



# Banana value chain profile for Peru: A top organic producing country is threatened by Fusarium TR4


Leslie E. Mosquera<sup>1</sup>, Diego A. Álvarez<sup>1</sup>, Thea Ritter<sup>1</sup>, Jonathan Mockshell<sup>1</sup>, Juan Carlos Rojas Llanque<sup>2</sup>, and Miguel Dita<sup>3</sup>

<sup>1</sup> Performance, Innovation and Strategic Analysis for Impact (PISA4Impact), Applied Economics and Impact Evaluation, International Center for Tropical Agriculture (CIAT)


<sup>2</sup> Instituto Nacional de Innovación Agraria (INIA)


<sup>3</sup> Biodiversity for Food and Agriculture, Bioversity International

## HIGHLIGHTS

 The banana sector in Peru provides employment, generates export revenue, and contributes to the country's food security. Bananas are one of Peru's top agricultural exports, accounting for significant foreign exchange earnings. Peru ranks third in organic banana production and is the nineteenth largest banana exporter globally and the tenth largest in Latin America and the Caribbean.

 Bananas are a significant source of food for many Peruvians and are the most consumed fruit in the country. The vast majority (91.3%) of the country's banana and plantain production is dedicated to supplying the domestic markets.

 The banana value chain in Peru is characterized by the high degree of cooperation not only among producers, but also among public and private institutions with the objective of strengthening the banana sector.

 In March 2021, Fusarium Tropical Race 4 (TR4) was detected in Piura, the main organic banana-producing province for export in Peru. Institutions are trying to mitigate its impact through strategies including training, monitoring, and disinfection. Rapid spread remains a concern and could be worsened by heavy rains and flooding.



*Bananas play an important role in Peru's economy. Peru is a major player in organic banana production.*

Following the Dominican Republic and Ecuador, Peru is the third largest organic banana producer in the world, and is an important country for organic banana trade, exporting 114,000 tons of organic bananas in 2021 (Leon, 2023). In addition, Peru is the nineteenth largest banana exporter in the world and the tenth largest in Latin America and the Caribbean. Peru's banana sector is threatened by the arrival of *Fusarium Tropical Race 4 (TR4)* in the country in 2021 (SENASA, 2021a). Given the importance of bananas for the region and the potential impact of TR4, below we examine the banana sector in Peru in more detail.

## **The importance of the banana sector for the economy**

The Musaceae<sup>1</sup> sector (bananas and plantains) in Peru is important for its economy, providing employment, generating export revenue, and contributing to the country's food security (MIDAGRI, 2014). Bananas are one of Peru's top agricultural exports, accounting for significant foreign exchange earnings. In 2021, Peru exported 210,702 tons of bananas, generating approximately USD 147.3 million in export revenue. The main destination countries are the Netherlands, which is the largest buyer of Peru's bananas with a value of USD 43.5 million and a 29.7% share of Peruvian banana exports, followed by the United States with a 22% share, and Panama with a 17.1% share (MIDAGRI, 2021).

## **Importance of the banana sector for Peru's food security**

Banana is an important source of food for many Peruvians. On average, each person in Peru consumes 58.4 kg of bananas per year, which is the most consumed fruit in the country (FAOSTAT, 2022). This is confirmed by data from the 2019 National Household Survey (ENAH0), which shows that bananas are the most consumed fruit by Peruvians (Infobae, 2022). The cultivation of bananas and plantains play a significant role in rural development, ensuring food security, and reducing poverty. A large share (91.3%) of the country's

