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Improving occupational safety and health in the global value chain of coffee in Mexico: Drivers and constraints

A case study



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A case study

The study was prepared by Rodrigo Mogrovejo, chief technical adviser of the ILO's Vision Zero Fund, and by consultants Pilar Cariño, Rodolfo Arias and Francisco Abardía.

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| Foreword

All individuals have the right to work without risks, to protect their safety and health. However, every year, 2.8 million workers die from work-related causes and an additional 374 million workers suffer non-fatal work-related injuries. The human cost of this adversity is enormous and the economic burden of poor occupational safety and health (OSH) practices is estimated at 4 per cent of the annual global gross domestic product. The International Labour Organization (ILO) aims to create worldwide awareness of the dimensions and consequences of work-related accidents, injuries and diseases, and to place the health and safety of all workers on the international agenda in order to promote and support practical action at all levels.

Through its flagship programme “Safety and Health for All”, the ILO promotes an OSH culture through the design and implementation of effective local solutions that can be replicated worldwide. A clean, safe and healthy workplace helps to promote decent work. The Vision Zero Fund (VZF), a multi-donor trust fund administered by the ILO, demonstrates the commitment of the international community to ensuring workers’ safety and health in global supply chains.

In Mexico, in the framework of a project on the coffee value chain financed by the VZF with funding from the European Commission, a study was conducted to identify the drivers and constraints relating to the improvement of OSH across that value chain and to propose possible interventions to address the constraints.

The study’s preliminary findings promoted the first tripartite dialogue in the coffee sector ever held in Mexico. Multi-stakeholder meetings were organized in the states of Oaxaca, Veracruz and Chiapas – where 70 per cent of the country’s coffee production is located – and also at the national level in Mexico City. The meetings were attended by the most representative actors in the coffee value chain and were organized within the commissions responsible for designing OSH public policy in the country. The interventions proposed in this study reflect the agreements reached by stakeholders in that process of social dialogue, in particular the priority intervention areas that were unanimously adopted by the National Advisory Commission for Occupational Safety and Health in December 2019.

Helmut Schwarzer
Officer-in-charge
ILO Office for Mexico and Cuba



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Abbreviations and acronyms

4C	4C Association Code of Conduct
AMCCE	Mexican Association of Specialty Coffees and Coffee Shops [Asociación Mexicana de Cafés y Cafeterías de Especialidad]
AMECAFE	Mexican Coffee Value Chain Association [Asociación Mexicana de la Cadena Productiva del Café]
AMSA	United Agribusinesses of Mexico [Agroindustrias Unidas de México]
ANICAFE	National Coffee Industry Association [Asociación Nacional de la Industria del Café]
C.A.F.E.	Coffee and Farmer Equity [Starbucks certification model for ensuring sustainably processed coffee and equitable pay for farmers]
CAFECOL	Agroecological Coffee Centre [Centro Agroecológico del Café]
CENICAFE	National Coffee Research Centre [Centro Nacional de Investigaciones de Café]
CERTIMEX	Mexican Certifier of Ecological Products and Processes [Certificadora Mexicana de Productos y Procesos Ecológicos]
CESMACH	Ecological Farmers of Sierra Madre de Chiapas [Campesinos Ecológicos de la Sierra Madre de Chiapas]
CICADES	International Training Centre for Coffee Production and Sustainable Development [Centro Internacional de Capacitación en Caficultura y Desarrollo Sustentable]
CLAC	Latin American and Caribbean Network of Fairtrade Small Producers [Coordinadora Latinoamericana y del Caribe de Pequeños Productores y Trabajadores de Comercio Justo]
CNSP	National Public Health Council [Consejo Nacional de Salud Pública]
COCOEEST	State Advisory Commission for Occupational Safety and Health
COCONASST	National Advisory Commission for Occupational Safety and Health
CONABIO	National Commission for the Knowledge and Use of Biodiversity [Comisión Nacional para el Conocimiento y Uso de la Biodiversidad]
CONCAMIN	Confederation of Industrial Chambers [Confederación de Cámaras Industriales]

CONEVAL	National Council for the Evaluation of Social Development Policy [Consejo Nacional de Evaluación de la Política de Desarrollo Social]
COOPCAFE	Association of Small Coffee Producers of Chiapas [Coordinadora de Pequeños Productores de Café de Chiapas]
COPARMEX	Mexican Employers Confederation [Confederación Patronal de la República Mexicana]
CQI	Coffee Quality Institute
CROC	Revolutionary Confederation of Workers and Peasants [Confederación Revolucionaria de Obreros y Campesinos]
CROM	Regional Confederation of Mexican Workers [Confederación Regional Obrera Mexicana]
CRUO	Oriente Regional University Centre [Centro Regional Universitario de Oriente]
CTM	Confederation of Mexican Workers [Confederación de Trabajadores de México]
DGIFT	General Directorate for Federal Labour Inspection [Dirección General de Inspección Federal del Trabajo]
ECOSUR	College of the Southern Frontier [Colegio de la Frontera Sur]
ENA	National Agricultural Survey [Encuesta Nacional Agropecuaria]
EU	European Union
ICO	International Coffee Organization
IICA	Inter-American Institute for Cooperation on Agriculture
ILO	International Labour Organization
IMJUVE	Mexican Youth Institute [Instituto Mexicano de la Juventud]
INEGI	National Statistics and Geography Institute [Instituto Nacional de Estadística y Geografía]
ISMAN	Indigenous Cooperative of the Sierra Madre de Motozintla [Indígenas de la Sierra Madre de Motozintla]
ITC	International Trade Centre
NAICS	North American Industry Classification System
NYBOT	New York Board of Trade
OSH	Occupational safety and health

PASST	Occupational Safety and Health Self-Management Programme [Programa de Autogestión en Seguridad y Salud en el Trabajo]
RFSST	Federal OSH Regulations [Reglamento Federal de Salud y Seguridad en el Trabajo]
SADER	Secretariat of Agriculture and Rural Development [Secretaría de Agricultura y Desarrollo Rural]
SAGARPA	Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food [Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca y Alimentación]
SCA	Specialty Coffee Association
SIAP	Agri-food and Fisheries Information Service [Servicio de Información Agroalimentaria y Pesquera]
STPS	Secretariat of Labour and Social Welfare [Secretaría del Trabajo y Previsión Social]
SUBICAFFE	Sustainability and Well-being for Small-scale Coffee Producers [Sustentabilidad y Bienestar para Pequeños Productores de Café]
USDA	United States Department of Agriculture
VZF	Vision Zero Fund





| Executive summary

This research was implemented in the framework of the Vision Zero Fund (VZF) project “Occupational safety and health improvement in coffee value chains”, which was conducted in Mexico under the International Labour Organization (ILO) flagship programme “Safety and Health for All”. The VZF brings together governments, employers’ and workers’ organizations, companies and other stakeholders to jointly advance towards the vision of achieving zero severe and fatal work-related accidents, injuries and diseases in global supply chains.

The coffee value chain in Mexico is of great economic and social importance for the country. Over the past decade, the volume of coffee production has declined owing to a combination of factors – the impact of climate change, outbreaks of coffee leaf rust and persistent low prices – which have reduced the sector’s productive capacity. Nonetheless, coffee



production in 2017 was the main activity of 6 per cent of all agricultural economic units in the country and remained a key international trade commodity thanks to the influence of large national producers and key multinational companies. Mexico is the world's 12th largest exporter of Arabica coffee and the leading exporter of organic coffee, for which the United States, Spain, Belgium, Germany and Canada are the main destination markets.

Mexico's most important coffee-producing areas are in Chiapas, Veracruz and Oaxaca, states which also have the highest poverty rates in the country. A total of 7 of every 10 coffee producers are located in those three states, while 4 of every 10 coffee producers are women. It is estimated that the coffee value chain currently employs between 1.2 and 1.3 million people in the production phase alone (about 6 per cent of the labour force employed in the agricultural sector), working in approximately 546,700 production units. Coffee production units comprise 98 per cent small-scale coffee producers, with less than 5 hectares of crops; 2 per cent medium-scale coffee producers, with 5 to 15 hectares; and just 0.2 per cent large-scale coffee producers, with 15 hectares or more.

Most coffee producers in Mexico participate in value chains with a captive governance model. In this model, producers generally lack information on the requirements of the final customer and have a high percentage of contributing family workers, who receive no pay and are mostly women.

In contrast to other Latin American countries, Mexico has a robust institutional and legal framework in the economic, social and labour spheres. Although their roles and economic capabilities are limited, different levels of government and various public institutions are responsible for creating an enabling environment for the promotion of improvements in occupational safety and health (OSH) in coffee value chains, which they achieve by establishing or modifying norms, guidelines or programmes with different national policy objectives. This institutional capacity also enables the specific demands of coffee actors to be articulated in a context that is inclusive and supports their participation in issues related to OSH. However, the wide dispersion of small-scale coffee producers, economic informality and the lack of access of coffee producers to value chains that offer incentives for improving production processes are among the main challenges for the introduction of guidelines to improve working conditions and employment in the sector.

A number of actors contribute to the development of different support services at the national level for improving production, encouraging entrepreneurship and promoting coffee producers and their products, as well as for disseminating strategic information, generating knowledge and establishing mechanisms for dialogue and representing the interests of coffee producers.

A global value chain approach offers key opportunities for improving OSH and decent work. Therefore, knowledge of coffee value chains should be generated in order to promote interventions that aim to prevent occupational accidents and diseases.

Vulnerability profile at the production stage

Most of the work to obtain the commodity – processed coffee beans – is concentrated in the following stages of production: (i) shade management and preparation and maintenance of land; (ii) planting; (iii) treatment; (iv) harvesting/picking; (v) transportation of coffee cherries; and (vi) wet method processing. These stages present the highest risk of occupational accidents and vulnerability in the production process and therefore offer the greatest opportunities for improving the OSH conditions of the labour force in the coffee value chain in Mexico.

Risk factors

The machete —a tool used for weeding and tree pruning— is the main cause of work-related accidents (mechanical risk factor), regardless of the size or characteristics of the plantation. Ergonomic risk factors are associated with the physical burden and the postures required and they affect both men and women.

Tree pruning, done at different heights by male workers, is another important risk factor given that it may result in falls and blows. Another significant permanent risk factor for workers is the presence of harmful fauna (biological risk factors) such as snakes and other animals.

Other significant risk factors for workers, both women and men, include the toxicological characteristics of the agrochemicals used, which are frequently dusted, sprayed, sprinkled or applied as a steam or vapour for the purposes of fertilization, pest control and weed control. These agrochemicals are applied without the use of any protective equipment or protocol with respect to the toxicity level of their components. Moreover, there is a lack of sanitation services and access to clean water, restrooms and public showers, limiting the ability of workers to clean themselves after applying agrochemicals and further exacerbating the risks involved.

Physical risk factors include the noise emitted by work tools – such as the brush cutters or machines used for wet method processing – which can cause hearing loss, headaches, sleep disturbances and communication problems. The nature of coffee-production activities also entails a physical risk associated with exposure to the thermal-hygrometric conditions characteristic of each producing area, aggravating any health problems caused by excess humidity. In the case of wet method processing, insufficient preventive maintenance measures and obsolete or improvised facilities are the common denominator of mechanical and electrical risks.

Finally, important psychosocial risks include fatigue and stress, which are a constant burden for plantation workers for several reasons, including the large distance between their homes and the workplace, excessive working hours and a lack of recreational breaks, which negatively affect job satisfaction and self-fulfilment. This situation is further exacerbated by the absence of medical services or access to any health care system for most workers, as well as the fact that where such services do exist they treat only specific ailments.

Sensitivity

The combination of economic informality, working in the family environment, economic fragility, the limited demand for the professionalization of labour activities and the prevalence of subsistence activities creates a culture with a low level of aversion to work-related health and safety risks. In addition, the piece-rate pay and temporary contracts that are typical of employment in coffee production lead workers to undertake strenuous workdays and exploit themselves without considering the physical consequences and risks that such practices entail.

The type and size of production units also influence the level of exposure to risks, even in the performance of the same tasks. For example, in conventional production, coffee farms have more intensive production processes that are also more intensive in terms of the use of herbicides, whereas small-scale producers cannot necessarily cover the cost of these herbicides and therefore rely more on their own manual labour for maintenance activities, which diminishes their exposure to agrochemicals.

Except in rare cases of good practice, most activities in the coffee production sector do not comply with existing OSH standards and regulations, irrespective of the size of the production unit.

Coping

An initial constraint to coping capacity is the lack of medical facilities and personnel in rural areas. A second constraint is associated with effective access – the ability of people to actually use the services offered. For this to occur, they

must be aware of the services to which they have a right. Given the informal work environment of most workers, compensation mechanisms are not widely available.

Drivers and constraints

From the perspective of a systematic market analysis, the research team identified a number of constraints to improving OSH in the coffee value chain in Mexico. In particular, the high levels of informality and contributing family employment have a decisive influence on OSH conditions in coffee production processes, as does the low level of integration of coffee producers in global marketing chains.

Existing support functions are also limited in terms of training programmes and business or financial education with a specific OSH focus. Other key constraints are the lack of disaggregated official OSH data on the coffee value chain and the limited effective access of workers to health care services and sanitation infrastructure.

Finally, constraints in the sphere of rules and regulations include the lack of legal instruments, such as a coffee production strategic plan with an OSH focus, as well as limited institutional capabilities to enforce existing OSH regulations, which means that most production units are unfamiliar with such regulations.

The research team identified two drivers for compliance with certifications: the existence of many actors with experience in implementing programmes for improving working conditions in coffee production and the increased demand for specialty coffee.

Intervention areas

Using a platform of broad consensus based on the participation and representation of all groups of actors in the coffee value chain, the following interventions were prioritized:

- ▶ Increase stakeholders' knowledge of OSH standards for the agricultural sector.
- ▶ Increase the prevention of occupational accidents and diseases in agricultural rural development programmes.
- ▶ Train OSH specialists for the agricultural sector and create the requirement for training small-, medium- and large-scale coffee producers.
- ▶ Promote an OSH culture in the coffee sector.
- ▶ Promote good OSH practices among female coffee producers.
- ▶ Generate evidence, through case studies, of the impact of OSH in terms of increasing productivity.





| Introduction

Global value chains offer key opportunities for improving occupational safety and health (OSH). This case study aims to promote interventions to prevent occupational accidents and diseases in the coffee value chain in Mexico. It focuses on market systems in order to identify drivers, constraints and opportunities for improving OSH and includes all the links of the value chain, from inputs to marketing. Three of Mexico's 12 coffee-producing states were chosen for the study: Chiapas, Oaxaca and Veracruz, where more than 70 per cent of the country's coffee plantations and coffee producers are located.¹

1 Based on SIAP data as of end-2018.

Mapping included a literature review of the value chain, the status of working conditions and OSH and current legislation. The study team also made three research missions to each state to interview key actors and make workplace observations to triangulate the literature data. The analysis was completed in two iterative processes. Using the results of field work and applying a combination of the methodology proposed by the methodology kits (ILO 2018a), the SafeWork method (ILO 2019) and the value chain method (ILO 2015), the research team began by defining an initial list of constraints, drivers and potential interventions, which were then discussed at workshops in each of the states participating in the study.

The team conducted 35 interviews and focus groups (see annex), six field visits and four dialogue workshops (three regional and one national).

In Mexico, the OSH situation was assessed using the conceptual and regulatory framework established in the Federal OSH Regulations (RFSST) (Mexico 2014a). Given that no disaggregated data for the coffee sector is available, the following occupational risks for the sector of economic activity “Agriculture, livestock, forestry, fishing and hunting” (Mexico 2005) were used: 685,708 workers

covered by occupational risk insurance;² 15,192 occupational risks; 12,525 occupational accidents, at a rate of 1.8 for every 100 workers; and 741 occupational diseases, at a rate of 10.8 for every 10,000 workers exposed. The rate of occupational diseases is even higher than that reported for other economic sectors such as the processing industries, the construction sector and social and community services.³

Therefore, the OSH situation of agricultural activities in Mexico has until now been largely unknown and represents an important knowledge gap since the main health information systems only report accident rates in economic units or enterprises of the formal sector of the economy. This makes it difficult to fully understand the origin or nature of the factors that limit OSH improvement in coffee production, a challenge that this study aims to address.

Specifically, this case study presents the results of the International Labour Organization’s (ILO) methodology on OSH improvement in global value chains.

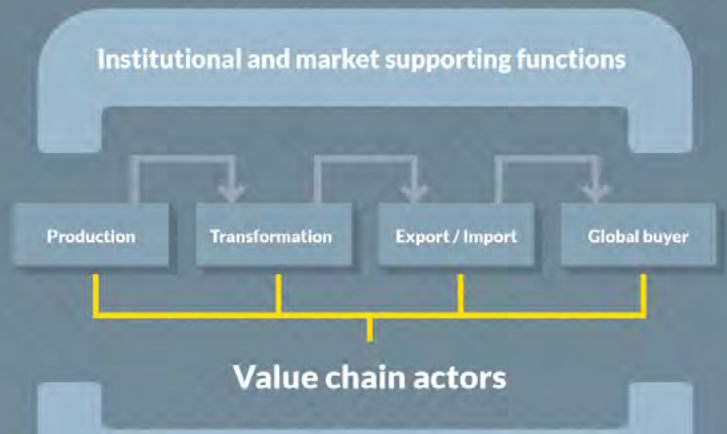
2 Mexico, Incorporation and Contribution Directorate, population registered by unit, as published on the Health Information Division website, January–December 2018.

