

## GLOBAL MARKET REPORT

# Banana prices and sustainability

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March 2023

## Market Overview

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**Global banana production continues to grow and meet increasing demand, though weather events, pests, and diseases affect supply.**

First domesticated in Southeast Asia, bananas have gone from being the first cultivated fruit to the most consumed and exported fruit in the world (ITC News, 2018; Reay, 2019; WorldAtlas, 2020). Bananas, along with plantains, are the fourth most important staple crop worldwide and are essential to maintaining food and nutritional security among 400 million people in producing countries (Banana Link n.d.; Guinness World Records, 2022). They are an important source of potassium as well as vitamins A and C (Reay, 2019). The banana plant is an herb that takes 10 to 18 months to go from planting to producing fruit. Bananas are typically harvested green 7 to 10 days before maturing (Hoose, 2021). Stems are manually cut off the plant from which many banana bunches or hands are extracted and sold in local markets or further processed.

Bananas destined for export are washed, cut into bunches of four to eight bananas, labelled, and packed into boxes for shipping (Dole, 2013). When consumed fresh, bananas are transported and stored in refrigerated environments. The transport and storage of bananas represent approximately 65% of their carbon footprint (Intrans, 2015; Secretariat of the World Banana Forum, 2017). After reaching their destination, bananas are artificially ripened by being exposed to ethylene gas at constant temperatures before being distributed to retailers and sold to end consumers.

An estimated 1,000 varieties of bananas are grown in 150 countries, 30 degrees north and south of the equator. They grow in tropical climates with average temperatures of 27°C and more than 200 cm of annual precipitation (Banana Link, n.d.; Food and Agriculture Organization of the United Nations [FAO], 2022b; Moyer, 2022). The Cavendish has become the most consumed and exported variety, now accounting for almost half of all varieties grown worldwide and nearly 100% of internationally traded fresh bananas (Cross, 2019). The banana plant is sterile, so it can only be replicated by

## LIVELIHOODS

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About 15,000 smallholders grow bananas for export markets in Ecuador, the Philippines, Colombia, Peru, and the Dominican Republic.

planting roots or cuttings from existing plants, resulting in very little to no genetic diversity at banana plantations (Reay, 2019); this makes them vulnerable to pests and diseases (India Today Web Desk, 2019; Reay, 2019). The Gros Michel, the most popular banana variety until the 1950s, was devastated in Central and South America by the *Fusarium wilt Tropical Race 4*, a deadly fungus found in soils (Cross, 2019). The Cavendish quickly replaced the Gros Michel and is now facing similar threats from emerging pests and diseases, including Tropical Race 4 and *Sigatoka* fungi, which could wipe it out in the coming years (Cross, 2019; Reay, 2019). Scientists are racing to find resistant varieties to these diseases and other challenges, such as climate change, so we can continue enjoying fresh bananas, an important source of nutrition for many (Wageningen University & Research, 2017).

The banana sector is a growing USD 25 billion industry, projected to expand at a compound annual growth rate (CAGR) of 4.5% between 2022 and 2027 (Crawford & Kueffner, 2020; Mordor Intelligence, 2022). The banana value chain provides direct employment to millions of people around the world (Evans & Ballen, 2018). For instance, more than 1 million workers were employed in the export banana sector

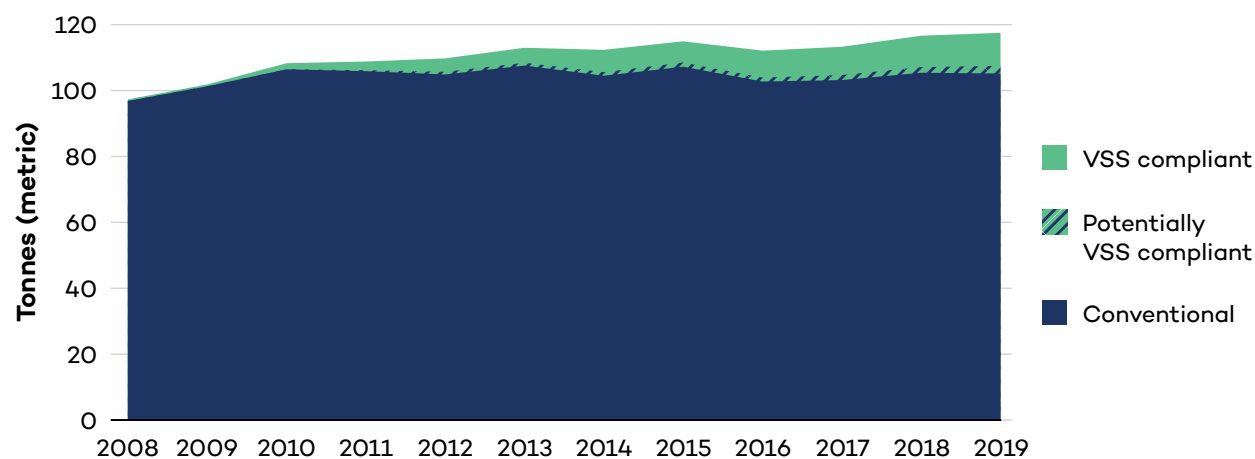
in 2020 (International Labor Rights Forum & Banana Link, 2017; Pinedo Caro, 2020). Bananas are grown on smallholder farms and large plantations around the world. Although most bananas grown in Latin America come from large plantations, there are still pockets of smallholder banana farmers. Ecuador, the Philippines, Colombia, Peru, and the Dominican Republic have about 15,000 smallholder banana farmers exporting to world markets. They are mostly certified Fairtrade and Organic (Banana Link, n.d.). The banana industry in the Dominican Republic, the largest producer and exporter of organic bananas, employs more than 20,000 people, including many migrants from neighbouring Haiti (Banana Link, n.d.). In Africa, foreign companies wholly or partly own most large- and medium-scale banana plantations. For instance, French or Belgian companies own all large- and medium-scale plantations in Côte d'Ivoire (Banana Link, n.d.). In Costa Rica, large multinational fruit companies own around half of the export production.

Banana production grew from about 97 million tonnes (Mt) in 2008 to almost 120 Mt in 2020 from cultivating 5.2 million hectares, according to the FAO (FAOSTAT, 2022). Banana production has slowed over the last decade, as its CAGR of 0.26% from 2008 to 2019 decreased to -0.35% from 2014 to 2019, likely because of weather events such as hurricanes, drought, and heavy rains, as well as pests and diseases. Although most banana production is consumed domestically, about 20% of global production was exported in 2020, providing an important source of foreign exchange revenues for exporting countries (Banana Link, n.d.; FAOSTAT, 2023). Since 2016, India, China, and Indonesia have consistently been the largest

producing countries to supply their domestic markets. Latin American countries have primarily remained the biggest exporting countries. The top exporting countries in 2020 were Ecuador, the Philippines, and Costa Rica (closely followed by Guatemala and Colombia), exporting some 7 Mt, 3.1 Mt, and 2.6 Mt, respectively (UN Comtrade, 2022). The European Union, the United States, and China were the largest importers in 2020, importing about 5.2 Mt, 4.7 Mt, and 1.8 Mt, respectively (UN Comtrade, 2022). Although the global supply of bananas depends greatly on weather, producers have generally been able to meet growing global demand (Hommel, 2019). Nevertheless, the surge in demand for bananas that occurred at the outset of the COVID-19 pandemic may have caused supply and demand imbalances in some countries (Cheon & Lee, 2021; Fresh Plaza, 2020, 2021).

The pandemic affected the banana sector in different ways in different parts of the world. On the whole, demand for bananas rose 1.7% in 2020 from 2019, as the fruit is a peel-protected, affordable, and nutritious home-consumable product that can boost immune systems (FAO, 2021a; Research and Markets, 2019). Demand increased significantly in the biggest banana importers—the European Union and the United States—which benefited some Latin American exporting countries that implemented effective mitigation measures. Ecuador, Costa Rica, and Colombia saw their banana exports grow by around 6%, 21%, and 7%, respectively, from 2019 to 2020 (FAO, 2021a). On the other hand, measures to restrict the movement of people in China, the third-largest importer, had dramatic impacts on Asian banana exports, which fell by 12% in 2020 from the previous year (FAO, 2021a). The Philippines was hit particularly hard by these measures and the effects of diseases in

**Figure 1.** Global banana production from 2008 to 2019: Bananas that comply with voluntary sustainability standards (VSSs) reached 9%–11% of total global production



Sources: FAOSTAT, 2022; Meier et al., 2021.

production that year, with exports dropping by 25% (FAO, 2020). African banana exports also declined in 2020 by 8% from 2019, as some negotiated contracts were put on hold and shipping costs increased (FAO, 2021a). For instance, Ivorian bananas shipped to France, a large importer of bananas from this country, were 26% more expensive than Colombian bananas. Although the impacts of the pandemic on the banana sector have yet to be fully ascertained, the sector seems to have remained resilient (FAO, 2021a).

## Climate change is already striking banana plantations and requires farmers to accelerate adaptation.

The global banana value chain will also have to tackle challenges brought on by climate change, which is predicted by one study to reduce suitable banana-growing areas in the subtropics by more than 1 million km<sup>2</sup> by 2050. Nevertheless, 5 million km<sup>2</sup> may become viable for banana cultivation in other regions by 2070. Recent temperature increases have helped improve productivity in 27 producing countries in Africa, Latin America, and Asia (Buckelew, 2020).

Research suggests that these gains may be wiped out as projected changes in climatic conditions may be advantageous to improving productivity in some banana-growing regions and disadvantageous in others (Varma & Bebbler, 2019). Global climate models used to explore climate and technology adoption scenarios in the sector indicate that a number of African banana-producing countries—such as Côte d'Ivoire, Tanzania, and Kenya—will

benefit from changing climatic conditions, while several Latin American and Asian countries—including Brazil, India, and Costa Rica—will need to adapt or be disadvantaged by 2050 (Varma & Bebbler, 2019).

Droughts are particularly concerning, as precipitation patterns are expected to become less reliable. An increase in the frequency of storms is already being felt. Storms have intensified in the Dominican Republic: banana producers there had to contend with 17 hurricanes in the 2017 growing season alone. High winds and flooding caused by hurricanes Maria and Irma damaged 5,000 ha of banana plantations. More recently, in 2020, hurricanes Eta and Iota damaged about 27% of banana production in Honduras, representing USD 17 million in losses (Banana Link, 2021a).

In the short term, the top challenge that climate change poses to the banana industry is its role in spreading diseases such as Tropical Race 4, which threaten to destroy the sector (Lauriat, 2020; Timmusk et al., 2020). Research conducted in Colombia found that changing climatic conditions raise the risk of spreading Black Sigatoka disease (Fones, 2020). Changing climatic conditions in the Philippines are expected to expand areas that are favourable to the Fusarium fungus to 67% of its banana-growing regions (Salvacion et al., 2019).

Banana producers will have to adapt to potential challenges brought on by changing climatic conditions, such as increased incidences of storms, droughts, and extreme heat events, as well as diseases, if they are to remain viable. An example is what happened to the Windward Islands in the 2000s and early 2010s when banana exports ground to a

halt due to the negative effects of hurricanes at plantations (Jim Prevor's Perishable Pundit, 2008; Reay, 2019). Banana farmers in various parts of the world have started to adopt climate-smart agricultural practices. For instance, banana workers in Costa Rica are benefiting from government and development agency efforts to improve their climate resilience by providing guidance to improve production practices. These practices include intercropping bananas with cocoa or fruit trees, which can prevent pests and diseases, or mulching to maintain soil moisture and prevent the emergence of weeds (Agencia Española de Cooperación Internacional, 2016). Ecuadorian and Dominican banana producers also benefit from shared research on agricultural practices, which includes assessing the effectiveness of organic farming in preventing the negative effects of drought and pests (Reay, 2019).

Improved water management in the sector is an important climate adaptation measure as precipitation becomes less reliable. As a response, banana farmers are demanding better weather-forecasting information and implementing drip irrigation systems, rainwater collection and storage, and mulching to preserve soil moisture (Reay, 2019). Excess water due to flooding can also hamper banana cultivation, as it creates an environment that is ripe for the spread of fungal diseases such as Black Sigatoka, which devastated the Guyanan banana sector in just 3 years (Reay, 2019). To improve the resilience of banana plants to such diseases, farmers are working to enhance general plant health via fertilization, removal of affected plants, and proper drainage (Reay, 2019).

Research on climate-resilient banana varieties is also ongoing, although it has recently

focused on developing disease-resistant varieties. Many banana growers are also diversifying their farming operations to improve their resilience to climate change. For instance, intercropped banana- and coffee-growing operations offer a synergistic growing environment, where banana plants offer coffee plants shading and fertilizer via plant residues.

