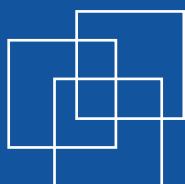




International
Labour
Organization



**Food and agriculture
global value chains:
Drivers and constraints
for occupational safety
and health improvement**
Executive summary





Food and agriculture
global value chains:
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| Context

New global estimates on the economic costs of work-related illnesses and injuries indicate that these represent 3.94 per cent of global gross domestic product (GDP) per year, or 2.99 trillion US dollars. The human cost is 2.78 million workers who die each year from work-related injuries and illnesses. An estimated 2.4 million of these deaths can be attributed to work-related diseases alone.

In response, there has been an increase in attention paid to prevention within policy discussions at the global level. In particular, this issue was added to the G20 agenda in 2014 when Ministers of Labour and Employment adopted the G20 Statement on Safer and Healthier Workplaces. Their commitment was reaffirmed at the 2015 meeting in Ankara in the Ministerial Declaration, where G20 members reiterated their determination to improve occupational safety and health (OSH) in their countries and throughout the world.

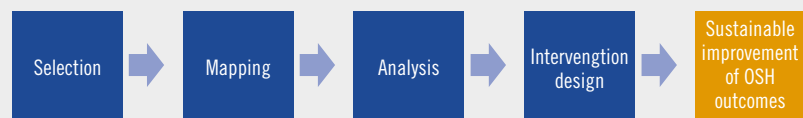
In order to contribute to this effort, the *Joint International Labour Organization (ILO) – European Union (EU) project to improve knowledge base and safety and health in global supply chains (GSCs) to support G20 work on safer workplaces* was developed by the two organizations under the OSH GAP Flagship programme. The project emerged as a follow-up to the G20 meeting in Ankara and started in March 2016, during the preparation of the ILC general discussion on Decent Work in GSCs.

The project aimed to gather evidence on ways to approach OSH within the GSC discussion and possible entry points to build intervention models for the improvement of OSH in GSCs. From that perspective, the project sought to understand the dynamics at play in GSCs with a view to identifying drivers and constraints for OSH improvements, should these lie within specific business relationships in the supply chain or within institutional and policy environments in sourcing and consumer countries.



| Methodology

The project was structured around the development of three case studies over a 22 month period, to gain an in-depth understanding of three specific value chains integrated in the global economy from three different sourcing countries. In order to select, map, analyse and propose intervention models in those GSCs, the project developed a methodology adapted from the *Market Systems for Decent Work* approach which was applied throughout these case studies.



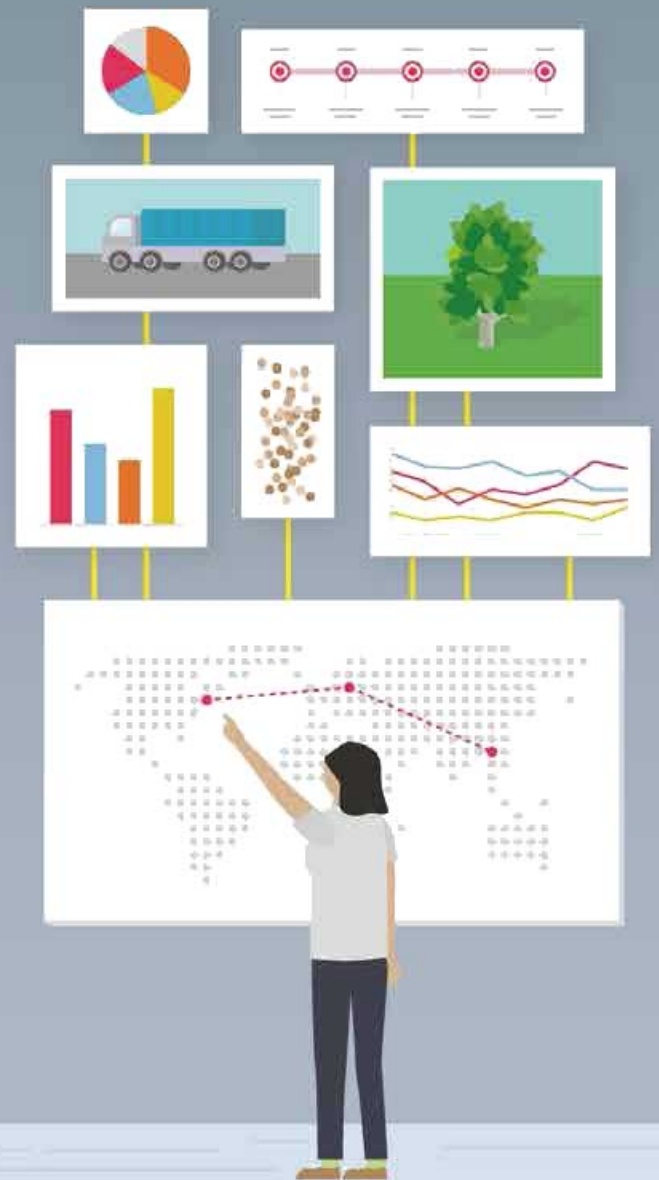
The criteria for the selection of value chains included: market position; employment with specific consideration of existing OSH indicators; environmental and social impact, sector organization and regulation; and potential for transferability of results. The value chain selection was carried out in three countries identified by the project. The selected value chains were coffee from Colombia, palm oil from Indonesia and lychee from Madagascar.