3 Mexico, IMSS (2019), Table No. VII.23.

| Step 1: Selection



| Step 2: Mapping



| Step 3: Analysis

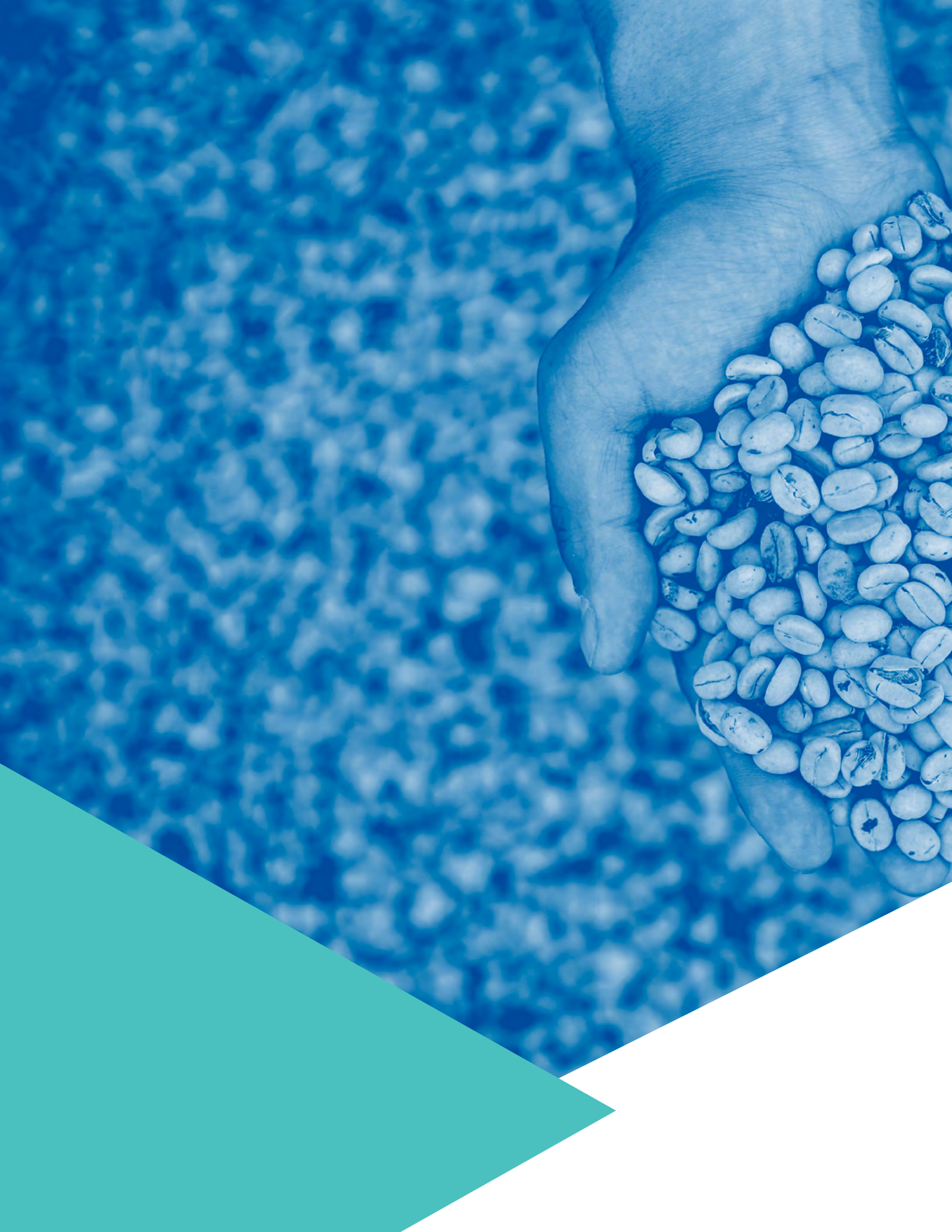


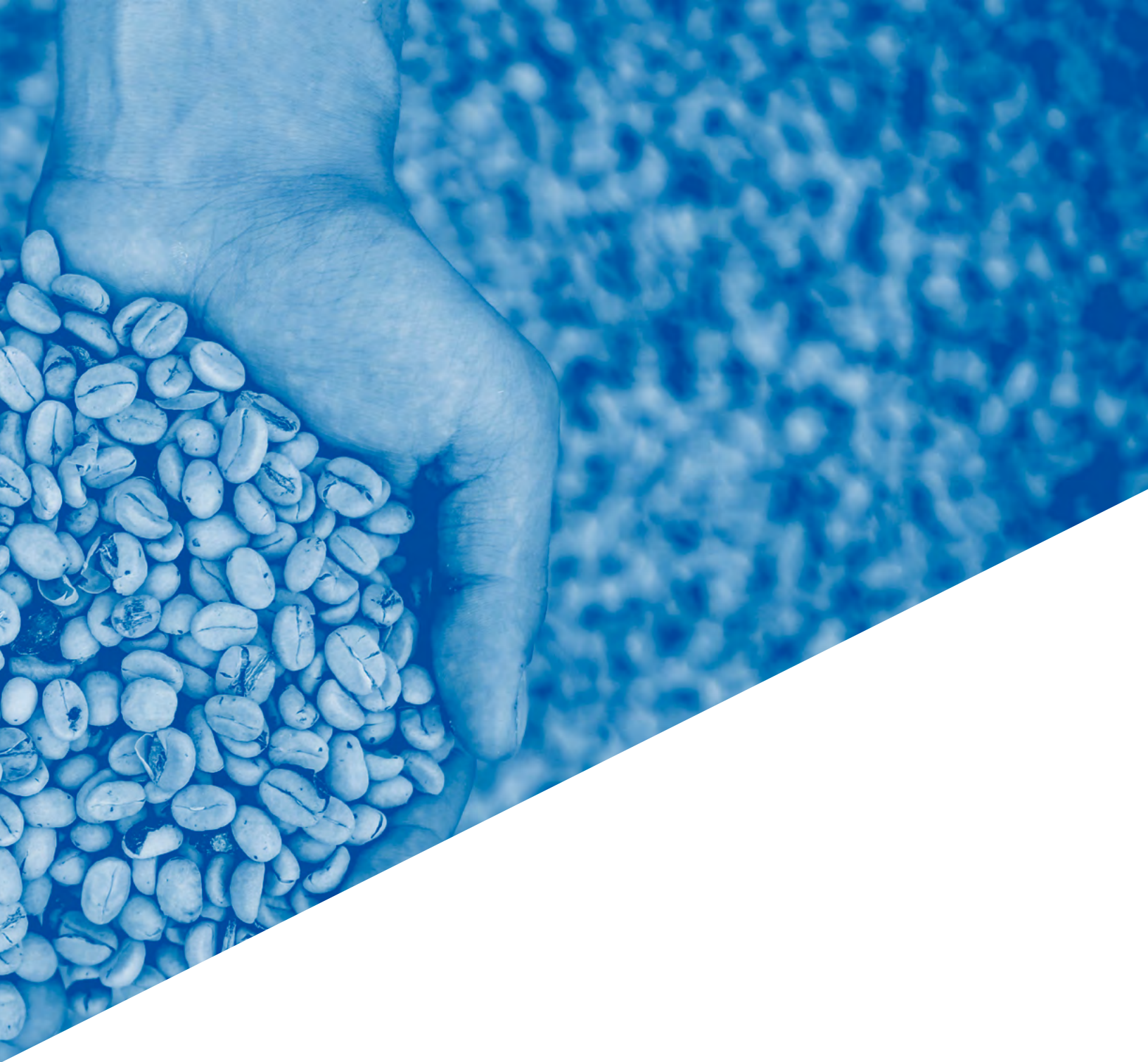
| Step 4: Intervention design



Supermarket

Interventions for sustainable improvement of occupational safety and health outcomes





1 | The coffee value chain in Mexico

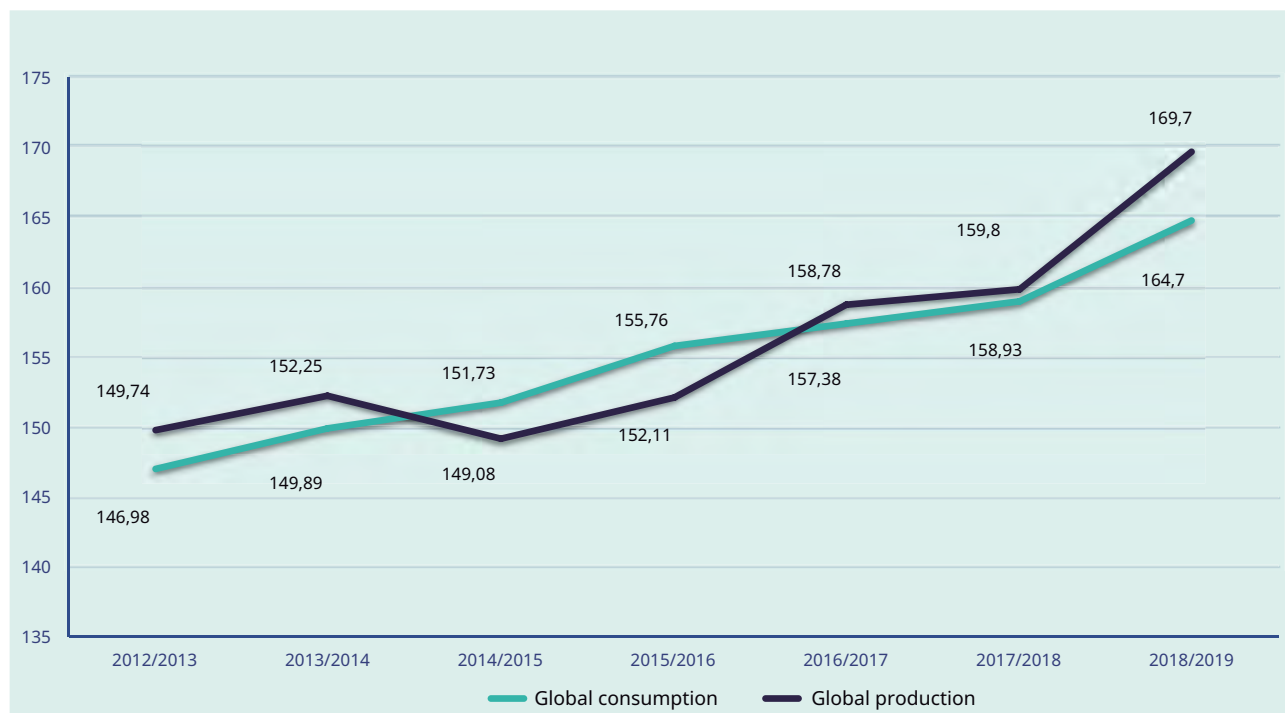
1.1 Market and product

1.1.1 Market

Seventy-seven per cent of worldwide coffee production is marketed globally (ICO 2019). Global coffee sales represent approximately US\$200 billion annually. According to the trade balance for the 12 months preceding July 2019, coffee output was 169.73 million 60 kg bags and world demand was 164.77 million bags. During the same period, the

export volume reached 129.9 million bags, with 83.3 million bags (64 per cent) of the Arabica variety (*Coffea arabica*) and 46.5 million bags (36 per cent) of the Robusta variety (*Coffea canephora*). Mexico ranks 12th worldwide in Arabica coffee exports. With respect to the processing stage, 91.3 per cent of the coffee exported was green coffee.

Figure 1. Growth of coffee production and consumption, millions of 60 kg bags, 2012–2019

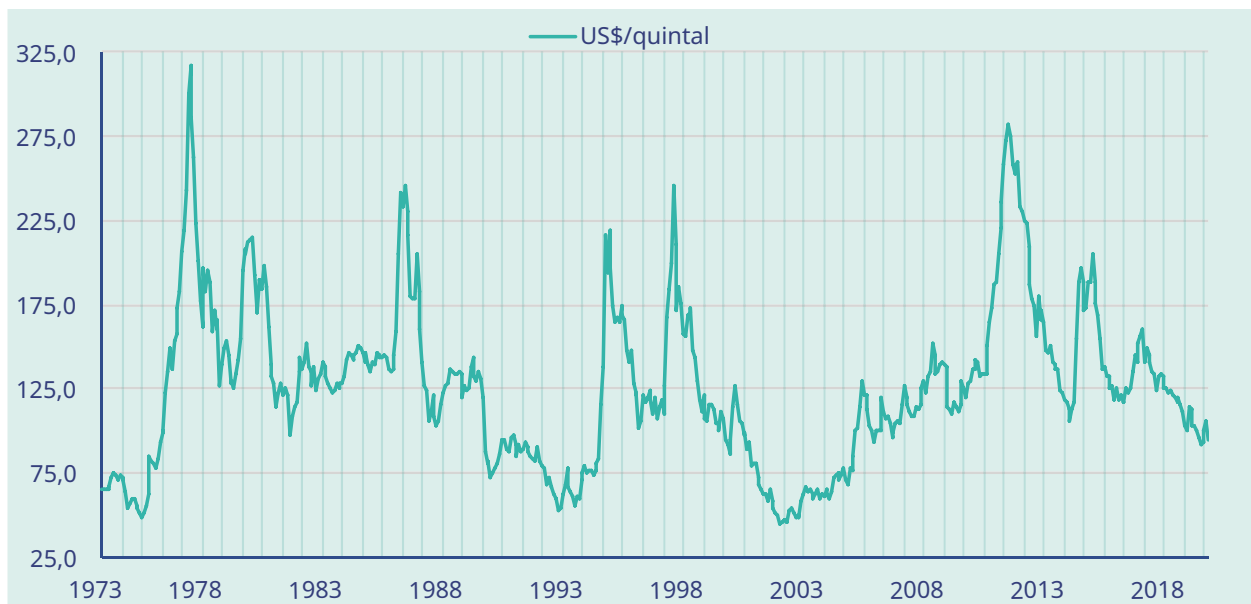


Source: ILO, based on ICO data as of July 2019.

In recent decades, prices have experienced a downward trend (Figure 2). According to the New York Board of Trade (NYBOT), the price of a quintal of coffee fell from US\$220 to US\$97 between August 2014 and August

2019, a decline of 66 per cent of its trade value in just five years. World coffee production is experiencing its worst price crisis in nearly 20 years and prices are at their lowest in 13 years, despite the sustained growth of demand.

Figure 2. NYBOT International Coffee Price Index, 1973–2019

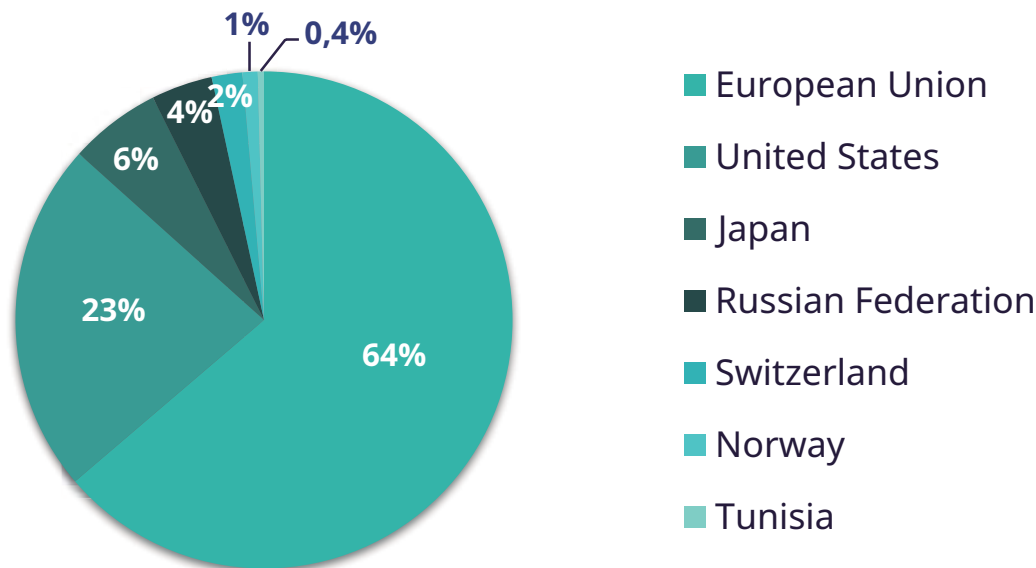


Source: ILO, based on data obtained from *Macrotrends* website.

Over the past 20 years, global coffee consumption has nearly doubled, from 92 million 60 kg bags in 1990 to 164 million bags in 2019. Consumption statistics, without considering the number of inhabitants, demonstrate that the leading coffee-consuming countries are the United States, Germany, Japan, France, Italy, Canada, the Russian Federation and Spain (Gómez-Posada 2018). The main consumers in kg

per person per year are Finland (11.5 kg), Norway (9.9 kg), Iceland (9 kg), Denmark (8.7 kg), the Netherlands (8.4 kg), Sweden (8.2 kg), Switzerland (8 kg), Belgium (6.8 kg), Luxembourg (6.5 kg) and Canada (6.2 kg) (Gómez-Posada 2018). In Mexico, annual per capita consumption is estimated at 1.6 kg, which indicates that coffee consumption is not part of the culture or the average diet of Mexicans (Euromonitor Consulting 2017).

Figure 3. Main coffee importing/consuming countries in the world, 2018–2019 (percentage of total global imports)



Source: ILO, based on ICO data.

The growing market for differentiated and specialty coffees has given small-scale coffee producers an opportunity to improve their incomes and to enter the global coffee market, especially as a strategy to compensate for low global market prices. Yet, there is a downward trend in the earnings of these coffee producers with respect to the final price that consumers pay for their coffee.

The United States and the European Union (EU) are the main destination markets for organic coffee exports and derivative goods produced by developing countries. According to a 2011 study by the International Trade Centre (ITC), there are wide variations in the level of imports to different countries of

certified organic coffee products. Those with the certification marks of Fairtrade, Organic, UTZ, Rainforest Alliance and the 4C Association Code of Conduct (4C) stand out (ITC 2011).