Climate change mitigation opportunities exist all along the banana supply chain. The production of 1 kg of bananas results in 0.5 kg to 1.3 kg of greenhouse gases (GHGs) or 0.1 kg to 0.2 kg per banana (Reay, 2019). Reducing fertilizer and pesticide applications and decreasing fossil fuel consumption to power farming machinery are the main opportunities to reduce farm-level emissions. Organic farming offers direct insights into reducing the GHG emissions from banana cultivation, as it supports practices such as the use of cover crops, manure, and compost to help remove and store carbon in soils or the avoidance of chemical fertilizers (Paustian et al., 2019; Skinner et al., 2019). At the other end of the supply chain, avoidable wastage by retailers and end consumers also offers important climate change mitigation opportunities. For instance, 65,000 tonnes of bananas are wasted in the United Kingdom every year, which represents between 30,000 tonnes and 65,000 tonnes of avoidable annual GHG emissions (Reay, 2019). Finding an alternative to the transportation of bananas on refrigerated ships offers the greatest opportunity to cut GHG emissions, as the transport and storage of bananas account for up to two thirds of the total banana carbon footprint (Reay, 2019). Switching to more efficient refrigerated container ships could reduce GHG emissions by up to a third (Reay, 2019).

## VSSs can help build the resilience of banana plantations and tackle climate change, though VSS-compliant bananas are mainly concentrated in the main exporting countries.

Several efforts are underway to strengthen the sustainability and resilience of the banana sector so it can face challenges such as climate change. One of these efforts is implementing VSSs, which began in the banana industry in the early 1970s. VSSs define a number of requirements that producers need to comply with and support farmers in adopting them. For instance, all the schemes operating in the banana sector—GLOBALG.A.P., Rainforest Alliance, Fairtrade International, and Organic—require farmers to adopt soil preservation measures to maintain soil moisture and fertility. While Organic does not allow the use of chemical

fertilizers, the other three schemes require farmers to adopt integrated pest management systems to limit the use of fertilizers, maintain records of the amounts used, and apply the biological control of pests. These measures can have a positive effect on building the resilience of banana plantations, as they can keep the soil healthy and humid to cope with periods of drought and improve the management of pests and diseases. Some VSSs also recommend intercropping and agroforestry to further improve banana farming resilience (Elder et al., 2021; Voora et al., 2022). Implementing VSSs allows farmers to differentiate themselves from conventional banana producers in the marketplace (Voora et al., 2019). In exchange for adopting more sustainable farming practices, farmers can label their products as VSS compliant or produced in accordance with a standard (Organic Produce Network, 2018).

Some 15,000 farmers produced 10 Mt–12.35 Mt of VSS-compliant bananas in 2019 with a farm gate value of at least USD 2 billion–USD 3 billion, up by between 470,000 tonnes and 1.11 Mt from the previous year (Meier et al., 2021).

The most prominent VSSs in the banana sector in 2019 included in the dataset were Rainforest Alliance (9.24 Mt), Organic (1.87 Mt), and Fairtrade International (1.24 Mt). Growing at a CAGR of 32% to 35% between 2008 and 2019, VSS-compliant bananas represented at least 9% to 11% of total global production in 2019 (Meier et al., 2021). Nevertheless, there are signs that growth in the supply of VSS-compliant bananas may be slowing, as its CAGR dropped to 8% to 10% from 2014 to 2019. Although this drop signals that demand may be approaching an upper limit, the pandemic seems to have

### MARKET VALUE

A total of 10 Mt to 12.35 Mt of VSS-compliant bananas was produced in 2019 by almost 15,000 farmers, with a farm gate value of at least USD 2 billion to USD 3 billion.

### CAGR

Conventional production increased at a CAGR of 0.75% from 2008 to 2019 and at 0.13% from 2014 to 2019. VSS-compliant production grew at a CAGR of 32% to 35% between 2008 and 2019 but slowed to between 8% and 10% from 2014 to 2019.

boosted interest and demand for more healthy options, such as VSS-compliant bananas (Karst, 2021).

If we incorporate an estimated production volume of GLOBALG.A.P. for 2019<sup>1</sup> in the assessment above, which according to our analysis, is about 10.7 Mt to 11 Mt, and assuming that GLOBALG.A.P. farmers are not compliant with other VSSs, the total volume of VSS-compliant bananas increases to 20.7 Mt to 23.35 Mt, capturing 18% to 20% of the total banana market in 2019.<sup>2</sup> Based on this analysis, GLOBALG.A.P. would be the largest VSS in banana production (by volume) in 2019.

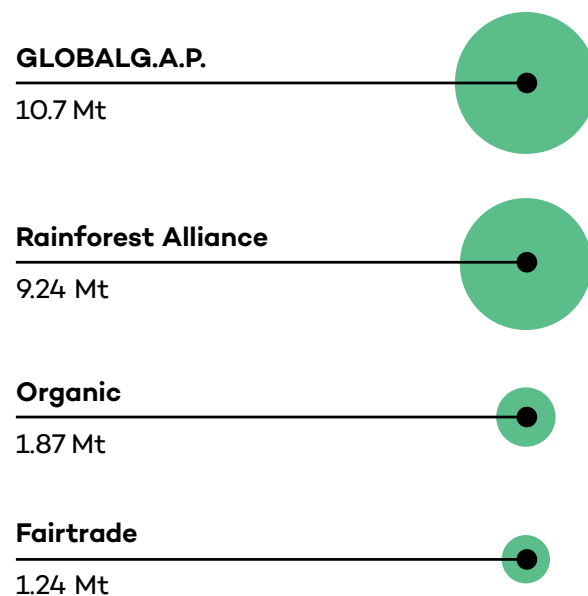
The majority of VSS-compliant bananas are sold in international markets, as Europe and North America are the main consuming markets (Meier et al., 2021). However, this does not mean that all VSS-compliant bananas are sold as such, with benefits for farmers such as increased prices and premiums.

For instance, according to our analysis, the total VSS-compliant production sold as such peaked at about 84% in 2012 and seems to have declined since then (Meier et al, 2021; Potts et al., 2014). Although there is no certainty that this declining trend has continued, due to a lack of data, ensuring that VSS-compliant bananas are sold as such is important to maintaining the viability of VSS-compliant farmers. Banana

producers who cannot sell their product as VSS compliant may not receive the additional revenues through higher prices and premiums needed to pay for various VSS compliance costs. Banana farmers also face the additional challenge of having to keep their prices low, as some retailers even sell bananas at a loss to lure prospective customers into their stores (Fairtrade International, 2022a; Organic Produce Network, 2022a). VSS-

## How many bananas are compliant with a VSS?

**Figure 2.** VSS-compliant banana production volumes in 2019



Source: Meier et al, 2021, except GLOBALG.A.P., which was estimated by authors.

<sup>1</sup> We estimated GLOBALG.A.P.'s production volume based on the reported GLOBALG.A.P.-compliant harvest area by country and the average yield from Rainforest Alliance, Organic, and Fairtrade International in each country in 2019.

<sup>2</sup> It is very likely that bananas complying with GLOBALG.A.P. may also comply with other schemes, such as Rainforest Alliance, Fairtrade International, or Organic. Considering the effects of potential double or triple certification in calculating the total volume of VSS-compliant bananas in 2019, we estimate that this total may range between 10 Mt and 23.35 Mt, or between 9% and 20% of total banana production.

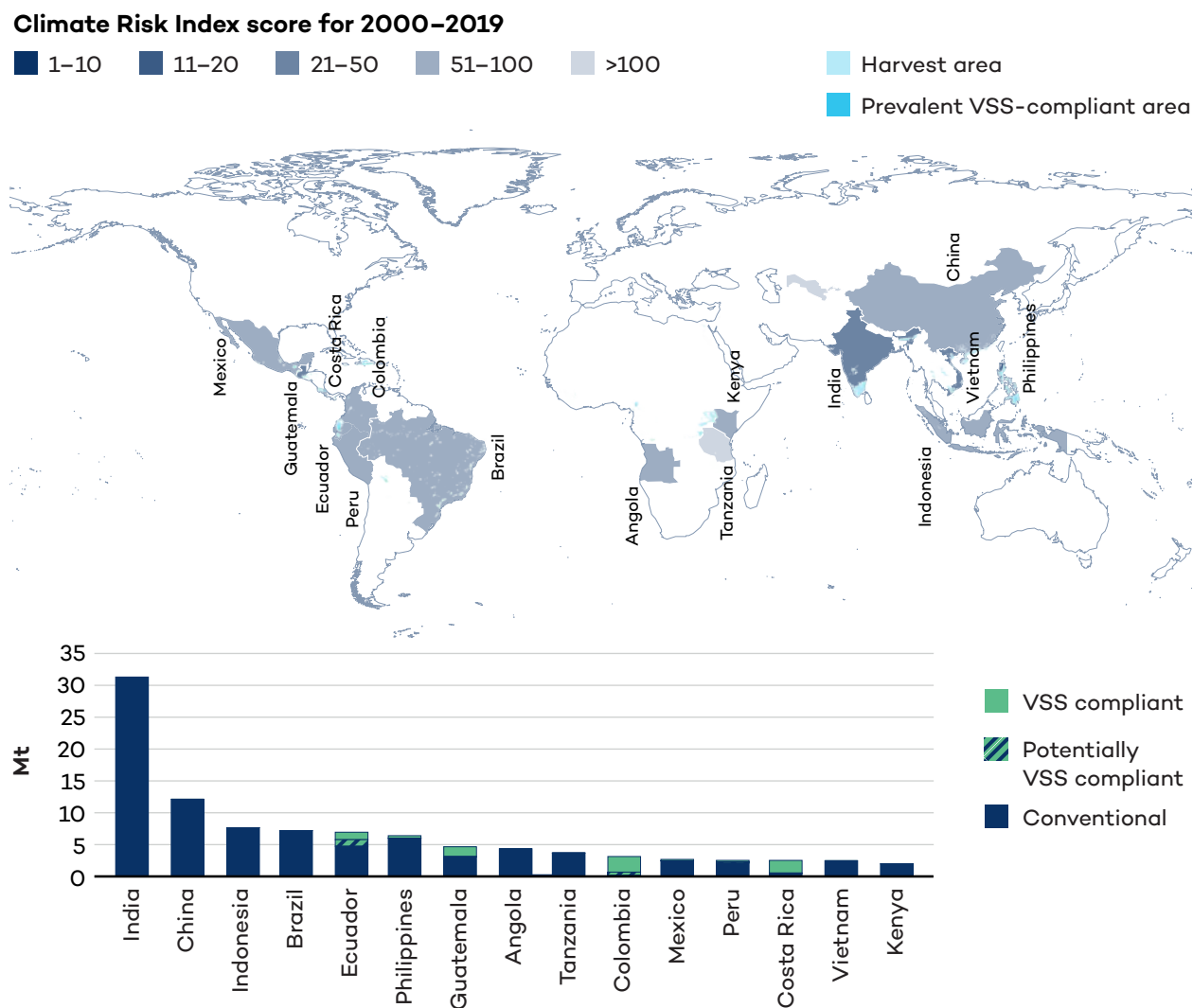
compliant banana farmers must cope with the considerable challenge of having to compete with conventional bananas maintained at artificially low prices (Fairtrade International, 2022a; Organic Produce Network, 2022a).

India, China, Indonesia, Brazil, and the Philippines offer VSSs the greatest potential

to expand based on the size of their conventional banana production. Among the least-developed banana-producing countries, Burundi, Sudan, the Democratic Republic of the Congo, Mozambique, and Ethiopia offer VSSs the greatest opportunities to enable sustainable development via the adoption of more sustainable banana farming

### Banana growing regions of the world

**Figure 3.** Distribution of banana production in the top 15 producing countries in 2019



Sources: Eckstein et al., 2021; FAOSTAT, 2022; Meier et al., 2021; Voora et al., 2020.



practices based on their share of global banana production, the limited presence of VSSs, and their Human Development Index. Just as important, VSS-compliant banana farming can affect yields. According to our analysis, in 2019, VSS-compliant banana yields were higher in four banana-producing countries, even in three, and lower in 19. VSS-compliant yields were higher in some of the larger banana-exporting countries, such as Costa Rica, Colombia, and Côte d'Ivoire. In contrast, major banana exporters like Ecuador, the Philippines, and Guatemala had lower VSS-compliant banana yields than conventional banana yields in 2019.

## Demand for VSS-compliant bananas remains concentrated in Europe and North America, with the potential to develop in producing countries and emerging economies.

Europe and North America remain the largest consumers of VSS-compliant bananas (FAO, 2021a). In 2020–2021, 10% of all bananas consumed in these continents were certified Organic (Compagnie fruitière, 2020). A third of all bananas sold in the United Kingdom were Fairtrade-certified in 2020 (Banana Link, 2020b; Fairtrade America, 2021). Consumer awareness of sustainability issues in the banana sector and the low retail prices of VSS-compliant bananas drive demand in these markets (Banana Link, 2020b, 2021c). Organic bananas were USD 0.15/lb more expensive, on average, than conventional ones in the United States in the first quarter

of 2021, with lower premiums than other organic fruits, such as berries (Organic Produce Network, 2021, 2022b). Although lower prices for VSS-compliant bananas have attracted more consumers, their increasing market share may result in lower prices, with detrimental effects on banana producers in developing countries. To tackle this challenge, VSSs have started requiring living wages and incomes for banana industry workers and farmers (Banana Link, 2021b), which could also encourage consumers to purchase VSS-compliant bananas. Consequently, this would imply that banana manufacturers will need to pay their workers higher wages, and banana traders will need to pay banana farmers higher farm gate prices.