Once selected, a mapping was conducted to obtain a detailed typology of actors in each value chain and their institutional and market environment. The mapping was followed by an in-depth qualitative analysis. The project conducted qualitative research so as to understand the root causes that led to the development of drivers and constraints for OSH in each value chain, and see to what extent these could be leveraged to improve OSH. In doing so, gathering the experience from the different types of actors involved in each value chain as well as its market and institutional environment was paramount. The methodology identified OSH vulnerability profiles at each stage of production, including the identification of occupational hazards as well as factors of vulnerability such as access to social protection and status in employment. The last stage of intervention design involved consultations with stakeholders of the value chains and their supporting functions in each country.

| Step 1: Selection



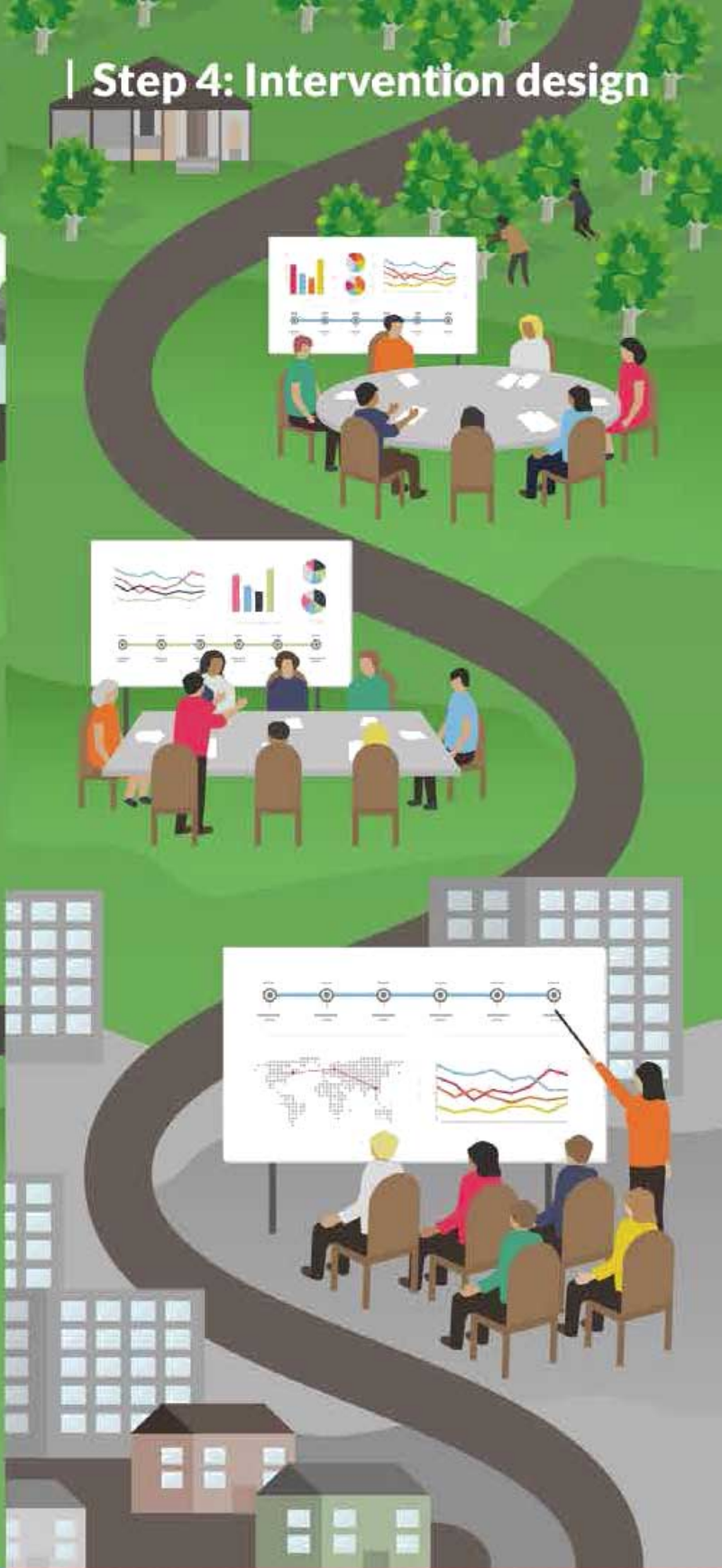
| Step 2: Mapping



| Step 3: Analysis



| Step 4: Intervention design



Interventions for sustainable improvement of occupational safety and health outcomes


- _____
- _____
- _____

CA
DE
LOMBIA

EXCEL
SO
CAFÉ
DE
COLOMBIA

70 Kg.

11000



Drivers and constraints for OSH in the coffee global value chain from three producing regions in Colombia

Colombia is the third coffee producer and exporter in the world after Brazil and Vietnam. As a whole, the different production steps generate around 743,000 direct jobs in Colombia. Within the first step alone (coffee growing), 730,000 jobs are generated annually, with a peak during coffee harvest. 69.4 per cent of these jobs are filled by coffee growers themselves and members of their household. Most of the employment generated is informal, regardless of the size of the farm. The temporary nature of coffee harvesting plays a restrictive role in the hiring of workers under formal contracts, especially in regions where the labour market for salaried work is poorly developed.

Drivers and constraints for OSH improvement

A set of factors drive and constrain the adoption of safe work practices in the coffee value chain from Colombia:

- **Institutionalization:** Established in 1927, the National Federation of Coffee Growers (FNC) is made up of 33 cooperatives of coffee growers. It is partly financed by the coffee export tax, and it has a network of rural extension workers throughout the country. Through its centralized and decentralized presence, the FNC disseminates and promotes its strategy for the improvement of OSH in coffee farms.
- **New market trends:** A market segment has recently emerged mainly from high-income countries whereby consumers and buyers are willing to pay higher prices in exchange for the responsible production of coffee relating to specific social and labour conditions.
