.e. 98% by third-party suppliers and 2% by its own mills (Figure 1). According to its Annual Report 2022, Wilmar milled 3.2 million tons of sugarcane, and it processed/distributed 12.1 million tons of sugar.[25] In the same report, Wilmar says it trades 15 million tons of raw and white sugar annually.[26]

Figure 1 Wilmar sugar supply, 2022



Source: Wilmar (2022), *Sustainability Report 2022*, p. 185

Wilmar operates sugarcane and sugar beet mills in Australia, India, Myanmar, China and Morocco. About 80% of the raw sugar the company produces is shipped to overseas markets.[27] Besides sugar, the by-product molasses is used as an additive for livestock feed and to produce ethanol in Australia, India and Myanmar.[28]

Wilmar owns sugarcane mills in Australia (8), India (7), China (2) and Myanmar (2). Wilmar states that 89% of its 'third-party raw sugar' comes from Brazil, Thailand, and Australia, and the remaining 11% comes from India, South Africa, and Latin American countries, without specifying these further. Shipping data shows that Wilmar Sugar Americas Trading Pte exported 4.5 thousand tons from Nicaragua.[29] This company, based in Mexico, has links with ED&F Man Sugar, Sucden Americas Corporation, and Czarnikow (owned by ABF).[30] As total exports of sugar by Nicaraguan millers are in total 1.08 million tons, this is 0.4% of Nicaraguan sugar exports.

Links with customers are difficult to establish, but Coca-Cola mentions Wilmar as one of its sugar suppliers.[31]

Alvean

Alvean is presented as the world's largest sugar trader, in the Copersucar 2020-2022 Integrated Report.[32] In 2021, Copersucar acquired a 50% interest in the joint venture Alvean (born from partnership Copersucar/Cargill in 2014).[33] Alvean has an operating base in seven countries, i.e., Spain, Switzerland, Brazil, Thailand, Hong Kong, the United States, and China. Its 34 partner mills in Brazil annually crushed 83.2 million tons of sugarcane.[34] Alvean handled more than 12 million metric tons of sugarcane in 2020/2021. It traded 4.9 million tons of sugar in 2021/2022, of which 57% on the external market.[35] No supply chain links were found in either Bolivia or Nicaragua.

ED&F Man

In FY2022 the sugar division sold around 13.9 million of Bonsucro certified sugar, and 7.1 million tons of Fairtrade certified sugars, as well as over 30 million tons of organic sugar products.[36] It annual report 2022 states: *"The strongest performance was delivered by Sugar Trading with an Operating Profit of $84.2 million, followed by Molasses and Liquid Products ("MLP") with an Operating Profit of $59.4 million."*[37] According to shipping data, ED&F Man Sugar exports sugar from Nicaragua.[38]

In terms of value chain links, the following was found:

- The company supports a clean water project in Nicaragua. *"This project was sponsored by our supplier, Pantaleon, and was paid for jointly by ED&F Man and one of our rum-producing customers, Diageo.;"*[39]
- Nicaraguan sugar mill Monte Rosa is a supplier of ED&F Man;[40]
- ED&F Man supplies sugar to Czarnikow Sugar, which is owned by ABF.[41]

Sucden

Sucden sources, transports, stores, markets and distributes sugar, ethanol, and molasses, among other commodities such as cocoa and coffee. It claims a global market share of 15% in sugar trading, accounting for more than 6 million tons of raw sugar trade.[42] According to its Sustainability Report, the trader handled 11.4 million tons of sugar.[43] The Sucden Americas Corporation sources sugar from Nicaragua.

The following value chain links were found:

- Sucden sources from Nicaraguan sugar mills Nicaraguan Sugar Estates and Monte Rosa;
- Sucden is a sugar supplier of Coca-Cola.[44]
- Sucden also has links with ED&F Man, which supplies sugar to Czarnikow Sugar, which is owned by ABF.[45]

Czarnikow

CZ is jointly owned by ABF, Maquarie and an Employee Benefit Trust. The company trades in unrefined (raw) sugar from beet and cane, verified sustainable unrefined (raw) sugar, and molasses, all in bulk. The company sources raw sugar (> 4 million tons in 2022) from different countries in Asia, Africa and Europe.[46] Czarnikow sources sugar from ED&F Man, which has links with sugar mills in Nicaragua.

2.4 Main buyers of cane sugar

Major cane sugar consuming companies with global operations are listed in Table 3. In addition to the six companies mentioned in the Basic 2021 Report, Diageo is now also included. Bacardi was added too, as links were found with Nicaragua. But as no volumes were found, this company has been left out of the top-seven. In total, these seven companies accounted for an estimated 16.3 million tons of cane sugar consumption (data from various periods). Based on 138 million tons of global cane sugar production in 2022 and assuming stable sourcing, these companies processed a combined share of around 12 percent of global cane sugar production.

Table 3 Major cane-sugar consuming companies

Company	Volume sourced (est. ton, 2017)	Volume sourced (est. ton)	Source
Associated British Foods	1,700,000	6,440,524 (n.d.)	[47]
Coca-Cola	5,000,000	5,000,000 (2020)	[48]
PepsiCo	793,000	2,423,540 (2021)	[49]
Nestlé	1,250,000	2,008,000 (2019, 2020, 2021)	[50]
Unilever	400,000	250,833 ((2022)	[51]
Diageo		100,523 (sugar)+ 178.014 (molasses) (2023)	[52]
Kellanova (former Kellog's)	271,000	112,065 (2019, 2021)	[53]
Bacardi	Unknown	Unknown	
Total	**9,414,000**	**16,335,485****	

* These volumes are from different periods; **Molasses of Diageo are not included in this total.

Overall, cane sugar supplier transparency remains very low among consumer goods companies. Only Nestlé and Coca Company publish a list of tier 1 sugar suppliers. Nestlé publishes the company names and the sugar mill names in its supply chain, including country of origin, though the list is dated April 2020. Coca-Cola lists the names of sugarcane and sugar beet suppliers. No suppliers' lists were found for the other companies. The 'Global Sourcing Map', that ABF Sugar published in April 2019, stating that this map would contain information about the company's sugar growing, sourcing and exporting areas, which was presented as an act of transparency,[54] cannot be traced anymore.

While the large volumes of cane sugar are sourced from the leading producing countries like Brazil, India and Thailand, companies like Coca-Cola and PepsiCo are also part of the supply chain of sugar from smaller producing countries. This is presumably caused by their decentralised production model. As explained by the German sugar producer Nordzucker, some of its imports are raw cane sugar in bulk delivery which is exported from large shipping terminals that mix supplies from several sugar mills. This sugar is no longer traceable to individual mills. Where cane sugar is purchased for direct consumption, the commodity is delivered in bags that can be traced back to mills.[55]

ABF Sugar

ABF Sugar is a group of agribusinesses which together employ 30,000 people and operate 20 plants in nine countries, with the capacity to produce some 4.5 million tons of sugar annually. The company states it farms *"more than 330,000 hectares worldwide by ourselves, and by over 25,000 growers."* ABF Sugar produces around 4.5 million tons of sugar beet, and cane sugar.[56]

From the company's documents it does not become clear whether the company sources from Latin America. However, ABF owns Czarnikow, a sugar trader that sources sugar from ED&F Man.

In addition, ABF developed and funds a sugar campaign in collaboration with UNALA, the Latin American Sugar Producers Association. Together they have developed the Latin American Making Sense of Sugar website. Member organisations and enterprises from UNALA are from Argentina, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Mexico, and Nicaragua.[57] The campaign suggests the company has an interest in the region.