Promoting the consumption of sustainable bananas in developing countries is also important, as they are among the largest producers and consumers of bananas. About 80% of bananas are consumed locally in large producing countries such as India, China, and Brazil (Banana Link, n.d.). India produces and consumes 25% of bananas worldwide, but very few produce VSS-compliant bananas. This presents a major opportunity to increase the demand for bananas grown under sustainability standards. Although Latin America produces the most VSS-compliant bananas in the world, most of this production is exported. Consequently, increasing intraregional trade and demand for VSS-compliant bananas represents important opportunities to increase sustainable consumption in this region. For instance, the 2020 Memorandum of Understanding on Organic Products between Chile and Brazil aims to facilitate Organic-certified produce trade between the two nations (Willer & Trávní, 2022).

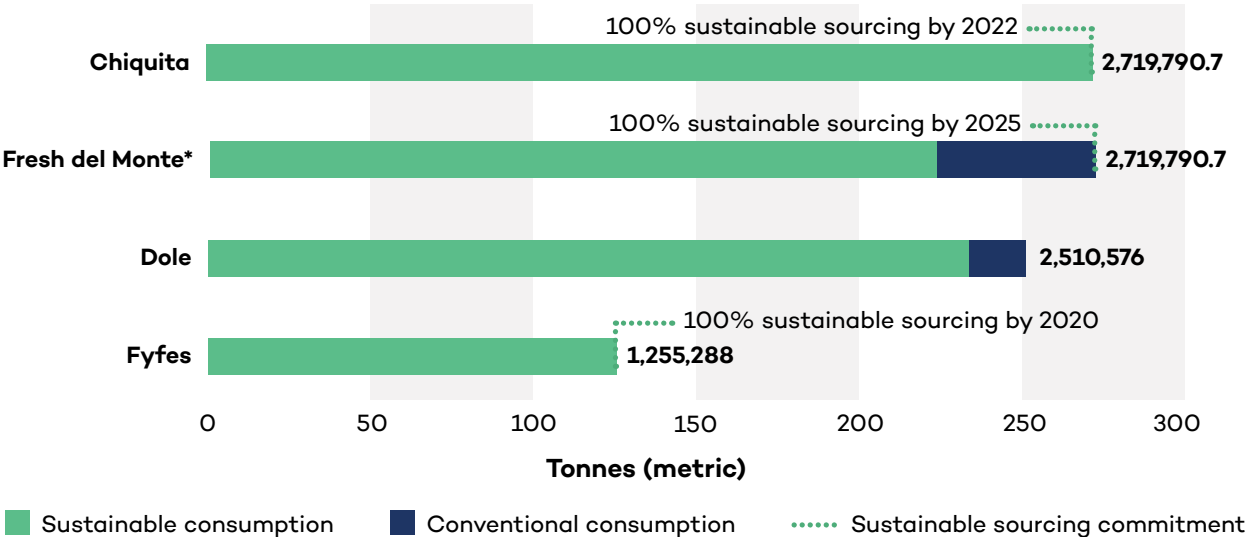
Increasing VSS-compliant banana consumption will require coordinated efforts across supply chains. Retailers are particularly important, as they directly influence consumers by establishing consumption options (Banana Link, 2021c). Increasing VSS-compliant banana consumption in emerging markets will require concerted consumer education campaigns and price incentives. For instance, the Fairtrade International campaign Behind the Peel educates Canadian retailers and consumers by sharing information on growing demands for more sustainable bananas and stamping bananas with informative messages such as “Hazardous pesticides harm banana

workers and their communities” or “Women have no protection from harassment on banana plantations” (Behind the Peel, n.d.). Similar campaigns could also be conducted for VSS-compliant bananas in emerging markets such as Brazil, China, or South Africa. Furthermore, Community Supported Agriculture programs present opportunities to establish a consumer base for VSS-compliant farmers by offering consumers subscriptions to receive fresh produce boxes (including bananas), usually at discounted prices (Vancouver Farmers Markets, n.d.).

In 2019, the four largest banana companies (Chiquita, Fyffes, Dole Food, and Fresh

### Progress on sustainable sourcing commitments

Figure 4. Major banana buyers and traders, their sustainable sourcing commitments, and progress in 2020



\* The company reports that 82% of their exported bananas and pineapples complied with VSSs in 2021, but it is uncertain whether this % applies to each commodity.

Sources: Chiquita Brands, 2022; Del Monte International, 2021; Dole Food Company, Inc., 2020; Fyffes, 2021; Mordor Intelligence, 2022; Rainforest Alliance, n.d.; Reybanpac, n.d.; United Nations Conference on Trade and Development (UNCTAD), 2016. Due to data limitations, we have considered data from 2021 as a proxy to illustrate the volumes of VSS-compliant bananas sourced by Fresh del Monte and Dole.

del Monte) accounted for just over 40% of global banana exports (Banana Link, n.d.). According to our estimates, Chiquita sourced 2.7 Mt of bananas in 2020. Information about the share of sustainably sourced bananas for that year was only available for bananas that comply with the Rainforest Alliance standard, which accounted for about 1 Mt (Rainforest Alliance, n.d.). In 2022, the company reports that its total land is sustainably certified in compliance with GLOBALG.A.P. and Rainforest Alliance (Chiquita Brands, 2022). Fyffes, one of the top banana companies serving the largest share of the European market and the largest importer of Fairtrade bananas for this market, has fully disclosed sourcing volumes for 2020. They reported purchasing 1.25 Mt of bananas in 2020—all of which was reportedly sustainably sourced in compliance with VSS such as GlobalG.A.P., Rainforest Alliance or Fairtrade (Fyffes, 2021). Dole reports that about 93% of bananas exported complied with VSSs, mainly GLOBALG.A.P., in 2021 (Dole Food Company Inc., 2021), while Fresh del Monte reports that 82% of their exported bananas and pineapples complied with VSSs in 2021 (Del Monte International, 2021). The banana sector is mostly vertically integrated and highly competitive. This partly explains why there is a general lack of full transparency among large banana companies regarding sourcing details, though it has improved for some companies since our last report (in 2020). Estimating the growth potential for sustainably sourced bananas is not possible, as sustainable sourcing targets for the banana sector are not publicly available. Nevertheless, we can estimate that

if 100% of the four companies' bananas were obtained from VSS-compliant sources, based on existing sourcing information, this could represent between 9 Mt and 10 Mt.

Forecasting VSS-compliant banana production can only be viewed as an educated guess.<sup>3</sup> Taking a more pessimistic outlook weighs the short-term and slowing VSS-compliant production growth trend more heavily and sees that the presence of VSSs would experience a steady increase to approximately 14 Mt by 2025. A more optimistic outlook weighs the increasing long-term VSS-compliant production trend more heavily and projects a more rapid increase to more than 15 Mt by 2025. Several potential futures exist between these outlooks, and although VSS-compliant production is likely to slow, we predict that it will reach 14.82 Mt by 2025 as consumer demand for more healthy and sustainable products continues to grow, motivating sustainable banana-sourcing commitments. Consequently, we expect VSS-compliant banana production to range from 14.29 Mt to 15.34 Mt by 2025.

<sup>3</sup> Forecast based on the dataset included in Meier, C., et al, 2021 and thus, it excludes estimated volumes of GlobalG.A.P.

## A Dive Into Banana Prices

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External factors heavily influence prices in the banana sector, showing the high vulnerability of the value chain to global disruptions.

Pricing is a key factor, as it can determine if banana farmers and workers stand to gain financially from complying with VSSs. Efforts to shift the sector toward sustainability, such as by implementing VSSs, are partly driven by the goal of internalizing the external costs associated with the industry. For example, the external costs of bananas grown in Colombia, Dominican Republic, Ecuador, and Peru in 2017 were found to be USD 6.70 per 40-pound wholesale box versus USD 3.65 per 40-pound wholesale box for Fairtrade-certified bananas with fewer detrimental socio-ecological impacts (True Price, 2017).

Addressing external costs is particularly difficult in the banana sector, as retailers keep prices low so they can attract customers to their stores, even going as far as incurring losses (Fassler, 2019). Internalizing these external costs for all bananas would make VSS-compliant banana prices more competitive compared to conventionally grown bananas. Therefore, examining how banana prices intersect with the sustainability of the sector is paramount.

As with other commodities, banana pricing follows supply and demand dynamics. Slight changes in the supply of bananas and

production efficiency, as well as changes in consumer preferences over the seasons, can cause significant price movements. Economic factors such as the cost of inputs, energy, freight contracts, and labour—which are related to fossil fuel (mainly oil price) variations—heavily influence the market. Other factors, including changes in international regulations or exchange rates in producing countries against the U.S. dollar, can also affect the cost and price structure of the banana market (UNCTAD, 2016), making the market highly dependent on external factors that make it relatively difficult to assess (Fresh Plaza, 2020).

The banana sector has been very sensitive to the greater frequency of droughts, floods, hurricanes, and other natural disasters due to climate change that disrupt the development of the banana plant cycle, leading to yield losses and price swings (UNCTAD, 2016). In 2019, for example, La Niña and El Niño, which caused heavy rains, crimped banana yields in Ecuador (Fresh Plaza, 2020). Adverse weather conditions in 2016 and 2017 hampered production in Cameroon, resulting in an 8% decline in banana exports (Gebre & Rik, 2022), and, as mentioned earlier, two destructive hurricanes in late 2020 cut into banana production in Guatemala and Honduras.

The COVID-19 pandemic and its effects on the global economy caused some volatility in banana prices in 2020. In Ecuador, for instance, export prices almost halved, from USD 0.65/kg in 2019 to an average price of USD 0.33/kg in 2020 (FAOSTAT, 2023). This decrease was likely due to the temporary

closure of important sales channels, specifically in the wholesale, food, and tourism industries, that affected the entire distribution chain. This resulted in excessive supply in the global market, which caused a marked drop in prices (Castro, 2021). In addition, pandemic-related restrictions affected global logistics in 2022. The absence of containers and shipping space due to congestion in major ports, especially in China, has had a clear impact on banana sales in the spot market (Banana Link, 2021a). Not only was there a shortage of containers, longer transit times, and irregularities in traffic, but shipping rates also rose (He, 2022). This has complicated the situation in the banana industry, as the fruit needs to be ripened based on a precise time schedule after harvesting (Fresh Plaza, 2022b).

More recently, the conflict between Russia and Ukraine that began in February 2022 has taken a toll on the market, as both countries together have historically accounted for about 10% of global banana imports (FAOSTAT, 2023), and Russia alone is the largest export destination for Ecuadorian bananas, buying 20% of the country's total exports (Cabezas, 2022). At the beginning of the crisis, Russian importers cut their banana purchases and asked Latin American exporters to reduce the prices of banana boxes. Some importers cancelled contracts and switched to spot purchases, which are made at the market value for immediate delivery and were negotiated at lower prices than those specified in contracts (Fresh Fruit Portal, 2021). In addition, Russia was not receiving cargo ships at its ports due to international transport sanctions and temporary suspensions on all cargo bookings to and from Russia by the largest container shipping companies (Liakos, 2022), so Ecuadorian producers were stuck

with large volumes of the fruit (Farrant, 2022). This backup caused oversupply and price declines in world export markets several times in 2022 (FAO, 2022a). Going forward, this may represent a change in the global market dynamics, as Latin American producers who used to export to Russia and Ukraine are targeting other Asian markets, including Japan and China, that were served almost exclusively by banana-exporting countries such as the Philippines (Schockemöhle, 2022).

**In the value chain, banana producers are the most affected by market disruptions while receiving the lowest prices.**

Disruptions in the global economy and markets, including the consequences of the pandemic, the logistics crisis, and the Russia–Ukraine conflict, coupled with the global surge in inflation, have led to higher costs across all inputs in the banana value chain, from fertilizer to packaging materials (Van Der Broek, 2022). This has put banana producers under increasing financial pressure (Fairtrade International, 2022a), as some are accepting farm gate prices below the cost of production, making it impossible to maintain a decent livelihood, pay living wages, and reinvest in their plantations (Campos Malpartida, et al., 2022).

Indeed, major banana export-producing countries in Latin America, the Caribbean, West Africa, and India reported lower production volumes in the first semester of 2022 (Fresh Plaza, 2022e), as farmers

stopped fertilizing due to the higher price of inputs caused by increases in the prices of oil and maritime freight (Fairtrade International, 2022a). For instance, Ecuadorian exporters reported increases in freight charges of USD 1.90 per box and in cardboard of USD 1 per box. At the farm level, fertilizer prices alone have climbed 45% in Ecuador (Maxwell, 2021).

Other factors also influence farm gate prices across banana-producing countries. These factors include the type of market structure, including the number of operators involved in export operations, or if the bananas are produced mainly for local consumption or the international market. The integration of actors along the value chain, the level of institutional support, and the type of bananas produced all influence the final price that farmers obtain (Tumin & Shaharudin, 2019). In exporting countries such as the Philippines, farmers receive about USD 0.42/kg, and those in Ecuador, Colombia, and Costa Rica get about USD 0.45 USD/kg. In countries producing for local consumption (such as India or China), farmers receive around USD 0.70/kg, mostly due to government support for farmers, such as through subsidies, and higher consumption in local markets (i.e., China) (Bloomberg News, 2019; UNCTAD, 2016).

