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OCCUPATIONAL SAFETY AND HEALTH IN THE MYANMAR GARMENT SECTOR

MARKET ASSESSMENT,
OSH RISK ASSESSMENT AND
BUSINESS CASE ANALYSIS

VISION ZERO FUND

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The report benefited from comments of Ockert Dupper (ILO) and Andrew Christian (ILO).

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First published 2020

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Occupational safety and health in the Myanmar garment sector: Market assessment, OSH risk assessment and business case analysis

International Labour Office, Country Office for Myanmar – Yangon: ILO, 2020

ISBN 9789220308066 (web PDF)

Occupational safety and health / Global supply chain/ Health/ Safety/ Myanmar/ Value Chain/ Garment/
Business case/ Social protection

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Printed in Switzerland

ACKNOWLEDGEMENTS

The authors would like to thank all the stakeholders of the Myanmar garment value chain, particularly the garment factories that shared their experience and opened the doors of their workplaces to the research team. The authors will like to thank the Factories and General Labour Laws Inspection Department, the Social Security Board, the Department of Industrial Supervision and Inspection, and the Occupational and Environmental Health Division for their continuous support. The study was strongly supported by SMART Myanmar and H&M who provided input and shared valuable data for the team's analysis. The authors are grateful to the Myanmar Garment Manufacturers Association, the Myanmar Textile Manufacturers Association, the Confederation of Trade Unions of Myanmar, the Myanmar Industry, Crafts and Services Union Federation, and the organization Let's Help Each Other, for aiding the research team with valuable information. We would also like to thank their members who took the time to meet with the team and to share their working experience.

The authors also wish to thank colleagues in the ILO Liaison Office in Myanmar as well as in the ILO's Labour Administration, Labour Inspection and Occupational Safety and Health (LABADMIN/OSH) Branch for their input and contribution to the publication and all those who contributed to this publication. The authors gratefully acknowledge the support of Joanne Land-Kazlauskas with the publication process.

This publication is a product of the Vision Zero Fund project on Occupational Safety and Health in Myanmar supply chains. The authors are solely responsible for the content and any opinions expressed in this publication. Its content does not reflect the official position of the ILO.

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Acronym list

ALR	Action Labor Rights	FOB	Freight on Board
CBA	Cost Benefits Analyses	GSCs	Global Supply Chains
CMP	Cut, Make and Package	ILO	International Labour Organization
CTD	Cumulative Trauma Disorder	JVs	Joint Venture agreements
CTUM	Confederation of Trade Unions of Myanmar	LHEO	Let's Help Each Other
EU	European Union	MGMA	Myanmar Garment Manufacturers Association
EUR	Euros	MHA	Ministry of Home Affairs (Myanmar)
FGLLID	Factories and General Labour Laws Inspection Department (Myanmar)	MIC	Myanmar Investment Commission
MICS	Myanmar Industries Craft and Services Unions Federation	OSH	Occupational Safety and Health
MMH	Manual Materials Handling	PPE	Personal Protective Equipment
MMK	Myanmar Kyat	SMEs	Small and Medium sized Enterprises
MOLIP	Ministry of Labour, Immigration and Population (Myanmar)	SOEs	State-Owned Enterprises
MS	Management Systems	SSB	Social Security Board (Myanmar)
MSDS	Material Safety Data Sheet	VZF	Vision Zero Fund

1. Project background and methodology

The Vision Zero Fund (VZF) was established in 2015 as an initiative of the Group of Seven (G7) countries to reduce occupational accidents, injuries and diseases. It focuses on sectors that are part of Global Supply Chains (GSCs). In Myanmar, the VZF focuses on two sectors, namely garment/textiles and agriculture, specifically ginger.

The VZF acknowledges that each supply chain is different, requiring customized public and private interventions to achieve effective Occupational Safety and Health (OSH) compliance. It has therefore adopted a systematic approach. It starts in each VZF partner country with an inception phase, during which the selected supply chains are targeted and comprehensively assessed to inform the design of intervention models, which are implemented during subsequent project phases.

A graphic synopsis of the methodology is reproduced below.

Figure 1-VZF's approach¹



The goal of this report is threefold. First, the report provides a mapping of OSH dynamics and stakeholders in Myanmar's garment / textile sector. Secondly, it offers insights into key OSH hazards identified and the types of OSH investments undertaken by manufacturers in Myanmar. Finally, the report showcases a set of business cases for nine OSH investments by presenting possible returns that can be obtained from either a business or risk reduction viewpoint.