Coca-Cola

The 'Ingredient suppliers' list of Coca-Cola[58] lists Tier 1 sugarcane and sugar beet, corn, and orange juice suppliers, representing the top 80% of global spend for the company's 4 top priority ingredients by volume. In total 54 beet and cane suppliers are listed. The following suppliers appear to have a link with sugar producers from either Bolivia or Nicaragua:

- Pantaléon. This supplier has a stake in the Monte Rosa Sugar Mill in Nicaragua;[59]
- Sucden. Sucden Americas states that it operates mainly in North and South America and the Philippines, trading approximately 2,000,000 tons of sugar every year. Sucden Americas further states that: *"We also manage the Sucden Group's world market supply From Central and South American origins such as Guatemala, Nicaragua, Colombia, El Salvador, Costa Rica, Honduras and Argentina."*[60]
- Unagro. This trader imports sugar from Bolivia.[61]
- Wilmar. See more about Wilmar in section 2.3.
- Imperial Sugar. According to a 2018 media source, this trader sourced sugar from Nicaragua. *"Imperial Sugar, based in the state of Georgia in the United States, is the consortium that is buying in bulk thousands and thousands of tons of raw sugar that is produced in Nicaragua. Then this product is acquired by the largest soft drink companies in the world, like Coca-Cola and Pepsi Cola."*[62]

Apart from these links, the following information was found, showing likely links between Coca-Cola and Nicaraguan or Bolivian sugar mills:

- Bolivian sugar mills Unagro and Guabirá are both mentioned in a 2016 Coca-Cola supported study on child labor in the Bolivian sugar sector.[63] Because Unagro is a supplier, Guabirá might be as well, since the company is interviewed.
- Nicaraguan sugar mill Ingenio San Antonio (part of Nicaragua Sugar Estates Limited) is mentioned in a 2018 Coca-Cola supported study on child labor in Nicaragua sugar sector.[64]
- Coca-Cola also supports a 2023 campaign against child labor, in collaboration with the four Nicaraguan main sugar mills. This is shown in a YouTube video published on the website of the National Committee of Sugar Producers (CNPA).[65]

PepsiCo

While PepsiCo sources an estimated 2 million tons of sugar, the company does not communicate where it sources from. No supply links were found in Bolivia or Nicagua.

Nestlé

Nestlé has factories in both countries. The company sources both sugarcane and sugar beet, from more than 160 suppliers and 60 countries, including Brazil, Peru, Guatemala and Colombia.[66] It published a list of Tier 1 sugar suppliers, outdated April 2020, including mill names and countries where those mills are based.[67] This list does not mention any mill based in either Bolivia or Nicaragua.

Unilever

Unilever has two locations in both countries, but no supply chain links were found with sugar.

- Unilever de Centroamerica S.A. Nicaragua in Managua
- Unilever Andina Bolivia S.A. Bolivia in Cochabamba

Diageo

Diageo's Latin America and the Caribbean business include Central America and the Caribbean (not specifying Nicaragua, but assuming this country is included as value chain links were found) and Bolivia, among many other countries in that region.[68] According to its ESG Reporting Index 2023, Diageo buys more than 100,000 tons of sugar and 178,000 tons of molasses.[69]

From the Sustainability Report of the sugar trader ED&F Man, it becomes clear that Diageo is a customer. The trader describes a clean water project in Nicaragua: *"This project was sponsored by our supplier, Pantaleon, and was paid for jointly by ED&F Man and one of our rum-producing customers, Diageo."*[70]

Kellanova

While Kellanova sources an estimated 112 thousand tons of sugar, the company does not communicate where it comes from. No supply links were found in Bolivia or Nicaragua.

Bacardi

Bacardi imports black molasses from Nicaragua. Between 2019 and 2023, the company imported at least 160 thousand tons of black molasses from the country. One of the suppliers was Nicaragua Sugar Estates.[71]

3

The two focus countries

This section contains updated data for the Bolivian and Nicaraguan sugar sector (versus the 'Basis 2021 report'). Data on local revenues and profitability, including estimates, has been added. In Bolivia and Nicaragua, it is estimated that high global sugar prices have resulted in high revenues and profits for the sugar millers. The wages in the sugarcane sectors in both countries have been investigated and their relative position versus the living wage levels.

3.1 Introduction

The main market participants have been analysed, including the revenues and profitability of the sugarcane sectors in Bolivia and Nicaragua. In addition, the wage levels of the various workers are set against the value of a Basic Basket level. This data offers transparency about the opportunities and challenges for the local sugarcane sector and millers to adjust paid wages to a level of a Basic Basket or a living wage.

The sugarcane and cane sugar produced in both countries are used in food and beverages. It is used for soft drinks, sweetened beverages, convenience foods, fast food, candy, confectionery, baked products, and other sweetened foods. Sugarcane is used in the distillation of rum.[72] Another part of the sugarcane (waste or the processed cane sugar) is used in/for biofuels.

3.2 Bolivia

3.2.1 Market and main local millers/processors: Bolivia

Bolivia produced 0.5% of global sugarcane production in 2021.[73] In Latin America, it was the eighth-largest sugarcane producer. In 2021, 184,441 hectares were used for sugarcane production.[74] The production of sugarcane in the Santa Cruz department during the 2022 agricultural campaign was 9.1 million tons. In Santa Cruz, 5,700 sugarcane producers are active, of which 570 are large growers, producing 75% of the total. The sugarcane growers are organized in cooperatives. These organizations are affiliated with the sugar mills in the case of Guabirá, Unagro and Aguaí. Nationwide, 10.1 million tons sugarcane was produced.

At the national level there are two large regions dedicated to the production of sugarcane, being Santa Cruz and Tarija. Santa Cruz region dominates with 94% of all sugarcane produced, Tarija produces 2.5% of the total.[75]

Industrial ethanol production gets approximately 30% of the production of sugarcane, and 70% is for sugar production. Of alcohol ethanol production, 25% is for drinkable alcohol and the rest for ethanol.[76]

Exports must comply with national quotas. Important export destinations are Brazil, Peru, and the United States. The value of exports is relatively small in the total cane sugar production and total revenues of the four leading companies. The total export was US$ 8.9 million in 2022 and 12 million tons, substantially down from 2021 (US$ 12.0 million, 21.1 million tons).[77]

Guabirá Sugarcane Growers Union and 38 affiliated institutions supply the Guabirá Sugar Mill, representing 1,525 sugarcane producers. Ground cane is approximately 2.81 million tons (FY2023. In FY2024 2.99 million). Unagro had ground cane of 1,77 million tons (FY 2024: 1.88 million). It is a union of 1,300 sugarcane growers. CIASA had 1.03 million tons of ground cane (FY 2024: 1.47 million), with 1,100 sugarcane growers associated. Aguaí has 1.98 million ground cane (FY2024: 2.17 million ton). This cane comes from approximately 100 producers with plant an average of 30,000 hectares. Poplar Capital has 0.65 million ground cane (FY2024: 0.81 million ton), with around 800 growers.

The dynamic between the sugarcane grower and the mills is as follows. Sugarcane growers own the sugarcane plantations, while also some sugar mills have agricultural properties. Sugarcane growers are shareholders of the sugar mills and receive dividends. Sugarcane growers have purchase/sale contracts with the mills. A part of the sugar mill output can be marketed by the growers. The price of sugar is sensitive to international prices.

Table 4 Bolivia: Production data for four mills and total (March 2023)

US$ million (FY March 2023)****	Unagro	Guabirá	CIASA	Aguaí	Polar (Belgica)	Total*
Sugarcane (million tons)	1.77	2.81	1.03	1.98	0.65	8.20
Sugar production (mln quintals of 46 kg)	2.57	2.45	2.15	2.61	0.75	10.50
Sugar production (mln tons)	0.12	0.11	0.10	0.12	0.03	0.48
Ethanol/Alcohol (mln litre)	29.9	130.3	No data	68.0	No data	228.2
Energy (Kwh, million)	41.5	68.7	No data	170.0	No data	280.2

Source: Local researcher, based on national data; *) total includes the whole country; Data for FY2024 point to a higher production, but are not included in the table as not all data were available. FY2024 Sugar production for the four companies was respectively 0.12, 0.15, 0.13, 0.14, and 0.05 million tons.

3.2.2 Revenues and profitability in the sugar sector

The four mills (which reported financial data) generated net revenues of US$ 379 million. The total gross profit (revenues minus input costs of raw materials) was US$ 98 million, and the operating profit (gross profit minus operating expenses, including salaries/wages) was US$ 58 million. The gross profit margin reached 25.9% for the four companies' total, and the operating profit margin was 15.4%.