Latin America has a fragmented market structure comprised of hundreds or even thousands of small and medium-sized producers and several operators involved in the export operations, although in some cases, a few companies control most of the export flows (UNCTAD, 2016). In East Africa, national banana chains are characterized by many actors involved in the commercialization of the fruit, such as

middlemen, who add little value and result in only a small proportion of the final selling retail price reaching farmers. This gives farmers little incentive to invest in improving production (Gebre & Rik, 2022). In addition, many banana producers in the region are struggling because they lack access to clean planting materials, knowledge about pest and disease management, methods to reduce post-harvest losses, and ways to add value and access new markets.

Banana producers are generally disadvantaged in bargaining for higher prices because the fruit is highly perishable, there is a lack of local capacity to process or store bananas, and farmers have a weak place in the value chain (Gebre & Rik, 2016). In addition, the flow of information along the chain is limited, and smallholder farmers have little access to alternative markets for their bananas. Meanwhile, other actors, such as retailers and wholesalers, have many connections and marketing options across regions and countries. In many countries, banana farmers sell to local private traders who decide unilaterally on market prices. Low prices paid to smallholder banana farmers producing for export in many countries threaten their profitability, causing many of them to leave the industry (Banana Link, 2019).

## Market concentration and heavy competition in the sector have contributed to low farm gate prices.

Banana production is a competitive race to the bottom for many producing and exporting countries. This has led to low farm gate prices, which are mainly caused by the squeeze between downward price pressure from buyers and rising production and living costs. The mainstream global trade industry is very concentrated, with few vertically integrated multinationals (e.g., Dole, Chiquita, Del Monte, Fyffes, and Compagnie Fruitière) that have historically held much of the power in the supply chain, though this has changed in recent years with the increasing influence of large retailers from Europe and North America. These multinational companies own production sites, transport, and ripening facilities and have their own distribution networks (Evans & Ballen, 2022). The highly competitive nature of the industry does not allow adequate room for negotiation in the face of rising costs, leaving producers disadvantaged (FRUITROP, 2021a).

Retailers in major consuming countries in North America and Europe (e.g., Walmart, Aldi, Tesco, and Lidl) also play an important role in dictating global banana prices, as they have gained market power over the years and often signal pricing through their annual fixed price contracts. These contract prices can affect efforts to impose a country's minimum prices on national-level regulation. Aldi, one of the biggest supermarket chains in the world and Europe's top banana buyer, is largely responsible for setting the benchmark price for fresh bananas through

weekly, then quarterly, and now their annual announcement of fixed price contracts (Haqqi, 2022). The so-called Aldi contract has become the single largest in Europe and therefore the “market-making” benchmark for all other retailers in the region.

Bananas are one of the cheapest fruits in stores. The supermarket price war in Europe, particularly in Germany and the United Kingdom, has driven down the retail price of bananas, in many cases to the detriment of producers (Morrison, 2021). Banana retail prices in the European Union averaged USD 0.90/kg in 2020, down 5.3% from USD 0.95 in 2018. In 2022, Aldi increased banana prices by USD 1.02/kg due to pressure from Latin American banana producers and exporters who denounced the fact that production costs have risen while purchasing prices have remained at the same level for years (Fresh Fruit Portal, 2021).

Indeed, retail prices are usually low because supermarkets use bananas as loss leaders in their stores to attract customers, and they negotiate lower prices from their suppliers (Fairtrade International, 2022a). Even if large retailers and supermarkets could guarantee that they could buy more bananas over the year to compensate for their lower contract prices, the banana price war at the retail level has put the whole industry under pressure (UNCTAD, 2016), especially at the upstream levels of the chain.

## The greatest economic value and pricing power are concentrated at the retail level, while small producers are the most vulnerable in the chain.

Unlike other commodities, such as coffee or cocoa, bananas are not processed along the chain—only ripened. There is therefore little opportunity to add value in the supply chain. Farmers receive a farm gate price that should cover their production, certification, and organizational costs and provide them with a profit margin. Farmer organizations also assume logistical and organizational costs and receive a cooperative gate price but often do not make profits.

The banana value chain shows disparate distribution. Research in banana markets across 15 European countries found that the biggest share of the value generated in the international banana supply chain is usually at the retail stage, as retailers capture about 40% of the final price value per kilogram of the fruit (BASIC, 2015). In addition, retailers enjoy significant buyer power and are better protected against volatility, as they can arrange procurement processes and cancel contracts, switch between banana suppliers, or start direct sourcing to secure required volumes at competitive prices (Banana Link, 2019).

Other stages, such as shipping, import, and ripening processes, capture an average of 40% of the final retail price, while the production stage, including labour wages and prices paid to farmers' suppliers, captures

around 20% of the final retail price. In countries such as Costa Rica, Ecuador, and the Dominican Republic, labour wages in conventional banana chains represent, on average, about 5% to 8% of the final retail price, while banana producers receive about 12% of it (Afruibana, 2021; Banana Link, 2017; BASIC, 2015).

Value distribution across the banana supply chain also differs among countries due to export and import tariffs, retail prices, and the level of centralization or organization of banana producers. In most countries with a fragmented structure comprising many small and medium-sized producers operating in a competitive environment, such as Colombia, Costa Rica, and Ecuador, producers receive about 15% of the final retail price, and workers in conventional banana plantations may earn from 5% to 9% of the price paid by end consumers for the fruit (Tumin & Shaharudin, 2019; UNCTAD, 2016). In others with more oligopolistic and centralized market structures, such as Cameroon, the production stage (including producers and workers) receives about 26% of the final retail price, which is 30% above the industry average (BASIC, 2015). This is because Cameroon has centralized all their production and export capacities, which are operated by a few units, reducing the number of intermediaries (UNCTAD, 2016). However, this does not necessarily mean that, in absolute numbers, farmers in centralized market structures receive higher prices and incomes than those in more competitive market environments, as this also depends on variables such as production costs (Afruibana, 2021).

Small producers are typically the most vulnerable in conventional chains, as they



have little or no power to influence the market price of bananas (Banana Link, 2019)—and far less than in VSS-compliant export chains such as Fairtrade International, where minimum prices apply for all origins. Also, most banana farmers have limited scope for negotiating their prices or finding other buyers when market conditions change, for instance, when orders are cancelled on short notice. In addition, the wages of workers and the prices that farmers receive are two of the few variable costs along the value chain that firms adjust in response to variations in export prices (Banana Link, 2019). Farmers and workers then bear the highest risks and pressure when prices are low.

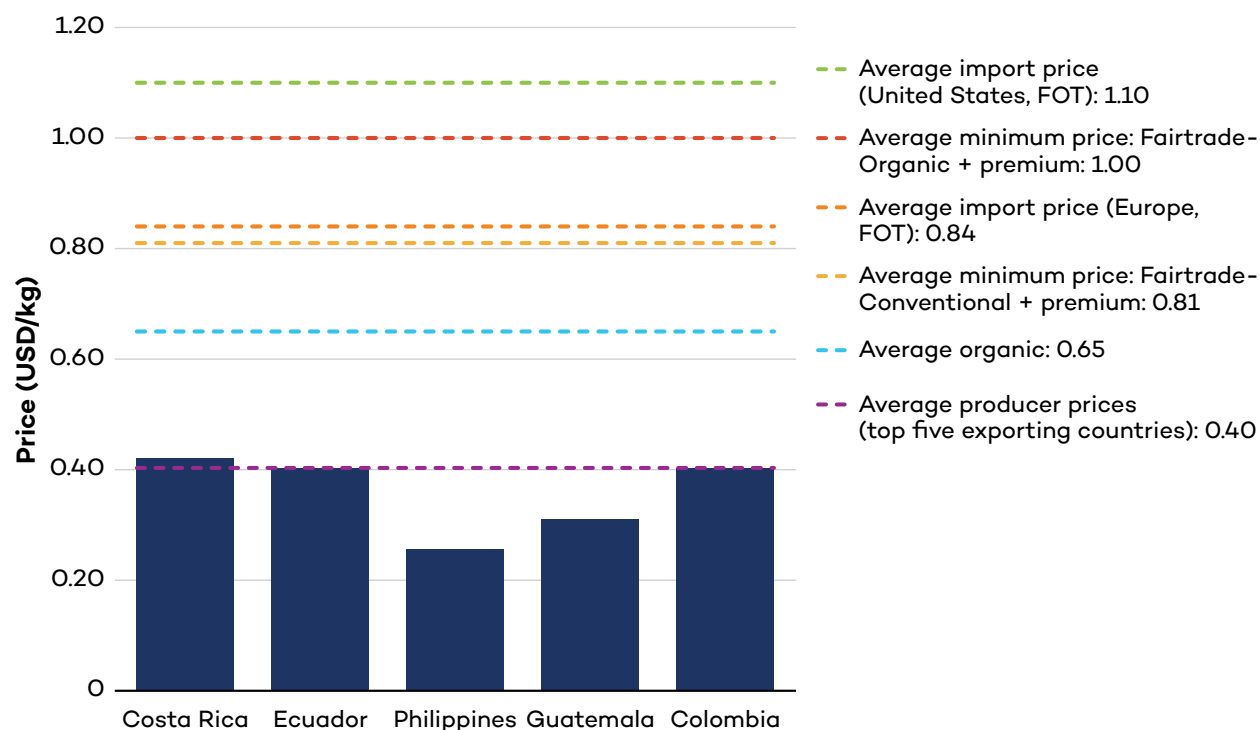
## VSSs are working to provide better remuneration for banana farmers and plantation workers.

VSSs in the banana sector are adopting measures that aim to ensure that banana farmers and workers are better remunerated. Since the early 2000s, Fairtrade International has implemented minimum prices and premiums differentiated between conventional and organic bananas and by country of origin. In 2021 the standard set a base wage for plantation workers. While Rainforest Alliance has not yet implemented minimum prices or fixed premiums for bananas sold under its scheme, it began efforts to create better remunerative models for farmers by establishing a mandatory “sustainability differential” in January 2023 (Rainforest Alliance, 2021).

As of December 2022, prices for conventional bananas at the free on board (FOB) level under Fairtrade International terms ranged from USD 10 to USD 12.70 per 18.14 kg box, while Fairtrade–Organic bananas ranged from USD 12.80 to USD 14.90 per box, depending on the producing country. For instance, banana growers in African, Caribbean, and Pacific countries received around USD 11.60/box for conventional Fairtrade bananas and USD 14.35/box for Fairtrade–Organic bananas, while Ecuadorian farmers got about USD 10.05/box and USD 12.85/box for Fairtrade conventional and Fairtrade–Organic bananas, respectively (Fairtrade International, 2022c). In September 2022, Fairtrade International announced it was raising the minimum price for bananas to counter the effects of higher export costs and global fluctuations in the market. Price increases are expected that range from USD 0.40/kg to USD 1/kg for both conventional and Fairtrade–Organic banana producers for contracts with producers as of January 1, 2023, depending on the type of banana produced and country of origin (Fairtrade International, 2022c).

In the Fairtrade International model, premiums are also paid on top of the minimum or the selling price. These are supposed to cover production costs, certification fees, training and extension services, and investment in farming operations. Fairtrade International provides a premium of USD 1/box for conventional or organic bananas in all producing countries that are not distinguished based on origin or quality (Fairtrade International, 2022c). This premium seeks to cover the cost of sustainable production and is generally restricted to investment in the producers’

**Figure 5.** Average producer banana prices in major export countries (FOB), Fairtrade Minimum Price (FTMP) and premiums and Organic (FOB), and average import prices in the United States and Europe in 2021 (USD/kg)



Note: FOT = free on truck

Sources: Authors' elaboration based on data from FAOSTAT, 2022; Fairtrade International, 2022d; Fresh Plaza, 2022c; Philippines Statistics Authority, 2021; World Bank, 2023.

business, livelihood, and community (Fairtrade International, 2021a).

As mentioned above, Rainforest Alliance has also introduced a new system of sustainability differentials for banana producers that came into effect in January 2023 for new contracts. This differential is not fixed, and the intention is that this payment recognizes the efforts of and specific activities undertaken by the producer to meet the farm requirements of the Sustainable Agriculture Standard (Rainforest Alliance, 2021). It remains to be

seen how banana buyers will be encouraged to pay this differential.

To better illustrate the differences between conventional and VSS-compliant prices in the export market, Figure 5 showcases the average producer prices (FOB) in the five major banana-exporting countries (Ecuador, Costa Rica, the Philippines, Guatemala, and Colombia) for conventional bananas in 2021 and the average prices paid by VSSs such as Fairtrade and Organic (FOB) in the same countries, based on available data.<sup>4</sup> The figure

<sup>4</sup> Minimum prices and premiums for Fairtrade International that were valid until December 2022.

also shows average prices paid at the import level in the United States and Europe<sup>5</sup> (FOT). It should be noted that farmers receive a portion of the FOB price and that these are average prices that do not reflect the reality of all banana farmers.