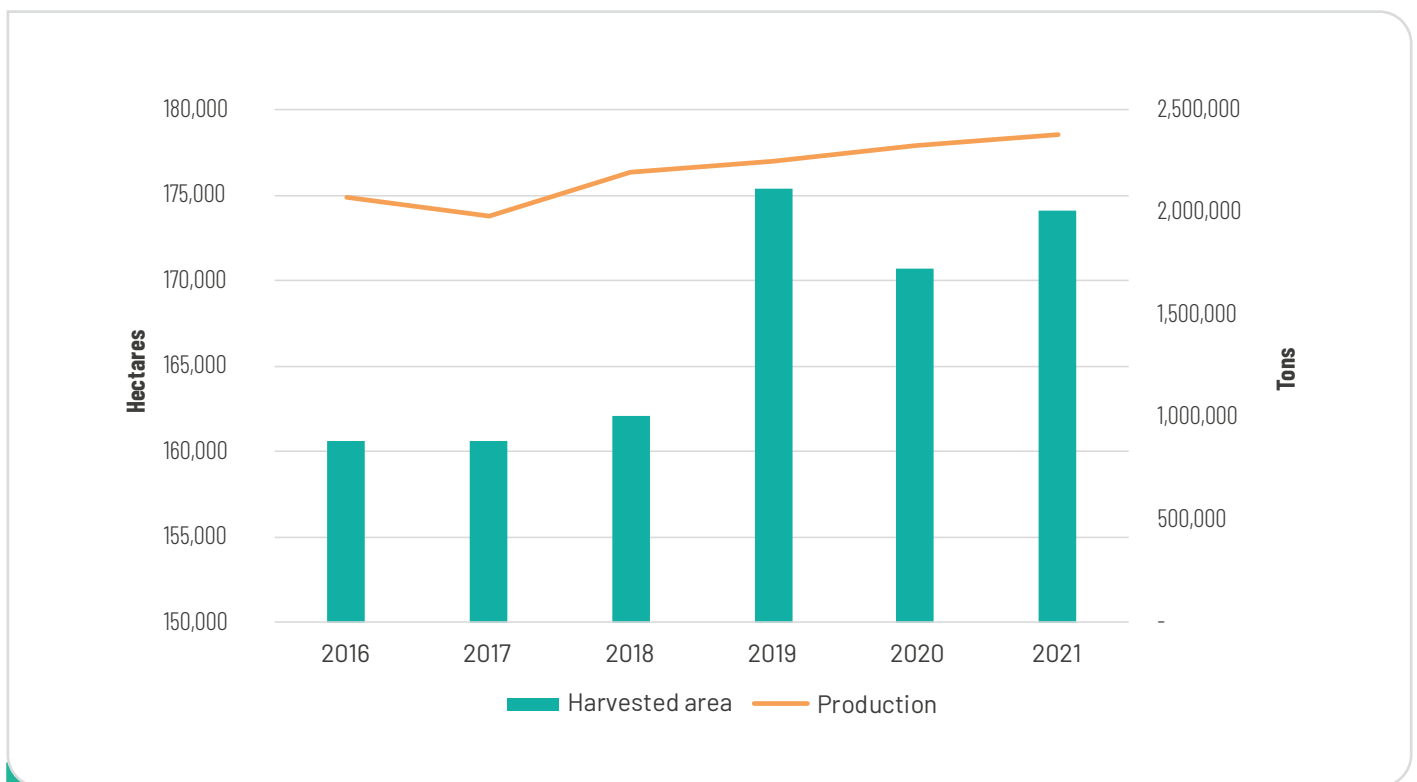
<sup>1</sup> Musaceae is a botanical family that includes various species of flowering plants commonly known as bananas and plantains. It is also called "Banana Family."

banana and plantain production is dedicated to supplying the country's domestic markets (FAOSTAT, 2022).

## Banana production across Peru

From its national agricultural lands, 174,100 hectares (ha) of bananas and plantains were harvested in Peru in 2021, of which less than 10% (16,500 hectares) were certified as organic banana. Although the share may appear small within Peru, the number of hectares is equivalent to half of the area certified as organic bananas in the Dominican Republic, which is the world's largest producer of organic bananas (FAOSTAT, 2022). The production and export of organic bananas have become increasingly important

to Peru's economy and agricultural sector. Organic bananas provide economic benefits to smallholder farmers, promote environmentally friendly production practices, and cater to the growing demand for healthier and more sustainable food products in the global market. Figure 1 shows bananas production in terms of the amount produced and the area harvested from 2016 to 2021 based on data from FAOSTAT (2022). From 2016 to 2018, harvested areas remained low, which meant lower production. In 2019, the harvested area increased by 8.2% and production increased by 2.6%. Production has maintained an increasing trend since 2017 even though the harvested area has decreased since 2019. This is because yields increased 6.3% from 2019 to 13.66 tons/ha in 2021.