Although profits and profit margins seem high for the mills, the return on equity is low. The ratio was 5.1% for financial year March 2023, with large differences between the various companies. The return on equity calculates the annual net profit as percentage of the invested equity. The outcome of 5.1% is relatively low in an international context (for instance of globally listed companies). The low level can be attributable to a relatively high inefficiency of assets, or under-utilisation. Further analysis is not crucial for the current report.

Table 5 Bolivia: Financial data for four mills and total (March 2023)

US$ million (FY March 2023)	Unagro	Guabirá	CIASA	Aguaí	Total
Revenues (US$ million)	91.5	147.6	36.2	103.3	378.6
Gross profit (US$ million)	20.9	41.2	5.0	30.8	97.9
Operating profit (US$ million)	11.5	26.4	1.0	19.4	58.3
Net profit (US$ million)	4.6	13.5	0.8	9.7	28.6

US$ million (FY March 2023)	Unagro	Guabirá	CIASA	Aguaí	Total
Ratios					
Gross profit margin	22.9%	27.9%	13.8%	29.8%	25.9%
Operating profit margin	12.6%	17.9%	2.7%	18.8%	15.4%
Net profit margin	5.0%	9.1%	2.1%	9.4%	7.5%
Return on equity*	3.1%	10.8%	0.5%	7.8%	5.1%

Source: Local researcher, based on national data; *) Return on equity = net profit divided by equity

3.2.3 Employment and wage in the sugar sector of Bolivia

The General Labor Law in Bolivia was established on December 8, 1942 with XII titles and 122 articles, although none of them contemplated a space for the sector of sugarcane workers. This while in later years this group, together with the workers in the cotton harvest, would become a significant workforce, growing at the national level up to 160,000 peasants and indigenous people from communities of the cities in the west of the country.

In April 1983, the Supreme Decree 19524 came into effect, incorporating rural wage workers into the scope of the General Labor Law. This decree established that the Ministry of Labor and Microenterprises would regulate its application. The Supreme Decree 20255 of May 24, 1984, regulated the incorporation of sugarcane workers and cotton harvesters into the General Labor Law: this regulated safety aspects and hygiene at the working place, medical care, professional risks and social security. Since then, various improvements in legislation for rural workers have been executed.

The total number of workers in agriculture and plantations led to an average employment of 250,000 workers in the last three years (until 2023). Focusing on the sugar sector, the following data are important:

- There are approximately 6,000 ‘zafreros’, which are the cane cutters.
- Additionally, the sugarcane production generates a mix of direct and indirect employment. Indirect jobs include transporters, truck drivers, mechanical services, industry personnel, maintenance of agricultural machinery, among others. Direct plus indirect, the sugarcane chain in Bolivia employs approximately 100,000 people. On every ‘canero’ (small plantation area, there are 5,700 of them), which are on average 13 hectares large, eight employees find employment.
- Data from the local researcher indicated that the mills gave employment to several thousand people. The latest estimate is 3,213. This includes 600 employees at Poplar Capital SA.[78]

The Basic 2021 Report indicated 35,000 plantation workers,[79] but new information from the local researcher led to an estimate of more than 100,000 jobs. Of this, 85% is indirect. The local consultant pointed to increased mechanization in the harvest.[80]

The harvest in Santa Cruz Bolivia generates for a part temporary employment. The direct jobs of the four largest mills in the country are the best paid compared to other stable industries. Indirect jobs, such as the 6,000 sugarcane cutters, which include men, women, and young immigrants of disadvantaged or marginalized groups, are the lowest paid and are unstable jobs.

The average wage of a worker in the sugar sector is approximately Bs. 3,925 for a specialised worker, and Bs. 2,990 per month for other workers (March, June 2023).[81] The harvesters are paid by tons. Approximately Bs. 30 (US$ 4.41).

The national minimum wage is established annually by the National Government. No worker should receive a salary below this amount. In 2022, the minimum wage was Bs. 2,250, and for 2023 the level is Bs. 2,362 per month.

Table 6 calculates the total wage sum in the sugarcane sector at US$ 288.5 million. This is 80.3% of the revenues.

Table 6 Bolivia: Wage and employment data

US$ million (FY March 2023)	Unagro	Guabirá	CIASA	Aguaí	Total
# of direct and indirect jobs					100,000
# of employees mills	600	1,034	550	379	3,213*
Annual wage unskilled**d workers (6.5 months, US$)	2,821	2,821	2,821	2,821	2,821
Annual wage skilled workers (12 months, US$)	6,836	6,836	6,836	6,836	6,836
Wage sum Direct + indirect jobs (US$ mln)					282.1
Wage sum mills (US$ mln)	2.9	5.0	2.7	1.8	15.5
Total wage sum (US$ mln) excluding double-counting					288.5
Revenues (US$ million)	91.5	147.6	36.2	103.3	378.6
Wage sum as % of total revenues					80.3%

Source: Local researcher, based on national data; Annual wage unskilled workers applied to wage sum Indirect workers, and annual wage skilled workers to employees at the mills. Double-counting deduction assumes that 3,213 employee mills are included in the total 100,000 number; *) including 650 of Poplar Capital mill; **) Sugarcane cutters in the 'unskilled group'.

The living wage level for families (five people) reaches Bs. 562 weekly (only with high-need products). It does not include cleaning, transportation or education expenses. Thus, a family spends an average of Bs. 2,248 monthly. The Bolivian Workers' Central (COB) says that the family basket should be Bs. 8,310 per month includes food, clothing, housing, education and various other costs. Thus, while the current minimum wage established by the government is Bs. 2,362, the minimum basket (based on minimally necessary products) is Bs. 2,248, compared to the complete family Basic Basket of the COB, Bs. 8,310. The complete family basket is at least 4 minimum wages.[82]

The conclusion is that 1) the information on a living wage level is scarce, 2) the Basic basket of the unions are not officially used, 3) the minimum wage is calculated on a base basket of which the composition is unknown. Therefore, the minimum wage can be starting point for a calculation of a more realistic living wage. If this is combined with the data from the Basic report 2021 containing information from five countries in Latin America, the living wage applied in chapter 5 is US$ 507 per month.

Table 7 Bolivia: Pro forma living wage level

US$/month	Low	High	Average Bolivia	Source
Bolivia	342	1,202		Government / Union
Colombia	466	688	577	Global Living Wage Coalition

US$/month	Low	High	Average Bolivia	Source
Guatemala	346	943	644	Government / Global Living Wage Coalition
Nicaragua	533	533	533	Government institution
Peru	274	274	274	Government
Average excluding Bolivia	405	610	507	

Source: Profundo, Local researcher based on local data, Basic Report 2021, updated for inflation

The unskilled wage is 36% of the Basic Basket (COB-based), and the skilled wage 47% (Table 8). Versus the updated/regional average living wage US$ 507 per month from Table 7, the unskilled wage in Bolivia is 85% of the living wage.

Table 8 Bolivia: Sugarcane sector wages versus Basic Basket

2022/2023	Total
Wage unskilled workers per month (in Bs.)	2,990
Wage skilled workers per month (in Bs)	3,925
Annual wage unskilled workers (6.5 months, US$)	2,820.8*
Annual wage skilled workers (12 months, US$)	6,836.0*
Basic basket per month, 5 people (Bs.)*	8,310
Living wage (calculated by Profundo in Bs.)**	3,505
Unskilled wage as % of Basic Basket	36%
Skilled wage as % of Basic Basket	47%
Unskilled wage as % of Living wage	85%
Skilled wage as % of Living wage	112%

Source: Local researcher based on local data; *) Based on Labor market survey in Bolivia; **) based on Table 7.