- **Legal framework and institutional capacities of the Ministry of Labour:** A new regulation on OSH influenced the public and private sectors to join forces in preparing the value chain to comply with new requirements. Still, the resources of labour offices in the regions, especially in rural areas, are rather limited for them to perform their OSH functions.
- **Social protection system:** It is worth noting the existence of contributory and non-contributory social protection programs that play both a preventive and compensatory role. The legal framework for the social protection system is extensive, but effective access to these benefits and health services remains limited in rural areas.
- **Regional perspectives:** Some institutions at the regional level have made progress in promoting OSH in coffee-growing regions, although they have been disconnected from initiatives at the central level which limits their dissemination from one region to another. Supporting institutions in the regions, and particularly in remote areas, often do not reach coffee growers and their workers. Temporary rural workers in general are not organized in associations or unions.

Opportunities for the promotion of OSH

Though it represents most of the employment generated in the value chain, employment at the production stage is, in its large majority, informal. At the coffee growing stage, coffee producers and their workers are exposed to various occupational hazards. According to the information collected by the FNC and the Ministry of Labour in a joint survey on the main occupational hazards on coffee farms, the following hazards were identified (in order of importance): biomechanical (repetitive movements of hands and arms, rotation of the trunk), environmental (natural disasters), sanitary (access to drinking water), biological (snake bites) and chemical (application of agro-chemicals). The accident/ill health rate is highest during coffee bean harvest, soil cultivation and management of weeds. The management, prevention and mitigation of OSH risks is in its infancy in rural areas, especially in remote areas. Relatively few coffee growers, most of whom are certified under private compliance initiatives, have access to information on how to improve their preventive practices. This means coffee growers, especially in small and medium-sized farms, as well as their families and their workers, are disconnected from services that could support them to identify hazards and implement preventive measures. The same is true for workers on larger farms either temporarily contracted for the harvest or subcontracted for the application of agro-chemicals, who may have little access to training, information, and compensation due to their status in employment. Barriers of access to occupational and general health services persist due to geographical location as well as the economic situation of coffee growers and their workers.