This demonstrates the level of specialization of the coffee-producing countries for certain markets, as well as their competitive advantages for the production of certain products.⁴ It should be noted that certifications of organic or sustainable production are not always a guarantee of access to buyers in those markets. Such access largely depends on the quality requirements or standards imposed on coffee producers and the costs that coffee producers must pay for certification (two or three certification inspections).⁵

4 Cases such as that of Mexico are exemplary: in 2016, Mexico positioned itself as the leading producer of organic coffee, despite the fact that the volumes of its export of that product represented just 1 per cent of total coffee import volumes worldwide.

5 See Bo van Elzakker and Frank Elyhorn, *The Organic Business Guide: Developing Sustainable Value Chains With Smallholders* (IFOAM 2010).

1.1.2 Product

In Mexico, 97 per cent of the coffee grown is of the Arabica variety. The presence in the country of coffee rust – a disease caused by the fungus *Hemileia vastatrix*, which is currently the main phytosanitary threat to coffee production – has led to the introduction of new resistant hybrid varieties derived from the *Sarchimores* variety, with good cup profiles. These include the varieties *Iapar*, *Marsellesa* and *Parainema*. Others have been adopted from the *Catimores* variety, including *Oro azteca*, *Costa Rica 95* and

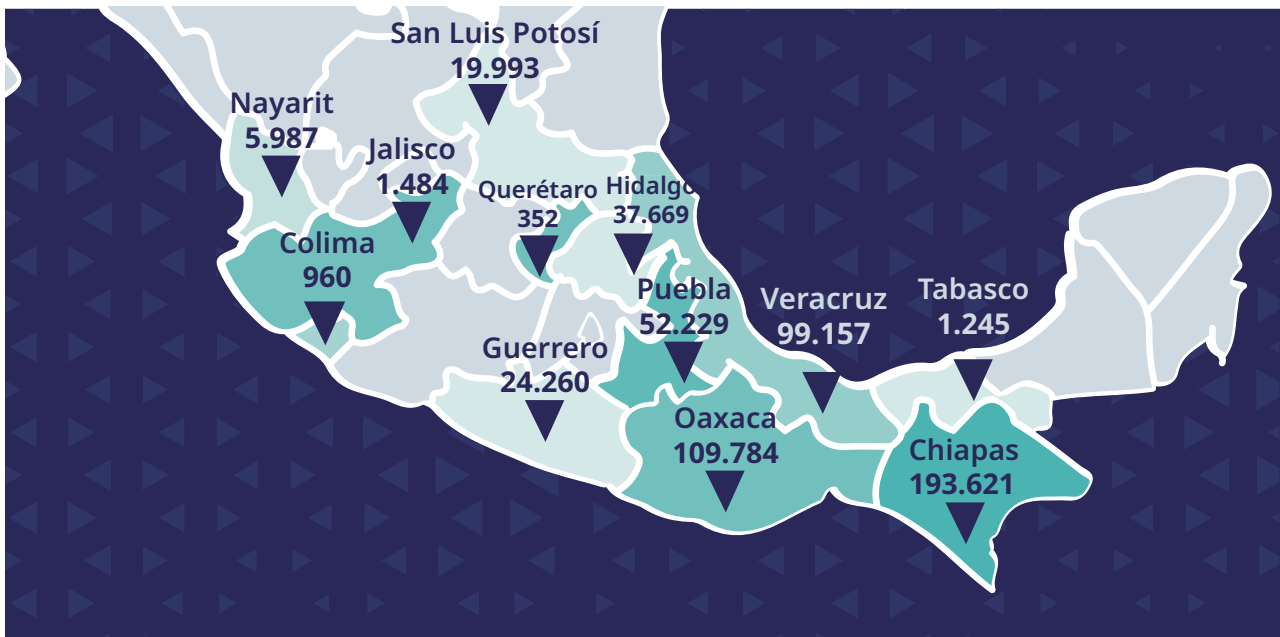
Colombia, among others. These hybrids have been incorporated in the overall process of renovating coffee plantations that was initiated in Mexico a few years ago. Nevertheless, according to Henderson (2019), 95 per cent of coffee production continues to be obtained from an *Arabica* variety that is vulnerable to orange coffee rust. That disease led to harvest losses of 50 per cent between 2012 and 2016 and constitutes the main threat to production of this crop. The coffee value chain in Mexico has three main products: green or gold coffee;⁶ roasted and ground coffee; and products derived from coffee.



1.2 Structure of the value chain

1.2.1 Productive structure

Distribution of coffee plantations in Mexico



Source: CONABIO and AMECAFE 2018.

According to the Agri-food and Fisheries Information Service (SIAP), the harvested area decreased by some 90,000 hectares (11 per cent of the initial total) between 2010 and 2019, leading to a drastic reduction in coffee-growing municipalities, a 31 per cent reduction in production volume and a productivity loss from 6.57 quintals of gold coffee per hectare in 2010 to 5.13 quintals per hectare in 2019. The 2017 National Agricultural Survey (ENA) revealed

that between 2012 and 2017, production fell by 1,244,614 tonnes, equivalent to a reduction of approximately 400,000 tonnes over five years (INEGI 2018).

During the 2018–2019 season, 709,543 hectares of coffee were planted in 475 municipalities in 15 of Mexico's 32 states, 4 of which – Chiapas, Oaxaca, Veracruz and Puebla – contain 83 per cent of the country's coffee production units (Table 1).

Table 1. Coffee production units, by plantation size

State	Size of production unit			Total
	Small	Medium	Large	
Chiapas	189 593	3 469	559	193 621
Colima	944	15	1	960
Guerrero	22 451	1 725	84	24 260
Hidalgo	37 632	37		37 669
Jalisco	1 396	65	23	1 484
Nayarit	5 424	540	23	5 987
Oaxaca	108 048	1 419	317	109 784
Puebla	51 326	711	192	52 229
Querétaro	352			352
San Luis Potosí	19 977	11	5	19 993
Tabasco	1 245			1 245
Veracruz	96 894	2 030	233	99 157
Total	535 282	10 022	1 437	546 741

Note: The most recent SIAP survey of cultivation surface units dates from 2007; the 2013 survey covers only the central points of production units, without surface data, for a total of 546,741 coffee producers.

Source: ILO, based on information from SIAP and SADER (2019).



Drawing on cultivation surface data (Mexico, SIAP 2019), Table 2 lists the national distribution of production units by size.

Table 2. Coffee enterprises, by production unit size

Production unit size	Characteristics
Small-scale coffee producers	
535,282	Less than 5 hectares
Percentage of the total	97.9 per cent
Organized	40 per cent
Unaffiliated	60 per cent
Land tenure	<i>Ejidal</i> and community
Profile	Family/farmer/indigenous
Medium-scale coffee producers	
10,022	5 to 15 hectares
Percentage of the total	1.8
Land tenure	<i>Ejidal</i> , community and private
Profile	Farmers and small landowners
Large-scale coffee producers	
1,437	15 or more hectares
Percentage of the total	0.2
Land tenure	Private
Profile	Large plantation owners, agribusiness/export companies

Source: ILO, based on SIAP data.

The 2019 harvest produced 3,640,256 quintals, with an average of 5.13 quintals per hectare (Mexico, SIAP 2019). Chiapas, Veracruz, Puebla, Oaxaca and Guerrero together contributed 94 per cent of total national production. Mexico is also a major producer of organic coffee. Organizations of small-scale coffee producers – especially in Chiapas, Oaxaca, Veracruz and Puebla – are largely responsible for the successful promotion of organic coffee production. According to SIAP, during the 2017–2018 harvest season, the volume of organic coffee production totalled 350,000 60 kg bags, making Mexico the world’s second-largest producer. Mexico continues to be the world’s leading exporter of organic coffee, exporting some 28,000 tonnes annually, mainly to the EU (Mexico, SIAP 2019), in particular to Spain, Belgium and Germany (Mexico, SAGARPA 2017).

Small-scale coffee producers

The economy of this group of coffee farmers operates on a small scale and is based on contributing family employment and

subsistence production, incorporating a variety of activities combined with commercial coffee production.⁷ These producers usually manage small plots in community-owned lands (ejidal or communal) and use low-input traditional technologies (CONABIO and AMECAFE 2018).

Their situation is precarious, not only because they cannot recover the costs invested – approximately US\$140 per hectare, with current losses of up to 30 per cent – but also because the coffee price crisis, compounded by low productivity following the widespread incidence of coffee rust, has forced most coffee producers to implement a difficult renovation process.

Regardless of whether small-scale production is organized, women participate throughout the coffee production process, as Table 3 shows. Studies report that the work of women is considered “helping out”, which makes the economic value of their work invisible (Cárcamo-Toalá 2007; Vázquez 2002). Women participate in the activities listed in Table 3 as producers, spouses of producers or daughters of producers (Cárcamo-Toalá et al. 2009).

7 The coffee-production activities of these small-scale producers are currently linked to multiple activities and the relative de-agrarization of farm households as part of their strategy to develop alternative income sources (Carton de Grammont 2009). Because of the household nature of their activity, the main labour force of these production units consists of family members, most of whom are unpaid.

Table 3. Participation of women in production processes of small-scale coffee producers

Production subprocess	Participation of women
The entire production process	Preparation of meals for workers and the family
Renovation of coffee plantations	Establishment of the nursery to replace old plants
Coffee plantation maintenance	Pruning and fertilization
Harvesting/picking	Collection of cherries (mature fruit of the coffee plant)
Wet method processing	De-pulping and drying (removing the coffee bean)

Source: Interviews with coffee producers and cooperative representatives during the mapping phase.

Unaffiliated small-scale coffee producers

Unaffiliated small-scale coffee producers – who farm less than 5 hectares and do not belong to any trade or other type of organization – account for about 60 per cent of coffee producers. They are commonly known as *libres* (“free”). Their production is based on the intensive use of their own and their family’s labour, and to a lesser extent on the use of wage employees for the harvest.⁸ They have low productivity levels – just two or three quintals per hectare, on average. Their cultivation model is generally for the conventional market, without certifications or access to solidarity markets or brand marks of any type.

Small-scale producers in Puebla and Veracruz sell their production as unprocessed cherries (the mature fruit of the coffee plant), especially in the areas where humidity levels during the winter months (October to February) make drying difficult. In other areas, such as in Chiapas, Oaxaca and Guerrero, coffee producers are known as *pergamineros* (“parchmenters”) because they do wet method processing in-house. Their product (cherry or wet parchment) is sold to local intermediaries, who then deliver the product to marketers or industrial producers. The sales price is normally determined by the buyer. This group of coffee producers has the lowest profit margins, which seriously affects their income. They are exposed to a high-risk, uncertain environment and may potentially abandon the coffee fields, use the land for another activity or migrate to earn alternative income (Ortega Hernández and Ramirez Valverde 2012).

⁸ According to Vázquez-López et al. (2017), the resources that this type of economic unit invests in coffee planting originate from different sources, such as wage employment, remittances, credits, loans, government programme subsidies or personal savings; the authors maintain that resources are obtained by implementing strategies that entail multiple jobs or activities – whether as a producer or as a family unit – that may or may not be associated with agricultural activities.

Organized small-scale coffee producers

According to the Mexican Coffee Value Chain Association (AMECAFE), an estimated 40 per cent of coffee producers are organized. Organizations of small-scale coffee producers have diverse levels of maturity and consolidation, depending on their organizational profiles and experience. Their members are smallholder farmers (*minifundistas*, with a maximum of 5 hectares), peasants and indigenous peoples and the leaders or representatives of such organizations work to manage programmes and services for the benefit of all members. In addition to representing their members and arranging for different types of support, the most structured organizations are involved in all steps of the coffee value chain: procurement of equipment; collection; dry method processing; export; transformation processing; and sale to the final customer. They may also offer support functions such as financing, certification and training.

The participation of female producers in coffee-producer organizations improves their position. However, women's participation in the organizational structure is limited⁹ by their educational level and the amount of time they have available to devote to the organization (Cárcamo-Toalá et al. 2009). Therefore, women's participation in such initiatives does not guarantee that they will enjoy optimal development, concrete benefits or equal treatment as compared to male members.

Medium- and large-scale coffee producers

Medium-scale coffee producers own 5 to 15 hectares; large-scale coffee producers own 15 or more hectares. The larger land area allows more options for investing in productive and processing facilities, which increases production volumes. Agricultural export firms are found in both groups, especially large-scale coffee producers (Díaz Cárdenas 2014).

Wage employees are mainly attracted to these producers and to the collection centres of small-scale coffee producers. These producers have achieved a significant level of development in establishing chains from the production to the market levels, largely in response to the mechanization of some production processes (such as roasting), or they have developed management capacities and the ability to conduct information searches that enable them to access markets.

Labour demand increases during the harvest, when temporary day labourers are hired. Although large landowners hire only day labourers, because these workers are paid at a piece rate they often put family members to work, regardless of their age or sex, in order to increase the amount delivered at the end of the day and thereby to increase their income (Ayala-Carrillo et al. 2014).

Unlike in the case of small-scale coffee producers, for whom women work as contributing family workers, medium- and large-scale coffee producers offer women wage employment,¹⁰ especially during harvest season. A significant current challenge is gender discrimination against women who work on farms, in particular migrant women, including in the form of differentiated wages

9 Based on data obtained from interview 6.

and the lack of recognition of their status as workers, among others (Rojas-Wiesner 2018, p. 166).¹¹ Nevertheless, there is evidence that housing, education and health conditions have improved on coffee plantations in recent years, thanks to demands from

international buyers and the fact that several farms are on the coffee tourist route (Robles-Santana 2018). The allocation of jobs within plantations is different for men and women. Production subprocesses in which women participate are listed in Table 4.

Table 4. Participation of women in coffee plantation production processes

Production subprocess	Participation of women
Activities of plantation headquarters	Meal preparation for workers, domestic work, plantation maintenance
Renovation of coffee plantations	Filling of bags and transplanting of coffee plantlets
Wet method processing	Coffee selection
Harvesting	Picking of cherries
Administrative activities	Secretarial duties, accounting support, medical services, teaching

Source: Interviews with coffee producers and cooperative representatives during the mapping stage.

1.2.2 Labour force and employment in coffee production

In Mexico, women account for about 40 per cent of coffee producers nationwide.¹² In addition to those who own their farms, many women contribute to plots managed by men even though they are not included in statistics. Thus, women clearly play a key role in coffee production.

Currently, it is estimated that during the coffee production phase nationwide, the planting and harvesting seasons employ between 1.2

and 1.3 million people, respectively.¹³ Table 5 demonstrates that during the planting season, 58.1 per cent of the labour force employed are temporary workers, 38.1 per cent are contributing family workers and 3.8 per cent are permanent workers. By comparison, during the harvest season, 55.4 per cent of the labour force employed are contributing family workers, 40.7 per cent are temporary workers and 3.7 per cent are permanent workers.

10 Owners interviewed in Chiapas Region stated that 100 per cent of temporary workers hired for the harvest are from Guatemala.

11 With respect to the Soconusco coffee plantations in Chiapas, a study of 14 farms of this region found that some women mentioned acts of harassment and violence. They claimed that they did not report them for fear of being fired, while even if they did report such incidents to the administration the aggressors were not punished. This is a reality for many women, especially migrants and indigenous women. See Zapata-Martelo et al. (2012a).

12 According to the National Coffee Census (Padrón Nacional Cafetalero) of 2013.

Table 5. Estimated labour force in the coffee production sector, by size of production unit, 2019

Type of worker	Size of production unit (hectares)						Total
	0.1 to 2	2.1 to 5	5.1 to 10	10.1 to 15	15 to 20	More than 20	
Planting season (April–August)							
Family	651 703	58 359	9 020	0	0	0	719 082
Permanent	0	0	0	11 961	5 364	29 700	47 025
Temporary	381 736	68 368	10 567	4 101	1 389	5 530	471 691
Total	1 033 439	126 727	19 587	16 062	6 753	35 230	1 237 798
Harvest season (September–March)							
Family	651 703	58 359	9 020	2 734	926	2 212	724 954
Permanent	0	0	0	12 303	5 556	33 180	51 039
Temporary	381 736	68 368	26 417	16 404	6 945	33 180	533 050
Total	1 033 439	126 727	35 437	31 441	13 427	68 572	1 309 043

Note: National parameters for sector size were defined based on estimates of employment in the agricultural sector using the Encuesta Nacional de Ocupación y Empleo (ENOE) [National Survey of Occupation and Employment] for the third quarter of 2017 and estimates of agricultural activity provided by the Encuesta Intercensal [Intercensal Survey] 2015, which report, respectively, 5.5 and 4.2 million people engaged in agricultural activities or the agricultural sector. The employment estimate does not consider composition by sex due to the lack of statistical data on labour force composition by production unit size.

Source: ILO, based on administrative records and interviews with actors of the coffee value chain in Mexico.

In the production stage alone, the labour force employed in coffee production represented 6 per cent of the total labour force engaged in productive agricultural activities, according to the 2017 ENA. Of this labour force, 78.2 per cent were men and 21.7 per cent women. Women’s participation in coffee production is 1.3 times higher than their participation

in total agricultural activities. By type of employment in the production unit, 20.6 per cent corresponded to unpaid employment and 64.7 per cent to paid employment (frequently day labourers and employees), while the remaining 14.6 per cent corresponded to the owners of the coffee production unit.

13 In Mexico, estimating the size of the labour force in the coffee production sector is a key challenge for understanding overall working conditions. The difficulty lies in the complexity of the sector’s economic dynamism, its highly diverse nature, the seasonality of activities and the employment of contributing family workers, as well as other factors associated with the invisibility of many tasks performed in the context of the high level of labour informality prevalent in agricultural activities in general. Key sources of national information include: (i) the Agricultural, Livestock-breeding and Forestry Census (Censo Agrícola, Ganadero and Forestal); (ii) the ENA; (iii) the Monthly Survey of the Manufacturing Industry (EMIM); (iv) the Census of Coffee Producers (Padrón de Productores del Café); and various public and private administrative records containing information on the enterprises or units of coffee production.