This report, summarizing three separate studies conducted by the VZF between 2017 and 2019, presents data and information from a variety of sources. The table below explains the methodology used in the three studies:

Table 1 - Methodology

#	Study	Methodology
1	An OSH mapping of the Myanmar garment sector.	The first study's methodology was based on a combination of a secondary literature review (laws, policy briefs, and publications) and interviews with key sector stakeholders.
2	An analysis of factory level OSH data and information.	The report utilized secondary data from existing literature as well as primary data drawn from two databases: <ul style="list-style-type: none"> • SMART Myanmar's Factory Assessments: within SMART's Social Compliance Academy programme, factories are assessed on a variety of components, including OSH. • A Database of self-reported OSH information from suppliers of an international brand: this data was provided by an international brand and provides information about OSH conditions in their suppliers' factories. • Primary observations in six, Yangon-based garment factories to verify findings from the literature review and the available data and two Mandalay-based textile factories.

¹ILO, Vision Zero Fund Flier.

Available at: https://www.ilo.org/global/topics/safety-and-health-at-work/programmes-projects/WCMS_563285/lang--en/index.htm

Table 1 - Methodology

#	Study	Methodology
		<ul style="list-style-type: none"> Discussions with workers outside factories, in meetings organized by trade unions and labour organizations.
3	An assessment of OSH business cases.	The study reviewed literature on the return on investment in OSH, including Cost Benefits Analyses (CBA), to highlight the potential benefits for Myanmar's garment factories of investment in OSH improvements.

1.1 OSH mapping

The mapping of the garment / textile supply chain and its market environment was conducted in 2017, and consisted of both secondary and primary research as detailed below:

Figure 2 - Research approach

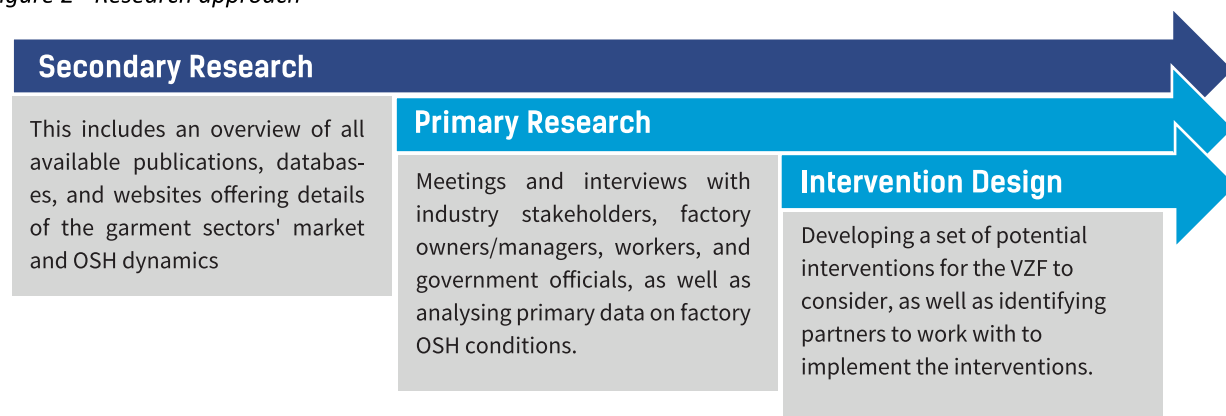


Table 2 - OSH literature review

Source	Research	Year	Sample Size
ILO Survey, a collaboration between the Improving Labour Relations for Decent Work and Sustainable Development in the Myanmar Garment Industry (ILO-GIP) and the VZF. *designed and implemented with financial and technical support from the VZF	Factory Managers and Workers' Survey ²	2017	The study collected primary data from: <ul style="list-style-type: none"> 79 factory managers 790 workers
Action Labor Rights (ALR)	A study of Labour Conditions in Garment Factories in Myanmar, wholly Korean Owned.	2016	The study collected primary data from: <ul style="list-style-type: none"> 39 factories 1,200 workers