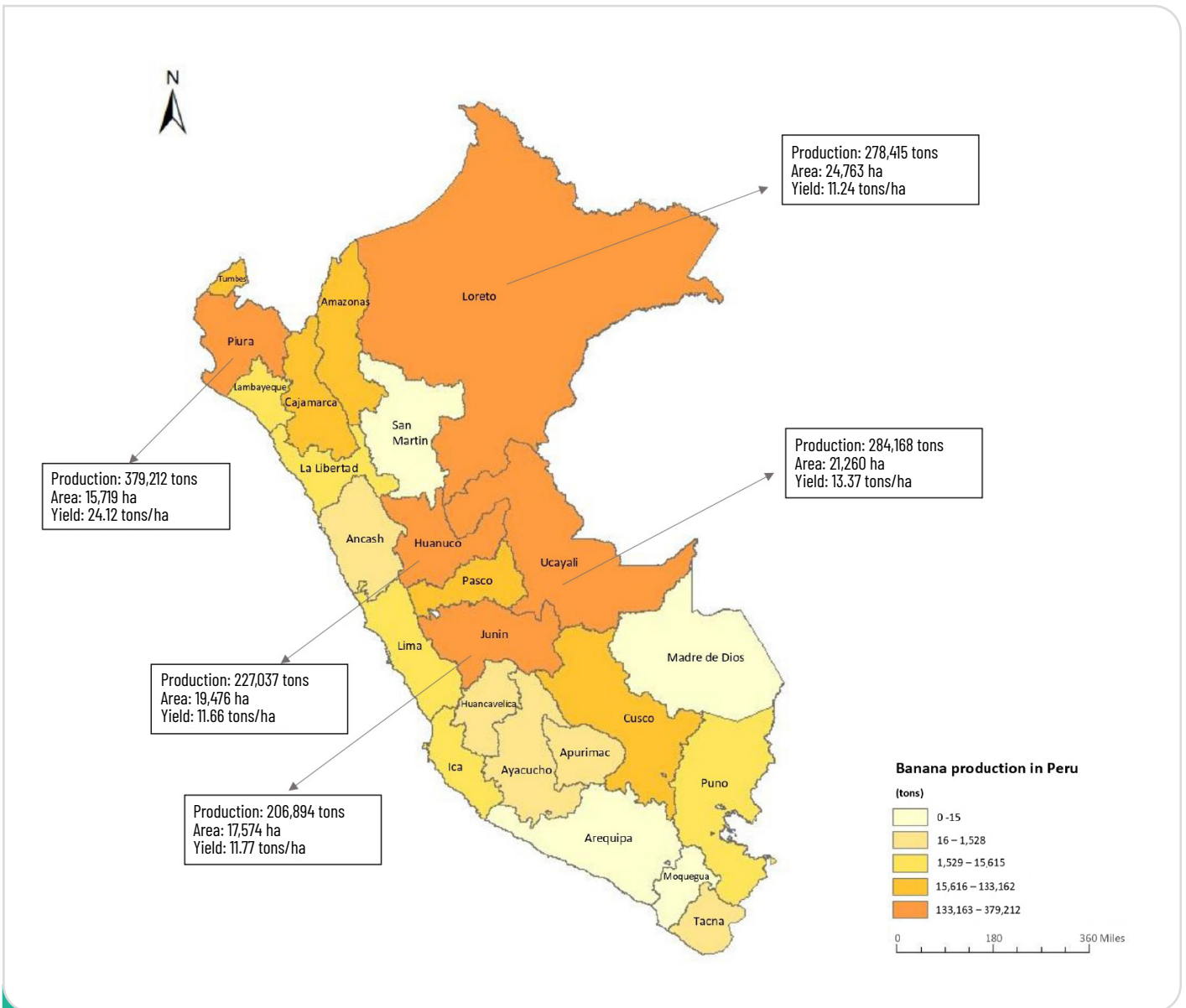


**Figure 1**

Banana and plantain production in Peru (2016-2021)  
 Source: Own elaboration based on FAOSTAT (2022)

Production for export in Peru is focused on organic bananas, mainly grown as a monoculture crop. Figure 2 shows banana and plantain production in Peru by region in 2019. Peru is divided into three zones: the Jungle, Highland, and the Coastal zone. The Jungle zone produces 50% of Peruvian bananas, of which the region of San Martin has the highest production (392,917 tons, equivalent to 17.4%

of national production) and bananas are planted on 38,988 ha. Ucayali and Loreto are the third and fourth largest regions producing bananas in Peru, with productions of 284,168 tons and 278,415 tons, respectively. In the Highland zone, 26% of banana production is concentrated in Huanuco and Junin, which produce 227,037 tons and 206,894 tons, respectively.