The employment generated in the commercialization, threshing and export stages is formal: it is characterised by written contracts, they pay is based on legal provisions and they are affiliated to contributory social security schemes. At the threshing stage, the main OSH hazards are lifting heavy loads, exposure to airborne particles, noise and machinery hazards such as unguarded machines. Exposure to airborne particles is controlled to different degrees depending on the technology and investments made in prevention. Some thresh-

ers have advanced extraction systems, but in some instances they are not present. Some companies have advanced OSH management systems, as their location in urban areas eases access to prevention and promotion services, as well as training for their staff. Along with OSH management systems, companies often have focal points responsible for safety and health, with a dedicated budget facilitating the reduction and elimination of hazards, and a monitoring system of accidents and ill health and their cause. These formalized companies, due to their affiliation to the social insurance system, have access to prevention services (diagnosis, advice, promotional material) provided by the employment injury insurance scheme. At the level of the threshers, progress in terms of OSH finds limitations as it regards to sub-contracted workers, who are most-

ly exposed to manual handling hazards associated with the loading and unloading of the bags of green coffee. Efforts to improve OSH in the value chain could focus on the profiles of workers identified as particularly vulnerable: small coffee farmers, their families and their temporary workers, as well as temporary harvesters and sub-contracted workers applying agro-chemicals in medium and big farms. This process requires the mobilization of existing good practices in the value chain, and the participation and coordination of numerous actors along the value chain and its institutional environment. The experience accumulated in coffee could be useful to other rural value chains in Colombia, as part of the Government's ambitious rural development agenda, as well as to other coffee-producing countries around the globe.





730,000 workers in 552,128 farms

Vulnerability profile

Smallholders and their family members working on farms

Temporary agricultural workers

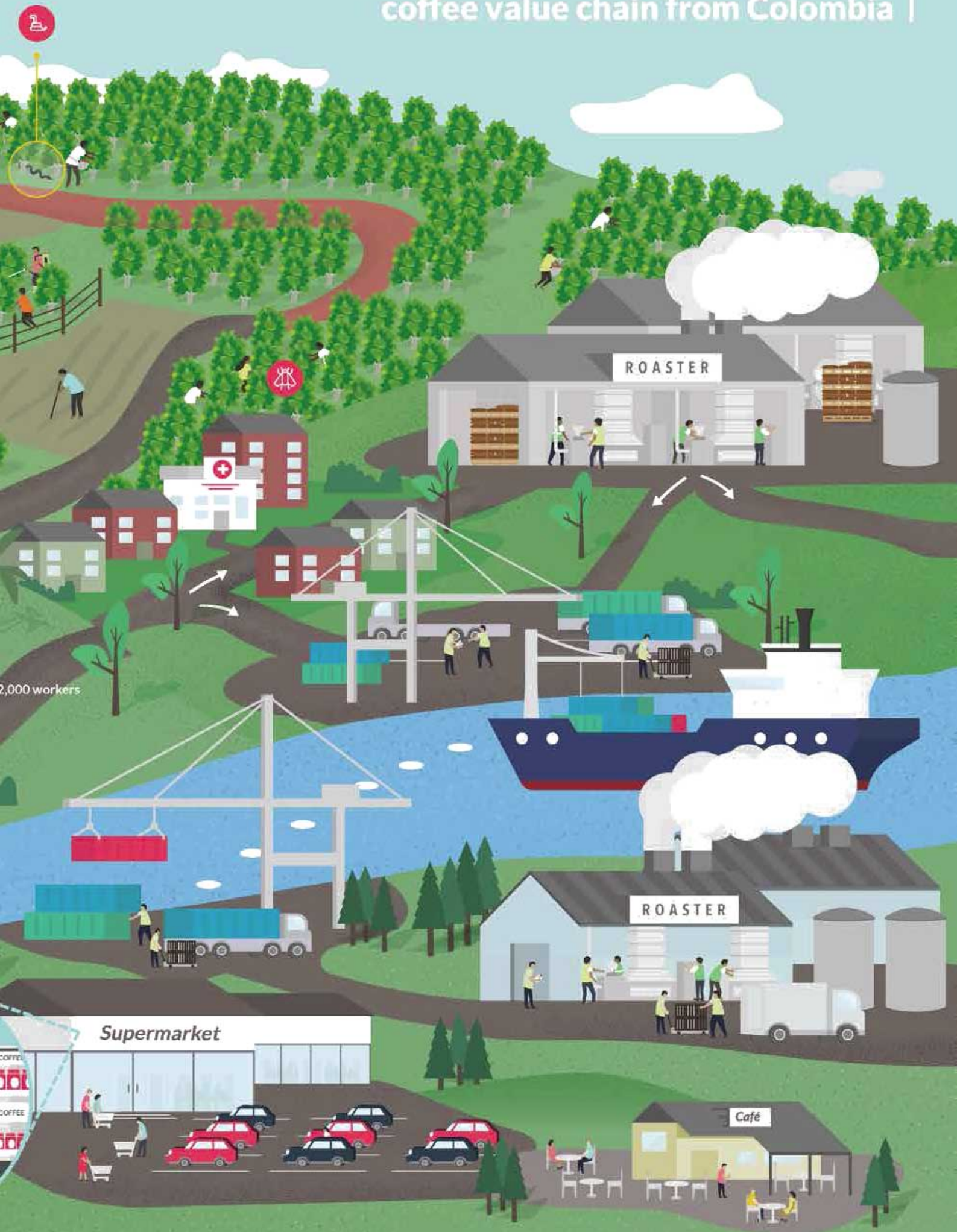
Subcontracted workers at the threshing station