Table 2 - OSH literature review

Source	Research	Year	Sample Size
Impactt (C&A Foundation)	From Boycott to Boom? A Socio-Environmental Map of Myanmar's Garment Industry in 2016.	2016	The study collected primary data from: <ul style="list-style-type: none"> • 60 workers selected with the help of local unions. • 40 sector stakeholders including multilaterals, government bodies, brands, enterprise owners. • 7 factory managers and owners
Mari Tanaka	Causal impacts of export and multinationals on domestic firms and workers	2017	The study collected primary data from: <ul style="list-style-type: none"> • 173 factory managers

1.2 OSH risk assessment

The OSH Risk Assessment was completed in 2018 and with the aim to discover the drivers and constraints for OSH improvement in the garment / textile supply chain. It consisted of an analysis of secondary data as well as workplace observations. Secondary data was drawn from two main sources:

- A Database of self-reported OSH information from suppliers of an international brand: this data was provided by the international brand and provides information about OSH conditions in their suppliers' factories. The data was self-reported by the factories and not double checked by either the brand or independent auditors.
- SMART Myanmar's Factory Assessments: within SMART's Social Compliance Academy programme, factories are assessed on a variety of components, including OSH.

This data analysis was supplemented and validated through workplace observation of work processes to ascertain OSH risks, hazards and their controls, as well as meetings with workers. These observation visits were conducted by an ILO research team in six garment factories in Yangon and two textile factories in Mandalay. Three meetings with workers affiliated to CTUM, MICS and Let's Help Each Other complemented the research, however the information could not be triangulated with factory visits.

Data from suppliers of an international brand

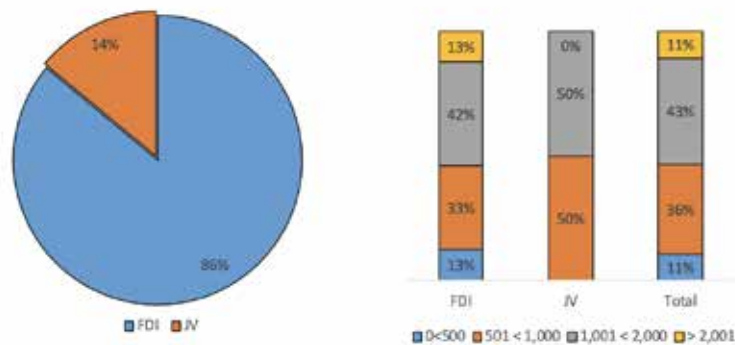
All suppliers within the brand's supply chain undergo an assessment of their sustainability, which measures the sustainability of products, brands and facilities (manufacturers). The data is collected through self-reporting, and subsequently validated by the brand through direct observations in the factories.³

It is important to note that the data used by the ILO research team had, at the time of the study, not yet been validated by the brand. Nevertheless, the data provides an interesting and useful snapshot of macro OSH conditions and dynamics within these factories.

The ILO research team had access to the self-reported data of 38 factories within the brand's supply chain in Myanmar.⁴ The charts below show their composition in terms of ownership and number of workers. The database reveals that the vast majority (86 per cent) are foreign owned, receiving mostly Chinese Foreign Direct Investments (FDI), and 14 per cent are under a Joint Venture (JV) agreement.

Factories in the brand's supply chain appear to be quite large, with 43 per cent employing up to between 1,000 and 2,000 workers, 36 per cent between 500 and 1,000, and 11 per cent employing more than 2,000 and less than 500 each.

Figure 3 - Brand's suppliers factory sample, percentage of factories (left) and percentage of workers employed (right)



The SMART Myanmar database

SMART Myanmar is an EU funded project aimed at supporting sustainable production in the Myanmar garment and textile sectors. The programme provides a series of assessment, training and advisory services to factories in the country, and has extensive data on the management, production, structural and OSH profiles of the factories with which they work.

The SMART OSH data is derived from their Social Compliance Programme and includes information about factories' score across seven key OSH variables: Fire safety, Electrical safety, Chemical safety, Machine safety, Personal protection, Working condition, and Health and Safety (H&S) overall management. It is expected that SMART's clients join the programme because they face OSH and other compliance issues. Regardless of the motivation, joining SMART's programme means these factories are willing, and potentially have already started, to implement OSH improvements.

Within each of these categories, factories are given a point for each item with which they are compliant, and each category has a different maximum score, as shown in table 3. In the upcoming analysis, SMART's data will be presented showing factories' percentage of satisfactory items in each category.