With respect to the coffee transformation and processing phases, low-skill labour predominates: 66 per cent of the labour force employed in those processes are classified as labourers and the rest as employees of different technical areas. In addition, most workers engaged in the production of processed coffee and many of those engaged in the roasting (55.5 per cent) and grinding (50 per cent) processes are not regular employees and are therefore exposed to risks and hazards in the workplace without any social security coverage. By contrast, 94.1 per cent of the workers engaged in the processing of instant coffee are regular employees and therefore have social security coverage in accordance with regulatory frameworks.

With respect to remunerations in this phase of the process, at least until 2017, workers received, on average, wages above the minimum wages established in Mexico, as shown in Table 6. Nevertheless, differences exist between the stages since remunerations for coffee processing have been considerably lower in relation to the other two processing stages – 20 per cent and 60 per cent less, respectively – which confirms that wages are strongly associated with the specialization of activities, the complexity of product processing and the linkage to specific production chains.

Table 6. Estimated monthly earnings of coffee production workers (in Mexican pesos)

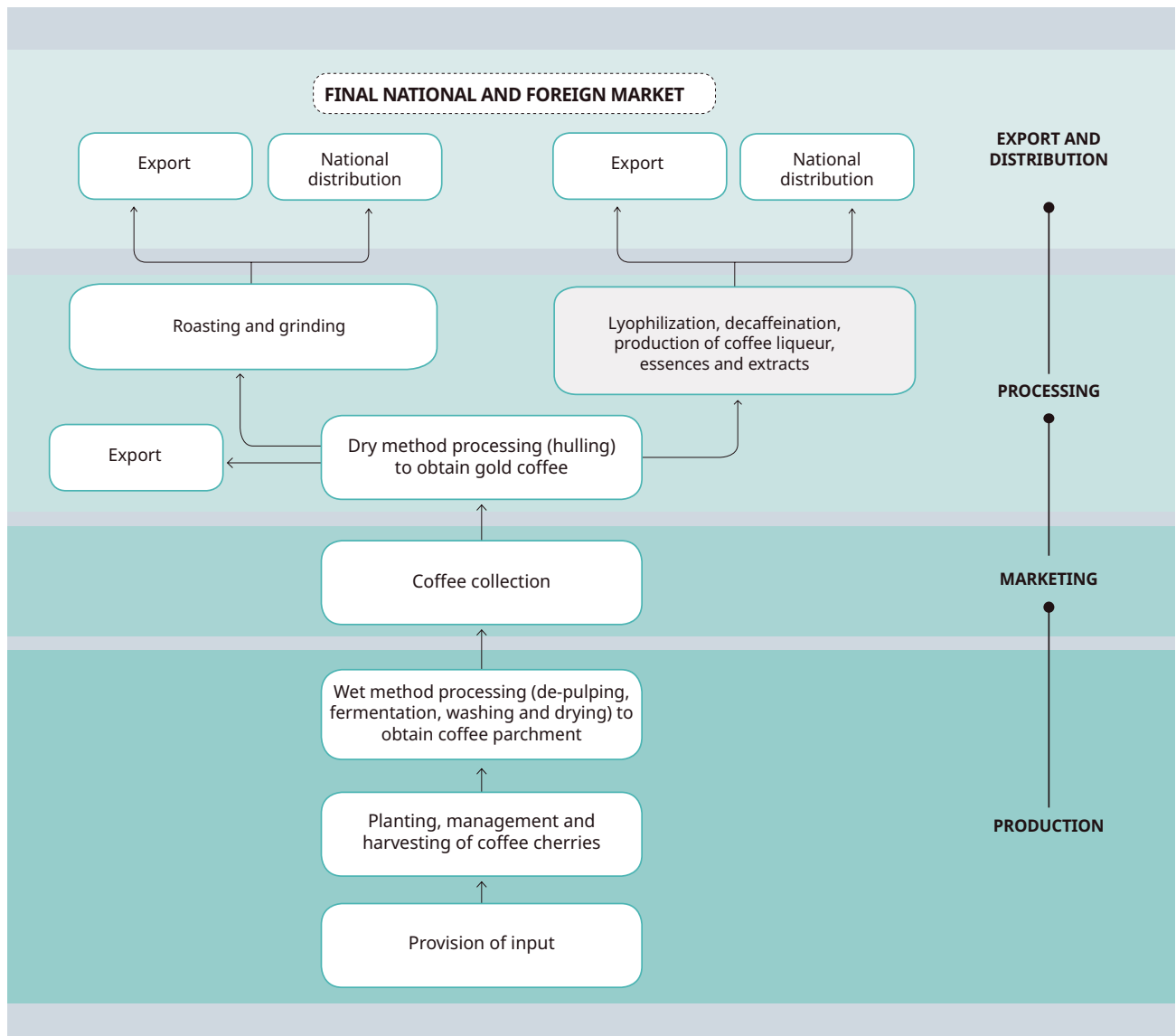
Process or stage	Workers		Employees	Outsourcing
	Without social benefits	With social benefits + profits		
Coffee processing	5 400,66	7 584,06	9 430,98	15 045,44
Roasted and ground coffee	8 070,27	16 875,65	12 215,69	-
Instant coffee	8 121,17	14 092,47	24 050,13	16 457,11
Total	7 829,15	13 817,19	18 765,57	15 397,71

Source: INEGI, Monthly Survey of the Manufacturing Industry, 2017.

1.2.3 Governance models in the coffee value chain

Figure 4 presents a simplified diagram of the coffee value chain in Mexico, divided into four main phases: (i) production; (ii) marketing or collection; (iii) processing; and (iv) export and distribution.

Figure 4. The coffee value chain in Mexico



Source: ILO, based on data obtained from interviews and a literature review.

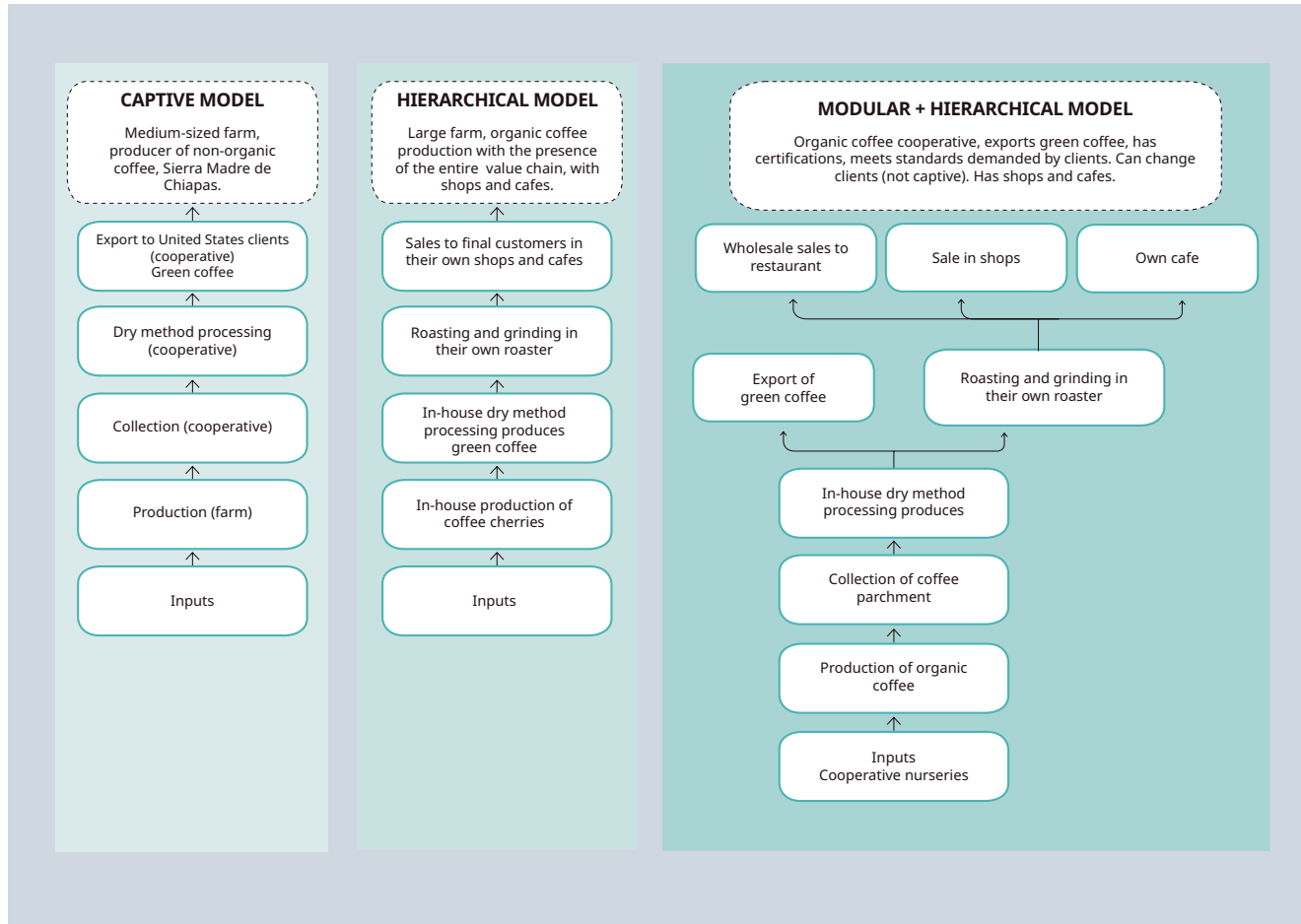
In Mexico, there is more than one type of model for the coffee value chain. This is associated mainly with the following factors: (i) the historical development of the production agents in the different regions of the country; (ii) the coffee product obtained; (iii) the level of mechanization in each of the processes in each value chain; (iv) the level of integration of the value chains with the final market; and (v) the type of value chain governance.

Accordingly, based on the Dietz (2011) typology of value chains and the cases observed and analysed in this research, the following three models of the coffee value chain may be observed in Mexico:

1. **Captive model.** Coffee producers depend on a few buyers who wield enough power and control to set product prices. Unaffiliated small-scale coffee producers are frequently found in this type of model and are at the mercy of intermediaries who use market information to establish oligopolistic prices.
2. **Hierarchical model.** Some actors exercise control over all links of the value chain, from production through sale to the client (final market). Most coffee plantations and cooperatives belong to this model when they market their product directly and have direct market control (sales points).
3. **Modular model.** Coffee producers or suppliers meet the standards or requirements of clients. Uncomplicated relationships for information exchange exist between both actors. These relationships can be codified through voluntary product and process standards. This is the case for unaffiliated small-scale coffee producers who work with marketers and for coffee cooperatives and plantations that sell to the market and meet specific standards (Fair Trade, Organic Coffee and UTZ, among others) when they do not have direct control over the final market (sales points).

Examples of each of these market types are provided in Figure 5.

Figure 5. Examples of organizational models (governance) of the coffee value chain in Mexico

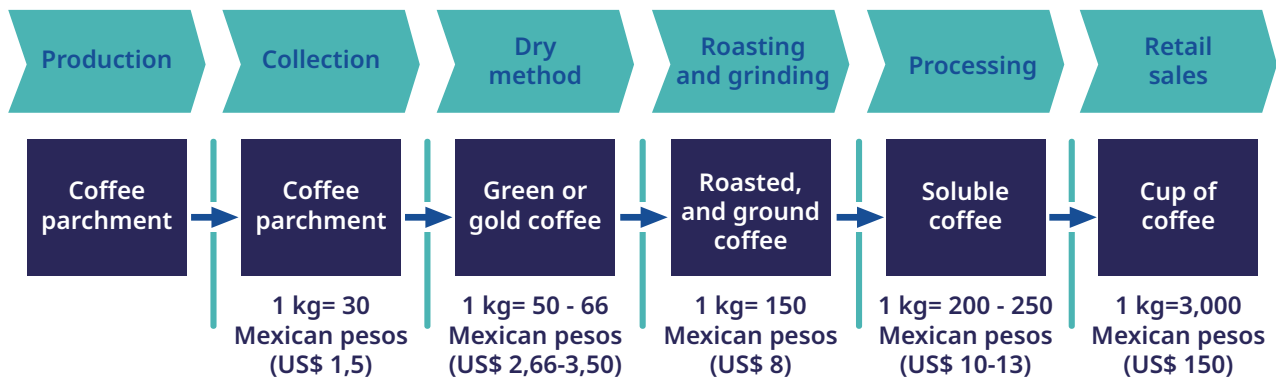


Source: ILO, based on data obtained from interviews.

Most coffee producers in Mexico participate in a captive value chain model, in which they generally produce without any information about the specifications of their final clients. This model is characteristic of the organic coffee production of organizations of small-scale coffee producers, corresponding to 3 per

cent of Mexico's total coffee production. Figure 6 presents the aggregate value throughout the value chain. Producers keep 1 per cent of the value that the final client pays per cup of coffee, assuming that 10 grams of coffee are needed to prepare 1 cup and that the average cup price is 30 Mexican pesos.

Figure 6. Price per link of the coffee value chain in Mexico



Source: ILO, based on data obtained from interviews.

1.3 Key transactions

1.3.1 Inputs¹⁴

A key process in this step is plant production. Unaffiliated small-scale coffee producers carry out this activity at a basic, small scale at the same time as the production process.¹⁵ However, for organized small-scale coffee producers and large plantations, this activity is conducted in formal operations in nurseries that may contain thousands of plants.¹⁶ The work process includes (i) obtaining coffee seeds; (ii) establishing the coffee hotbed; and (iii) establishing the coffee nursery.¹⁷ Obtaining coffee beans implies their selection and processing, which includes de-pulping, fermentation, washing, drying and storing. Managing the empty product containers

to protect the crops is another essential task. Amocali, A.C. – Campo Limpio is a civil association that represents more than 250 agrochemical and similar firms, bringing together manufacturers, formulators and distributors, agricultural packaging companies, pest control companies, agribusinesses, crop-dusting firms, shippers and associations of farmers and livestock ranchers. Its objective is to promote the practice and culture of triple-washing, collection, compacting and shipping to the final destination. It operates temporary packaging collection centres – one in Chiapas, two in Oaxaca and three in Veracruz.¹⁸

¹⁴ Competition Standard EC0794 Coffee Plant Production in Nurseries (Mexico) was used as a reference.

¹⁵ Interview 19.

¹⁶ For example, in the CESMACH Cooperative in Chiapas.

¹⁷ According to EC0794.

¹⁸ See Amocali, A.C. – Campo Limpio website, <https://campolimpio.org.mx/plan-de-manejo/centros-de-acopio-temporales-cat>

1.3.2 Production

The work process in the production link can be organized in the six substages described below, which vary by (i) type of production unit; (ii) organic or convention production; and (iii) gender (between men and women).

Shade management, field preparation and maintenance (clearing of weeds with machetes or chaporro, pruning, thinning, rejuvenation pruning)

Shade management involves climbing trees to trim them, depending on the needs of the crop; it also involves lowering the height of the shade by pruning treetops. Young day labourers usually perform this task, especially migrants, especially in the states of Chiapas and Oaxaca. For coffee plants to grow, weed growth must be permanently controlled (by chaporro) during the growing season, which is mainly done using a machete.¹⁹ Brush cutters are used on some large plantations to keep weeds cut to a few centimetres above the ground, leaving the cut portion in place as compost. Plant tissue culture management (pruning, rejuvenation pruning, thinning) (Alianza MéxicoREDD+ 2017) is carried out in accordance with production needs to support the renovation of coffee plantations.²⁰

Planting

It is sometimes necessary to replant, either to change the coffee variety or to replace lost plants (Cenicafé 2016). The renovation of coffee plantations through replanting is crucial for increasing productivity and fighting coffee rust and other diseases.²¹ The renovation process involves the removal of the plants to be replaced, plotting or preparing the fields, digging holes, building terraces and sowing the new plants. Less common is

the planting of a new coffee field, which in addition to those steps involves establishing live or inanimate barriers and defining fixed and temporary shade (Cenicafé 2016).

Treatment (fertilization, pest and weed control)

All coffee fields are fertilized to promote fruit growth, among other things. Fertilizers are used in both conventional and organic production, the difference being in the products used – chemical in the first case and biological in the second. Glyphosate in all of its concentrations is one of the most frequently used fertilizers,²² which is applied using backpack sprayers and other manual methods. The management of mature coffee fields also implies weed control with herbicides (glyphosate, oxyfluorfen, metsulfuron and others)²³ and pest control with soil or spray applications. Unaffiliated small-scale coffee producers²⁴ often cannot cover the cost of fertilizers and herbicides, unlike organized small-scale coffee producers and larger plantations, which regularly apply these crop treatments to increase productivity. In the case of organic production, the cooperative representatives interviewed mentioned that they made their own fertilizer given the high cost of purchasing it.²⁵ On the larger plantations, this activity was mainly performed by men,²⁶ whereas among the small-scale coffee producers – which have less flexibility in the use of manual labour – women also participated in weed control.²⁷

19 Interview 11.

20 Interviews 1 and 5.

21 Interviews 1 and 5.

22 Interviews 1, 3 and 5.

23 Interviews 1 and 5.

24 Interview 15.

25 Interview 15.

26 Interviews 1 and 5.

27 Interview 19.

Harvesting or picking

Harvesting includes the collection of ripe coffee berries and their selection (green, cherries, empty). This stage is labour-intensive and – for both small-scale and large-scale coffee producers — requires the hiring of additional personnel, usually with experience. Migrant workers are widely hired for this work in Chiapas, including many women. On large farms, harvesting follows the land's contour lines and ends by workers transporting the harvested sacks to a location where a truck can pick them up.