According to our analysis and the data shown in Figure 5, banana producers in major exporting countries associated with at least one VSS, such as Fairtrade or certified Organic, may have received substantially higher prices in 2021 than those selling conventional bananas. Also, they were more protected from external market disruptions, which can affect price negotiations and contracts in conventional banana chains. Figure 5 indicates that prices for VSS-compliant bananas in 2021 may have been more than 60% higher than those for conventional bananas.

Figure 5 also shows that average prices received by farmers in major exporting countries increased with double certification of Fairtrade and Organic, with a price of more than double the conventional average price. This represents about USD 0.60/kg more. The figure also illustrates that the average price for Fairtrade–Organic bananas is almost the same as the average import price in the United States, which is low but has grown at a CAGR of 4.25% from 2012 to 2021, while average import prices in Europe have decreased by a CAGR of 1.6% in the same period (World Bank, 2023). This reflects how exported bananas have become cheaper to import from Europe and the

market pressure to maintain low prices across the value chain.

While Organic-certified bananas registered lower average prices than Fairtrade and Fairtrade–Organic bananas, they were still significantly higher than the average conventional prices received by producers in major exporting countries in 2021 (more than 60%). It is also important to note that when the relevant market price for bananas, or the negotiated price, is higher than the Fairtrade minimum price, then at least the market price or the negotiated price must be paid, plus the mandatory premium (Fairtrade International, 2022c). This means that Fairtrade- and Fairtrade–Organic-compliant farmers in major exporting countries such as Costa Rica, Ecuador, and the Philippines may have received higher prices for their bananas than conventional farmers when selling bananas as Fairtrade and Fairtrade–Organic compliant in 2021. As mentioned above, it is very likely that most bananas destined for the exported markets comply with at least one VSS.

For farmers and workers on banana plantations, the effects of participation in VSSs on prices and incomes are mixed, though it appears that farmers who adopt VSSs tend to receive better monetary and in-kind incentives than non-certified farmers and may earn higher prices when growing bananas that comply with certified Organic or Fairtrade International schemes. Higher economic returns tend to increase when farmers comply with higher-quality standards and production levels, while economic returns for smallholders producing low-

<sup>5</sup> This refers to the average world price of bananas sold in the United States/U.S. import price and bananas sold in Europe (FOT) based on data from the World Bank Commodity Price (The Pink Sheet) (World Bank, 2023), adjusted to inflation.

quality and lower-volume bananas are more limited (Oya et al., 2017).

A 2015 economic analysis of Organic and conventional bananas in Ecuador shows that even when organic farming delivers lower yields than conventional farming, farmers associated with Organic certification may increase their economic returns and obtain more than 7% higher prices than growers of conventional bananas (though impacts on farmers' incomes are not reported). It also shows that additional benefits of Organic certification in the banana value chain include lower impacts from price volatility on farmers' incomes and less use of external inputs such as fertilizer, energy, and pesticides, which reduced production costs. In addition, the price premiums received by farmers generally offset the extra costs linked to adopting the standard (Castro et al., 2015).

A study by Wageningen University in 2019 found that workers at Fairtrade-certified banana plantations in Colombia received slightly higher average wages, as well as better monetary and in-kind benefits, such as paid leave and holidays and financial support for educational costs and training, than workers on non-certified plantations. This may be due to better working conditions, such as better contracting terms (Beekman et al., 2018). Research by True Price in 2017 shows that VSS prices and premiums in banana chains directly benefit small producers in terms of investments in productivity at the farm level. For instance, the premium received by Latin American producers selling Fairtrade bananas goes mainly to productivity investments, ranging from USD 95/ha a year in Ecuador to USD 225/ha a year in Colombia. Investing the premium in productivity interventions can also result in higher production,

revenues, and net farm income, which in turn can be used to structurally increase household income and the wages of workers (True Price, 2017).

Still, there are worries that VSSs' prices, particularly Fairtrade International minimum prices, are often reported to be insufficient to cover production costs even when they exceed the conventional market price. This is because inflation has affected the real value of the minimum prices offered, and the standard has failed to adjust its minimum prices and premiums to reflect this (Oya et al., 2017). As prices have been squeezed and production costs have risen, many believe the minimum price is not enough to support higher farm gate prices, especially considering the costs associated with becoming VSS certified (Askew, 2020).

In response to those concerns, Fairtrade International has adjusted its minimum prices and premiums for conventional and organic bananas to cover the rising costs of inputs and high inflation, effective as of January 1, 2023, which represents an increase of 4.5% of the price paid at farm level and an average extra 15% of the price producers receive from exporting their bananas directly. Fairtrade International is also working on publishing the costs of key inputs and services needed for banana production in each producing country, and the standard supports living wage models and differentials. It aims to provide more transparency in prices and costs in the banana sector and improve farmers' bargaining power (Fairtrade International, 2022b).

Fairtrade International's base wage for banana plantation workers is the only VSS-created initiative in the sector that puts such a

wage in place. It came into effect in July 2021 and aims to benefit workers on Fairtrade-certified banana estates and make significant strides toward a sustainable living wage. The initiative seeks to ensure that all Fairtrade banana workers receive at least 70% of the take-home pay—or the pay received after taxes and obligations are deducted—needed to achieve a living income as identified by the Global Living Wage Coalition in each banana-producing country. This implies wage increases of up to 15% for all Fairtrade banana plantation workers, who will receive the base wage stipulated by Fairtrade International, even if the legal minimum wage in the country of operation is lower (Fairtrade International, 2021b). For example, Nicaraguan banana workers associated with Fairtrade International will earn at least NIO 5,141 (USD 141) a month, which is 46% higher than the legal national minimum wage (Fairtrade International, 2021c).

**Public and private sector actors have adopted initiatives to raise minimum prices, support better trade relations, and reinforce the regulatory environment in the banana sector.**

In addition to initiatives implemented by VSSs to increase prices and sustainability differentials and advocate for a fair value distribution along the chain, a few producing and exporting countries have taken steps to protect the competitiveness of their banana export market, as well as some initiatives

from buyers and retailers supporting direct trade relationships or increasing the prices farmers receive.

For instance, Ecuador and Costa Rica have established minimum price references to try to guarantee producers' minimum revenue from banana farming. In Ecuador, the Ministry of Agriculture and Livestock dictates the average minimum support price for banana cartons, which in 2022 averaged USD 6.25/box of 41.5 lb to 43 lb. Reinforcing this has been difficult, however, as it has been reported that banana producers do not always get the set price because some exporters were not paying the minimum prices (AgroEcuadorTV, 2022; Poggio, 2017). Producers in the country were also pushing for a revaluation of this price up to USD 7.50 to cover the structural increase in production costs and stricter quality and sustainability requirements from retail buyers, especially in the European Union and the United Kingdom (Banana Link, 2020a; FRUITROP, 2021a). However, this initiative might also discourage banana buyers and importers from purchasing bananas from the country. More recently, in May 2022, the Ecuadorian government announced a plan to provide subsidies to help small banana producers affected by the economic crisis caused by the conflict between Russia and Ukraine and farmers who have been hit by Black Sigatoka disease (Fresh Plaza, 2022c).

## Subsidies and preferential tariff duties in major importing countries have played an important role in the industry.

As part of the revision of customs arrangements on the European banana market, production aid has been set up for zones deemed to be losing competitiveness due to the opening of the market. This has translated into trade policies, such as differentiated access for selected banana-producing countries and key import markets enjoying preferential quota-free and duty-free access. This was the case with the implementation of the Banana Accompanying Measures, a financial package of EUR 190 million (approximately USD 203 million) in funds adopted by the European Commission in 2010 to improve the competitiveness of the banana sector, and its diversification for certain countries in the African, Caribbean, and Pacific Group of States (ACP) that were not benefiting from the same economies of scale as Latin American producers (Afruibana, 2021; UNCTAD, 2016). Even if some countries, such as Cameroon, managed to improve workers' social conditions, create new plantations, build capacity, and expand organic production systems, these mechanisms proved to be insufficient to offset the competitive disadvantage of ACP producers. Furthermore, their implementation was complex, with the disbursement of payments often delayed, which made it difficult to take full advantage of the measures. Indeed, these measures ended in 2020, though some countries

received extensions to finalize their projects by the end of 2022 (Afruibana, 2021).

Additionally, several producing countries benefit from preferential tariff duties on most of the imports from the European Union, including bananas, as several bilateral trade agreements have been signed since 2013. As an example, bananas imported from Central America (except for Belize), Colombia, and Peru paid a reduced tariff rate of EUR 75/tonne in 2020 under the European Union–Central American and the European Union–Andean agreements. One important development in trade policy was the accession of Ecuador to the European Union–Andean agreement, which took effect in January 2017 and granted the country the preferential tariff of EUR 75/tonne. That tariff is significantly lower than the most favoured nation tariff according to the World Trade Organization schedule of concessions that Ecuador was paying to the European Union before its accession to the agreement (EUR 114/tonne) (FAO, 2020).

## Some retailers and buyers are promoting fairer trade and pricing relations in the banana sector.

A few retailers and banana buyers in major consuming countries have acknowledged the need to increase prices paid to farmers and workers after 2 years of criticism by seven Latin American and Caribbean exporting country industry associations united as the LatAm Banana Industry Task Force. As already mentioned, European retailer Aldi raised the price paid for bananas in 2022 as

part of its effort to commit to pricing that covers the costs of sustainable production, largely as a result of advocacy work. In addition, Fyffes, Europe's biggest fruit trader, is investing in a project in collaboration with the Global Living Wage Coalition to identify living wage gaps for its own operations and most of its suppliers (IDH Sustainable Trade, 2018). Banana producers and associations see this as a good start toward paying prices that allow producers in Africa and Latin America to continue to supply quality and sustainably grown bananas. However, there are worries that these initiatives, although valuable, are not sufficient to cover the rising costs of production and inputs. More recently, in March 2023, nine major retailers in the United Kingdom joined forces to commit to closing the living wage gap for banana workers in their international supply chains by 2027 (IDH Sustainable Trade, 2023). It is still important to see how the initiative evolves; however, other retailers in major consuming countries in Europe and North America should emulate and pursue efforts to close the living income and living wages gaps while offering higher price differentials for

more sustainable bananas (Afruibana, 2021; Banana Link, 2022; Maxwell, 2021).

Some buyers are actively promoting better trade relations in the banana sector. Companies such as Equifruit and Organics Unlimited in North America are establishing commitments to ethical fruit sourcing and providing fairer prices to farmers through direct contracts. They sell Organic and Fairtrade bananas and have direct relationships with farmers' cooperatives and associations in producing countries such as Peru and Ecuador while also working with their customers to establish fair contract prices for bananas (Equifruit, n.d.). Others, such as Earl's Organic Produce, are paying about 10% more for the Organic bananas they buy by sourcing directly from grower cooperatives in Mexico and Ecuador. Many companies implementing direct trade practices believe that conventional bananas, but especially VSS-compliant bananas, are typically sold well below where they should be. For instance, organic bananas should be sold at retail for at least USD 1.29 a pound to reflect banana farmers' costs and investments (Organic Produce Network, 2022a).

## A Way Forward: What is needed to build a more sustainable banana chain?

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Despite the efforts of VSSs; governments in producing, exporting, and consuming countries; and the private sector to implement minimum prices and work toward providing better remunerative prices and premiums to banana farmers, issues that are embedded in the global economy and the banana international market structures still

greatly affect prices upstream in the chain. These include market concentration and asymmetrical power relations among traders, buyers and retailers, and producers, as well as competition among producing countries.

In this context, all the links in the value chain—including governments in producing and consuming countries, private sector

actors, and VSSs—should consider some measures to make banana value chains fairer, promote a better distribution of value, increase farm gate prices, and mitigate the effects of external shocks on farmers' incomes. These measures include the following.

**Retailers can make better commitments to pay banana prices that reflect increased costs of production and establish long-term partnerships with producers.** Given their increasing market power and influence, retailers in big markets such as Europe, North America, and Asia should invest in the banana companies that supply them. As the banana industry faces disease, climate change, low profitability, and other risks, retailers can work toward implementing purchasing models that secure their supply by raising prices for farmers; helping them to transition to more sustainable growing practices, including those that are compliant with VSSs; opening dialogues with their value chain actors; and investing in banana plantations and communities to improve their resilience and prosperity (Galindo, 2022).

Direct trade mechanisms and shifting toward better contracting terms can protect prices for both buyers and farmers and prevent buyers from withdrawing from a contract if market conditions or prices change, leaving producers with unsold, perishable bananas. Contracts can also state the price paid for VSS-compliant bananas. They should be built in a way that covers both buyer and seller risk. Longer-term partnerships that support farmers and guarantee quality and supply to buyers could be better established—for

example, with long-term contracts of 3 years or more instead of 1-year contracts (BASIC, 2015).

**Shared responsibility strategy across the value chain can bring monetary incentives for sustainable growing practices, living incomes, and living wages.** Even when retailers in major importing countries in Europe and North America make ambitious commitments in terms of paying living wages and living incomes to workers and farmers in their banana supply chains and join multiple initiatives to advocate for more inclusive processes based on solidarity and shared responsibility between all supply chain actors, there is still a long way to go to reach this shared responsibility.