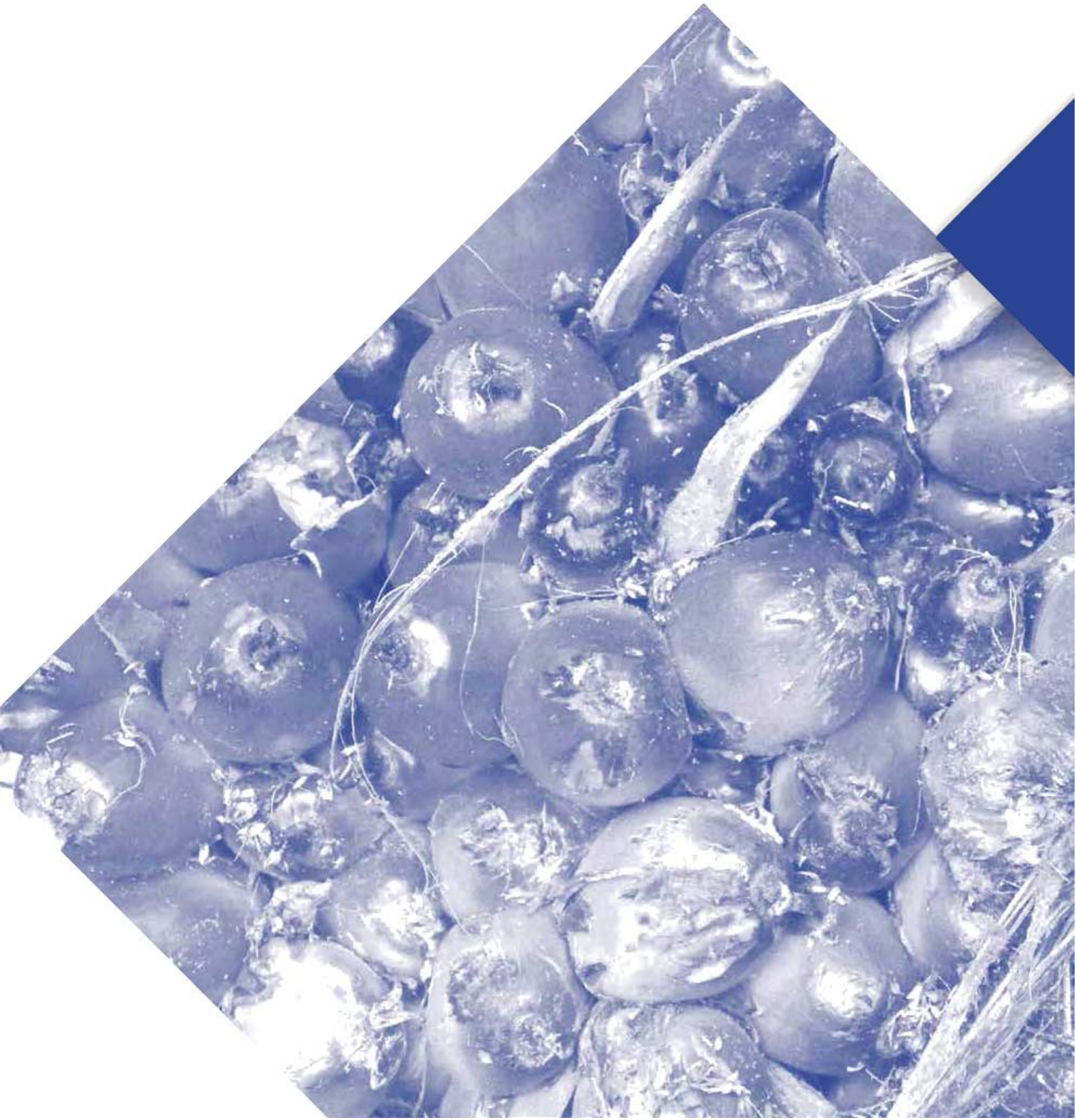
Associated main OSH risks

- | | | |
|--|---|---|
|  Awkward posture |  Snake bites |  Pest exposure |
|  Chemical exposure |  Heat exposure |  Cuts |
|  Noise and vibration exposure |  Fire |  Heavy lifting |
|  Inhalation of particles |  Slip and fall | |