Transport of the cherry

Once harvested, the coffee cherry needs to be transported for wet method processing. On larger plantations, pickers take the sacks from the fields to the roads where the harvest is picked up. For this operation, workers carry and move 50 kg or 1 quintal sacks. Depending on the situation, these sacks are carried on foot, on horseback, in a car or by truck. In addition, transporting the coffee cherry for wet method processing to the drying areas means that organized coffee producers and large-scale producers must load and unload trucks that will travel on mountainous roads.²⁸

Wet method processing

This process transforms the cherry-red fruit into parchment, from which washed coffee is obtained. In most Mexican regions, small-scale coffee producers perform in-house wet method processing using manual de-pulpers, cleaning and fermentation tanks, areas for drying or processing machinery.²⁹ The steps are: (i) de-pulping, which consists of removing the skin; (ii) fermentation for an average of 24 hours to remove the

mucilage layer, a very delicate phase since over-fermented coffee will have an astringent taste; (iii) washing and rinsing of the coffee with very clean water; (iv) drying to obtain a moisture content of 12 per cent; and (v) storage. In Veracruz, wet method processing is an industrial process. An alternative process to wet method processing is simply to dry the coffee, which results in a product known as natural coffee (Inforural 2012).

1.3.3 Domestic trade or collection

Unaffiliated small-scale coffee producers sell their coffee parchment to (i) intermediaries belonging to large export companies or (ii) independent local and regional collection centres, which keep about 1 to 3 Mexican pesos per kilo of coffee (US\$ 0.15). Women participate as intermediaries or owners of shops in communities or municipal capitals, buying coffee parchment from small-scale coffee producers. The coffee producers deliver their coffee to organizations and cooperatives, which are responsible for the subsequent steps of coffee processing. Large-scale producers also collect coffee from their crops and from other coffee producers in their warehouses to continue with processing.

1.3.4 Processing

The first transformative process is the dry method. In this process, the raw material is the coffee parchment, obtained from wet method processing. The process begins with the reception and registration of the parchment, which is then stored and pre-cleaned by being inserted through mesh

²⁸ Interviews 1 and 5.

²⁹ Interview 11.

wiring to remove impurities. The coffee beans are then hulled to eliminate the parchment or husk (endocarp) through friction or peeling. The dry method goes one step further than the elimination of the parchment, because it also eliminates most of the coffee's imperfections through mechanical, optical and manual processes. Depending on the amount of imperfections, classifications known as preparation (American or European) are adopted. The last step is the packaging of green or gold coffee in *ixtle* (vegetable fibre) sacks of 60 kg net (1.5 quintals), which are numbered and stacked in piles, normally of 250 or 500 sacks.³⁰ The dry method, unlike the wet method, is an industrial process and is only carried out by the largest organizations and by traders at the central collection centres.

The second transformation process is to make green or gold coffee into roasted coffee, either ground or in whole beans, which may also include the production of decaffeinated or even freeze-dried coffee. The processes involved in this stage are industrial and include roasting, decaffeinating, lyophilization and packaging. More consolidated small-scale coffee-producer organizations and large-scale producers implement these processes, as do the large industrial companies of the National Coffee Industry Association (ANICAFE).

1.3.5 External trade (import/export)

In the global coffee market, Mexico is responsible for 1.5 per cent of the total export volume, ranking 12th among exporting countries. According to the United States Department of Agriculture (USDA), over the past five trade years, the volume of Mexican

exports declined to an annual average rate of 11.9 per cent, while imports increased by an annual average rate of 8.2 per cent.

The USDA also reports that in the 2018–2019 trade year, 3.24 million 60 kg bags were exported, while imports reached 1.65 million bags of green coffee. Approximately 64 per cent of the volume exported is unroasted green coffee; 6.2 per cent is roasted, ground coffee; and 29.6 per cent is soluble coffee. Mexican coffee is exported to 45 countries on five continents: the United States is the largest buyer, followed by Belgium, Spain and Germany (Mexico, SAGARPA 2017).

In Mexico, there are 908 Mexican or multinational agricultural export firms, natural persons or legal persons registered and present in all coffee-growing regions, of which 259 have been active over the past five years. These firms integrate processing services (wet and dry method), transportation and collection centres. In addition to exporting and importing coffee, they are also intermediary buyers from independent coffee producers and organized coffee producers that cannot complete all their own processing, as well as owners of roasters and mills and manufacturers of soluble coffee. They produce and market green, soluble, roasted, ground and decaffeinated coffee. The ten leading companies are responsible for 46.5 per cent of the volume traded and account for 47.9 per cent of its value.

This stage of operations includes price negotiations and logistic operations for shipping, in which specialized companies participate. Table 7 lists the main actors of coffee trade processes.

30 Interview 12.

Table 7. Organization of the coffee trade in Mexico

Stage	Product	Actors
Domestic trading or collection	Organic or conventional Coffee cherries Coffee parchment	Local intermediaries Trading, threshing and export firms Organizations of coffee producers
Processing	Organic or conventional Green coffee Roasted coffee: without decaffeination and decaffeinated Soluble coffee and extracts	Organizations of coffee producers (15 per cent) Processing and roasting agribusinesses (85 per cent)
Marketing/export	Organic or conventional Green coffee: <i>Arabica</i> , <i>Robusta</i> Roasted coffee: without decaffeination and decaffeinated Soluble coffee and extracts Soluble, prepared from extracts, other concentrates	259 trade/export firms, 10 of which (4 per cent) market 47 per cent of the volume and represent 48 per cent of its value The main multinational companies dominating the export market are AMSA (Atlantic Coffee), Nestlé, Cafés California (Neuman) and Becafisa (Volcafé); they handle 85 per cent of the export market, while only 15 per cent is marketed by organizations of coffee producers and coffee producers that are directly linked to foreign buyers of both organic and conventional coffee.
Importation	Green coffee Soluble coffee	Agribusinesses and multinationals, Nestlé Mexico, Starbucks and others
National distribution and consumption	Green coffee Roasted whole-bean and roasted ground coffee, decaffeinated and soluble	12 companies, mainly Nestlé Mexico, roasted coffee for export, as well as Sabormex and others Organizations of coffee producers 70,000 coffee shops nationwide 350,000 jobs

Source: ILO.

1.3.6 Distribution to the final customer

Large coffee producers, organizations of coffee producers and processing companies participate in the final stage of distribution and sale for domestic consumption. Final customers include restaurants, hotels, offices, shops, 24-hour convenience stores, franchises, coffee bars, institutional cafeterias and households. According to Euromonitor Consulting (2017), most consumers in

Mexico purchase soluble coffee (54 per cent), followed by ground coffee (41 per cent) and roasted whole-bean coffee (5 per cent). The distribution of soluble coffee is at the retail level: in coffee shops, restaurants and bars. Roasted whole-bean coffee is sold to formal institutions, hotels, catering operations, offices, hospitals and education facilities (Euromonitor Consulting 2017).



1.4 OSH institutions and legislation in Mexico

1.4.1 International conventions and recommendations concerning OSH

Since 12 September 1931, when Mexico joined the ILO as a Member State, it has ratified a total of 78 of the 188 conventions adopted by the organization. In terms of conventions concerning OSH, to date it has ratified six conventions³¹ and has yet to ratify an additional eight conventions.³²

1.4.2 OSH public policy

Mexico's most important regulatory OSH instruments are its Political Constitution, the Organic Law of the Federal Public Administration, the Federal Labour Law, the Federal Law on Metrology and Standardization, the Federal Occupational Health and Safety Regulations and the country's official standards on OSH.³³

In Mexico, the Secretariat of Labour and Social Welfare (STPS) is responsible for designing, implementing and coordinating public policy on job creation, contract relations, workers' groups and labour and social rights. The STPS

conducts those oversight activities pursuant to Article 123 of the Constitution and in accordance with the Federal Labour Law, including by designing and implementing policies and strategic action plans and projects to strengthen OSH. The institution that coordinates the development of OSH standards is the National Advisory Committee on the Standardization of OSH, while the agency responsible for consultation and risk prevention is the National OSH Advisory Commission (COCONASST).

Labour Inspection Programme

The General Directorate for Federal Labour Inspection (DGIFT) of the STPS leads this programme. Inspection is regulated by the General Regulations on Labour Inspection and Application of Sanctions (Mexico 2014b). In addition to the STPS, federal agency officials are responsible for enforcement in the framework of their respective duties. The labour authority is authorized to carry out inspections on safety and hygiene, training, overall working conditions and verification of data.³⁴

31 Radiation Protection Convention, 1960 (No. 115); Hygiene (Commerce and Offices) Convention, 1964 (No. 120); Occupational Safety and Health Convention, 1981 (No. 155); Occupational Health Services Convention, 1985 (No. 161); Safety and Health in Construction Convention, 1988 (No. 167); Chemicals Convention, 1990 (No. 170).

32 Employment Injury Benefits Convention, 1964 (No. 121); Occupational Cancer Convention, 1974 (No. 139); Working Environment (Air Pollution, Noise and Vibration) Convention, 1977 (No. 148); Seafarers' Welfare Convention, 1987 (No. 163); Prevention of Major Industrial Accidents Convention, 1993 (No. 174); Safety and Health in Mines Convention, 1995 (No. 176); Safety and Health in Agriculture Convention, 2001 (No. 184); and Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187).

33 At regional workshops and at the second regular session of COCONASST, the merging of the following official standards was announced: NOM-003-STPS-1999, concerning agricultural activities, use of inputs and pesticides and safety and hygiene conditions, with NOM-007-STPS-2000, agricultural activities, installations, machinery, equipment and tools, and safety conditions. The new combined regulation emphasizes preventive activities in general for all agricultural activities, especially coffee production.

34 Articles 101 to 104. Federal OSH Regulations, 2014. Section 8. Surveillance and Verification of Compliance with Standards. Chapter 1.

In 2018, the DGIFT had 472 federal labour inspectors distributed throughout the country, including 9 in Chiapas, 9 in Oaxaca and 23 in Veracruz.³⁵ To give an idea of the volume of workplaces subject to the implementation of labour inspections, Chiapas has 14,220 enterprises and 236,751 workers; Oaxaca has 13,271 enterprises and 196,716 workers; and Veracruz has 43,280 enterprises and 738,172 workers.³⁶ During the interviews with different actors and the visits to farms and plantations, the research team specifically requested verification of the date of the most recent OSH labour inspection, without receiving a single clear answer.

Occupational Safety and Health Self-Management Programme (PAAST)

The Occupational Safety and Health Self-Management Programme (PASST) is an STPS initiative to encourage enterprises to establish and operate OSH administrative systems for which employers and workers share responsibility, based on national and international standards and supported by current legislation, in order to promote the operation of safe and hygienic workplaces. The programme is open to any type of workplace but prioritizes high-risk economic activities. Employers can voluntarily enrol their workplaces in the programme (Mexico, STPS 2018). As part of its efforts to promote self-management, the STPS offers a remote-learning programme of multimedia courses to facilitate knowledge of standards and decrease the costs associated with their

dissemination, training and application;³⁷ no enterprises in the coffee value chain in Mexico have participated in this programme.

OSH Commissions

Mexican legislation, through the RFSST, establishes mechanisms for consultations on risk prevention that are conducted by the national advisory commission on OSH (COCONASST) and the state advisory commission on OSH (COCOESST) (Mexico 2014a). Article 87 of the RFSST states that COCONASST has the objective of supporting the design of national OSH policy, proposing reforms and additions to the RFSST and related standards, as well as studying and recommending preventive measures to reduce workplace risk. In each of its state-level jurisdictions, COCOESST carries out the same functions as COCONASST (Mexico 2014a). Dialogue with both COCONASST and COCOESST contributed to this research study.

The Mexican Social Security Institute and OSH

The Mexican Social Security Institute (IMSS), through its Directorate of Economic and Social Benefits, has an office responsible for coordinating OSH. Among the key services this office provides to affiliated businesses are studies and preventive programmes on safety and hygiene; assessments of the main risk factors affecting workers' health; and advice, including training, on regulatory matters and the structure of the OSH commissions. In addition, it has 13 regional centres for safety

35 Mexico, STPS, Federal Labour Inspection Directorate, "Inspection Programme 2019".

36 Mexico, Directorate of Incorporation and Collection website data, January–December 2018.

37 See Mexico, Programa de Capacitación a Distancia para Trabajadores website, <http://www.procadist.gob.mx>

at work, training and productivity, where it trains workers, middle managers, technicians and professionals on key preventive issues and techniques and practices to prevent work-related accidents and diseases.

1.4.3 Access to social protection systems and health care services

According to the Social Security Law, the IMSS is responsible for the social security system, which guarantees coverage to all individuals – permanent or temporary – who are employed

in remunerated personnel and subordinate services, including migrant workers.³⁸ Coffee production workers face an initial barrier in accessing social security because 95 per cent of them are informal workers (Vázquez-López et al. 2017). Yet, even coffee production workers who contribute to social security receive health services through the fragmented public health care system rather than through the centralized IMSS system. Table 8 lists the distribution of active health care units for the three states included in this study.

Table 8. Health units with active health care facility unique ID,^a by coffee-producing state

Institution	Oaxaca	Chiapas	Veracruz
Youth integration centres	1	2	2
Mexican Red Cross	0	5	2
Public prosecutor offices	3	0	
Institute of Safety and Social Services for Government Workers	59	48	85
Mexican Social Security Institute	34	35	136
Mexican Social Security Institute, Welfare System	552	616	619
PEMEX (Petróleos Mexicanos)	3	1	22
Secretariat of Communications and Transportation	2	1	3
National Defence Secretariat	3	2	2
Navy Secretariat	2	2	5
Health Secretariat	1 297	1 120	1 008
State health care services	12	17	0
Municipal health care services	0	1	11
Private health care services	201	246	475
University health care services	0	0	2
National System for Comprehensive Family Development	14	2	2
Total	2 183	2 098	2 374

^a Clave única de establecimientos de salud (CLUES).

Source: Mexico, Secretaría de Salud 2020.

38 In the case of Guatemalan citizens, there is a migratory instrument, the visiting border worker card [tarjeta de visitante trabajador fronterizo] (TVTF)), which allows them to remain in the country for up to one year (art. 155 of the Regulations of the Migration Law) (Mexico 2014c) in the states of Chiapas, Campeche, Tabasco and Quintana Roo, subject to an existing job offer.

To a greater or lesser extent, coffee production workers lack effective access to health prevention and care services. For temporary migrant workers, additional barriers to effective access include fear and lack of knowledge (PAHO and WHO 2019).

A final relevant OSH consideration is the quality of housing conditions that employers provide to coffee field workers. According to article 283 of the Federal Labour Law, it is the obligation of the employer to (i) provide adequate and hygienic rooms free of charge, with clean water and durable flooring for workers and their family members and dependants; (ii) maintain those rooms in good condition and make any necessary and convenient repairs to that end; and (iii) provide workers with potable water and sanitation services during the workday. These obligations aim to comply with international labour agreements to improve the OSH conditions of workers, such as ILO Conventions No. 155 and No. 187.

1.5 OSH support and service functions

1.5.1 Coordination

Regulatory agencies

Currently, Mexico has no governing body for coffee production that provides broad representation of coffee producers and their interests. Government support is limited and disparate, isolated and divided among many windows in different agencies, each with different schedules, regulations and

systems of notification. Coffee producers have repeatedly advocated, in different forums and proposals, for the creation by decree of a new institutional structure that would be a decentralized entity with its own assets and would extend beyond the six-year model in order to consolidate programmes and projects in one integral, long-term approach. However, this has not yet materialized (IICA 2016).

Accordingly, in recent years, public policy on the coffee sector has been centralized in the Agriculture and Rural Development Secretariat (SADER) and in the National Committee of the Coffee Commodity System that was created in 2004 by the Law for Sustainable Rural Development. The Coffee Commodity System has integrated all actors involved in the coffee value chain in a governing body that participates in all policies, strategies and actions that affect the value chain and has formed a plural, inclusive entity with its own assets within the legal framework (Inforural 2012).

In April 2006, AMECAFE was formed by representatives of all coffee value chain actors to establish legal representation in the National Coffee Commodity System, which acts as the implementing body of the Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA) federal programmes. Its activities focus on establishing alliances and agreements that strengthen the sector and operating specific programmes to provide increased yields and added value; genetic improvements; and the renovation of coffee plantations, including technology transfer activities, training, marketing studies, and the refurbishing and installation of laboratories, among others.

Organizations of coffee producers

It is currently estimated that 40 per cent of the 546,741 coffee producers in Mexico belong to organizations, whose legal status varies and may take the form of cooperative societies. Such organizations also differ in terms of size and area of influence, ranging from local, regional or state organizations to national organizations.

Some business associations also have ties to the coffee sector, such as ANICAFE, which is affiliated with the Confederation of Chambers of Industry of Mexico (CONCAMIN) and a member of AMECAFE. The Mexican Association of Specialty Coffees and Coffee Shops (AMCCE) is an entity that provides professional training in coffee preparation and that focuses on identifying the needs of the coffee bar and speciality coffee shop sector in order to improve the quality of coffee from the cherry to the cup served to the final customer. The AMCCE brings together and represents coffee businesses, in addition to offering classes and international certifications, along with the Specialty Coffee Association (SCA) and the Coffee Quality Institute (CQI).

Finally, the unionization rate of workers in the higher links of the coffee value chain is minimal given that trade unions and organizations of day labourers are practically non-existent. As reported in an ILO study (2018b), the percentage of unionization of the agricultural sector in Mexico is just 0.28 per cent.