Table 3 - SMART's scoring system, maximum possible score per category

Fire safety	Electrical safety	Chemical safety	Machine safety	Personal protection	Working condition	H&S overall management
149	35	32	35	61	37	10

SMART Myanmar has shared data about 34 factories that are part of the Social Compliance Program. Most (65 per cent) factories in the programme are foreign invested establishments, followed by locally owned factories (29 per cent), and only a few establishments under joint venture agreements (6 per cent).⁵ As shown in the chart

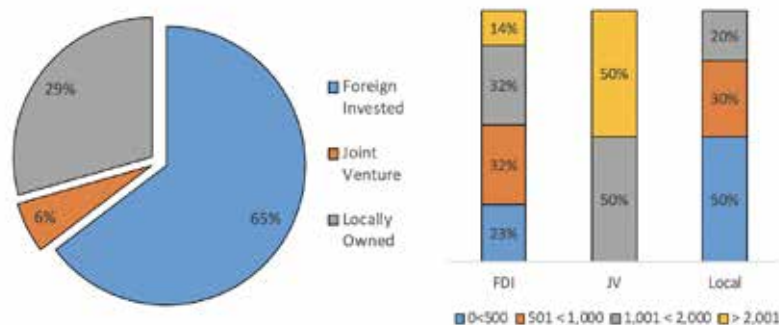
⁴Note: the brand's sample is not expected to be representative of the full reality in Myanmar, but instead to fall among the top performers in the country.

⁵Note: the SMART sample only includes two Joint Venture factories. The results of these factories will be shown here but won't be commented as the sample is too small to draw any conclusions about the category.

below, locally owned factories are likely to be smaller, with approximately 50 per cent employing fewer than 500 workers.

Foreign owned factories, however, tend to employ a much larger workforce, with 32 per cent employing between 1000 and 2,000 workers and an additional 32 per cent of the factories employing around 1,000 workers.

Figure 4 - SMART's factory sample, percentage of factories by size (left) and percentage of workers employed (right)



Primary observations

In addition to analysing the secondary data described above, the research team visited six garment factories around Yangon and two textile factories around Mandalay in August and September 2018. During these visits, the ILO Research team collected information in two ways:

- Management interviews: discussions with factory managers were aimed at collecting information and data on the factory's workforce, its composition, as well as the OSH Management Systems implemented in these factories.
- Direct observations: the ILO team conducted observations in the factories to collect information and data on a series of OSH-related risks and hazards, including circulation of vehicles, workers movement, noise levels, work environment, workstations, work at height, chemicals, dust, machine safety, electrical safety, fire safety, and first aid.

The ILO research team also interviewed workers in Yangon to collect qualitative information to triangulate with manager interviews and direct observations at the factories. While those interviewed were garment factory workers, met with the help of Confederation of Trade Unions of Myanmar (CTUM), Myanmar Industries, Crafts and Services (MICS) Trade Union Federation, and Let's Help Each Other (LHEO), they were not interviewed on-site, and therefore not necessarily employed by the factories included in the study. Therefore, accurate triangulation was not possible. Nevertheless, the information provided was valuable to contextualize the findings and identify issues that require additional research.

The ILO research team utilized the methodology developed by the Vision Zero Fund Initiative, which aims to clarify drivers and constraints for OSH improvement in global supply chains.⁶ In all areas assessed, factories were scored from zero to three, depending on their ability to identify and manage specific hazards. These scores were based primarily on visual observations and not supplemented with scientific measurements that would require specific equipment. For example, observations often highlighted the presence of dust and airborne particles in the factories. However, the levels were not measured. Observations also revealed that workers made use of personal protective equipment (PPE) such as surgical masks, which may not have been the appropriate protection against the specific dust and airborne particles encountered in the factories. The recommendations in this area will therefore need to be augmented by additional research.

1.3 OSH business case analysis

The goal of the business case analysis report, conducted in 2019, was to complement the findings of the various reports discussed in table 2. We aim to showcase nine specific OSH investments that highlight possible returns from either a business case or risk reduction perspective.