3.3 Nicaragua

3.3.1 Market and main local millers/processors: Nicaragua

Nicaragua produced 7.7 million tons of sugarcane in 2020/2021, representing 0.4% of global production.[83] This is largely used to produce sugar. The country produced 16.54 million quintals, or 0.8 million tons of cane sugar, of which 60% was exported (2022). According to official figures from the National Committee of Sugar Producers (CNPA), Nicaragua's sugar activity generates more than 4% of the Gross Domestic Product (GDP). In 2022/23, sugarcane production will have amounted to 7 million tons (-4% YoY). In 2022/23, there were labour shortages due to migration. For 2023/24, it is expected that sugarcane will be on 73,000 hectares (+1% YoY). In 2023/24, sugar production can reach 800,000 tons (+7% YoY), after 748,220 tons in 2022/23. Nicaragua's sugar industry benefits from relatively high domestic prices compared to world sugar prices, resulting from high import tariffs on sugar[84] and a 15% value added tax.[85]

Nicaragua has four processing industries (sugar mills) and over 800 independent cane producers. Of the 103,674 acres of land planted with sugarcane, 60% belongs to the processing industry and 40% to independent producers.[86] Of this production, 65% was exported and 35% was domestically used. Only the San Antonio mill company produces refined sugar; the others produce only white/raw sugar.

The domestic market leads to US$ 156 million 'sulfite' (a product made from refined white sugar and sulfuric acid) sales, and US$ 45 million refined sugar sales. In total, domestic sales generated US$ 201 million during the harvest season 2022/23.[87] In March 2023, refined sugar prices in the domestic market at wholesale and retail were in the US$ 0.40-0.47 per pound range, and white sugar US$ 0.35-0.39.[88]

Table 9 Nicaragua: domestic sugar sales

2022/23 (quintal pounds mln)	Sulfite	US$/quintal pound	Value sulfite (US$ mln)	Refined	US$/quintal pound	Value refined (US$ mln)	Total value (US$ mln)
San Antonio	1.00	34.0	34.0	1.281	35.0	44.8	78.9
Pantaléon/Monte Rosa	1.97	34.0	66.9				66.9
CASUR	0.87	34.0	29.6				29.6
Montelimar	0.75	34.0	25.5				25.5
Total	4.59	34.0	156.0	1.281		44.8	200.8
Total (mln metric tons)	0.21			0.06			

Source: Local researcher based on national data and interviews. Sulfite is a product made from refined white sugar and sulfuric acid

The export revenues are based on white/raw sugar (US$ 260 million) as well as refined sugar sales (US$ 34 million), in total US$ 294 million.

Table 10 Nicaragua: export sugar sales

2022/23 (quintal pounds mln)	Sulfite	US$/quintal pound	Value sulfite (US$ mln)	Refined	US$/quintal pound	Value refined (US$ mln)	Total value (US$ mln)
San Antonio	3.64	27.0	98.3	1.125	30.0	33.8	132.0

2022/23 (quintal pounds mln)	Sulfite	US$/quintal pound	Value sulfite (US$ mln)	Refined	US$/quintal pound	Value refined (US$ mln)	Total value (US$ mln)
Pantaléon/Monte Rosa	4.42	27.0	119.3				119.3
CASUR	1.00	27.0	26.9				26.9
Montelimar	0.59	27.0	15.8				15.8
Total	9.64	27.0	260.3	1.125		33.8	294.1
Total (mln metric tons)	0.43			0.05			

Source: Local researcher based on national data and interviews. Sulfite is a product made from refined white sugar and sulfuric acid

On top of sugar revenues, the industry generates revenues from molasses, sugar syrup, which is a by-product of cane sugar production. In total, 0.243 million tons of molasses have been produced, domestically sold (51% in 2022/23) and exported (49%). Molasses is used for alcoholic beverages and, for a minor part, for animal feed (the Basic 2021 Report concluded that industrial ethanol production lacks size).

Table 11 Nicaragua: molasses sales

	Million ton	US$/ton	Value (US$ mln)	Share
Domestic	0.125	110	13.8	
Exports	0.118	120	14.2	
Total	0.243		27.9	100%
Millers				
San Antonio			11.8	42%
Pantaléon/Monte Rosa			10.2	37%
CASUR			3.4	12%
Montelimar			2.5	9%

Source: Local researcher based on national data and interviews.

Another by-product is bagasse, or sugarcane pulp. This can be used for energy production. A part is used internally, and the majority (604 million Kwh) is sold to CNDC (National Load Dispatch Centre), and an additional amount is used for irrigation purposes. With a price of 20 cents per kWh,[89] this would lead to revenues of US$ 127 million. Nicaraguan sugar mills did not produce ethanol in 2022/23.[90]

Table 12 Nicaragua: Energy sold in harvesting season

	Kwh (million)	Kwh (mln) irrigation	Total kWh (mln)	Price/kwh (US$)*	Value energy
San Antonio	102.3	26.6	128.9	0.20	25.6
Pantaléon/Monte Rosa	151.4	0.1	151.5	0.20	30.1

	Kwh (million)	Kwh (mln) irrigation	Total kWh (mln)	Price/kwh (US$)*	Value energy
CASUR	147.3	5.1	152.4	0.20	30.3
Montelimar	203.0	5.3	208.3	0.20	41.3
Total	604.0	37.1	641.1**	0.20	127.3

Source: Local researcher based on national data and interviews; *) for energy prices, we applied Nicaragua energy prices from GlobalPetrolPrices.com; average of households and business, as data from local interviews (US$ 0.80/kWh) seemed relatively high; **) 641.1 is below the official 657 data as there appears to be a gap in official data.

3.3.2 Revenues and profitability in the sugar sector of Nicaragua

Based on section 3.3.1, the total revenues in sugar are US$ 650 million in the harvesting year 2022/23, including cane sugar, molasses, and energy.

Table 13 Nicaragua: total revenues sugar millers/processors

US$ million	Sugar	Molasses	Energy	Total
San Antonio	210.9	11.8	25.6	248.3
Pantaléon/Monte Rosa	186.3	10.2	30.1	226.6
CASUR	56.4	3.4	30.3	90.1
Montelimar	41.3	2.5	41.3	85.1
Total	494.9	27.9	127.3	650.1

Source: Local researcher based on national data and interviews, and preceding tables.

There are no public data on profit & loss and balance sheets of the various companies. Therefore Profundo has applied the average weighted margins of Bolivia and Peru (as they are accessible): a gross profit margin of 35%, and an operating profit margin of 22%. The total gross profit of the group is estimated at US$ 228 million, and the operating profit US$ 145 million.

Table 14 Nicaragua: revenues and estimated profits sugar millers/processors

US$ million	San Antonio	Monte Rosa	CASUR	Montelimar	Total
US$ million	Sugar	Molasses	Energy		
Sugar production (mln tons)	0.31	0.29	0.08	0.06	0.74
Molasses (mln tons)	0.10	0.09	0.03	0.02	0.24
Energy (kwh, million)	102.3	151.4	147.3	203	604
Revenues (US$ million)	248.3	226.6	90.1	85.1	650.1
Gross profit (US$ million), estimate	87.0	79.4	31.6	29.8	227.7
Operating profit (US$ million), estimate	55.2	50.4	20.0	18.9	144.5

Source: Local researcher based on national data and interviews, and preceding tables. Estimates gross profits and operating profits by Profundo, based on average margins in Bolivia and in Peru.

3.3.3 Employment and wage in sugar sector of Nicaragua

The agroindustry sugar sector generates more than 135,000 direct and indirect jobs in Nicaragua. Direct jobs are around 35,000, including permanent employees, temporary employees, and sub-contractors. The number of indirect jobs refer to the supply chain, distributors etc.[91] In the first nine months of 2023, the cane sugar industry is the fourth largest exporting sector in the country.[92] CONFETRAYD (the confederation of sugar sector workers), with 5,036 members (of which 19% female), is active in three of the four sugar mill companies (except for San Antonio).[93]

Table 15 Nicaragua: number of employees linked to sugarcane sector

Category	# 2023
Hired directly	35,000
Subcontracted/indirectly	100,000

Source: Local researcher based on national data and interviews.

The Nicaraguan Labor Code (Law 185) in its article 85 establishes that workers have the right to a minimum wage. That same article of the law establishes that the minimum wage will be set by the National Minimum Wage Commission, including unions, representatives of the companies and representatives of the State. The minimum wage is approved to be applied to different productive sectors, for which nine sectors (differentiated wages) were established, with the lowest wage being that of the agricultural sector, including sugarcane. The minimum wage in the agricultural sector is set at US$ 143 (C$ 5,196) per month. Within the agricultural sector, specific collective agreements have been made, also for the sugar sector, which include social benefits. Nationally, the sugar sector has achieved US$ 193 (C$ 7,005) per month.[94]

A part of the workers in the sugar sector cut the cane, i.e. the harvesters. They receive a salary based on the amount of cane they manage to cut per day. The cutting season is six to seven months. On average, they can earn US$ 303 (C$ 11,000) per month.