1.5.2 Private certifications

Through certification and brand recognition, coffee producers seek to give added value to their coffee and obtain higher prices (Gómez-Posada 2019). The principal certifications of

environmental and social sustainability with a presence in Mexico are UTZ Certified; 4C Global Coffee Platform; Rain Forest Alliance; Bird Friendly; USDA Organic; Japanese Agricultural Standards (JAS); ECOCERT; Organic Crop Improvement Association (OCIA) International; Starbucks Coffee and Farmer Equity (C.A.F.E.) Practices, Nespresso AAA; and Fairtrade. The certifications with the greatest presence in the production units interviewed were organic and Fairtrade; in fact, Mexico is the country with the largest number of hectares with organic certification and the sixth largest number of hectares with Fairtrade certification (Frohmann 2017).

For more than 50 years, Mexico has been a leading producer of organic coffee, which is defined as coffee free of chemicals and pesticides, grown under strict quality and environmental protection control conditions that are regulated by production and processing standards. The principal certifier of organic coffee in Mexico is a civil society organization, the Mexican Certifier of Ecological Products and Processes (CERTIMEX). To obtain organic certification, coffee producers must comply with the CERTIMEX standards of production, processing and commercialization of ecological products (CERTIMEX 2014, Chap. 4, "Organic coffee"), which are defined for each stage in the value chain. In terms of OSH, the dry method must meet safety and hygiene regulations that "guarantee the proper functioning of the machinery, the safety and security of personnel and a product free of contaminants", while in the production stage, no specific reference is made to safety and hygiene or safety and health (see CERTIMEX 2014). For coffee with organic certification, organizations of small-scale coffee producers received US\$0.30 per pound in 2019.³⁹

FLOCERT is the global Fairtrade certifier, which applies 14 criteria for small-scale coffee producers in section 3.3.6, “Occupational safety and health”.⁴⁰ Of those 14 criteria, 12 criteria are core requirements and 2 criteria are development requirements, while 13 criteria include the note:

“Applicable to members who employ more than 10 workers working for more than 30 hours per week that are present for one month or more during a year”;

and 1 criterion includes the note:

“Applicable to all workers employed by coffee producers and/or by members. For organizations certified before 1 July 2019, applicable beginning on 1 April 2021”.⁴¹

Both notes leave room for discretion in the labour market, for which no clear-cut definitions exist with respect to the types of labour market entry, as detailed in the section on labour force in the production stage. For the Fairtrade certification, in 2019, organizations of small-scale coffee producers received, per pound, US\$1.40 plus US\$0.20 for social insurance.⁴² Table 9 summarizes the main certification requirements considered relevant for OSH.

Table 9. Coffee certifications and their OSH requirements

Certification	Considerations
Organic production ⁴³	<ul style="list-style-type: none"> - 4.1.6 Use of uncontaminated good quality water. - 4.1.10 Separation of fields with conventional production from fields with organic production. - 4.1.16. Prohibition of synthetic herbicides. - 4.1.17. Prohibition of synthetic pesticides. - 4.2.2. In transformation, only the use of mechanical and physical processes are permitted, as well as natural fermentations. - 4.3.2. Machinery and facilities must be in perfect condition and have a cleaning and maintenance schedule. - 4.3.3. Processing plants should have safety and hygiene regulations that guarantee the proper operation of machinery, the safety and security of personnel and a product free of contaminants.

39 Interview 15.

40 The section has 16 criteria, but two apply to other crops.

41 The standard reads: “You and your members ensure that all field workers have access to clean drinking water that is available in the region.”

42 Interview 15.

43 CERTIMEX 2014.

Certification	Considerations
Fairtrade International ⁴⁴	<ul style="list-style-type: none"> - Section 3.3.21 and 3.3.26–3.3.36, under the headings “Conditions of employment” and “Occupational health and safety” - You and your members make work processes, workplaces, machinery and equipment on your production site safe. - Children under the age of 18 years, pregnant or nursing women, mentally disabled people, people with chronic, hepatic or renal diseases and people with respiratory diseases do not carry out any potentially hazardous work, such as applying pesticides. - You and your members have accessible first aid boxes and equipment and a sufficient number of people trained in first aid in the workplace at all times. - You and your members provide clean toilets with hand washing facilities close by for workers, and clean showers for workers who handle pesticides. - These facilities are separate for women and men and the number of facilities is in proportion to the number of workers. - You and your members ensure that workers nominate a representative who knows about health and safety issues. - You and your members provide training to workers who carry out hazardous work on the risks from this work to their health and to the environment. - The workers have been trained on what to do in the case of an accident (which applies to hazardous work not related to the handling and application of pesticides). - When you carry out hazardous work, you and your members display all information, safety instructions, re-entry intervals and hygiene recommendations clearly and visibly in workplace in the local language(s) and with pictograms. - You and your members provide and pay for personal protective equipment (PPE) for all workers who perform hazardous work. You make sure that the PPE is used. - Replacement PPE is ordered and distributed when the existing equipment wears out (applicable to hazardous work not related to the handling and application of pesticides). - You and your members improve health and safety conditions by: <ul style="list-style-type: none"> • putting up warning signs that identify risk areas and potential hazards in local languages and including pictograms if possible; • providing information to workers about safety instructions and procedures including accident prevention and response; • putting safety devices on all hazardous machinery and equipment and protective guards over moving parts; • providing safety equipment to all workers who perform hazardous tasks and instructing and monitoring workers on its proper use; and • storing chemical spraying equipment safely. - You and your members ensure that all field workers have access to clean drinking water that is available in the region. - You and your members give local, migrant, seasonal and permanent workers the same benefits and employment conditions for the same work performed. - If you or your members employ migrant or seasonal workers through a contracting agency or person, you put effective measures in place to ensure that their hiring and working conditions also comply with this standard.

Source: ILO, based on information provided by CERTIMEX and FLOCERT.

44. FLOCERT 2020; the requirements listed correspond to small-scale producer organizations.

Certification costs vary according to the type of certification and whether it is the initial certification or a recertification. The volume of products to be certified also has an influence, as well as whether the requested certification is collective or individual. Assuming such costs is almost impossible for small-scale coffee producers who do not belong to organizations. The better prices obtained after certification serve as an incentive for coffee producers. They comply with requirements and plan their training activities around them.⁴⁵ Initiatives such as organic and Fairtrade, which include OSH criteria, assess the efforts of coffee producers in accordance with ILO conventions (FLOCERT 2019).

1.5.3 Providers of training, research and development

In addition to requesting specialist services, most coffee-producer organizations have worked to train their technical personnel with their own resources. They also work with universities, training centres such as the International Training Centre for Coffee Production and Sustainable Development (CICADES) and civil society organizations such as AMECAFE and the Agroecological Coffee Centre (CAFECOL), among others. Farmers also exchange information with other organizations to learn about their requirements in this area.

Although Mexican legislation mandates employers to inform workers about OSH and provide them with training,⁴⁶ the supply of

government resources is insufficient to cover the demands and specifications of all economic activities in the wide range of industrial, service and agricultural processes. Therefore, OSH training is provided by two types of entities that are often related: associations, business chambers and universities; and organizations that provide private consultants.

The most representative experienced training providers are (i) the Mexican Safety and Hygiene Association, with 15 units; (ii) the Mexican Occupational Medicine Society, which offers basic courses on industrial hygiene, occupational health and medicine; (iii) the National Chamber of Transformation Industries, which offers training in subjects requested by members and organizes short basic courses and seminars; and (iv) the Microanalysis Group, which provides training on OSH-related issues.⁴⁷

With respect to the plantations visited, in no case did interviewees provide information on OSH training activities for workers and labourers throughout the coffee value chain or in production processes, plantations or wet or dry method processing.

With respect to research and development, several public agencies, civil associations, universities and research centres have developed valuable experiences (although with limited budgets) in research and the generation of scientific knowledge, developing a variety of strategic research lines.

45 Interviews 3 and 15.

46 Article 7 of the Federal OSH Regulations.

47 See Microanalysis website, <http://microanalysis.com/inicio/>

1.5.4 Financing

As is the case in other agricultural and rural activities, actors involved in coffee production face significant financial exclusion. The main coffee-growing states – Chiapas, Veracruz, Oaxaca, Puebla and Guerrero – are in fact the states with the least financial infrastructure and the lowest credit amount per capita. Currently, Chiapas and Oaxaca have 5 branch banks per 100,000 inhabitants, while Nuevo León and Mexico City have 15–20 banks per 100,000 inhabitants. This gap is even wider in terms of automated teller machines (ATMs). Neither is the situation equitable in terms of credit amounts.

For organic coffee producers/exporters, buyers play a key role in financing both the production process and social and community development initiatives. For small-scale coffee producers that do not export, traders and exporters represent their main source of financing. A number of specialized foundations such as Heifer, Rogers and Café Femenino also offer financing to small-scale coffee producers, regardless of whether they are members of organizations. Collectors are another source of financing for unaffiliated small-scale coffee producers.

During the current six-year period, the Bienestar para el Campo programme has started serving the smallest coffee producers – with 1 hectare or less – who are located in marginalized areas in 13 coffee-growing states; they will receive 5,000 Mexican pesos in 2020. The Sembrando Vida programme seeks to promote crop renovation and plant production. For its part, SADER launched a call for the subcomponent Sustainability and Well-being for Small-scale Coffee Producers (SUBICAFE) of the Agricultural Promotion Programme, through which it provided 200,000 Mexican

pesos (approximately US\$10,000), among other types of support, to natural persons and legal entities in order to implement training and social promotion activities. This financing could be aligned with the objectives of the OSH initiative. It is estimated that in 2020, a total of 250,000 small-scale coffee producers will be SUBICAFE beneficiaries.

1.5.5 Information

One of the challenges faced by Mexico is gaining access to timely information on the different issues associated with coffee production. Despite technological advances in information capture and systematization – which, for example, would enable the registration and mapping of all production plots, georeferencing its coffee production – Mexico has no updated coffee production registry with strategic information that would serve as an input to decision-making. Neither does it have the accurate monitoring needed to calculate annual coffee yields. Estimating production and trade volumes would facilitate timely decision-making. The official source is the SIAP, a decentralized administrative agency of SADER, which is responsible for generating annual statistics and geographical information on agricultural production.

Information on the OSH situation in the coffee value chain, as discussed below, is non-existent for informal economic units – more than 95 per cent of total units – and is even limited for the small-scale sector of formal operations. Available public information on OSH is organized in accordance with the North American Industry Classification System (NAICS), disaggregated to four digits. To provide more specific information about the situation of coffee production, disaggregation to the six-digit level would be required.

1.6 OSH vulnerability profile in the production stage of the coffee value chain in Mexico

This section analyses the vulnerability of the production stage.⁴⁸ It details and evaluates the risk factors for people who work in coffee production in Mexico; the characteristics of their labour entry, which can aggravate the impact of those risks; and their capacity to respond to the consequences of occupational accidents or diseases. As noted above, most labour participation is concentrated in the production phase, which offers the greatest opportunities for improving the OSH conditions of the labour force.

This dimension of vulnerability was constructed analysing three elements: (i) risk exposure; (ii) sensitivity resulting from job characteristics, which are associated with exposure to risk factors; and (iii) coping capacity, which consists of the strategies and resources available for workers to address the consequences of their exposure to occupational risk factors. The information presented below is based on interviews and field visits. During field visits, the research team specifically inquired whether statistics or information was available on the cause of occupational accidents and diseases. Only one large plantation visited provided such statistics. That plantation also had the best OSH conditions of all the locations visited; its data may be considered as a benchmark for improving OSH conditions above the average current conditions of coffee producers in Mexico.

1.6.1 Risk factors

Intolerable risk factors

The use of the machete (mechanical risk factor) is considered the leading cause of occupational accidents in coffee production in Mexico. Regardless of the size and characteristics of the plantations, both men and women use machetes for weeding and clearing brush.⁴⁹ Deficient preventive maintenance measures and obsolete and improvised facilities are the common denominator of the wet method processing facilities visited, which generates mechanical and electrical risks. With few exceptions, industrial development is limited and installations, although designed for agro-industrial development, do not provide an effective way to move materials. Open cleaning and de-pulping tubs are used, without safety measures. There are improvised staircases without banisters, no safety guards are generally installed for moving machinery and workers do not use the protection equipment required for industrial activities. No women or minors were found carrying out this work. There are no warning signs or fire extinguishers for use in the case of fires, for which the greatest risk is electrical malfunction given that the electrical installations observed are provisional and control systems do not have proper grounding system installations.

48 The methodology section details the reasons for prioritizing production over the other links of the chain.

49 Interview 8.

This is a serious risk given the large volumes of water used. Such moisture can become a conductor of electricity, with the possibility of causing serious harm. There is also an absence of plans for the proper maintenance of installations, resulting in further risks for this type of activity. The small- and medium-scale producers who were interviewed stated that they lacked the economic resources needed for technological updating or preventive maintenance.⁵⁰ Available statistics do not record accidents resulting from such risks.

The presence of harmful fauna (biological risk factor) such as snakes also poses a permanent risk for workers.⁵¹



Mechanical risk, use of the machete

Tree and bush pruning, carried out at different heights and implemented by male workers, is another important risk factor that can result in falls and blows. According to the farmers interviewed, the most common injuries are “blows” resulting from falls from a height, although no interviewees mentioned any deaths resulting from such falls. Ground-level falls are also a risk given the unevenness of the terrain, while workers may slip during wet method processing because of the water on the floor.

Coffee production poses several ergonomic hazards for workers – associated with the physical loads carried and the postures that the work demands— to which both men and women are exposed. Maintenance and harvest activities require repetitive tasks, with the stretching of the arms and lower extremities.⁵² The geographic conditions of the highland coffee fields also demand uncomfortable standing postures and even kneeling on uneven, sloping ground.⁵³ Another ergonomic hazard is lifting and carrying bags weighing 50 to 60 kg each – heavier than the maximum weight established by law – to transport coffee cherries from harvest locations to collection centres. Generally, male day labourers perform this task; however, there are documented cases of women participating in this work, although they carry lighter loads. Most workers who perform this task are paid a piece rate for the amount they harvest and transport.

50 Interview 11.

51 The parameters for considering mosquito bites intolerable include exposure, likelihood and consequences: insect bites suffered in this agricultural activity have a significant impact because they can cause death; the activities are performed in open areas and without controls against harmful fauna; and services to provide immediate care in response to insect bites are not available.

52 This was observed in Interview 1.

53 Interviews 1 and 5.



Toxic agrochemicals pose another major risk. Practices that make these inputs more dangerous include the amount used and the frequency of application. In fertilization, pest and weed control processes, workers use different chemical inputs, which are present in the work environment in the form of powder, dust, spray, steam or gas. They enter the body through the skin or respiratory or digestive tract (Harris 2000), causing acute (accidents) or chronic (diseases) poisoning. At several plantations visited, the study team found that pesticides and herbicides prohibited in other countries and restricted in Mexico are still being used. When specifically asked, no interviewee mentioned possible poisoning; this may be because they do not have enough information to identify signs and symptoms of possible poisoning. In many cases, they are only familiar with the brand name of the agrochemicals used. When they feel ill, they take a break from exposure and then return to work.⁵⁴ No physical evidence was found that women engage in this activity.



Ergonomic hazards for physical loads

Each type of production unit generates different risk factors. The first difference is between conventional units and those of organic production, for which there are no hazards associated with herbicide use. A second difference is associated with the size of the production unit, since large plantations have more intensive production processes and also make more intensive use of herbicides, while small-scale conventional coffee producers often cannot cover the cost of herbicides and the farm families themselves perform a larger share of maintenance activities, reducing their exposure to those agrochemicals.

Finally, the noise produced by equipment – such as brush cutters or wet method machinery – can cause hearing loss, headaches, sleep disturbances and communication problems.

Serious risk factors

Physical risk factors that are associated with exposure to the extreme heat and hygrometric characteristics of each production zone include temperature changes and exposure to solar radiation, humidity and rain. Physical hazards affect all workers and day labourers, irrespective of gender.

During the plant treatment stage, a serious risk factor is associated with the lack of sanitation services and of access to potable water and restrooms and showers for workers to clean themselves after applying agrochemicals. This situation increases the likelihood of suffering from an occupational disease or poisoning.

54 Interview 8.



Toxic agrochemicals risk



Risk from noise produced by equipment

Psychosocial risks associated with the organization and type of work are also important. Day labourers expressed the need to work as many hours as possible since the purpose of temporary activities is short-term economic benefit, without considering job satisfaction or self-fulfillment. In several cases, the research team observed high levels of alcohol consumption and

domestic violence. Fatigue and stress are a constant among these workers. The workers also mentioned the distances they needed to travel to reach their work areas and the lack of recreational activities. Their precarious mental health is threatened by the knowledge that they have no health care system and their enrolment in social security systems is non-existent or limited.



Box 1

Generation of OSH statistics on coffee plantations

A key finding of this research is that no specific official statistical information exists on occupational accidents affecting people employed in coffee production. The study found that larger production units, which have more resources to generate these statistics, normally report occupational accidents. International experience indicates that statistics on injuries and accidents can play a crucial role in their prevention since they identify the areas in which preventive activities need to be intensified and specify the problems that need to be resolved.

Given the lack of official statistical information, the study of production units that compile information on occupational accidents and diseases is especially relevant. During the information collection activities, the research team visited a production unit composed of several large plantations, which employs up to 1,500 workers annually (500 during the maintenance season, from February to August; 1,500 during the harvest season, from September to January) and took the initiative⁵⁵ to compile OSH statistics for five consecutive years, using the “method of recording basic facts related to the nature and occurrence of work injuries”, in accordance with American National Standards Institute (ANSI) Standards Z 16.1 (Method of Recording and Measuring Work Injury Experience) and 16.2 (Recording Basic Facts Relating to the Nature and Occurrence of Work Injuries). For this compilation, they used standard forms for all work centres; the compilation process was led by the safety and hygiene commissions of each enterprise; the supervisor, witnesses and health care providers of each plantation participated in this task.