The 2019 report was developed through a detailed review of existing literature on the return on investment in OSH. Table 4 contains the main case studies examined:

Table 4 - OSH Business case literature review

Author	Title / Year	Report description	Highlights
European Commission	Socio-economic costs of accidents at work and work-related ill health (2011). ⁷ OSH report (Benefits of Occupational Safety and Health)	<ul style="list-style-type: none"> The study documents 56 OSH prevention projects in the European Union and focuses particularly on small and medium sized enterprises (SMEs) in the construction, transport, metal and hospital / social sectors. Ten case studies are presented in detail. The study groups are organized into six categories: <ol style="list-style-type: none"> Hazard Avoidance Organizational measures New equipment Workplace adjustment Training Personal Protective Equipment The study uses three key quantitative indicators to assess case studies: <ol style="list-style-type: none"> Net Present Value Profitability Index Benefit Cost Ratio 	<ul style="list-style-type: none"> Investing in OSH yields positive results. The greatest driver for OSH was legal compliance. Costs of workplace accidents and health issues are partly borne by society and the individual, as well as by companies. 73.4% of accidents at work resulted in sick leave of at least one day; 22% of at least one month (2010). 28% of EU workers say they suffered from a health problem caused by or exacerbated by work. 8.6% of workers in the EU reported a work-related health problem in the past 12 months, 60% of those were musculoskeletal problems (2007). Median work-related injury had a cost of between EUR 1,651 for low and EUR 11,661 for high severity injuries (2011). Average Benefit Cost Ratio of interventions was EUR 1.21 for every EUR 1 invested. The most beneficial OSH investments were those aimed at preventative hazard avoidance (Benefit Cost Ratio of 1.6:1) and purchasing new equipment (Benefit Cost Ratio of 1.4:1). The most common cases of accidents or ill health at work were back problems, slips and trips, cuts, machinery and falls.
World Economic Forum	The Workplace Wellness Alliance: Making the Right Investment: Employee Health and the Power of Metrics (2013). ⁸	<ul style="list-style-type: none"> This report collects data from 25 companies and details nine "deep dive" case studies looking into the return on investments of workplace wellness. These companies are some of the largest in the world: Saudi Aramco, Johnson & Johnson, Unilever, Novartis, and General Electric. Data from workplace wellness programmes is mostly from the United States, but cases are also from Japan, Saudi Arabia, Egypt, Brazil and Singapore. 	<ul style="list-style-type: none"> Investment into wellness programmes was profitable for all nine "deep dive" companies. Activities included smoking cessation programmes, stress management, gym memberships, food purchasing programmes, sponsored health screenings, online health coaching, health data collection, and encouragements to exercise. Returns on investment from wellness programmes ranged from US\$1.48 - 1.94 (EUR 1.3 - 1.71) for every \$1 (EUR 0.88) invested.

⁷European Commission. 2011. Socio-economic costs of accidents at work and work-related ill health.

⁸World Economic Forum. 2013. The Workplace Wellness Alliance Making the Right Investment: Employee Health and the Power of Metrics. Accessed from: http://www3.weforum.org/docs/WEF_HE_WorkplaceWellnessAlliance_Report_2013.pdf

Table 4 - OSH Business case literature review

Author	Title / Year	Report description	Highlights
International Finance Corporation	Tackling Childcare: The Business Case for Employer Supported Childcare (2017). ⁹	<ul style="list-style-type: none"> This report details ten case studies of OSH investments into childcare support strategies across ten different sectors from garments to healthcare. Geographically diverse case studies are selected from Africa, North America, Asia and Europe. Of the ten case studies, seven are from emerging economies and three are from developed economies. Benefits of OSH childcare investments included a more gender diverse workforce, 24/7 staff availability, retention of staff (particularly new mothers), improved productivity, reduction in sick leave and enhanced corporate reputation. 	<ul style="list-style-type: none"> Lack of childcare is a major barrier to women's full and equal participation in work. Childcare supports can be delivered in many ways, from providing back up emergency care to on-site nurseries. The greatest returns on investment were found when childcare support strategies were part of wider efforts to build an OSH culture (diversity, wellness, and work life balance). The regulatory environment is highly important in ensuring effective childcare OSH investments are implemented. For employer-supported childcare to develop, collaboration between private and government sector actors is needed.
European Agency for Safety and Health at Work	The business case for safety and health at work: Cost-benefit analyses of interventions in SMEs (2014). ¹⁰	<ul style="list-style-type: none"> This report builds on the European Commission's 2011 OSH report, which detailed 13 new case studies intended to act as "eye openers" for SMEs to encourage OSH investment. The report summarizes existing research in OSH case studies, totalling 91 globally (2014), 64 from the United States and Canada and one from Asia. 	<ul style="list-style-type: none"> SMEs account for 67% of EU employment but 82% of occupational injuries. Many OSH improvements are relatively low cost, but SMEs have problems financing them. Average payback of OSH investment was 2.3 years.