Occupational Safety and Health vulnerabilities in the coffee value chain from Colombia





Drivers and constraints for OSH in the palm oil global value chain from two producing provinces in Indonesia

Palm oil is Indonesia's third largest export commodity after oil/gas and coal. In 2015, Indonesia produced about 53 per cent of the total global production. Indonesia is also a key player to achieve global market transformation towards sustainable palm oil production as the country is the biggest certified sustainable palm oil producer contributing 56 per cent of the world production. Palm oil cultivation accounts for much of the job creation associated with the palm oil value chain. The industry, with its large plantation companies and mills, is an important provider of formal employment in rural settings. In Indonesia around 3,362,640 workers are employed in palm oil plantations while 2,140,774 workers are smallholder farmers. Workers in plantations and mills are historically brought in from other regions.



Drivers and constraints for OSH improvement

A set of factors drive and constrain the adoption of safe work practices in the palm oil value chain from Indonesia:

- OSH regulatory framework and supporting functions: Especially at the mill and refinery stages, the legal framework and the supporting functions for OSH are described as drivers for the adoption of safe and healthy working practices. Notably, Indonesian labour law requires companies that employ 100 or more individuals and those with activities that pose potential danger for their workers and for the environment to establish an OSH management system. Smallholders though seldom benefit from OSH supporting functions as they can be remotely located and are not generally organized in associations or cooperatives. In addition, smallholders have limited resources to allocate to OSH.
- Indonesian Sustainable Palm Oil (ISPO) certification system: The Indonesian Government, conscious of the fact that private compliance initiatives not be accessible to totality of the value chain actors, is progressively implementing a compulsory certification system, which includes legislation relevant to the growing and transformation of oil palms. This includes applicable labour law legislation and its OSH provisions.
- Pressure from Western consumer markets: The palm oil industry is increasingly put under the spotlight by civil society organizations in Europe and North America concerned with its environmental and social impact. This prompted manufacturers and brands to create a certification scheme aiming to promote better environmental and social conditions, including OSH performance throughout the supply chain. Still, the impact of these initiatives is limited given that these markets are only a small share of the overall palm oil consumption in the world, traceability in the chain down to smallholder level is challenging, and so far market incentives are limited for actors to obtain certification.

Opportunities for the promotion of OSH

At the palm growing stage, in plantations, work is mostly formalized, with variations across temporary and sub-contracted workers. Hazards are closely linked to the nature of the tasks performed, which also tend to be associated to gender and contractual relationships. Plantation companies are formalized entities with OSH management systems in place, occupational health (OH) services, provide training and have regular safety briefings. Yet the degree to which non-permanent workers benefit from these varies. The gendered division of work corresponds to different types of tasks and consequently to exposure to different hazards. While harvesting tends to be a male job, maintenance and agro-chemical application are often carried out by women. Likewise, the former tends to be seen as a core task and consequently integrated among permanent workers, while the later are seasonal tasks that are often offered on a temporary basis or externalized to sub-contracted companies, with varying degrees of formality. The fact that unionization correlates largely with permanent employment patterns at this stage of the value chain limits the access to information and sensitization that those organizations can support towards temporary and sub-contracted workers. A further issue, to guarantee that the OSH management system in place covers all workers present on site, is the practice in some instance of harvesters who hire help or bring family members to support them in their work. This is done mainly with a view to maximise income as a part of their salary is often variable depending on volumes harvested. Those workers tend to be invisible to the company, which leaves them unprotected.

At smallholding level, the reality is different as the available resources to invest in OSH as well as the support functions in place are limited. In smallholdings work is mostly informal and involves the farmer, paid or unpaid family workers as well as temporary workers to support seasonal tasks, in particular harvesting. Smallholders are only seldom organized in associations or cooperatives that could provide basic elements for OSH improvement (i.e. quality seedlings, training, safer agro-chemicals, information on

their proper dosage and application, among others), though with certification processes it is developing.

At milling and refining stages, employment is formal and a number of jobs (i.e. for specific tasks regarding sterilization, press station, oil room and boiler for instance) require specialized training and often certified workers as defined by the Ministry of Manpower and following specific curricula. A range of industrial hazards are identified in the OSH management systems of mills, in particular hazards associated with the operation of machinery in mills (exposure to noise, dust, fumes and aerosols, heavy loads and slip and falls caused by oil and fat deposits on floors), as well as fire safety.