**Figure 2**

Banana and plantain production by region in Peru  
 Source: Own elaboration based on MIDAGRI (2020)



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The Coastal zone is home to the largest banana-exporting regions in Peru. Piura is the second largest banana-producing region at the national level with a production of 379,212 tons and the largest banana-exporting region with 206,000 bananas exported (Ramos, 2020). In addition, Piura is the most important region for Peruvian organic banana production, where 60% of the country's area certified as organic is located, equivalent to 9,927 ha (Andina, 2022). Despite having a smaller area of land dedicated to banana production (15,719 ha), this region contributes 16% to national production, resulting in high yields (24 tons/ha). The region of Tumbes has the highest yields in the country (24.4 tons/ha) (MIDAGRI, 2020). Other regions that exported organic bananas in 2019 were Lambayeque, La Libertad, and Tumbes with export values

of 7,876 tons, 3,643 tons, and 2,904 tons, respectively (Ramos, 2020). The regions of Amazonas, Junin, Huanuco, Ucayali, Loreto, Cusco, and San Martín play a key role in the supply of bananas and plantain for domestic markets.

## Actors in Peru's banana value chain

Figure 3 shows the structure of the banana value chain in Peru. At the beginning of the banana value chain, both the public and private sector are suppliers who are responsible for boosting banana production. Suppliers can be categorized into three types. The first consists of financial suppliers, such as private banks, the Agrarian Bank (a public institution that belongs to the Ministry of Economy and Finance, as well as the Regional Directorates of Agriculture, which are institutions that contribute to regional agricultural improvement and report directly to each region's Governor), and the Ministry of Agricultural Development and Irrigation (MIDAGRI), which develops national agricultural policies and allocates funds to the agricultural sector.

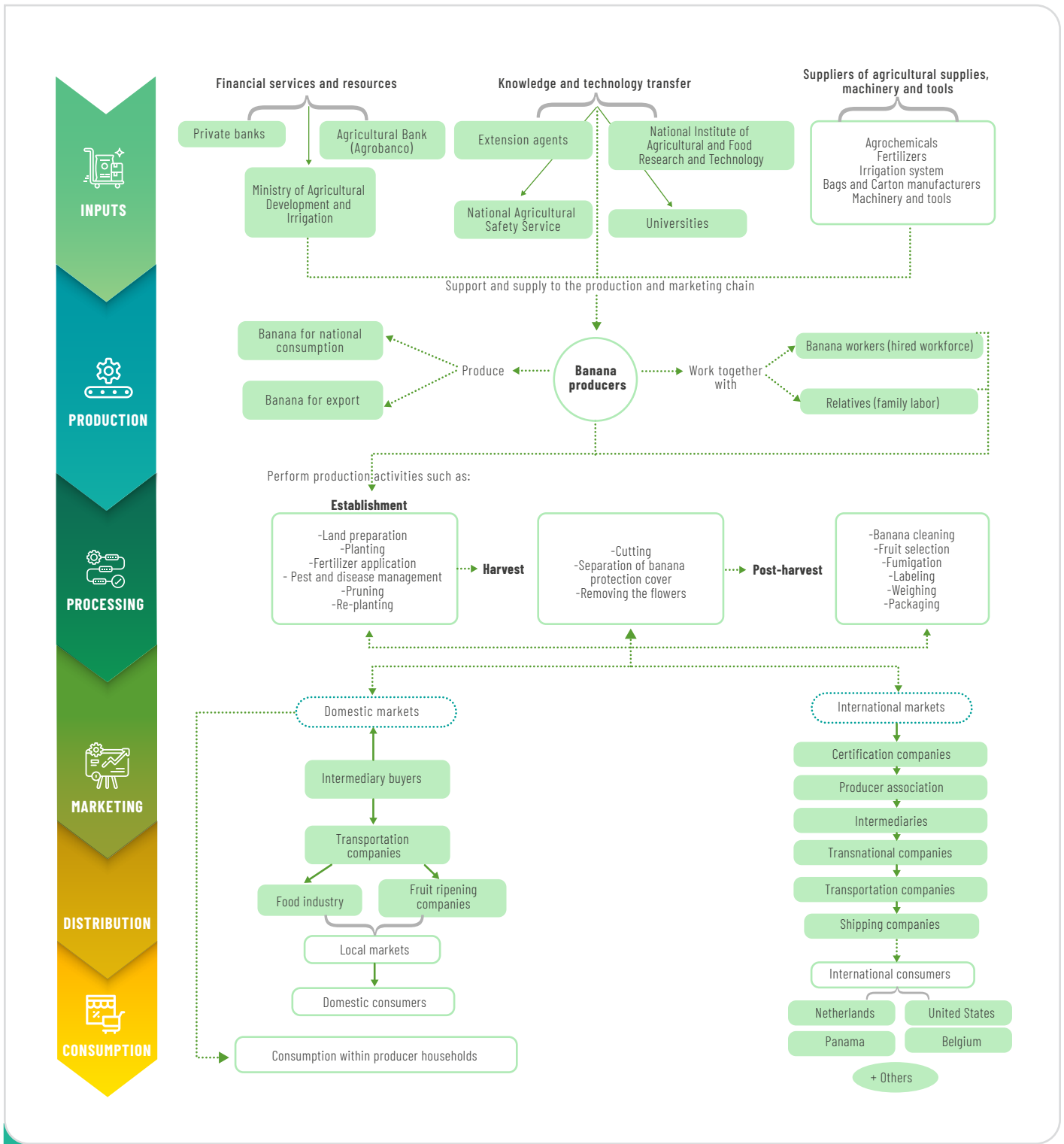
The second type of suppliers includes actors in charge of knowledge and technology transfer, such as universities, extension agents, the National Institute of Agrarian Innovation (INIA) (a government agricultural research center entrusted with technology transfer and the development and implementation of national policies), and the National Agricultural Safety Service (SENASA) (an institution appointed by MIDAGRI, responsible for preventing and managing pests and diseases in animals and crops in the country). These actors belong to the National Agricultural Innovation System (SNIA), which promotes research, technological development, innovation, and technology transfer with the aim of boosting the modernization and competitiveness of the agricultural sector.