It is important that retailers engage in pre-competitive collaboration<sup>6</sup> models to adjust banana prices to reflect the weight of the surge in production and logistics costs for banana farmers. They should cooperate in bearing the burden of inflation and the costs of adopting quality and sustainability standards that are required in developed markets. Indeed, European retailers often demand certification and other quality requirements, but efforts and willingness are needed to adequately compensate farmers who are dealing with the costs of producing more sustainable bananas (El Universo, 2022; Potts et al., 2014). Given that the European Union is committed to supporting more sustainable value chains and food systems, there is a call for consistency, as requests should not add financial constraints and burdens on farmers, while the downstream

<sup>6</sup> Pre-competitive collaboration allows a group of competing companies to come together to develop a solution for a problem they all share and from which none of them would gain a competitive advantage.



stages of the chain seek ways to compete with low prices in the market (Fresh Plaza, 2022a).

Some retailers are advancing on this. For instance, Lidl pledges provide better remuneration for workers in Côte d'Ivoire at VSS-compliant banana plantations. Along with other mass retailers in Europe, Lidl is working to define a plan to spread the cost of raising wages throughout the value chain. Meetings will be held in 2023 (Fresh Plaza, 2022d). These are intentions for the time being, and we will need to see how they play out in practice.

Buyers, retailers, and governments can adopt policies and programs to reward banana farmers who use more sustainable agricultural practices that yield positive results, such as biodiversity conservation, watershed protection, or carbon sequestration. VSSs and other non-governmental organizations can help coordinate and monitor these results, while governments and private sector actors can provide monetary incentives. For instance, Costa Rica already has a well-established system for payment for ecosystem services, and VSS-compliant banana producers in the country may be able to receive payments for maintaining agroforestry systems (Bellamy Sanderson, 2013). In addition, Germany has partnered with the Global Nature Fund and the Lake Constance Foundation to establish a payment for ecosystem services model to finance structures of biological connectivity in areas of intense production in the banana sectors of Costa Rica and the Dominican Republic (Global Nature Fund & Lake Constance Foundation, 2019), which could benefit VSS-compliant producers. These examples could be used to design rewarding mechanisms

that match living income and living wage benchmarks for farmers and workers.

**Governments in major producing and consuming countries can play a bigger role in helping farmers implement more sustainable growing practices and increase price transparency.** This can be done by technology transfer and capacity building. It is expensive to develop and apply technologies for sustainable farming, so a strong public role will remain necessary to support research and diffusion of knowledge among farmers, especially poorer ones (Castro et al., 2015). In addition, governments should consider policies to help banana farmers transition to VSS-compliant practices by offering financial incentives; tax reductions; access to credit, such as loans to support organic farming; insurance; and better access to certification for farmers. Government agencies in charge of the development of the banana sector must also inform farmers about best practices on soil and integrated pest management, irrigation techniques, and processing of the fruit to help them in this transition.

Major banana-producing countries, in cooperation with other value chain actors such as importing countries and retailers, should provide up-to-date information to farmers about minimum and market prices across different countries and value distribution. Greater transparency will allow producers to compare and improve their sustainable production practices and their economic conditions and make informed decisions to access markets and better negotiate prices (Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, 2021).

It is also important to **leverage regional networks and associations** (e.g., worker unions, consultative councils for trade agreements, and local ombudsmen) to advocate for higher producer prices in the face of pushback from European and North American buyers and retailers. The power dynamics of the industry must be rebalanced to give producers and workers a stronger voice. Instead of major retailers in developed countries defining prices, Latin American and African countries could unite to push for higher minimum prices for farmers and advocate for price transparency in the market. For instance, through the Latin American and Caribbean Network of Small Fair Trade Banana Producers, countries that normally compete could unite to better define prices for bananas (Fresh Plaza, 2022a). Countries are building on this effort by joining and participating in multistakeholder frameworks such as Afruibana, the Trade Union, and the World Banana Forum, where actors in the global banana supply chain work to achieve consensus on best practices for sustainable production, prices, and trade (FAO, n.d.).

**VSSs can also define minimum prices, wages, and premiums for compliant farmers that help establish living incomes and living wages in the sector.** Standards in the banana sector can do more to improve conditions for farmers associated with their schemes. This can include adopting higher minimum price floors across the board and minimum wages based on living wage references for workers on banana plantations, as well as demanding and establishing more transparency mechanisms surrounding prices paid directly to farmers. While Fairtrade International recently increased its minimum banana prices, it is unclear if the new prices

and accompanying premiums account for the significant rise in production costs and reflect the benefits of adopting more sustainable growing practices. To implement new reference prices, VSSs could consider an index price adjustment for inflation, as well as the social and environmental cost savings of adopting VSS-compliant practices. Also, with the support of other actors, including buyers and producing countries, they can work toward establishing benchmarks to define living income reference prices, as they have done in other agricultural commodity sectors, such as cocoa and coffee.

**Adding value through local processing and boosting regional markets for VSS-compliant bananas could increase local consumption.** Strengthening local and regional VSS-compliant banana value chains can add value and promote employment and development in banana-producing countries. For instance, there is great potential to use banana biomass as a renewable resource or to produce organic fertilizers; to recycle banana agricultural wastes to produce paper and fibre composites; and for banana constituents to be processed and used as natural food preservatives and food thickeners (Padam et al., 2014). These alternative uses could become an additional source of revenue for farmers. Governments and VSSs can support these initiatives by launching pilot projects in selected regions or countries and providing monetary or in-kind incentives to farmers willing to engage and add value to the local banana industry.

It is also important to boost the local consumption of sustainable bananas in producing and developing countries. Doing this requires increased awareness of the importance of consuming fruits on a regular

basis and educating consumers on the fruit's true price, including all costs associated with producing healthier and pesticide-free food, while making sure that growers are compensated. Promotional campaigns can feature VSS-compliant bananas in supermarkets on dates such as Earth Day and promote them as healthy snacks at the beginning of the New Year and during the back-to-school season (Bareuther, 2022). In addition, processing VSS-compliant bananas into other food products such as baby food, flour, milk, condiments, juice, and chips could be very beneficial and increase demand for local bananas in some producing countries. In Africa, for instance, the emerging middle class means these products may meet various market demands, as they are distinct from the usual supply (Afruibana, 2021).

Building more sustainable and resilient banana production systems is essential. It requires industry actors, including VSSs, to coordinate and implement effective measures to support farmers adopting more sustainable practices and ensure they are rewarded fairly. These measures include targeting price transparency; increasing financial rewards for farmers; improving contract terms; ensuring the fair distribution of costs that have not been included in the banana pricing structure, such as investments made to keep plantations free from pests and diseases; better access to certification; and implementing best farming practices. These measures, along with better and more transparent trade relationships, can make a difference to farmers' livelihoods.

## References

- Afruibana. (2021). *The banana industry – A pillar of African rural development. A common challenge for Africa and Europe*. <https://fruit35.blog/wp-content/uploads/2022/03/AFRUIBANA-White-Paper-on-African-Banana-EN.pdf>
- Agencia Española de Cooperación Internacional. (2016). *Estrategia para la adaptación: Una agricultura promovida, en conciencia y sostenible* [in Spanish]. <https://www.aecid.otc.cr/wp-content/uploads/2016/04/Estrategia-para-la-adaptaci%C3%B3n.pdf>
- AgroEcuador TV. (2022, July 6). *Algunas exportadoras de banano no pagan el precio mínimo de sustentación y otras cometen falsedad en los planes de embarque* [in Spanish]. <https://agroecuadortv.com/algunas-exportadoras-de-banano-no-pagan-el-precio-minimo-de-sustentacion-y-otras-cometen-falsedad-en-los-planes-de-embarque/>
- Askew, K. (2020). *Banana wars: Growers slam ‘hypocrisy’ of Aldi and Rainforest Alliance in pricing and standards spat*. Food Navigator. <https://www.foodnavigator.com/Article/2020/11/24/Banana-wars-Growers-slam-hypocrisy-of-Aldi-and-Rainforest-Alliance-in-pricing-and-standards-spat>
- Banana Link. (n.d.). *All about bananas*. <https://www.bananalink.org.uk/all-about-bananas/>
- Banana Link. (2017). *The problem with bananas: Environmental, social & corporate issues*. <https://www.bananalink.org.uk/the-problem-with-bananas/>
- Banana Link. (2019). *The social, environmental and health impacts of banana supply chains*. [https://www.rethinkingvaluechains.com/wp-content/uploads/2020/07/ENG\\_Bananas-case-study\\_RVC-Openresources\\_December-2019.pdf](https://www.rethinkingvaluechains.com/wp-content/uploads/2020/07/ENG_Bananas-case-study_RVC-Openresources_December-2019.pdf)
- Banana Link. (2020a). *Aldi and the Ecuadorian exporters “don’t seem to get it”!* <https://www.bananalink.org.uk/blog/aldi-and-the-ecuadorian-exporters-dont-seem-to-get-it/>
- Banana Link. (2020b). *Organic and Fairtrade banana consumption amounts to 10% in Europe and North America*. <https://www.bananalink.org.uk/news/organic-and-fairtrade-banana-consumption-amounts-to-10-in-europe-and-north-america/>
- Banana Link. (2021a). *Concern for banana livelihoods in hurricane ravaged Honduras*. <https://www.bananalink.org.uk/news/concern-for-banana-livelihoods-in-hurricane-ravaged-honduras/>
- Banana Link. (2021b). *Fairtrade leads way to living wages for banana workers*. <https://www.bananalink.org.uk/news/fairtrade-leads-way-to-living-wages-for-banana-workers/>
- Banana Link. (2021c). *Why sustainability is the fastest growing purchase consideration*. <https://www.bananalink.org.uk/news/why-sustainability-is-the-fastest-growing-purchase-consideration/>
- Banana Link. (2022). *Blog: ALDI sends a strong signal with a bold banana purchasing reform*. <https://www.bananalink.org.uk/news/blog-aldi-sends-a-strong-signal-with-a-bold-banana-purchasing-reform%ef%bf%bc/>

- Bareuther, C. (2022). *Consider the boom in organic sales driven by the pandemic and consumers' desire to make healthier choices*. Produce Business. <https://www.producebusiness.com/a-bunch-of-ways-to-sell-more-organic-bananas/>
- BASIC. (2015). *Banana value chains in Europe and the consequences of unfair trading practices*. [https://www.bananalink.org.uk/wp-content/uploads/2019/04/banana\\_value\\_chain\\_research\\_final\\_web.pdf](https://www.bananalink.org.uk/wp-content/uploads/2019/04/banana_value_chain_research_final_web.pdf)
- Beekman, G., Dekkers, M., & Koster, T. (2018). *Towards a sustainable banana supply chain in Colombia: Rainforest Alliance Certification and economic, social and environment conditions on small-scale banana plantations in Magdalena, Colombia*. Wageningen Economic Research. <https://doi.org/10.18174/466678>
- Behind the Peel. (n.d.). <https://behindthepeel.com/>
- Bellamy Sanderson, A. (2013). Banana production systems: Identification of alternative systems for more sustainable production. *Ambio*, 42(3), 334–343. <https://doi.org/10.1007/s13280-012-0341-y>
- Bloomberg News. (2019). *China is going bananas for bananas as purchases surge to record*. Bloomberg Professional Services. <https://www.bloomberg.com/professional/blog/china-going-bananas-bananas-purchases-surge-record/>
- Bucklelew, M. (2020). Declines in global banana production may harm nutritional diversity of diets worldwide. *Yale Environment Review*. <https://environment-review.yale.edu/declines-global-banana-production-may-harm-nutritional-diversity-diets-worldwide>
- Cabezas, G. (2022). *Russia-Ukraine conflict affecting the Ecuadorian banana industry*. Tridge. <https://www.tridge.com/stories/russia-ukraine-conflict-affecting-the-ecuadorian-banana-industry>
- Campos Malpartida, S., Flinterman, W., de Peña, M., & Paredes, W. (2022). *Banana prices are plummeting and farmers are suffering. That's a problem*. Fresh Plaza. <https://www.freshplaza.com/article/9394190/banana-prices-are-plummeting-and-farmers-are-suffering-that-s-a-problem/>
- Castro, L. M., Calvas, B., & Knoke, T. (2015). Ecuadorian Banana farms should consider organic banana with low price risks in their land-use portfolios. *PLOS ONE*, 10(3), e0120384. <https://doi.org/10.1371/journal.pone.0120384>
- Castro, H. (2021). *Banana prices increase in Ecuador due to damage to Central American plantations*. Fresh Plaza. <https://www.freshplaza.com/article/9284422/banana-prices-increase-in-ecuador-due-to-damage-to-central-american-plantations/>
- Cheon, J. & Lee, J. (2021). *2021 banana market report*. Tridge. <https://www.tridge.com/market-reports/2021-banana-market-report>
- Chiquita Brands. (2022). *Chiquita sustainability report 2021-2022*. [https://www.chiquita.com/wp-content/uploads/2022/04/CHIQUITA\\_Sustainability-Report-2022.pdf](https://www.chiquita.com/wp-content/uploads/2022/04/CHIQUITA_Sustainability-Report-2022.pdf)