The Basic Basket of necessities monthly is worth US$ 533 (or C$ 19,358), including food, home necessities and clothing.[95] This means that the sugar sector wage is approximately 36% of the basic needs. For cane harvesters, the monthly salary in the harvesting season covers 57% of the Basic Basket level, but as they are only able to work 6-7 months per year in this sector, their annual salary covers only 31% of the Basic Basket level. The local consultant indicated that the workers whose salary covers 100% of the Basic Basket is considered to have a 'high salary'. This group is less than 15% of the country. The Basic Basket is an important reference for unions to improve the conditions of workers in the sugar sector.

Table 16 Nicaragua: minimum wages sugar sector, in context

US$	Per month	Per Year
Construction	320.4	3,844.3
Agricultural sector	143.2	1,717.8
Sugar sector	193.0	2,315.8
Cane harvesters	303.0	1,969.5
Basic Basket	533.3	6,400.2

US$	Per month	Per Year
Sugar sector wage/Basic Basket	36.2%	36.2%
Cane harvester wage/Basic Basket	56.8%	30.8%

Source: Local researcher based on national data and interviews.

By applying the annual wages in the sugar to the number of employees and harvesters (these count for 6.5 months due to the length of the harvest season), the total wage sum is estimated at US$ 289 million. This is 44.5% versus revenues.

Table 17 Nicaragua: Estimated wage sum sugarcane sector

US$ million	Total
Revenues of the four mill companies	650.1
Gross profit (US$ million), estimated	227.7
Operating profit (US$ million), estimated	144.5
Annual wage sugar sector (12 months)	2,315.8
Annual wage harvesters (6.5 months)	1,969.5
# of sugar sector workers	135,000
Total wage sum	289.3
As % of total revenues	44.5%

Source: Local researcher based on national data and interviews.

4

Price-setting, sales, and profits in the sugarcane value chain

This chapter sketches the changes to the value of a sugarcane product along the value chain, from field to fork. The analysis pays special attention to the downstream stakeholders in the value chain receiving the largest economic benefits.

4.1 Key actors in the sugarcane value chain

In the current report, the focus is on how the Bolivian and Nicaraguan value chains are integrated in the global value chain of cane sugar. Thus, the following actors have been identified in the chains of Bolivia and Nicaragua:

- Farmers of sugarcane, including workers;
- Millers/processors with cane sugar as output;
- Domestic wholesalers;
- (Global) traders in cane sugar which act on the global sugar market;
- Biofuel companies and resellers: companies that produce or re-sell ethanol and/or mix this with conventional fossil fuels and sell it to customers (business-to-business or to consumers);
- Fast-Moving Consumer Goods companies (FMCGs), including soft drink and food companies. In addition, ingredient companies and others;
- Food retailers/supermarkets who sell the products to consumers; and
- Food Service companies who sell the products to hotels, restaurants, and cafés.

4.2 Millers

In the Basic 2021 Report, the 'millers' section was based on six Peruvian companies that had published their key financial results (net sales, gross profit, operating profit). The gross margin range was from -17.7% to 29.7%. The average gross margin was 16.2% (2019 data). The average operating margin was 6.4%, and the pricing-up was 19%. In the current report, additional data is available from Bolivia. These are added to the updated data on Peru to have a broader basis for analysing the Latin American sugarcane mill sector.

The sugarcane millers are active in producing several sugar types, including sulphite, raw sugar, and refined sugar, as well as the production of alcohol and energy based on biomass. Local research in Bolivia has resulted in data for revenues, gross profit, and operating profit, which are crucial elements for the Profit Distribution Analysis.

Table 5 reveals that the gross margin in the Bolivian sugar mill activities is between 13.9% and 29.8%. In total, the four companies have a gross margin of 25.7%. This is below the margin in Peru (updated from Bloomberg). For Nicaragua, no information is available to calculate a gross margin. The operating margin in Bolivia is between 2.7% and 18.8%. In total, the Bolivian sector has an operating margin of 15.1%. This is also below the operating margin in Peru, which was 28.4% in 2022. This report applies the weighted margins of Bolivia and Peru to the rest of the global sugarcane milling sector.

The millers pay for the sugarcane, or are integrated companies, and have output as described above (sugar, ethanol/alcohol, and energy).

The price per ton of the four Bolivian millers/farmers was US$ 439 on average, including revenues from alcohol and electricity. This was substantially below the sales per ton generated globally, which was US$ 518. Guabirá had a relatively high outcome, but the other three millers showed a low outcome.

Based on the average sugarcane price of US$ 412 (cane sugar-based) in 2022, the global sugarcane milling sector generated a total value of US$ 72 billion in 2022 (2019: US$ 47 billion), a gross profit of US$ 25 billion (2019: US$ 7.7 billion), and an operating profit of US$ 16 billion (2019: US$ 3 billion). The 2022 outcomes are substantially higher than in 2019. This is because:

- The world sugar price in 2022 was much higher (US$ 412 versus US$ 284 per ton).
- And the margins of millers/farmers were substantially higher: a gross margin of 35.0% (versus 16.2%), and an operating margin 22.2% (versus 6.4%).

Table 18 Sugarcane millers: Focus countries and global

US$ million	Gross margin	Operating margin	Sugar (m ton)	Sales value	Input value	Gross profit	Operating profit	Price/ton (US$)
2022	**Co**	**Co**	**Sugar**	**Sugar**	**Sugar**	**Sugar**	**Sugar**	**Sugar**
Formula	**A**	**B**	**C**	**D=E/(1-A)**	**E=CxIP**	**F=AxD**	**G=BxD**	**H = D/E**
Input price (US$/ton)								412
Bolivia:								
Unagro	22.9%	12.6%	0.26	91.5	71	21	11	357
Guabirá	27.9%	17.9%	0.24	147.6	106	41	26	603
CIASA	13.8%	2.7%	0.10	36.2	31	5.0	1.0	362
Aguaí	29.8%	18.8%	0.26	103.3	73	31	19	396
Total four companies Bolivia			0.86	378.6	281	98	58	439
Total margin Bolivia						25.9%	15.4%	
Total margins Peru						43.1%	28.4%	
Average margins (weighted)						35.0%	22.2%	
Global milling/farmer sector			138.0	71,533	46,473	25,061	15,901	518

Source: Profundo; A and B are company margins. These are applied to the specific sugar-related activities

4.3 Domestic wholesalers

A global study by the International Sugar Organisation[96] showed that in more than eighty countries the local prices of sugar are higher than world market prices. The wholesale prices in these

countries were 40% higher and the retail prices were 100 % higher than world market price. These prices are based on local price regulation, import tariffs, and local conditions.

Of global sugar production, 37% is sold on the world market, and the majority (63%) on domestic markets. This percentage is applied to the domestic cane sugar trade (86.9 million tons). Both world and local 'sugar' will end up in the same chain of FMCGs and other processors. Consider that global cane sugar sourcing FMCGs, like Coca-Cola, have local activities in many countries.

For the local markets' wholesale sector, the above-mentioned 40% information has been applied, resulting in global gross profit margin of 28.7%. For the operating margin, the global traders' margin has been used (3.8%). Compared to the Basic 2021 report, the operating profit is 11% lower, but this is mainly based on a change in methodology, as well as slightly lower volumes, as the current report shows that more volumes are sold internationally (37% versus 33%).

Table 19 Domestic wholesalers cane sugar: global

US$ million	Gross margin	Operating margin	Sugar (m ton)	Sales value	Input value	Gross profit	Operating profit	Price/ton (US$)
2022	Co	Co	Sugar	Sugar	Sugar	Sugar	Sugar	Sugar
Formula	A	B	C	D=E/(1-A)	E=CxIP	F=AxD	G=BxD	H = D/E
Input price (US$/ton)								518
Domestic wholesale	28.7%	3.8%	86.9	63,206	45,066	18,140	2,386	727

Source: Profundo; A and B are company margins. These are applied to the specific sugar-related activities

4.4 Global traders

Over one-third of sugar, 37%, is traded on the world market. This percentage is applied to cane sugar, resulting in 51.1 million tons internationally traded. The volumes are traded by several large trading companies. The sugar volumes traded by these companies are 97% of the globally traded volumes.