The rest of the report will be structured along the following sections:

2. Introduction to the Myanmar Garment Sector: describes the market, production and dynamics of the Myanmar garment sector.
3. Legal Framework: provides a description of the legal framework for OSH in Myanmar, and a presentation of the main aspects of the recently approved OSH law.
4. Value Chain Structure and OSH Stakeholders: describes the main structure, and responsibilities of key stakeholders in the sector.
5. OSH Assessment: summarizes findings from secondary and primary research to showcase the main issues and dynamics identified by the ILO research team.
6. Textile Factories: offers a short glimpse into the OSH conditions within Myanmar textile factories.
7. Business Case Analysis: presents nine business cases for investment on OSH.
8. Conclusions: will draw findings and present a set of recommendations based on the findings of this research.

2. Introduction to the Myanmar garment sector

2.1 General market description

Textile production in Myanmar started under British colonial rule and has grown since that time. In 1988, the military government began to allow foreign investments, which prompted new growth. Production peaked in the early 2000s, when roughly 400 factories were actively producing garments,¹¹ generating an estimated US\$ 600 Million in revenues and 400,000 jobs. The sanctions imposed by the United States (US) and European Union (EU) in 2002, however, led to stagnation in the sector, which Myanmar only started recovering from in 2011 when the government reopened the economy to foreigners. Toshihiro Kudo,¹² in an effort to clarify the evolution of the modern Myanmar garment sector, split its evolution into five phases: a Pioneer Period (1990 – 1993), a Steady Growth Period (1994 – 1997), a High Growth Period (1998 to 2001), a Stagnation Period (2001 to 2005), and a Recovery Period (2006 – 2011). Roughly 130 factories survived the Stagnation Period, supplying garments to Korean, Japanese, Taiwanese and Chinese buyers.¹³

Figure 5 - Modern Myanmar garment sector evolution¹⁴

	1990 - 1993 Pioneer Period	1994 - 1997 Steady Growth	1998 - 2001 High Growth Period	2002 - 2005 Stagnation Period	2006 - 2011 Recovery Period
Major Player	JVs between state-owned and military-related enterprises and Korean and Hong Kong firms.	JVs between state-owned and military-related and Korean and Hong Kong firms; 100% foreign-owned firms	Domestic private firms; "Spin out" Korean and Hong Kong Businesses; Taiwanese buyers	Foreign-affiliated firms; Widening disparity among firms	Foreign-affiliated firms
Policy Environment	Virtual Prohibition of 100% foreign ownership; Monopoly of quotas by state-owned and military-related enterprises.	Monopoly of quotas by state-owned and military-related enterprises. Lifting of prohibition on 100% foreign ownership	Allocation of quotas to private firms; Expansion and misuse of CMP; Privileges of MIC approved firms; Import of equipment by deferred payment.	Obligation to register with MIC; Tightening of regulation and taxation	Obligation to register with MIC; Tightening of regulation and taxation
Global Economic Environment	MFA regime, no sanctions by US and EU	MFA regime, no sanctions by US and EU	MFA regime; Brisk markets in US and EU; Worsening trade relations with US and EU; ILO warning for sanctions	Slow down of US market; Abolition of MFA regime (Jan 2005). US economic sanctions (from Jul 2003). Disappearance of major EU buyers	No access to US market. China plus orders from Japan and Korea
Export by Type of Firm	State-owned and military-related JVs 95% 100% foreign-owned 0% Domestic private 5%	State-owned and military-related JVs 90% 100% foreign-owned 5% Domestic private 5%	State-owned and military-related JVs 15% 100% foreign-owned 20% Domestic private 65%	State-owned and military-related JVs 10% 100% foreign-owned 25% Domestic private 65%	State-owned and military-related JVs 10% 100% foreign-owned 25% Domestic private 65%

Since the lifting of international sanctions, the Myanmar garment sector has experienced steady growth. Myanmar Garment Manufacturers Association (MGMA) estimates that the industry has nearly 442,000 workers,¹⁵ 90 per cent of whom are women. The factory list from MGMA reported that 511 factories were operational in the country in December 2018. Given these numbers, the broader estimate appears reliable. The largest production location is currently within the city of Yangon, in Hlang Tharyar Township. Other areas, outside of Yangon, include Thilawa, Bago, Patheingyi and Hpa-An. Production in these latter areas is increasing due to swelling costs and traffic congestion in Yangon. While factories used to be predominantly locally owned, there has been a strong, recent growth in foreign investors starting to manufacture in Myanmar. Locally owned factories account for only 36 per cent of all factories.