The third category consists of suppliers of services, inputs, machinery, and tools that are needed for agricultural activities. These suppliers are directly linked to banana producers who undertake production activities from crop establishment to post-harvest production. However, most producers do not work alone. They are supported by family members and/or employed laborers. Some producers follow an organic production system (organic certified) for export, while others use a traditional production system or organic production without certification for domestic consumption.

Groups of private and governmental actors have been created to support and enhance the banana value chain. For example, The National Board of Organic Banana organizes producers into cooperatives and producers associations and represents producers in policy processes. Likewise, the Technical Roundtable in Piura was created to discuss and address problems in the banana sector. The Organic Banana Cluster (*Cluster de Banano*), which is a group of producers, companies, universities, and other actors in the banana value chain, has recently been created to channel government funds. The objective of the Organic Banana Cluster is to generate strategies to boost its competitiveness in international markets. These initiatives or strategies have been prioritized with banana technical roundtables, such as training, technology, and research to improve the quality of bananas.



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**Figure 3**

Actors in the banana value chain

Source: Own elaboration

Regarding organic production for export, Peru’s organic banana value chain has been in development for 22 years and about 10,000 households depend on this sector (Gestion, 2022). Production is in the hands of small producers who plant between 0.25 and 1 hectare of bananas (Vásquez Zamora, 2020). These small producers

are grouped into associations, which began as non-profit institutions. Over time, these institutions began to fragment into several associations, resulting in about 35 associations today (Vásquez Zamora, 2020). On 22 December 2012, the Peruvian government approved Law No. 29972 (Government of Peru, 2012), which promotes the

inclusion of agricultural producers through cooperatives, to improve their negotiating capacity and generate economies of scale, enabling them to competitively enter the market.

Organic production needs organic certification and must fulfill Peru's technical regulations for organic production to be sold and labeled as such. In addition, banana producers may need to have other certifications for export, such as Fairtrade, Global GAP, and other mandatory certifications according to specific markets, such as USDA organic. Certification companies play an essential role in establishing standards for agricultural practices carried out during production and in allowing entry to international markets. Peru's technical regulations for organic production are carried out by SENASA, which also oversees compliance with regulations for organic certification. The requirements include specifications about soil fertility, water conservation plans, and phytosanitary and weed management. In addition, the practices that fall under the organic regulations must be fully complied for three consecutive years before production can be certified as organic, unless the certifying company considers that it can already be certified, in which case it must have 12 months of monitoring before harvest (MIDAGRI, 2016).

In the marketing process, actors are responsible for linking banana producers with consumption. Some cooperatives export their members' production directly. In addition, some intermediaries buy and stockpile bananas for transnational companies. The latter are companies that export bananas under their brand name. In 2021, 61 actors between marketing companies and banana producers associations participated in banana export activities. The top five banana exporters in 2021 were Agronegocios Los Angeles SAC, APPBOSA, Anpro S.A.C, Pronatur S.A.C, and Capebosan-Jibito (MIDAGRI, 2021). Other actors are closely involved in the distribution process, such as suppliers of bags, carton manufacturers, logistics operators, packing companies, shipping companies, and transporters to the port. Puerto Paita, in Piura, is the main port for banana exports.