Efforts to improve OSH in the value chain could focus on the profiles of workers identified as par-

ticularly vulnerable: agricultural workers, especially sub-contracted and invisible workers as well as producers and their temporary workers in independent smallholdings. This process requires the mobilization of existing good practices in the value chain, which are numerous. In this value chain where a large number of actors are formalized, large and medium companies have developed over the years a number of safety and health practices, processes and policies that could be utilised. The participation and coordination of institutional supporting functions is paramount, especially since an institutional basis is in place with the ISPO, the regional and district presence of the Ministry of Manpower as well as the strategy of the Directorate of Occupational Health and Sport of the Ministry of Health for the mainstreaming of basic OH services in rural areas.





2,140,774 farmers
3,362,640 workers

~60,000 workers

REFINERY

Occupational Safety and Health vulnerabilities in the palm oil value chain from Indonesia



Vulnerability profile

Agricultural workers in non-standard forms of employment (temporary and subcontracted)

Workers and producers in independent smallholdings

Other risk factors

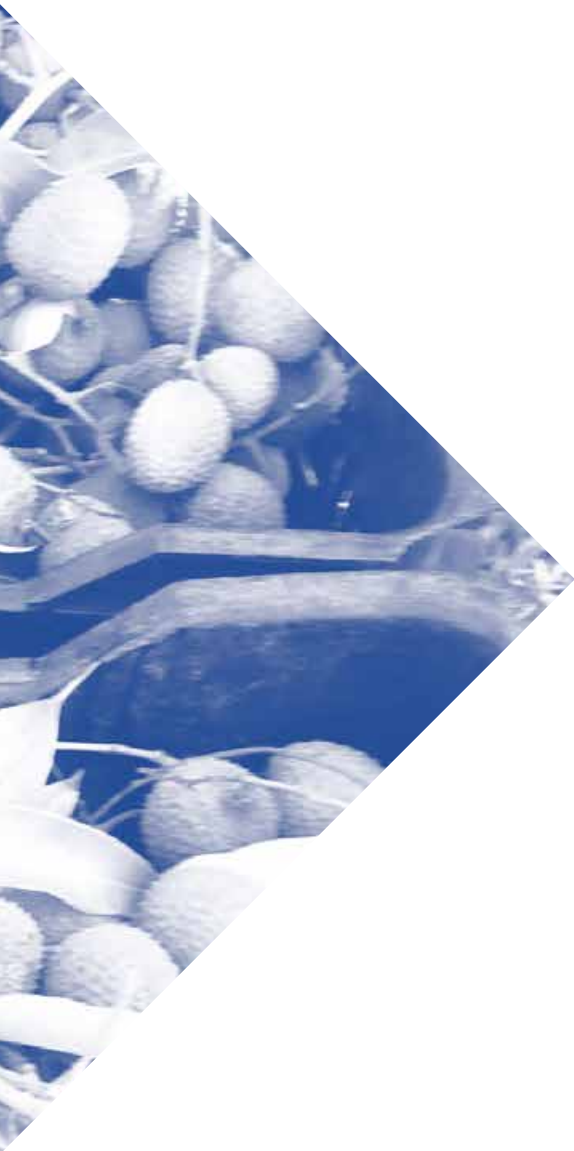
Associated main OSH risks

-  Electrical risk
-  Snake bites
-  Awkward posture
-  Heavy lifting
-  Fall of object
-  Heat exposure
-  Chemical exposure
-  Awkward posture
-  Heavy lifting
-  Fall of object
-  Heat exposure
-  Snake bites
-  Slip and fall
-  Heavy lifting
-  Fall from heights
-  Noise exposure
-  Hot steam



Drivers and constraints for OSH in the lychee global value chain from Madagascar

Madagascar is the biggest lychee producer in the southern hemisphere (harvest between October and February) and accounts for 80 per cent of the lychee sold in the European Union. An estimated 45,000 workers are needed to harvest the quantity of lychee that are exported and a further 4,000 to transport them between farm and city, while about 25,000 workers are needed in treatment and processing stations during the lychee season, which spans 5 to 10 days for fresh and three weeks for processed lychees. Employment is by nature seasonal and, with the exception of companies that have several activities and retain their workers the rest of the year, work is temporary.