- Compagnie fruitière. (2020). *Growing organic bananas in Latin America*. <https://www.compagniefruitiere.fr/en/derose/>
- Crawford, A., & Kueffner, S. (2020). *Disease is ravaging the \$25 billion banana industry*. Bloomberg. <https://www.bloomberg.com/news/features/2020-05-22/the-25-billion-banana-industry-is-being-ravaged-by-disease>
- Cross, D.T. (2019). *Bananas could soon be gone due to diseases and climate change*. Sustainability Times. <https://www.sustainability-times.com/environmental-protection/our-bananas-may-be-doomed-due-to-diseases-and-climate-change/>
- Del Monte International. (2021). *Fresh Del Monte 2020 sustainability report*. <https://freshdelmonte.com/sustainability-reports/>
- Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH. (2021). *Cost of production in the banana sector*. [https://www.nachhaltige-agrarlieferketten.org/fileadmin/user\\_upload/Production-Costs-Colombia.pdf](https://www.nachhaltige-agrarlieferketten.org/fileadmin/user_upload/Production-Costs-Colombia.pdf)
- Dole. (2013). *Harvesting bananas* [video]. <https://www.youtube.com/watch?v=17sak6Vlq8>
- Dole Food Company, Inc. (2020). *Dole corporate responsibility & sustainability report 2020*. [https://www.dole.com/-/media/project/dole/farm/farm-images/dole\\_sustainability\\_report\\_2020-englischfinal.pdf](https://www.dole.com/-/media/project/dole/farm/farm-images/dole_sustainability_report_2020-englischfinal.pdf)
- Dole Food Company, Inc. (2021). *Informe de Sostenibilidad Frutas Frescas 2020-2021* [in Spanish]. <https://www.dole.com/-/media/project/dole/brand/campaign/sustainability-report/informe-de-sostenibilidad-2020-2021-dole-frutas-frescas.pdf>
- Eckstein, D., Künzel, V., & Schäfer, L. (2021). *Global climate risk index*. Germanwatch. <https://www.germanwatch.org/en/cri>
- Elder, S., Wilkings, A., Larrea, C., Elamin, N., & Fernandez de Cordoba, S. (2021). *State of Sustainability Initiatives review: Standards and poverty reduction*. International Institute for Sustainable Development. <https://www.iisd.org/publications/ssi-review-standards-poverty-reduction>
- El Universo. (2022, October 28). *Desde Ecuador, países bananeros de la región insisten a supermercados europeos en cambios de sus estrategias de compras para el 2023* [in Spanish]. [https://www.eluniverso.com/noticias/economia/desde-ecuador-paises-bananeros-de-la-region-insisten-a-supermercados-europeos-en-cambios-de-sus-estrategias-de-compras-para-el-2023-nota/?modulo=interstitial\\_link](https://www.eluniverso.com/noticias/economia/desde-ecuador-paises-bananeros-de-la-region-insisten-a-supermercados-europeos-en-cambios-de-sus-estrategias-de-compras-para-el-2023-nota/?modulo=interstitial_link)
- Equifruit. (n.d.). *Banana background check*. <https://equifruit.com/en/sustainability>
- Evans, E., & Ballen, F. (2018). *Banana market*. askifas. <https://edis.ifas.ufl.edu/publication/FE901>
- Evans, E., & Ballen, F. (2022). *Banana market*. askifas. <https://edis.ifas.ufl.edu/publication/FE901>

- Fairtrade America. (2021). *Banana impact report – 2020*. <https://www.fairtradeamerica.org/why-fairtrade/global-impact/reports-trends/banana-impact-report-2020/>
- Fairtrade International. (2021a). *Fairtrade increases banana minimum price as producers face ‘financial squeeze.’* <https://www.fairtrade.net/news/fairtrade-increases-banana-minimum-price-as-producers-face-financial-squeeze>
- Fairtrade International. (2021b). *Fairtrade leads way to living wages for banana workers.* <https://www.fairtrade.net/news/fairtrade-leads-way-to-living-wages-for-banana-workers>
- Fairtrade International. (2021c). *Fairtrade International – Standards & pricing 31.12.2021.* [https://files.fairtrade.net/standards/HL\\_Calculation-of-wages-in-the-Fresh-Fruit-Standard.pdf](https://files.fairtrade.net/standards/HL_Calculation-of-wages-in-the-Fresh-Fruit-Standard.pdf)
- Fairtrade International. (2022a). *A banana price crunch is hitting banana farmers and workers hard. Fairtrade’s Silvia Campos explains why.* <https://www.fairtrade.net/news/a-banana-price-crunch-is-hitting-banana-farmers-and-workers-hard-fairtrades-silvia-campos-explains-why>
- Fairtrade International. (2022b). *As production costs soar, Fairtrade raises banana prices in support of farmers.* <https://www.fairtrade.net/news/fairtrade-raises-banana-prices-in-support-of-farmers>
- Fairtrade International. (2022c). *Banana price announcement from Fairtrade International Standards & Pricing.* [https://files.fairtrade.net/standards/Standards\\_Price-Announcement\\_Banana\\_EN.pdf](https://files.fairtrade.net/standards/Standards_Price-Announcement_Banana_EN.pdf)
- Fairtrade International. (2022d). *Fairtrade minimum price and fairtrade premium table.* <https://files.fairtrade.net/Fairtrade-Minimum-Price-and-Premium-Table-EN-PUBLIC.pdf>
- FAOSTAT. (2022). *Crops and livestock products.* <https://www.fao.org/faostat/en/#data/QCL>
- FAOSTAT. (2023). *Bananas: Production, trade and producer’s price data.* <http://www.fao.org/faostat/en/#data>
- Farrant, T. (2022). *How has the Russia-Ukraine war devastated Ecuador’s banana industry?* Euronews.culture. <https://www.euronews.com/culture/2022/04/06/how-has-the-russia-ukraine-war-devastated-ecuador-s-banana-industry>
- Fassler, J. (2019). *Bananas are getting cheaper. That low price comes with hidden costs.* The Counter. <https://thecounter.org/bananas-are-getting-cheaper-that-low-price-comes-with-hidden-costs/>
- Fones, H. (2020). *Guest post: How climate change could accelerate the threat of crop diseases.* Carbon Brief. <https://www.carbonbrief.org/guest-post-how-climate-change-could-accelerate-the-threat-of-crop-diseases/>
- Food and Agriculture Organization of the United Nations. (n.d.). *World banana forum.* <https://www.fao.org/world-banana-forum/en/>
- Food and Agriculture Organization of the United Nations. (2020). *Banana market review 2020.* <https://www.fao.org/3/cb6639en/cb6639en.pdf>

- Food and Agriculture Organization of the United Nations. (2021a). *Banana market review 2021*. <https://www.fao.org/documents/card/en/c/CC1610EN/>
- Food and Agriculture Organization of the United Nations. (2021b). *Banana statistical compendium 2020*. <https://www.fao.org/3/cb6637en/cb6637en.pdf>
- Food and Agriculture Organization of the United Nations. (2022a). *Banana: Market review – Preliminary results 2022*. <https://www.fao.org/3/cc3421en/cc3421en.pdf>
- Food and Agriculture Organization of the United Nations. (2022b). *Markets and trade: Bananas*. <https://www.fao.org/markets-and-trade/commodities/bananas/en/>
- Fresh Fruit Portal. (2021). *ALDI's banana price increase is “a step forward, but not enough” – LatAm industry*. <https://www.freshfruitportal.com/news/2021/12/13/aldis-banana-price-increase-is-a-step-forward-but-not-enough/#:~:text=The%20German%20supermarket%20chain%2C%20ALDI,%241.84%20per%20box%20by%202022>
- Fresh Plaza. (2020). *Overview global banana market*. <https://www.freshplaza.com/article/9238048/overview-global-banana-market/>
- Fresh Plaza. (2021). *The logistics and transportation costs of banana exports soar by up to 300% in Colombia*. <https://www.freshplaza.com/article/9352429/the-logistics-and-transportation-costs-of-banana-exports-soar-by-up-to-300-in-colombia/>
- Fresh Plaza. (2022a). *Do the EU's demands threaten Latin American bananas?* <https://www.freshplaza.com/article/9433445/do-the-eu-s-demands-threaten-latin-american-bananas/>
- Fresh Plaza. (2022b). *Ecuadorian banana exports until May fell by 6.36%*. <https://www.freshplaza.com/article/9440497/ecuadorian-banana-exports-until-may-fell-by-6-36/>
- Fresh Plaza. (2022c). *Ecuador will subsidize more than 4,000 small banana producers affected by the crisis generated by the war*. <https://www.freshplaza.com/article/9429748/ecuador-will-subsidize-more-than-4-000-small-banana-producers-affected-by-the-crisis-generated-by-the-war/>
- Fresh Plaza. (2022d). *Lidl shows its commitment to the banana sector*. <https://www.freshplaza.com/article/9429330/lidl-shows-its-commitment-to-the-banana-sector/>
- Fresh Plaza. (2022e). *Price of banana varieties triples in two weeks*. <https://www.freshplaza.com/article/9435807/price-of-banana-varieties-triples-in-two-weeks/>
- FRUITROP. (2021a). *Ecuador's minimum reference price for banana boxes to remain unchanged in 2022*. <https://www.fruitrop.com/en/Articles-by-subject/Direct-from-the-markets/2021/Ecuador-s-minimum-reference-price-for-banana-boxes-to-remain-unchanged-in-2022>
- FRUITROP. (2021b). *Fairtrade setting new minimum prices for the banana in 2022*. <https://www.fruitrop.com/en/Articles-by-subject/Direct-from-the-markets/2021/Fairtrade-setting-new-minimum-prices-for-the-banana-in-2022>
- Fyffes. (2021). *Sustainability report*. <https://www.fyffes.com/sustainability/reports-2/>



- Galindo, G. (2022). *Bananas are early battlefront in EU bid for greener farm standards*. Politico. <https://www.politico.eu/article/bananas-are-early-battlefront-in-eu-bid-for-greener-farm-standards/>
- Gebre, G. G., & Rik, E. (2016). Sustainability assessment of a banana value chain: The case of Arba Minch, Ethiopia. *Journal of Agribusiness* 34(2), 181–193. [https://hbo-kennisbank.nl/resolve/vanhall\\_larenstein/eyJ1IjogImh0dHBzOi8vd3d3LmdyZWVu aS5ubC9pZ3VhbmEvQ01TLk1ldGFEYXRhRWRpdERvd25sb2FkLmNscz9maWxlPTI6M TOzNDEyOjEiLCAiaCI6ICJkMDIwMWJhZmNi MDE5MTZkOTYyYmU2NjkkNmZlYz QxNDY1MWFhNDhiMTk2NDIwMjg0MGM2MDIwN2E2ZDNkMzUwIn0=](https://hbo-kennisbank.nl/resolve/vanhall_larenstein/eyJ1IjogImh0dHBzOi8vd3d3LmdyZWVu aS5ubC9pZ3VhbmEvQ01TLk1ldGFEYXRhRWRpdERvd25sb2FkLmNscz9maWxlPTI6M TOzNDEyOjEiLCAiaCI6ICJkMDIwMWJhZmNi MDE5MTZkOTYyYmU2NjkkNmZlYz QxNDY1MWFhNDhiMTk2NDIwMjg0MGM2MDIwN2E2ZDNkMzUwIn0=)
- Global Nature Fund & Lake Constance Foundation. (2019). *Del Campo al Plato: Baseline report: Biodiversity in standards of the banana and pineapple sector*. [https://www.globalnature.org/bausteine.net/f/9578/CAP\\_Baseline-Report.pdf?fd=0](https://www.globalnature.org/bausteine.net/f/9578/CAP_Baseline-Report.pdf?fd=0)
- Guinness World Records. (2022). *Most popular fruit*. <https://www.guinnessworldrecords.com/world-records/74279-most-popular-fruit>
- Haqqi, T. (2022). *15 largest supermarket chains in the world*. Yahoo Finance. <https://finance.yahoo.com/news/15-largest-supermarket-chains-world-160828739.html>
- He, L. (2022). *Port delays are getting worse in Shanghai. That's very bad news for global supply chains*. CNN Business. <https://www.cnn.com/2022/04/01/business/shanghai-covid-port-delays-global-impact-intl-hnk/index.html>
- Hommel, A. (2019). *Global market update: Banana*. Tridge. <https://www.tridge.com/stories/global-market-update-banana>
- Hoose, S. (2021). *How long does it take for a banana flower to become a fruit?* Hunker. <https://www.hunker.com/12418646/how-long-does-it-take-for-a-banana-flower-to-become-a-fruit>
- IDH Sustainable Trade. (2018). *Living wages in the banana sector*. <https://www.idhsustainabletrade.com/news/living-wages-in-the-banana-sector/>
- IDH Sustainable Trade. (2023). *UK retailers commit to close living wage gaps in international banana supply chains*. <https://www.idhsustainabletrade.com/news/uk-retailers-commit-to-close-living-wage-gaps-in-international-banana-supply-chains/>
- India Today Web Desk. (2019). *Bananas: 10 things you did not know*. India Today. <https://www.indiatoday.in/fyi/story/bananas-10-things-you-did-not-know-1503884-2019-04-17>
- International Labor Rights Forum & Banana Link. (2017). *A call to action from workers in the global banana industry*. <https://laborrights.org/releases/call-action-workers-global-banana-industry>
- Intrans. (2015). *The journey of bananas: From land to your hand*. Institute for Transportation. <https://intrans.iastate.edu/news/the-journey-of-bananas-from-land-to-your-hand/>
- ITC News. (2018). *What are the world's favourite fruits?* International Trade Centre <http://www.intracen.org/news/What-are-the-worlds-favourite-fruits/>