Most companies provide public information on margins for their holding company, and not specific for the sugar business. Therefore, the margin of the holding companies is used to calculate the implicit profits on sugar and the pricing-up. The assumption is that the 51.1 million (metric) tons of cane sugar the companies' trade is sourced against the world market price.

The gross margin of the global traders is 14.6% (weighted average), and the operating margin is 3.8%. The value of sugar they are trading is US$ 24.7 billion after pricing-up (2019 US$ 17.3 billion), the gross profit US$ 3.6 billion (2019: 4.0 billion) and the operating profit US$ 0.9 billion (2019: US$ 0.9 billion).

The data for global traders are a mix of Wilmar and the other companies. Wilmar has two activities in sugar:

- The company trades 12.1 million tons sugar in its Feed and Industrial segment,
- It has 3.2 million tons sugar milling in its Plantation and Sugar Milling segment.

These divisions do not publish separate gross margins but give a segment result (including interest). The Feed and Industrial segment has a margin of 3.9%, and the Plantation and Sugar Milling 24.8%. The operating margin of the whole company is 4.3%. The last one has been applied for Wilmar. For the other companies, similar methodologies have been applied.

Table 20 Global traders cane sugar: global

US$ million	Gross margin	Operating margin	Sugar (m ton)	Sales value	Input value	Gross profit	Operating profit	Price/ton (US$)
2022	Co	Co	Sugar	Sugar	Sugar	Sugar	Sugar	Sugar
Formula	A	B	C	D=E/(1-A)	E=CxIP	F=AxD	G=BxD	H = D/E
Input price (US$/ton)								412
Wilmar International	20.5%	4.3%	15.3	7,940	6,309	1,631	345	519
Alvean (Copersucar)	2.6%	1.8%	12.0	5,079	4,948	131	90	423
ED&F Man 2022 & Liquid	6.0%	3.0%	5.6	2,457	2,309	148	74	439
Czarnikow (ABF)	31.4%	6.9%	4.0	2,404	1,649	754	165	601
Bunge	2.6%	1.8%	12.0	5,079	4,948	131	90	423
Sub-total/Average	14.6%	3.8%	49.6	18,447	15,751	2,696	696	483
Other	14.6%	3.8%	1.5	6,210	5,303	908	234	483
Average/Total	14.6%	3.8%	51.1	24,657	21,054	3,603	931	483

Source: Profundo; A and B are company margins. These are applied to the specific sugar-related activities

4.5 Biofuel producers and resellers

Of biofuel production in 2022 (188 million litres, of which 124 billion litres ethanol), 20% was based on sugarcane. Sugarcane based biofuels were 37.5 billion litres,[97] thus 30% of biofuel ethanol was based on sugarcane. The way how biofuels are made from sugarcane can be twofold: either from the by-product molasses when cane sugar is the main product, or from sugar when sugar production is sacrificed. The yield and needed sugarcane are different:

- From molasses: if one ton of sugarcane is crushed in a sugar factory, the yield is approximately 110 kg of sugar; the by-product molasses can be converted to ethanol and the typical yield is about 10 litres. In addition, bagasse, the fibre created when sugarcane is squeezed, can be used as biomass fuel.
- From syrup: if only ethanol is produced, which means sugar production is sacrificed, then about 76 litres of ethanol is yielded.[98] Another source indicates that one-ton of sugar (for which 10X the amount of sugarcane is needed) yields 141 gallons of ethanol (or 640 litres).[99] For the calculations in this report, the assumption is that one ton of cane sugar can produce 640 litres of ethanol/biofuel.

For the sugarcane supply chain, this means that biofuel production and revenues add to the total value of the supply chain. The 37.5 billion litre sugarcane-based ethanol would need approximately 58.5 million tons of cane sugar equivalent. This is divided as follows between the use of molasses (the by-product) and the direct use of sugar syrup (skipping the step of making cane sugar).

- A part is produced from molasses. Assuming 100% of molasses is used for ethanol, this would lead to 19 billion tons of ethanol.

- For the rest of sugar-based ethanol (37.5 minus 19 = 18.5 billion litres), cane sugar is sacrificed. This means an equivalent of 28.8 million tons of cane sugar (18.5/0.64) is sacrificed. These 28.8 million tons is 21% of global cane sugar production.

For the calculation of the global Profit Distribution Analysis, these 28.8 million tons is not applied but the 58.5 million tons, which is used as a proxy for the value of the biofuel chain.

Ethanol is produced at the local millers' level, but global energy operators like Shell produce ethanol. These international players also source ethanol from local companies to mix this with fossil fuels, following their own policies or government regulations. Ethanol is mainly made from sugar (Brazil is a leader) as well as from grains (corn/maize is prominent in the USA).

Shell promotes itself as one of the world's largest traders and blenders of biofuels. In 2022, Shell used 9.5 billion litres (2021: 9.1 billion litres) of biofuels to blend into its petrol and diesel products. This includes 3 billion litres from Raizen (sugar-based ethanol), in which Shell has a 44% stake. Shell indicates that of its biofuel feedstock (excluding Raizen), 8.1% comes from molasses and 3.1% from sugarcane.[100] This means that including Raizen, approximately 5.8 million of its biofuels are based on sugarcane.

Versus the Basic 2021 Report, the methodology has been further developed. In this 2023 updated version the input price is the world market price (in the Basic 2021 Report, a combination of world market price and domestic wholesale price). Versus the Basic 2021 Report, the volumes of sugar-based ethanol have increased and the profits are much higher. This is also due to higher profit margins of the relevant Shell Group divisions and those of the other companies active in biofuels.

Table 21 Biofuel sector in sugarcane chain: global

US$ million	Gross margin	Operating margin	Sugar (m ton)	Sales value	Input value	Gross profit	Operating profit	Price/ton (US$)
2022	Co	Co	Sugar	Sugar	Sugar	Sugar	Sugar	Sugar
Formula	A	B	C	D=E/(1-A)	E=CxIP	F=AxD	G=BxD	H = D/E
Input price (US$/ton)								412
Shell	11.1%	2.9%	5.8	2,695	2,396	299	78	
Cosan	22.6%	16.7%						
Alto Ingredients	5.6%	3.2%						
Rex American Resources	6.4%	3.0%						
Green Plains	3.8%	-2.7%						
Sector assumption*	9.6%	5.0%	52.6	24,010	21,706	2,304	1,212	
Total	9.7%	4.8%	58.5	26,705	24,102	2,604	1,290	457

Source: Profundo; A and B are company margins. These are applied to the specific sugar-related activities; *) unweighted average excluding Shell.

4.6 Fast-Moving Consumer Goods companies (FMCGs)

A major part of the 63% of local sugar from domestic wholesale, and the 37% of global traders will be sourced by FMCGs and ingredient companies. In section 2.4, the seven largest global sugar

sourcing FMCGs were mentioned: ABF, Coca-Cola, PepsiCo, Nestlé, Unilever, Diageo, and Kellanova.

Versus the Basic 2021 Report, in-depth analysis has been further developed. The assumption remains that 75% of cane sugar is used for food and beverage, and the remainder for biofuels which are also made from the by-products/waste of sugarcane. Versus the Basic 2021 Report, the operating margins of FMCGs have further increased.

The top-7 companies source 16.3 million tons of sugar, 12% of the total volume of cane sugar sourced by all global food companies. The top-7 realise a gross margin of 56.5% and an operating margin of 18.8%. These margin levels are strongly affected by the high margins from Coca-Cola, PepsiCo, and Diageo. Many food companies globally do not achieve these margins. Therefore, we assume, like in the Basic 2021 Report (with respect to 2019 data) a gross margin of 50% for the other companies and an operating margin of 10%. This results into an average gross margin of 51.1% (weighted), and an average operating margin of 13.2%.