The research team assessed the work accidents using the records provided. Accidents are defined as a sudden event which results in an organic injury, a functional impairment or death, occurring during the exercise of, or because of, work. On this plantation, 33.5 per cent of the accidents observed involved lacerations, which were caused mainly by machetes during weeding and tree-pruning activities and affected the upper extremities (hands and fingers) and lower extremities (feet and legs); 26.8 per cent involved falls due to the uneven terrain and the work at heights; 23 per cent involved bites or stings by harmful fauna (snakes, insects and other animals); and 17.7 per cent involved pulled muscles or injuries caused by lifting loads and other objects.

The data did not record any poisonings by agrochemicals or deaths from occupational accidents or diseases.

Source: Interviews and field visits.

55 One supervisor participated in the OSH certification programme coordinated by the Labour Secretariat, with ILO support.

Table 10. Risk factors identified in coffee production stages

Subphase or subprocess	Intolerable or extreme level of risk ^a	Serious risk ^b
Shade management, field preparation and maintenance	<ul style="list-style-type: none"> - Biological: presence of harmful fauna (snakes and other animals) - Safety: overturned vehicles, commuting accidents, roads/paths in poor condition - Mechanical: equipment, machinery, tools 	<ul style="list-style-type: none"> - Physical: hygrometric thermal conditions, temperature changes - Ergonomic: physical load and demand for certain postures - Ecological: earthquakes, landslides, floods - Psychosocial: resulting from the organization and type of work
Planting	<ul style="list-style-type: none"> - Biological: presence of harmful fauna (snakes and other animals) - Safety: overturned vehicles, commuting accidents, roads/paths in poor condition - Mechanical: equipment, machinery, tools 	<ul style="list-style-type: none"> - Physical: hygrometric thermal conditions, temperature changes - Ergonomic: physical load and demand for certain postures - Ecological: earthquakes, landslides, floods - Psychosocial: resulting from the organization and type of work
Treatment	<ul style="list-style-type: none"> - Chemical: pesticides, fertilizers, herbicides. - Biological: presence of harmful fauna (snakes and other animals) - Mechanical: equipment, machinery, tools (use of application equipment: pumps and sprayers) 	<ul style="list-style-type: none"> - Physical: hygrometric thermal conditions, temperature changes, exposure to extreme conditions - Hygiene: conditions of sanitation services, latrines, restrooms, dining areas, availability of potable water - Ergonomic: physical load and demand for certain postures - Ecological: earthquakes, landslides, floods, earthquakes - Psychosocial: resulting from the organization and type of work
Harvesting or picking	<ul style="list-style-type: none"> - Biological: presence of harmful fauna (snakes and other animals) - Ergonomic: physical load and demand for certain postures, heavy lifting 	<ul style="list-style-type: none"> - Physical: hygrometric thermal conditions, temperature changes, exposure to extreme conditions - Ecological: earthquakes, landslides, floods, earthquakes - Psychosocial: resulting from the organization and type of work

Subphase or subprocess	Intolerable or extreme level of risk ^a	Serious risk ^b
Transport of cherry	<ul style="list-style-type: none"> - Biological: presence of harmful fauna (snakes and other animals). - Mechanical: equipment, machinery, tools 	<ul style="list-style-type: none"> - Physical: hygrometric thermal conditions , temperature changes, exposure to extreme conditions - Ergonomic: physical load and demand for certain postures, heavy lifting - Ecological: earthquakes, landslides, floods, earthquakes - Psychosocial: resulting from the organization and type of work
Wet method processing	<ul style="list-style-type: none"> - Ergonomic: physical load and demand for certain postures; heavy loads, falls - Physical: noise and vibrations - Mechanical: equipment, machinery, tools 	<ul style="list-style-type: none"> - Physical: lighting, temperature changes, exposure to extreme conditions - Ecological: conditions of installations - Electrical: electrical installations in poor condition or improvised - Psychosocial: resulting from the organization and type of work.

^a Mass effects, deaths, permanent disabilities (level 5) and extremely serious injuries, occupational diseases (level 6).

^b Frequently occurring incapacitating injuries, frequently occurring occupational disease (level 4).

Source: ILO.

1.6.2 Sensitivity⁵⁶

The type of labour entry of workers, particularly in the context of informal labour relations, leads to a lack of awareness regarding risks associated with the performance of their daily tasks. In the context of family work and the division of labour in the household, the expectation of harm is low since work accidents are more often the result of unfortunate events (bad luck) rather than of a lack of knowledge of risk mitigation measures. Thus, there is an attitude of tolerance and acceptance of most risk factors given that workers are either unaware of such risk factors or unable or unwilling to implement preventive actions.

Piece-rate remuneration and temporary contracts are also incentives for workers to work longer days to increase yields. This can result in oversights that result in work accidents, such as when performing maintenance work or during the harvest. In a context of high levels of informality in the employer-worker relationship, conditions are established that favour the increased labour exploitation of workers, who lack any means of collective bargaining or trade union representation.

56 The information in this section was obtained from interviews and field visits 1, 3, 8 and 15.

The application of control measures to reduce risks is limited, especially among unaffiliated small-scale producers, who account for the largest share of the labour force. Even with respect to intolerable risk factors, individuals who work in small production units have no personal protection equipment, clean water or appropriate (cotton) clothes. They do not receive information or training – either formal or informal – on the dangers to which they are exposed, which would enable them to prevent the most important risks, including the use of agrochemicals, machetes, biological risks or heavy lifting. Information is lacking on the health status of workers when they begin their jobs and when they complete them. These data would be especially important for those who handle pesticides. The research team could not confirm whether they were provided with information for responding to natural phenomena or first aid training to enable them to help their co-workers.

With respect to pesticide management specifically – except for one large plantation visited – workers are given no information on the acute and/or chronic effects of agrochemicals and/or how to avoid them. Workers exposed to agrochemicals are not given medical check-ups – except in a very few cases – and are not given the proper personal protection equipment. They are provided with no areas in which to shower, wash contaminated equipment, dispose of wastewater or store the agrochemical containers. There are no safety procedures for the application of agrochemicals or safety measures for the final disposal of waste and containers. Local officials do not monitor workers' exposure to these chemicals.

Differences were noted on the plantations visited in the implementation of risk control measures, which were not dependent on

their size. Although one large plantation had similar characteristics to those of small-scale farms, in another plantation of a similar size antidote serums were available and medical procedures were established, while personal protection equipment was also available for applying pesticides, using machetes and shade-management activities. The second plantation also supplied training materials, an on-site physician to conduct medical examinations at the beginning of workers' contracts and facilities to adequately dispose of agrochemical wastes. Nevertheless, none of those measures are the result of coordinated action with institutional agents to address aspects of OSH; rather, they are initiatives promoted by the management team at those workplaces.

No training was identified for lifting heavy loads. It was observed that the preventive proposal established by some plantations visited to deter workers from lifting more than 50 kg by using sacks of 40 kg or less was of limited application. There is no appropriate transportation for workers and the roads where the coffee harvest is transported are narrow and accidents occur in transporting both workers and coffee. At one of the plantations, an interviewee stated that they are planning to use pipelines to transport the coffee by gravity, especially in hilly areas.⁵⁷

Finally, with few exceptions, the plantations did not form safety and hygiene commissions. Small-scale producers, even those that are organized, have never received a labour inspection visit since labour inspectors tend to focus on larger plantations.

1.6.3 Coping⁵⁸

As noted above, health care service coverage in coffee-growing areas is the responsibility of the Health Secretariat, the IMSS welfare system and private health care providers. The first barrier to coping capacity is the availability of medical facilities and personnel in rural areas, especially in coffee-producing zones. The National Council for the Evaluation of Social Development Policy (CONEVAL), citing the Health Secretariat, stated that in 2014, there were 0.4 specialized health care providers in Chiapas for every 1,000 inhabitants, compared with 2 providers per 1,000 inhabitants in Mexico City (Mexico CONEVAL 2018).

A second barrier is *effective access* – whether people can actually make use of existing health care services. For this, they must know which services they have a right to use. CONEVAL found that in Mexico, 2.1 million people do not exercise their right to health care because they are unaware that they have access to it, as established by the Constitution (Mexico CONEVAL 2019). Effective health care access for workers in coffee production varies by

region. As mentioned, in Chiapas coffee is harvested almost exclusively by Guatemalan workers, who have limited access to public health care services in Mexico and Guatemala (Nazar-Beutelspacher et al. 2014), despite the different public initiatives to promote the access of the migrant population to those services (*El Economista* 2019).

In the interviews, coffee producers stated that they believed the health care service network to be inefficient. For this reason, when accidents occur, both small-scale and larger producers use private health care services. Large plantations have permanent health care services on site – one of these has established protocols for snake bites. Small-scale producers generally lack first aid kits with antidote serum and other supplies to treat biological risk factors. Given the condition of informality of most workers, no widespread compensation mechanism exists. Only a few plantations pay workers sick leave given that these workers are not formally registered with the IMSS.

58 The information in this section was obtained from interviews and field visits 1, 3 and 15.





2

Improving OSH in the coffee value chain in Mexico: Drivers and constraints

2.1 Constraints

This section carries out a market system analysis to identify ten constraints to the improvement of OSH in the coffee value chain in Mexico. These constraints are associated with rules and regulations (2.1.4, 2.1.5, 2.1.11), support functions (2.1.6, 2.1.7, 4.1.8) and the activity of economic agents in core transactions of the chain (2.1.1, 2.1.2, 2.1.3, 2.1.9 and 2.1.10).

2.1.1 Low level of integration of producers in global marketing chains

The fact that producers do not participate in marketing may reduce their commitment to product quality. This situation leads to the increase in intermediaries who seek value in the volume produced more than in specialty coffees or varieties. In the long term, this situation discourages the adoption of good practices, reduces demand by producers for certification and makes certification services more expensive. It also leads to a lack of platforms (social, marketing or technological) that build the trust necessary among producers, marketers and the final market throughout the coffee value chain process.

2.1.2 Limited OSH co-responsibility

OSH is not considered a factor that adds value to the product obtained in the production phase. The situation is further complicated in medium-sized and small farms or economic units given that the employer/day labourer/employee distinction is distorted by the different social categories in the context of the household economy and the practices associated with unpaid employment. In both cases, the virtual absence of mediating

entities in worker–employer conflicts and of advocates for workers’ interests reinforces employment mechanisms based on social tradition, class divisions and labour informality, beginning with a lack of compliance with social security regulations.

Consequently, coffee production in most cases takes place outside all risk prevention frameworks, under conditions of high exposure to risk factors or threats to workers’ health, beyond the reach or monitoring of agencies at the different levels of government that are responsible for labour inspection. This is broadly identified as the *absence of a culture of risk prevention*. This creates a labour environment in which OSH is viewed as an economic burden that provides no returns on investment and an unnecessary distraction from daily work, even though it is associated with physical safety and health, thus becoming an activity with an extremely high vulnerability component in terms of social protection and a high worker accident profile.

2.1.3 High level of informality in coffee production and contributing family employment

Informality is a general characteristic of the coffee labour market. This informality refers to the type of tasks that own-account workers or employees carry out without social protection, without social security coverage, in the absence of employment contracts, at wages below the minimum wage or for no pay at all, as well as a whole range of practices that are not covered by Mexican labour law.⁵⁹ In most cases, labour informality in the coffee sector is associated with the family nature

of activities. In other cases, it relates to the employment of categories of workers who have few or no rights, such as migrant workers and those without the legal right to work. Thus, the lack of legal or social acknowledgement of labour rights is a significant constraint to OSH because it reinforces social or cultural practices rooted in forms of labour organization with strong traditions or values opposed to those of formal employment.

2.1.4 Limited institutional capacities to enforce OSH legislation

In the context of economic austerity, budget restrictions and reduced government intervention, the historical lags in labour inspection increase the risks of non-compliance with labour regulations and generate scepticism among some actors with respect to the effectiveness of government administration to ensure compliance.

These low expectations with respect to institutional capacity to enforce OSH legislation are reinforced by general recommendation 36/2019 of the National Human Rights Commission on the situation of agricultural day labourers in Mexico and non-compliance with standards concerning working conditions in the agricultural sector. That recommendation denounces several situations and practices that were also documented in the interviews with actors of the coffee value chain.⁶⁰

2.1.5 Lack of knowledge of OSH standards

Except for a few plantations in which the research team confirmed employers' and workers' knowledge of documents regulating safety, hygiene, ergonomics and management of pesticides, herbicides and other agrochemicals,⁶¹ the team noted a clear lack of knowledge of OSH risks and the type of measures necessary to mitigate them. This is partly associated with the low levels of co-responsibility and the high level of labour informality mentioned, since in that context the relevance of knowledge of such risks is low and does not constitute a decisive factor in the production capacities of economic units.

In many small and medium-sized plantations, when specifically asked, workers and employers reported that they were unfamiliar with documents such as the Federal Occupational Safety and Health Regulations or the official national standards that make them operative.⁶² Overall, the research team observed that the failure to adopt OSH risk prevention criteria as established by law was associated with the low level of dissemination of knowledge of the positive aspects of improving working conditions, based on a perception that the "laws" serve only to impose sanctions and other punitive measures.

59 In particular, the provisions of the Social Security Law (Mexico 2019a) and the Federal Labour Law (Mexico 2019b) with respect to labour regulations in agricultural activities.

60 The observations of the general recommendation include the lack of formation of safety and hygiene commissions in workplaces; the lack of clean water for workers; the lack of worker training in pesticide and/or fertilizer use and management; the lack of use of adequate personal protection equipment; the low rate of incorporation in programmes such as the plan to collect empty containers for recycling and the programme for proper agrochemical use and management; and the lack of adequate dwellings for immediate family members, men and women, with or without children (Mexico, CNDH 2019).

61 Interview 1.

62 This was the case for all interviews except interview 1.

2.1.6 Limited statistical information on OSH conditions

The limited availability of statistics on accidents and incidents associated with OSH is an important constraint to knowledge of the situation of working conditions in Mexico's coffee sector. This problem has multiple causes, including (i) the high level of labour informality prevalent in the sector; and (ii) the insufficient coverage of statistical tools or the absence of specialized tools to collect statistics to identify the level of exposure to occupational risks and their incidence. Consequently, available OSH statistics⁶³ correspond to the larger coffee plantations, which have more incentives to collect such information for their administrative records. These economic units enrol their formally employed workers in the social security administration; however, they comprise a very small subgroup of the personnel who work in these units.

2.1.7 Limited OSH support services for coffee producers and business owners

On the supply side, in workshops with different actors, the research team identified technical institutes, universities and non-governmental organizations with knowledge and experience in providing advisory or training services associated with the labour culture or capacity-building for some coffee-producing sectors. Although no participants highlighted the implementation of OSH-centred training, they did believe that more of these services were needed. They also stated that, in addition

to increasing the supply of such activities, their financing should be promoted or they should be linked with social sector actors and producers or actors in the production phase.

On the demand side, no legal or market drivers were observed. During the visits to small- and large-scale producers, the research team found no evidence of workers' training activities to identify or mitigate OSH risks. At one plantation, posters on how to prevent work accidents were visible.

Finally, according to several stakeholders, the lack of specialized networks or services for business development and assistance with marketing/distribution of coffee products limits the production potential of the coffee production sector. Some consider that this important constraint is associated with the lack of access to information to guide decision-making, identify market opportunities or partners and obtain knowledge to improve or innovate OSH practices.

2.1.8 Limited effective access to health care services and sanitation facilities

The absence of health care services and sanitation facilities – such as access to potable water or latrines in areas close to work areas – is a key constraint against the working population receiving assistance in the event of OSH incidents.

During the visits and interviews, the study team confirmed that workers believe that the absence of community health care services

63 Availability refers to existence; available statistics are not public information disaggregated to the level required to reflect the working conditions of coffee production in Mexico.



affects both their health and that of the community, including their family members. With respect to strategies for assisting workers in situations or events involving OSH, the team confirmed that workers generally rely on traditional medicine or private health care services. They only use public health care services such as Seguro Popular (People's Insurance) or some equivalent located nearby when the problem is more complicated. In addition to the lack of health care personnel in the communities in which workers of the coffee-growing sector reside, when workers do access some form of medical attention, they report that the lack of specific medications for insect bites or antidote serums are a real problem for treating these specific OSH events that occur during work on the plantations.

2.1.9 Lack of suppliers and agro-logistics

The lack of suppliers and agro-logistics to support the collection, storage, distribution and marketing processes, as well as to safely transport products, is a major constraint against developing value chains in the agricultural sector in general. Specifically in the case of coffee production, the lack of logistic infrastructure – especially the absence of specialized centres for local transfer or supply and of local trade agencies – has an impact on the establishment of formal channels between producers and supply service providers, reducing the possibilities for incorporating small-scale producers in global supply chains.

2.1.10 Low level of mechanization

Geographic and field conditions increase the dangers of coffee production. Fields with uneven terrain make it more difficult for workers to use machines and tools for weeding

or moving the harvested cherries, resulting in lacerations and falls, as mentioned in the vulnerability profile. These problems can be resolved with the use of brush cutters or gravity-fed transport, which are already used on some plantations. In household economic units, drivers are insufficient to, for example, replace or substitute the use of machetes for certain activities, given that the machete is a tool that is both cheap and easy to use; in addition, there is no risk prevention culture and household producers do not believe that it is important to identify different risk scenarios.

Accordingly, this is an area of opportunity for implementing technical and technological innovations that specifically target the resolution of problems associated with OSH risks. The potential and complexity of such innovations varies with the needs of different economic units, while the resolution of problems depends on the balance between the affordability and accessibility of the technologies suitable for each type of work.

2.1.11 Absence of a strategic coffee production plan with an OSH focus

The lack of a strategic plan for the productive development of the national coffee production sector in Mexico is a constraint against coordinating institutional actors around specific objectives.