- Jim Prevor's Perishable Pundit. (2008). *Hurricane Dean wreaks havoc on banana-producing islands*. <https://perishablepundit.com/hurricane-dean-wreaks-havocon-banana-producing-islands/>
- Karst, T. (2021). *COVID-19 pandemic supports banana demand*. The Packer. <http://www.thepacker.com/news/produce-crops/covid-19-pandemic-supports-banana-demand>
- Lauriat, G. (2020). Banana business facing crisis of pandemic proportions. *American Journal of Transportation*, 708. <https://ajot.com/premium/ajot-banana-business-facing-crisis-of-pandemic-proportions>
- Liakos, C. (2022, March 1). *Another squeeze on Russia: Three shipping companies won't sail there*. CNN Business. <https://www.cnn.com/2022/03/01/business/russia-shipping-halt-maersk-msc/index.html>
- Maxwell, M. (2021). *Banana producers react to Aldi price hike*. Eurofruit. <http://www.fruitnet.com/eurofruit/article/187028/banana-producers-react-to-aldi-price-hike>
- Meier, C., Sampson, G., Larrea, C., Schlatter, B., Bermudez, S., Dang, D., & Willer, H. (Eds.). (2021). *The state of sustainable markets 2021: Statistics and emerging trends*. International Trade Centre. <https://intracen.org/media/file/11643>
- Mordor Intelligence. (2022). *Banana market growth, trends, COVID19 impact and forecast 2023–2028*. <https://www.mordorintelligence.com/industry-reports/banana-market>
- Morrison, O. (2021). *Banana sector 'ripe for innovation' amid price wars and disease threat*. Food Navigator Europe. <https://www.foodnavigator.com/Article/2021/11/23/Banana-sector-ripe-for-innovation-amid-price-wars-and-disease-threat>
- Moyer, K. (2022). *20 interesting banana facts*. <https://blog.aghires.com/20-interesting-banana-facts/>
- Organic Produce Network. (2018). *Organics Unlimited carries on family tradition*. <https://www.organicproducenetwork.com/article/591/organics-unlimited-carries-on-family-tradition>
- Organic Produce Network. (2021). *Organic produce performance: Q1 2021*. <https://m.andnowuknow.com/quick-dish/organic-produce-network-releases-q1-2021-organic-produce-performance-report-Matt-Seeley-Steve-Lutz/lilian-diep/72986>
- Organic Produce Network. (2022a). *Organic banana industry still suffering with low prices*. *OPN Connect Newsletter*, 255. <https://www.organicproducenetwork.com/article/1582/organic-banana-industry-still-suffering-with-low-prices>
- Organic Produce Network. (2022b). *US organic produce sales up \$9 billion in 2021; up 5.5% from 2020*. *OPN Connect Newsletter*, 253. <https://www.organicproducenetwork.com/article/1567/us-organic-produce-sales-top-9-billion-in-2021-up-55-from-2020>
- Oya, C., Schaefer, F., Skalidou, D., McCosker, C., & Langer, L. (2017). *Effects of certification schemes for agricultural production on socio-economic outcomes in low- and middle-income countries: A systematic review*. *Campbell Systematic Reviews*, 13(1), 1–346. <https://doi.org/10.4073/csr.2017.3>

- Padam, B. S., Tin, H. S., Chye, F. Y., & Abdullah, M. I. (2014). Banana by-products: An under-utilized renewable food biomass with great potential. *Journal of Food Science and Technology*, 51(12), 3527–3545. <https://doi.org/10.1007/s13197-012-0861-2>
- Paustian, K., Larson, E., Kent, J., Marx, E. & Swan, A. (2019). Soil C sequestration as a biological negative emission strategy. *Frontiers in Climate*, 1. <https://doi.org/10.3389/fclim.2019.00008>
- Philippines Statistics Authority. (2021). *NegOr January 2021 farm prices*. <http://rssl07.psa.gov.ph/article/negor-january-2021-farm-prices>
- Pinedo Caro, L. (2020, December). *Wages and working conditions in the banana sector: The case of Costa Rica, Ethiopia, India, Indonesia and Viet Nam*. International Labour Organization. [https://www.ilo.org/wcmsp5/groups/public/---ed\\_protect/---protrav/---travail/documents/projectdocumentation/wcms\\_765133.pdf](https://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---travail/documents/projectdocumentation/wcms_765133.pdf)
- Poggio, C. (2017, November 10). *Ecuador: Banana producers don't always get paid the set price*. Fresh Plaza. <https://www.freshplaza.com/europe/article/2184693/ecuador-banana-producers-don-t-always-get-paid-the-set-price/>
- Potts, J., Lynch, M., Wilking, A., Huppe, G., Cunningham, M., & Voora, V. (2014). *State of Sustainability Initiatives review 2014: Standards and the green economy*. International Institute for Sustainable Development & International Institute for Environment and Development. [https://www.iisd.org/sites/default/files/pdf/2014/ssi\\_2014.pdf](https://www.iisd.org/sites/default/files/pdf/2014/ssi_2014.pdf)
- Rainforest Alliance. (n.d.). *Certified-farms-groups-and-CoC-operations-june-2021*. <https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.rainforest-alliance.org%2Fwp-content%2Fuploads%2F2021%2F07%2FCertified-Farms-Groups-and-CoC-Operations-June-2021.xlsx&wdOrigin=BROWSELINK>
- Rainforest Alliance. (2021). *Timelines: Implementation of the sustainability differential and investments under the 2020 Certification Program*. <https://www.rainforest-alliance.org/business/certification/timelines-implementation-of-the-sustainability-differential-and-investments-under-the-2020-certification-program/>
- Reay, D. (2019). Climate-smart bananas. In D. Reay (Ed.), *Climate-smart food* (pp. 81–91). Springer International Publishing. [https://doi.org/10.1007/978-3-030-18206-9\\_7](https://doi.org/10.1007/978-3-030-18206-9_7)
- Research and Markets. (2019). *Global banana market 2019-2024: Increasing health consciousness driving the banana market*. Cision. <https://www.prnewswire.com/news-releases/global-banana-market-2019-2024-increasing-health-consciousness-driving-the-banana-market-300880835.html>
- Reybanpac. (n.d.). *Reybanpac Línea de Negocio Banano* [in Spanish]. <https://reybanpac.com/linea-de-negocio/banano>

- Salvacion, A.R., Cumagun, C.J.R., Pangga, I.B., Magcale-Macandog, D.B., Cruz, P.C. Sta, Saludes, R.B., Solpot, T. C., & Aguilar, E. A. (2019). Banana suitability and Fusarium wilt distribution in the Philippines under climate change. *Spatial Information Research*, 27, 339–49.
- Schockemöhle, U. (2022). *Ships are moored for days outside ports in the Caribbean or Central American region*. Fresh Plaza. <https://www.freshplaza.com/article/9440928/ships-are-moored-for-days-outside-ports-in-the-caribbean-or-central-american-region/>
- Secretariat of the World Banana Forum. (2017). *Carbon footprint of the banana supply chain*. Food and Agriculture Organization of the United Nations. <https://www.fao.org/3/i6842e/i6842e.pdf>
- Skinner, C., Gattinger, A., Krauss, M., Krause, H. M., Mayer, J., van der Heijden, M. G. A., & Mäder, P. (2019). The impact of long-term organic farming on soil-derived greenhouse gas emissions. *Scientific Reports*, 9, 1702. <https://doi.org/10.1038/s41598-018-38207-w>
- Timmusk, S., Nevo, E., Ayele, F., Noe, S., & Niinemets, Ü. (2020). Fighting Fusarium pathogens in the era of climate change: A conceptual approach. *Pathogens*, 9(6), 419. <https://doi.org/10.3390/pathogens9060419>
- True Price. (2017). *Bananas: Fairtrade Colombia, Dominican Republic, Ecuador and Peru*. <https://trueprice.org/consumer/bananas-fairtrade/>
- Tumin, S. A., & Shaharudin, A. A. (2019). *Banana: The world's most popular fruit*. Khazanah Research Institute. <https://www.krinstitute.org/Views-@-Banana-; The Worlds Most Popular Fruit.aspx>
- UN Comtrade. (2022). International trade statistics. UN Comtrade Database. <https://comtrade.un.org/data/>
- United Nations Conference on Trade and Development. (2016). *Banana. An INFOCOMM commodity profile*. [https://unctad.org/system/files/official-document/INFOCOMM\\_cp01\\_Banana\\_en.pdf](https://unctad.org/system/files/official-document/INFOCOMM_cp01_Banana_en.pdf)
- Vancouver Farmers Markets. (n.d.). *CSA box*. Vancouver Farmers Market. <https://eatlocal.org/programs/csa-box-program/>
- Van Der Broek, A. (2022). *Seeing better organic banana supplies over 2021*. Fresh Plaza. <https://www.freshplaza.com/article/9440982/2022-seeing-better-organic-banana-supplies-over-2021/>
- Varma, V., & Bebbler D.P. (2019). Climate change impacts on banana yields around the world. *Nature Climate Change*, 9, 752–757. <https://doi.org/10.1038/s41558-019-0559-9>
- Voora, V., Bermudez, S., & Larrea, C. (2019). *Global market report: Coffee*. International Institute for Sustainable Development. <https://www.iisd.org/sites/default/files/publications/ssi-global-market-report-coffee.pdf>
- Voora, V., Larrea, C., & Bermudez, S. (2020). *Global market report: Bananas*. International Institute for Sustainable Development <https://www.iisd.org/system/files/publications/ssi-global-market-report-banana.pdf>

- Voora, V., Larrea, C., Huppe, G., & Nugnes, F. (2022). *Standards and investments in sustainable agriculture*. International Institute for Sustainable Development. <https://www.iisd.org/system/files/2022-04/ssi-initiatives-review-standards-investments-agriculture.pdf>
- Wageningen University & Research. (2017). *World-first Panama disease-resistant Cavendish bananas* [press release]. <https://www.wur.nl/en/newsarticle/World-first-Panama-disease-resistant-Cavendish-bananas.htm>
- Willer, H., & Trávní, J. (2022). *The world of organic agriculture: Statistics and emerging trends 2022*. FiBL & IFOAM – Organics International.
- WorldAtlas. (2020). *Most popular fruits in the world*. <https://www.worldatlas.com/articles/the-most-popular-fruit-in-the-world.html>
- World Bank. (2023). *World Bank commodities price data (The Pink Sheet)*. <https://thedocs.worldbank.org/en/doc/5d903e848db1d1b83e0ec8f744e55570-0350012021/related/CMO-Pink-Sheet-February-2023.pdf>

Vivek Voora, Cristina Larrea and Erika Luna prepared the Market Overview section; Steffany Bermudez, Johanna Joy Farrell and Cristina Larrea prepared the section A Dive into Banana Prices.

Peer reviewers: Judith Ganes and Alistair Smith

### **Acknowledgements**

We would like to acknowledge the contributions of Lucy Everett and Jennah Landgraf in conducting research on sustainable consumption preferences in developing countries and collecting sustainable sourcing information from banana buyers.

The Sustainable Commodities Marketplace Series provides a market performance overview and outlook for key agricultural commodities that comply with a number of voluntary sustainability standards (VSSs), focusing on global sustainable consumption and production. Each year, the series focuses on a different overarching theme, with individual reports for that year devoted to providing a market update for a chosen commodity. These reports are designed to be accessible and relevant for a range of audiences, including supply chain decision makers, procurement officers, policy-makers, and producers. The series builds on *The State of Sustainable Markets 2021*, a joint publication from IISD, the International Trade Center (ITC), and the Research Institute of Organic Agriculture (FiBL), which examines over a dozen sustainability standards for various commodities.

The *Global Market Report* analyzes trends in banana production, consumption, trade flows, and other relevant areas. It uses 2019 data for banana production that is VSS-compliant, given that this was the most current data available when we conducted the analysis. The report also examines prices and margins in the banana sector, looking at how VSSs contribute to increasing farm prices. It also provides recommendations to VSSs and other actors to increase the price and income that farmers obtain for their bananas and build sustainable and resilient banana systems.

IISD's State of Sustainability Initiatives advances sustainable and inclusive value chains by providing credible and solutions-oriented research, dialogue, and strategic advice for decision-makers about voluntary sustainability standards and other supportive initiatives.

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