In total, FMCGs generate embedded sugar value of US$ 135 billion (2019: US$ 84 billion), gross profit of US$ 66 billion (2019: 43 billion), operating profit of US$ 18 billion (2019: US$ 10 billion).

Table 22 FMCGs in sugarcane chain: global

US$ million	Gross margin	Operating margin	Sugar (m ton)	Sales value	Input value	Gross profit	Operating profit	Price/ton (US$)
2022	Co	Co	Sugar	Sugar	Sugar	Sugar	Sugar	Sugar
Formula	A	B	C	D=E/(1-A)	E=CxIP	F=AxD	G=BxD	H = D/E
Input price (US$/ton)								639
Coca-Cola Co	65.9%	29.3%	5.0	9,365	3,196	6,169	2,741	1,873
ABF (2023 16 Sep)	31.4%	6.9%	6.4	5,962	4,091	1,871	410	932
Nestlé	57.2%	16.7%	2.0	2,985	1,278	3,374	499	1,493
PepsiCo	68.6%	14.3%	2.4	4,921	1,547	1,106	702	2,033
Unilever	53.8%	16.0%	0.3	346	160	186	55	1,382
Kellogg's/Kellanova	31.3%	12.2%	0.1	102	70	32	13	930
Diageo (30/6/23)	74.0%	30.8%	0.1	246	64	182	76	2,455
Sub-total/Average	56.5%	18.8%	16.3	23,926	10,406	13,520	4,496	1,470
Other	50.0%	12.0%	87.2	111,499	55,750	55,750	13,380	1,278
Total	51.1%	13.2%	103.5	135,425	66,156	69,269	17,875	1,308

Source: Profundo; A and B are company margins. These are applied to the specific sugar-related activities.

4.7 Food retailers and food service suppliers

The FMCGs and ingredient makers sell their products to supermarkets and to wholesalers/foodservice suppliers. In this group, the supermarkets in most local markets generate most sales.

Supermarkets usually generate a gross margin of approximately 20%, and an operating margin below 5%. Wholesalers' high distribution costs can lead to lower operating margins compared to retail. Gross profit and operating profit by the retail/foodservice sector lag behind those of the FMCG sector.

Table 23 Food retail/service in sugarcane chain: global

US$ million	Gross margin	Operating margin	Sugar (m ton)	Sales value	Input value	Gross profit	Operating profit	Price/ton (US$)
2022	**Co**	**Co**	**Sugar**	**Sugar**	**Sugar**	**Sugar**	**Sugar**	**Sugar**
Formula	**A**	**B**	**C**	**D=E/(1-A)**	**E=CxIP**	**F=AxD**	**G=BxD**	**H = D/E**
Input price (US$/ton)								1,308
Supermarkets	20.0%	4.0%	77.6	126,961	101,569	25,392	5,078	1,636
on top brands								1,837
Horeca*	20.0%	2.0%	25.9	42,320	33,856	8,464	846	1,636
Total	20.0%	3.5%	103.5	169,281	135,425	33,856	5,925	1,636

Source: Profundo; A and B are company margins. These are applied to the specific sugar-related activities; Horeca = on-trade/others.

4.8 Summary of the value chain, global

4.8.1 2022 outcomes

The results generated in the preceding sections of this chapter form the basis for the finalisation of the Profit Distribution Model and help to understand who is earning what and who can take accountability for improving the wage conditions in Bolivia and Nicaragua.

The total value generated in the cane sugar supply chain, is estimated at US$ 491 billion. This is the sum of values embedded in each part of the chain (calculated in the earlier sections). The various chains generate a total gross profit of US$ 153 billion on this. The operating profit is calculated at US$ 44 billion.

Table 24 Embedded sugarcane values and profits in whole chain

US$ million (2022)	Value	Gross profit	Operating profit
Millers	71,533	25,061	15,901
Local wholesalers	63,206	18,140	2,386
Global traders	24,657	3,603	931
Biofuels	26,705	2,604	1,290
FMCGs	135,425	69,269	17,875
Supermarkets	126,961	25,392	5,078
Foodservice/others	42,320	8,464	846
Total	**490,808**	**152,533**	**44,309**

Source: Profundo, based on preceding tables

The downstream sector takes a major part of the gross profit, 67.7% (Table 25). The total of FMCGs, supermarkets and foodservice earned an estimated 53.7% of the operating profit, of which 40.3% by FMCGs, 11.5% by supermarkets and 1.9% by foodservice. In 2022, the high sugar price and high operating margins will have led to a relatively high profit share for millers (35.9% of operating profit). Local wholesalers globally will have earned 5.4% of the operating profit, global traders 2.1% and biofuel companies 2.9%.

Table 25 Embedded sugarcane values and profits (%-division) in whole chain

% (2022)	Value	Gross profit	Operating profit
Millers	14.6%	16.4%	35.9%
Local wholesalers	12.9%	11.9%	5.4%
Global traders	5.0%	2.4%	2.1%
Biofuels	5.4%	1.7%	2.9%
FMCGs	27.6%	45.4%	40.3%
Supermarkets	25.9%	16.6%	11.5%
Foodservice/others	8.6%	5.5%	1.9%
Total	**100.0%**	**100.0%**	**100.0%**
Total FMCG, supermarkets, foodservice	**62.1%**	**67.7%**	**53.7%**

Source: Profundo, based on preceding tables

In 2022, the pricing up has been from an index of 100 (millers and world price level) to 446 (for the top brands sold by retailers).

Table 26 Price-setting in embedded sugarcane chain

	US$/ton 2022	Index 2022
World market price	412	100
Millers	518	126
Local wholesalers	727	176
Global traders	483	117
Biofuels	457	111
FMCGs + other manufacturers		
Global	1,308	317
Top Brands	1,470	356
Supermarkets		
Global	1,636	397
Top brands sold by retailers	1,837	446
Foodservice/others	1,636	397

Source: Profundo, based on preceding tables.

The 10 companies that generate most operating profit on (embedded) cane sugar, earned 10.2% of the total gross profit in all chains and 11.3% of the operating profit. Six out of 10 are FMCG companies, three of them are traders and one is a large fuel company. Coca-Cola is the company with the highest operating profit linked to embedded cane sugar, US$ 2.7 billion.

Table 27 Top-10 companies benefiting from sugarcane

US$ million (2022)	Cane sugar-based value	Cane sugar-based gross profit	Cane sugar-based operating profit	% of global value chain operating profit
Coca-Cola	9,365	6,169	2,741	6.16%
Wilmar International	7,940	1,631	345	0.78%
Nestlé	2,985	1,067	312	0.70%
PepsiCo	4,921	1,106	230	0.52%
ABF	5,962	1,871	410	0.93%
Diageo (30/6/23)	246	182	76	0.17%
Alvean (Copersucar)	5,079	131	90	0.20%
Unilever	346	186	55	0.12%
Shell Group	2,695	299	78	0.18%
Kellogg's/Kellanova	102	32	13	0.03%
Total	**39,640**	**15,582**	**5,009**	**11.30%**
% of total value chain	**8.1%**	**10.2%**	**11.3%**	

Source: Profundo based on preceding tables; Value, gross profit and operating profit numbers are only based on the embedded cane sugar.

The top-10 companies' operating profits are for 7.3% based on embedded sugar. Coca-Cola's and ABF's operating profits depend most on cane sugar (21.8% and 24.7%, respectively), while Unilever's operating profit can be linked to only 0.5% embedded cane sugar.

Table 28 Top-10 companies' sugarcane profits as % of global profits

US$ million (2022)	Global operating profit	Cane sugar-based operating profit	Cane sugar-based operating as % of global operating profit
Coca-Cola	12,600	2,741	21.8%
Wilmar International	3,190	345	10.8%
Nestlé	16,597	499	3.0%
PepsiCo	12,325	702	5.7%
ABF	1,662	410	24.7%
Diageo (30/6/23)	6,341	76	1.2%

US$ million (2022)	Global operating profit	Cane sugar-based operating profit	Cane sugar-based operating as % of global operating profit
Alvean (Copersucar)	250	90	36.0%
Unilever	10,103	55	0.5%
Shell Group	3,524	78	2.2%
Kellogg's/Kellanova	1,875	13	0.7%
Total	68,467	5,009	7.3%
Total FMCGs	59,841	4,085	6.8%

Source: Profundo based on preceding tables.