Banana production for domestic consumption comes mainly from Amazonas, Junin, Guanaco, Ucayali, Loreto, Cusco, and San Martín. From these departments, bananas are transported to the wholesaler or to an intermediary who buys bananas and sells them in the city of Lima, where bananas are collected and distributed to other cities. Some companies offer ripening services in Lima for non-organic and organic bananas that are not exported. The fruit from these ripening companies is then sold in local markets, where bananas meet the final actor in the value chain: consumers. In the organic banana value chain, consumers

of bananas destined for export are in the Netherlands, the United States, Panama, Belgium, South Korea, Italy, Germany, Japan, and the United Kingdom. In the domestic market, as cited above, 91.3% of Peruvian bananas are sold in Peru because bananas play an important role in the daily diet for households in Peru. In 2020, the average per capita consumption of bananas per year was 58.44 Kg (FAOSTAT, 2021).



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## The threat of Fusarium Tropical Race 4 (TR4) in Peru

The first detection of TR4 in Latin America was in June 2019 in Colombia. As a result, SENASA declared a phytosanitary alert to prevent the entry of this disease into Peru and developed an action plan. Despite government efforts to prevent the entry of the disease, in March 2021 in Piura (in the province of Sullana in the district of Querecotillo), plants with suspicious symptoms were detected on a 0.5 ha field of Cavendish bananas. Laboratory tests confirmed the arrival of TR4 in Peru. Although initially 0.5 hectares were affected, by September of the same year, 72 hectares had already been reported to be infected with TR4 in Sullana (SENASA, 2021b). Foc TR4 has spread rapidly: As of April 2023, there were 157 outbreaks detected on 164 hectares (of which 1.5 hectares were eradicated), affecting a total of 112 banana producers (SENASA, 2023).

SENASA implemented different strategies to prevent the spread of TR4, such as training actors in the banana value chain to understand the seriousness of the disease and the importance of implementing biosecurity practices. SENASA also collects samples of plants with suspicious symptoms, which are analyzed at its Plant Health Diagnostic Center located in Lima. This national institution promotes the campaign “Peru united against Fusarium TR4” (see Figure 4) in which information has been disseminated through posters, radio, and television to raise awareness about the importance of the pest. Projects have also been implemented with international actors, such as FAO, which allowed the delivery of 528 biosecurity kits in banana and plantain-producing areas in 2021 to implement preventive measures in banana farms. These kits contain a backpack, two boots, 10 liters of benzalkonium chloride, two sprayers, two measuring jugs, two brushes, two coveralls, two buckets, and two tubs, and were delivered free of charge (SENASA, 2022). As a biosecurity strategy, SENASA has implemented disinfection and verification posts, achieving the disinfection of 13,210 containers between October 2021 and April 2023 (SENASA, 2023).



Figure 4

Poster from the campaign “Peru united against Fusarium TR4”  
Source: SENASA (2021c)

TR4 is a major concern in Peru, which has led local authorities to take measures to build awareness, as well as prevent and contain the disease. Despite the strategies implemented against TR4, there has been an accelerated spread of the fungus, which may be due in part to heavy rains that have caused flooding in banana plantations, resulting in soil and sludge displacement. Phytosanitary and research institutions in the country continue to work on identifying potential risks and ways to mitigate these effects.



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## Acknowledgements

We acknowledge financial support by the **Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)** GmbH in the project, “Innovations for the prevention and management of the banana fungal disease Foc TR4 (ALER4TA)”, implemented by the **Fund for the Promotion in Agriculture (i4Ag)** as part of the special initiative Transformation of Agricultural and Food Systems. The views and opinions expressed in this paper are those of the authors and should not be attributed to GIZ or its Executive Board.

## Citation

Mosquera L; Álvarez D, Ritter T; Mockshell J; Rojas J; Dita M. 2023. Banana value chain profile for Peru: A top organic producing country is threatened by Fusarium TR4. Brief. Bioversity International and the International Center for Tropical Agriculture (CIAT). Cali, Colombia. 10 p.

### CONTACT

**Jonathan Mockshell**

✉ [j.mockshell@cgiar.org](mailto:j.mockshell@cgiar.org)



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