The public sector has begun to introduce changes to improve overall conditions for workers, in accordance with some of Mexico's international commitments on labour (such as wage increases and union democratization) and also to support vocational training for youth. None of these changes, however, appear to be linked with or aimed at promoting improvements in the agricultural sector. These labour measures present a bias toward the

development of industrial or service activities since they do not directly address problems associated with the structural informality of agricultural activities or the absence of mechanisms to defend workers' labour rights. They also lack an integral perspective that includes the promotion of OSH, revealing a weakness in labour policy and a lack of specific relevance to the productive, labour and economic reality of the agricultural production units of coffee and rural areas.

2.2 Drivers

The systemic drivers to improve OSH serve as anchors for the potential interventions since they encourage those responsible to act. These systemic drivers should be differentiated from the individual drivers of the different actors or types of actors, which are analysed in the intervention proposals using the capacity-will framework.

2.2.1 Premium coffee prices for certifications

Compliance with different certification schemes is a driver for implementing improvement processes, both for unaffiliated small-scale producers and larger farms. To this end, organizations have at least one individual in their core team who coordinates training, internal audits and certification visits. In some cases, they have field personnel in each location to help producers fulfil requirements. During one visit to a plantation, it was interesting to note the existence of specific activities to ensure the existence of fire extinguishers in the facilities of both the plantation and the processing facilities. During the literature review on Fairtrade criteria, the research team identified a

specific criterion that evaluates the existence of extinguishers; nevertheless, the fire risk in the main facilities, according to the results of the SafeWork method assessment, is neither highly likely to occur nor to have a significant impact on coffee production. If OSH risk prevention criteria were adapted in accordance with the risk assessment proposed in this report, organizations would focus on factors with the highest likelihood of occurrence and impact, such as mechanical, ergonomic or biological risks.

The regional workshops discussed the possibility of generating a new OSH-centred certification associated with the payment of premium prices or the inclusion of OSH criteria in existing certifications, although it was also noted that an intervention in this area alone would be insufficient unless accompanied by actions to raise awareness and provide training.

2.2.2 Ecosystem of agents with knowledge and initiatives to improve the coffee value chain

During the regional visits, the research team noted that many actors with experience in programme implementation seek to improve working conditions in the coffee production sector. The government agencies present, whose objectives, plans or programmes focus on the development of national agricultural production, are important platforms for promoting the development of value chains with an emphasis on the OSH components that are of interest for the sector.

Particularly noteworthy was the presence of educational institutions, such as the Centro Regional Universitario de Oriente (CRUO) or the Colegio de la Frontera Sur

(ECOSUR), and of civil society organizations with experience in implementing processes to improve coffee production conditions. Although these processes do not directly focus on OSH, they can serve as channels for introducing potential interventions. Other key actors given their contribution to improving the environment and OSH include those associated with the provision of recycling and herbicide waste management services. The importance of these businesses for waste management was documented on some coffee plantations in Chiapas.

2.2.3 Increased demand for specialty coffee

One of the solutions for low coffee prices is enhanced quality and differentiation, which allows producers to access the speciality markets that are expanding and creating new trade opportunities. There is a recognized interest on the part of different actors in participating in the market of organic and speciality coffees, mainly driven by the high prices for this segment – up to 200 per cent higher than the prices producers can obtain from conventional coffee. While actors recognize that the international market for specialty varieties or organic coffee has become increasingly competitive, both in the production and marketing stages, they are fully aware of their potential and the benefits resulting from increased volumes destined to the international market.





3

Intervention areas for improving OSH in the coffee value chain in Mexico



The description of the coffee value chain carried out during mapping, including an OSH analysis, enabled the research team to answer the questions “Why have OSH conditions not improved?” (constraints) and “What can stimulate OSH improvement in the coffee value chain?” (drivers). Drawing

on that information, the stakeholders in the coffee value chain participated in developing intervention models at four meetings in the framework of COCONASST and COCOESST. Seven of the interventions were classified as priorities and unanimously adopted at a session of COCONASST held in December 2019.

Table 11. Relationship between constraints identified and interventions proposed

Level	Constraints identified	Interventions proposed in view of the drivers identified
CT	2.1.1. Low level of integration of producers in global marketing chains	3.2.2 Create an institutional platform for information exchange on supply of/demand for processed coffee
CT	2.1.2. Limited OSH co-responsibility	<p>3.1.3 Train OSH specialists for the agricultural sector and create the requirement for training small-, medium- and large-scale producers</p> <p>3.1.4 Promote an OSH culture in the coffee production sector</p> <p>3.1.5 Promote good OSH practices among female coffee producers</p> <p>3.1.6 Generate evidence, through case studies, of the impact of OSH in terms of increased productivity</p>
CT	2.1.3. High level of informality in coffee production and contributing family employment	
RS	2.1.4. Limited institutional capacities to enforce OSH legislation	3.2.5 Strengthen verification and labour inspection in coffee-growing areas
RS	2.1.5. Lack of knowledge of OSH standards	<p>3.1.1 Increase knowledge of actors on OSH standards for the agricultural sector</p> <p>3.1.3 Train OSH specialists for the agricultural sector and create the requirement for training small-, medium- and large-scale producers</p> <p>3.1.5 Promote good OSH practices among female coffee producers</p>

Level	Constraints identified	Interventions proposed in view of the drivers identified
SF	2.1.6. Limited statistical information on OSH conditions	3.2.1 Integrate work accident statistics and information systems
SF	2.1.7. Limited OSH support services for coffee producers and business owners	3.1.2 Incorporate the prevention of occupational accidents and diseases into agricultural rural development programmes
SF	2.1.8. Limited effective access to health care services and sanitation facilities	3.2.4 Improve water sanitation and purification systems in crop-growing areas
CT	2.1.9. Lack of suppliers and agro-logistics	3.2.3 Improve crop management practices
CT	2.1.10 Low level of mechanization	3.2.3 Improve crop management practices
RS	2.1.11 Absence of a strategic coffee production plan with an OSH focus	

Note: CT=core transactions; SF=support functions; RS=regulations and standards. Priority interventions appear in bold type (high level of capacity and will), while interventions that were outlined but for which low levels of capacity or will were identified appear in roman type.

Source: ILO.

3.1 Priority intervention areas (high level of capacity and will)

3.1.1 Increase knowledge of actors on OSH standards for the agricultural sector

The constraint to be addressed is the lack of knowledge of current OSH standards. This intervention has the objective of disseminating knowledge on the applicability, scope and opportunities that the OSH regulatory framework offers for improving the working and health conditions of agricultural workers. Compliance with legislation is a complex issue for the agricultural activities of an economic sector that is informal, operates largely within the household economy and relies on family labour. The greatest opportunities for improving knowledge of OSH standards (and therefore compliance with them) are in the largest production units (large plantations or coffee farms) and the cooperatives that consolidate the interests of small-scale producers. It is in these workplaces that knowledge of OSH standards and how to apply them is most likely to be disseminated and to achieve progress in the adoption of OSH practices.

3.1.2 Incorporate the prevention of occupational accidents and diseases into agricultural rural development programmes

The objective is to address the limited support that OSH support services provide to coffee producers and business owners. Considering budget cuts and the reduction

of the federal government administration in Mexico in recent years, OSH issues need to be integrated in a systematic manner into the federal work programmes of SADER, which is responsible for the coffee production sector. At the national-level consultations, the SADER representative expressed an interest in establishing targets to address specific issues.

The activities of this intervention include to incorporate the financing and administration of OSH projects and programmes in SADER and to implement a dialogue process among those responsible for SADER programmes and other agencies that include coffee production workers as beneficiaries. Such a dialogue could also help to identify points of agreement for promoting the financing and development of initiatives to improve OSH.

3.1.3 Train OSH specialists for the agricultural sector and create the requirement for training small-, medium- and large-scale producers

This intervention addresses constraints related to the low level of co-responsibility and the lack of familiarity with OSH regulations. It proposes to increase and strengthen training opportunities for specialists and producers, as well as to support the training needs of small-, medium- and large-scale producers through the impact of the intervention on certifications. The proposed actions are:

Action 1. Develop training programmes for OSH specialists for the agricultural sector, in collaboration with the IMSS, universities and OSH agencies.

Action 2. Promote the establishment of professional OSH certifications for agricultural activities.

Action 3. Develop OSH training courses for small-, medium- and large-scale producers, including measures to manage the risks associated with agricultural work and the use of toxic substances.

Action 4. Establish training centres in educational institutions, technical institutes or think tanks, with extension and value chain activities designed to strengthen OSH management capacity.

3.1.4 Promote an OSH culture in the coffee production sector

This intervention seeks to address constraints related to the low level of OSH co-responsibility, whose underlying causes include not recognizing the contribution of OSH to the productivity of the economic unit and the confusion of the employer/ day labourer/employee distinction with various social categories in the context of the household economy and the practices associated with unpaid work. During presentations at regional workshops on possible legal interventions, participants consistently emphasized the need to raise awareness about the economic improvements that OSH can provide to producers. The idea is to strengthen the concept of shared responsibility through preventive activities. The proposed actions are:

Action 1. Produce educational materials to launch a campaign to raise OSH awareness.

Action 2. Disseminate and promote global initiatives on OSH compliance in different forums, business syndicates, workers' organizations or other channels that bring together actors of the coffee sector.

Action 3. Develop OSH handbooks for production units and cooperatives.

Action 4. Prepare effective handbooks and instruments to promote and verify OSH standards for current and potential future certifications.

3.1.5 Promote good OSH practices among female coffee producers

This intervention seeks to address the constraint of the lack of OSH regulations and to strengthen the gender focus of the interventions designed to promote an OSH culture and to train producers. Specific OSH promotion processes should be developed for female family workers that take into account all the existing constraints against achieving OSH training for such workers. The proposed actions are:

Action 1. Create specific training opportunities for men and women producers who lead organizations of small-scale producers and who can work within their organizations to promote OSH among female family workers.

Action 2. Develop research activities with stakeholders working on gender and coffee issues in the world of small-producer organizations, such as the Women's Coffee Foundation or the Latin American and Caribbean Network of Fairtrade Small Producers (CLAC) in order to identify and develop good OSH practices.

3.1.6 Generate evidence, through case studies, of the impact of OSH in terms of increasing productivity

This intervention addresses constraints related to the low level of OSH co-responsibility, specifically its underlying causes associated with the limited visibility of OSH contributions to productivity. During the field visits, the research team identified a number of

plantations with OSH conditions above the average of the other farms, which were achieved through the deliberate application of OSH policies and practices that included the compilation of accident and production statistics. Accordingly, it was agreed to implement an evidence-based intervention on one of these plantations. The goal is to share this experience through an in-depth study in order to reinforce the OSH culture in the coffee production sector, not only as a right but also as a good investment.

3.2 Other intervention areas (reduced capacity and will)

3.2.1 Integrate work accident statistics and information systems

This study has demonstrated that the limited availability of OSH statistical data is a constraint whose underlying causes include labour informality and the absence of specialized mechanisms to collect such data. At the level of the economic unit, this study recommends exploring mechanisms to encourage information collection by the producers themselves. For the statistical processes of the sector and the publication of special tabulations for the national or subnational aggregate (regions), collaboration agreements among SADER, the National Statistics and Geography Institute (INEGI), AMECAFE and ANICAFE should be promoted, drawing on information from national agricultural surveys. With the goal of including relevant information on OSH strategic indicators in these areas, different initiatives could be promoted to collect complementary information for the coffee production sector, making use of strategical platforms or instruments currently implemented by the INEGI or SIAP.

3.2.2 Create an institutional platform for information exchange on supply of/demand for processed coffee

Among the systematic constraints listed is the low level of inclusion of producers in global marketing chains. It is indispensable for OSH promotion to be accompanied by an institutional mechanism or platform that facilitates such a producer-consumer link, with a view to building trust through familiarity with producers and their products, on the one hand, and price-product advantages on the other. This link will facilitate access to market niches with competitive price advantages. The proposed actions are:

Action 1. Update and consolidate the national registry of coffee producers with information on the characteristics and size of the production unit; the variety or species produced; the production volume (current and past); the employment characteristics; and the OSH considerations incorporated into every coffee production unit.

Action 2. Establish or integrate a registry of marketers or consumers of processed coffee with information on coverage of the market; the coffee variety used; the historic consumption volume; the prices offered to buyers; and the types of certifications required for purchasing from producers.

Action 3. Implement national and international dialogue processes with actors of the coffee value chain (certifiers, large buyers or marketers, organized small-scale producers) with the objective of including OSH compliance criteria in coffee production standards and integrating regional or global value chains.

3.2.3 Improve crop management practices

Technical improvements are crucial for improving OSH and productivity in the cultivation area for all types of production units in the coffee value chain. However, the cases observed reveal that solutions for each production unit will vary, depending primarily on (i) the size of the crop area; (ii) the organization or division of labour by activities; and (iii) the affordability and accessibility of the different technical/technological solutions. The proposed actions are:

Action 1. Create an information system on suppliers of the inputs needed by this production activity (coffee production associations, government agencies, coffee development institutes).

Action 2. Disseminate good practices on the use of alternative work tools (coffee production associations, government agencies, coffee development institutes).

3.2.4 Improve water sanitation and purification systems in crop-growing areas

This intervention seeks to increase effective access to sanitation infrastructure. Actors believe that coordinated community development is required since the mobilization of multiple resources and political will are required to address the lack of access to sanitation infrastructure, which also affects the development of economic activities. Small-scale coffee producers are particularly affected by this problem since it is associated with the precarious conditions of poverty and the household economy in which the agricultural activity is implemented. By contrast, large coffee

plantations have sanitation services and access to water suitable for human consumption. The point of access for this intervention is state governments and their municipalities, as well as universities, research centres and the STPS. The proposed actions are:

Action 1. Provide support for the preparation of infrastructure plans or programmes in coffee-growing municipalities, with an OSH focus (state and municipal governments, research centres or non-governmental organizations).

Action 2. Encourage the development of projects to design solutions for wastewater treatment, safe storage of hazardous materials and final waste disposal in order to reduce the range of community health risks (universities, research centres, municipal governments).

Action 3. Promote the inclusion of OSH criteria in the selection of federally financed infrastructure projects (STPS).

3.2.5 Strengthen verification and labour inspection in coffee-growing areas

This intervention addresses the constraint associated with limited institutional OSH capacities, whose underlying causes include institutional weaknesses in labour inspection. Most actors recognize that agricultural activity in the coffee production sector offers opportunities for improving OSH measures. Some actors believe that the “punitive” character of compliance with labour law may serve as a strong incentive for ignoring the law and continuing in informality since it represents an expense for production units that have limited income. One possible approach to increasing the number of standards while at the same time

promoting labour inspection is to strengthen local participatory mechanisms in order to raise awareness of how compliance with OSH standards provides opportunities for improvement. The proposed actions are:

Action 1. Promote the establishment of local mechanisms to promote and disseminate good practices based on the monitoring of current OSH regulations (coffee cooperatives, leaders of coffee-growing communities, STPS).

Action 2. Build capacities for the participatory promotion, surveillance and monitoring of OSH compliance and for identifying problems with the implementation of regulations in local contexts (coffee cooperatives, leaders of coffee-growing communities, STPS, health sector).

Action 3. Promote the participation of universities, technical institutes and applied research centres to provide training in local development management by channelling public or private funding to support the strengthening of surveillance, monitoring and knowledge of OSH practices.

Action 4. Develop a national system of indicators for monitoring actions associated with labour inspection in the coffee production sector in order to identify opportunities for improving OSH and community development.

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5. Annex : List of interviews and focus groups

Chiapas

- Interview 1 Rogers Plantation (field visit)
- Interview 2 Brasil Plantation (field visit)
- Interview 3 ISMAN
- Interview 4 Conservation International
- Interview 5 Santa Cruz Plantation (field visit)

Oaxaca

- Interview 6 Mexican Certifier of Ecological Products and Processes, S.C.
- Interview 7 Confederation of Workers' Trade Unions of Oaxaca State
- Interview 8 Yuviaga Plantations
- Interview 9 Cafetaleros Oaxaqueños
- Interview 10 S.A. Plantation of the SOFOM ENR value chain

Veracruz

- Interview 11 Catali Amarillo. Sociedad de Solidaridad Social (field visit)
- Interview 12 Explotadora California
- Interview 13 Union of small-scale coffee producers (field visit)
- Interview 14 Universidad de Chapingo

Chiapas

- Interview 15 Sierra Azul
- Interview 16 Coffee California (field visit)
- Interview 17 COOPCAFE

- Interview 18 INCAFECH
- Interview 19 Small-scale producer of a cooperative
- Interview 20 Young coffee producer
- Interview 21 Young coffee taster
- Interview 22 Juan Carlos Calderón
- Interview 23 CROC
- Interview 24 Brasil Plantation (2)
- Interview 34 COPARMEX Chiapas

Mexico City

- Interview 25 AMECAFE
- Interview 26 ANICAFE, CONCAMIN member
- Interview 27 Directorate of Occupational Health and Safety, STPS
- Interview 28 Occupational Health Coordination Office, IMSS
- Interview 29 Subsecretariat of Agriculture, Directorate of Agricultural Promotion; SADER
- Interview 30 National Union of Food, Beverage, Tourism Hotel, Gastronomy, Similar and Associated and Industry Workers; CROC
- Interview 31 National Coordinator of Organizations; CTM
- Interview 32 Corporate Agriculture Unit, Nestlé
- Interview 33 Rainforest Alliance Mexico
- Interview 35 Federal Labour Inspection Directorate, STPS

About the Vision Zero Fund

The Vision Zero Fund (VZF) brings together governments, employers' and workers' organizations, businesses and other stakeholders working towards the goal of zero work-related fatalities, injuries and illnesses in global supply chains. This G7 initiative, supported by the G20, is administered and implemented by the ILO. The VZF is an integral part of the ILO's Safety + Health for All Flagship Programme.

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