4.8.2 2022 versus 2019

In 2022, the global supply chain in cane sugar generated much more operating profits than in 2019 (see Basic 2021 Report): US$ 44.3 billion versus US$ 26.5 billion (+67%). This is based on higher global sugar prices and margins for the millers, and strong pricing power of the downstream companies (based on their brands' strength). Compared to 2019, embedded cane sugar-based increased substantially for millers (US$ 10.9 billion, or +215%), biofuel companies (US$ 1.1 billion, or + 493%), and all downstream actors (>24%).

Lower profits are visible for local wholesalers and global traders. The decline for the global traders is due to a scope change: an increase in available data for companies other than Wilmar. These other companies had lower margins than Wilmar. For the local wholesalers, this new report applied a lower margin than in the 2021 report. If both corrections had not been applied, the total of these actors would have shown higher profits.

Table 29 2022 versus 2019 outcomes of Profit Distribution Analysis

US$ million (2022)	Cane sugar-based operating profit 2019	Cane sugar-based operating profit 2022	Change 2019 to 2022	% growth 2019 to 2022
Millers	5,048	15,901	10,853	215%
Local wholesalers	2,694	2,386	-308	-11%
Global traders	1,305	931	-374	-29%
Biofuels	217	1,290	1,073	493%
FMCGs	12,452	17,875	5,424	44%
Supermarkets	4,101	5,078	978	24%
Foodservice/others	683	846	163	24%
Total	26,500	44,309	17,809	67%

Source: Profundo based on preceding tables.

5

Opportunities to raise upstream wages

The high profits generated downstream, as well as the increased profitability in the whole sugarcane chain in recent years, could raise attention to the opportunity to raise wages and reduce inequality in payments in the upstream sector. Currently, workers on the field face low wages below living wage levels.

5.1 Introduction

This section summarizes the profitability of the upstream sectors in Bolivia and Nicaragua and the profits made by the mid- and downstream on the Bolivian and Nicaraguan cane sugar. This raises the transparency about the financial opportunities for the downstream companies to contribute to improved payments to workers in the upstream sectors of Bolivia and Nicaragua, respectively.

The major downstream buyers of cane sugar are not transparent about the countries and companies from which they source their sugar requirements. Supply chain research by Profundo revealed some interesting links. As the picture is incomplete, this section assumes that the sizeable downstream sugar buyers can be linked to Bolivian and Nicaraguan sugar production in proportion to the global market share of both countries' cane sugar sector.

The next step is to analyse the paid wages in Bolivia and Nicaragua in the various segments of the upstream. Subsequently, the different wage levels will be compared with a Basic Basket level and living wage in both countries. Then, a calculation can be made for a necessary wage sum increase. This increase can be set in a context with the profits generated by downstream actors, which can be linked to Bolivia and Nicaragua.

The applied Basic Baskets data for Bolivia and Nicaragua differ in scope and source. For Bolivia, the Bs. 8,310 (US$ 1,206) per month includes education, and the source is the Bolivian Workers' Central – COB (see section 3.2.3), while the Nicaraguan Basic Basket (C$ 19,358 or US$ 533 per month) is based on a smaller scope and calculated by a government agency.

5.2 The outcomes – local challenge

The total wage sum of the workers in the sugarcane sectors in Bolivia and Nicaragua are in total US$ 578 million.

A wage rise to the living wage level would require an additional US$ 269 million wage sum, or US$ 49 million in Bolivia and US$ 220 million in Nicaragua (see Table 30). Versus total revenues in the two countries, this is 26% (13% in Bolivia, and 34% in Nicaragua) and versus operating profit is 132% (84% in Bolivia, and 152% in Nicaragua). Thus, the local sugarcane sectors, despite the strength of the (global) sugar price, would face a significant challenge in paying for a wage increase to the living wage level.

Table 30 Wage bill challenges vs local sugarcane sector

2022/23	Bolivia	Nicaragua	Bolivia + Nicaragua
Living wage (US$)	507.2	533.3	

2022/23	Bolivia	Nicaragua	Bolivia + Nicaragua
Average wage per month, lowest in range (US$)	434.0	303.0	
Wage sum mills per year (US$ mln)	15.5	Na	
Wage sum plantations per year (US$ mln)	282.1	Na	
Total wage sum per year, excluding double-counting	288.5	289.3	577.8
Wage rise % to Basic Basket	17%	76%	
Additional wage sum	48.7	219.9	268.6
Local sugarcane sector			
Revenues	378.6	650.1	1,028.7
Operating profit	58.3	144.5	202.8
Additional wage sum as % of revenues	13%	34%	26%
Additional wage sum as % of operating profit	84%	152%	132%

Source: Profundo based on preceding tables.

5.3 The outcomes – global top-10 downstream companies

As mentioned above, moving Bolivia and Nicaragua wages in the sugarcane sector towards the living wage level would increase the wage bill in the two countries by US$ 49 million and US$ 220 million, respectively.

If the top-10 beneficiaries in the sugarcane supply chain would take responsibility for this, Table 31 shows the consequences. As the top-10 downstream companies provide no precise data, the assumption is that they source 0.35% of the cane sugar requirements from Bolivia and 0.54% from Nicaragua. Thus, respectively 0.35% and 0.54% of the value these companies have generated on embedded sugarcane globally comes from Bolivia and Nicaragua, or US$ 138 million and US$ 214 million, respectively. For operating profit, these numbers are US$ 17 million and US$ 27 million, respectively.

If the top-10 companies would pay up in sugar sourcing costs to fund a wage rise in the local Bolivian and Nicaraguan sugarcane chains, this would significantly exceed the top-10's profits on embedded sugarcane from the two countries. In Bolivia, 279% of the embedded sugarcane operating profit would be needed, and Nicaragua 814% (see scenario A in Table 31).

If the required wage increases for Bolivia and Nicaragua would be absorbed in the global profits generated on sugarcane, this would depress these profits by a total of 5.4% (see last column, scenario B). However, it must be considered that the sourced sugarcane is spread in a large part of the product portfolio of the top-10 companies. Compared to global profit, the percentage is much lower, in total 0.39% (last column, scenario B).

If only the FMCGs in the top-10 would pay higher sugar prices, this cost 0.45% versus operating profit. These FMCGs would need to raise prices by 0.08% to pay Bolivian and Nicaraguan sugar workers a wage in line with a living wage level (last column, scenario C).

Table 31 Wage bill challenges for top-10 downstream companies

2022	Bolivia	Nicaragua	Total/%
Top-10 downstream companies, key data (US$ million)			

2022	Bolivia	Nicaragua	Total/%
Global value generated on sugarcane			39,640
Global operating profit generated on sugarcane			5,009
Global revenues all activities			560,844
Global operating profit all activities			68,467
% sugar sourcing from Bolivia and Nicaragua	0.35%	0.54%	0.89%
Value generated on Bolivia and Nicaragua sugar by top-10 downstream	138	214	352
Operating profit generated on Bolivia and Nicaragua sugar by top-10 downstream	17	27	44
Additional wage sum Bolivia and Nicaragua towards living wage	48.7	219.9	269
Additional wage sum as % of:			
A- Sugar sourcing downstream from focus countries by top-10 downstream:			
Value generated on Bolivia and Nicaragua sugar	35.3%	102.9%	76.4%
Operating profit generated on Bolivia + Nicaragua sugar	279%	814%	604%
B- Global sugar sourcing / activities by top-10 downstream:			
Global value generated on sugarcane	0.1%	0.6%	0.7%
Global operating profit generated on sugarcane	1.0%	4.4%	5.4%
Global revenues all activities	0.01%	0.04%	0.05%
Global operating profit all activities	0.07%	0.32%	0.39%
C- Global activities by top FMCGs (excl biofuel + traders):			
Global revenues of top FMCGs	0.01%	0.07%	0.08%
Global operating profit of top FMCGs	0.08%	0.37%	0.45%

Source: Profundo based on preceding tables.

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