Drivers and constraints for OSH improvement

A set of factors drive and constrain the adoption of safe working practices in the lychee value chain from Madagascar:

- **Food safety standards in Europe:** The majority of the lychee exported by Madagascar is consumed in Europe where companies, driven by European health and safety regulations for food imports, increasingly develop tools such as private compliance initiatives that certify supply chains. Importers invest in supporting their suppliers in the adoption of a certification system centred on food safety which, by the same token, can affect working conditions. The concern of sulphur residues in the fruits fostered investments (private and through development programmes) in safer technology at the treatment stage. The process is being pushed towards lower levels of the value chain, though it is constrained by seasonality and limited organization of farmers in associations and cooperatives.
- **The emergence of new market trends:** A segment of the market emerged in which consumers are willing to pay higher prices in exchange for organic and/or fair trade agricultural products. This phenomenon is corollary to the development of private compliance initiatives and incentivizes producers to organize and adopt improved agricultural practices that impact on OSH.
- **The social protection system:** The progressive formalization of work in the value chain allows for an increasing number of workers to have access to occupational health services and to social protection during the time of their contract. Protection and effective health surveillance throughout the year is limited by the temporary nature of the contracts and the absence of non-contributory social protection schemes.

Opportunities for the promotion of OSH

At the lychee growing stage, there are mostly smallholders and a few plantations. In the few existing plantations, the work processes can be optimized as tools are provided (ladders, etc.) and the trees are

regularly pruned and maintained at a lower height thereby not requiring climbing the tree for harvest. Workers are hired from the neighbouring villages and there are a few permanent workers.

On smallholdings, the workforce is made up of farmers, their paid and unpaid family members as well as daily workers from the village. In very small farms, household members constitute all of the workforce. During harvest, main hazards are falls from heights (i.e. the trees are not maintained, so they can be 15 meters high), heat exposure, pest exposure (insect bites), unsanitary water, and ergonomic hazards associated with the handling of heavy loads. Length of exposure is limited insofar as the season is short. Falling from heights is identified as having the most serious impact as harvesters climb directly on trees without tools or protection. Casual agricultural workers and small producers, although they are able to identify the hazards they face, are particularly exposed to them due to the absence of control measures. Additionally, it is particularly difficult for casual agricultural workers and small producers and their families to cope with the physical and financial consequences of a work-related accident or illness. Insofar as their jobs are informal, they do not benefit from social protection coverage or regular health surveillance. Tasks related to harvesting often follow gender patterns, with men assigned to the harvest (i.e. going up the tree) and loading and women gathering directly below the trees or in a storage unit for tailing and packing in crates. OSH hazard exposure therefore follows those patterns.

At the treatment and transformation stage, work is mostly formalized, though workers, with the exception of a few staff, are all temporary (seasonal contracts). Tasks are largely divided following gender patterns. Both men and women are exposed to the same industrial hazards to the extent that they affect the entire work place (i.e. risks of fires, falling objects, etc.). For other hazards, exposure follows gender patterns. Work around the handling of fruit are mainly carried out by women exposing them to ergonomic and chemical hazards (posture when sorting out fruit, residues after sulphur treatment). Men face ergonomic hazards when handling heavy loads, and chemical exposure when managing sulphur treatment.

The hazards identified during treatment and transformation are mainly related to a low level of knowledge, reinforced by the seasonal nature of the

activity. Hence workers are all on temporary contracts for the duration of the season (i.e. about two weeks). This results in discontinuity or absence of social and health protection for workers during the rest of the year and makes collective organization challenging.

Efforts to improve OSH in the value chain could focus on the profiles of workers identified as particularly vulnerable: farmers and their agricultural workers and family workers, and temporary workers

in treatment and transformation stations. This process requires the sustained mobilization of downstream actors to encourage certification processes to reach farmers and to ensure a fair distribution of the value generated by this product. Strengthening institutional support is also paramount, especially the institutions in charge of occupational health services and social security (the employment injury insurance scheme also has a function of prevention), towards the effective extension of social protection to rural and temporary workers throughout the year.



Occupational Safety and Health vulnerabilities in the lychee value chain from Madagascar



Vulnerability profile

Smallholders and temporary agricultural workers

Associated main OSH risks

- Fall from heights
- Heat exposure
- Unsanitary water
- Heavy lifting
- Road safety
- Pest exposure
- Fall of object

Temporary treatment and transformation station workers

- Sulphur exposure
- Fire
- Heavy lifting
- Fall of object

Surrounding communities

- Waste management

29 Companies
25,000 workers

€ SELLING PRICE
≈ 0.22€/kg



€ SELLING PRICE
≈ 2.10€/kg

€ SELLING PRICE
≈ 1.15€/kg



Supermarket







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