¹¹JETRO. 2012. "Dynamics of the Garment Industry in Low-Income Countries: Experience of Asia and Africa."

¹²Toshihiro Kudo. 2011. How has the Myanmar Garment Industry Evolved?

¹³Centre for Research on Multinational Corporations (SOMO). 2017. "The Myanmar Dilemma. Can the garment industry deliver decent jobs for workers in Myanmar?"

¹⁴ILO. 2014. "Myanmar Garment Sub-Sector Value Chain Analysis."

¹⁵MGMA estimates from April 2019.

Table 5 - Key figures of the Myanmar garment sector

Key figures of the Myanmar garment sector	511 ¹⁶ factories	78% of these factories employ less than 1,000 workers. Mostly located around Yangon. 36% are fully Myanmar owned.
	442,000 workers	90 % of whom are women. Expected to grow to 1.4 Million by 2024
	Export	Garment represents 18% of total exports.

2.2 Production location

Most of the production is located within the city of Yangon, especially in Hlang Thayar (32 per cent), followed by Shwe Pyi Thar (16 per cent), and North Okkalapa (16 per cent). The fast development of Yangon is causing two specific challenges for manufacturers: lead times due to heavy traffic and increasing rental prices for factory locations. To mitigate these concerns, four alternative areas, outside of Yangon’s traditional industrial zones, are showcased in table 6: Thilawa (Yangon), Bago (Bago), Pathein (Ayeyarwady), and Hpa-An (Kayin).

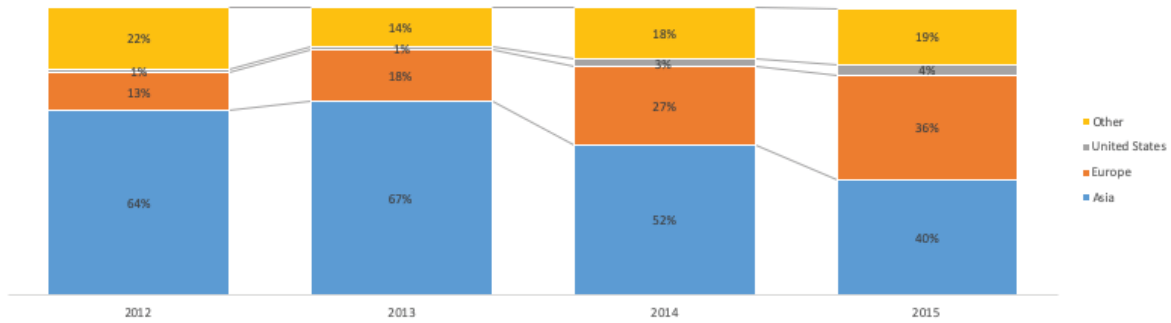
Table 6 - Production locations outside of Yangon

Production area	Location	Details
Thilawa	One-hour drive south of Yangon.	Thilawa is a Special Economic Zone (SEZ), with production incentives, and the possibility to develop purpose-built infrastructure for the industry (i.e. waste water management). One of Thilawa’s main advantages is its direct access to a deep seaport.
Bago	Two-hour drive north- east of Yangon.	Bago presents incentives like lower land, labour, and rental costs compared to that of Yangon.
Pathein	Four-hour drive east of Yangon	Pathein’s main challenge is its location, which forces manufacturers to ship products to Yangon by truck. However, Pathein offers lower labour costs and more reliable electricity than is currently available in Yangon.
Hpa-An	Four-hour drive east of Yangon	Hpa-An provides the same lower labour costs incentives as Pathein, and benefits from being closer to the Thai border. Its location decreases the time and cost of importing production inputs from Thailand.

2.3 Export destinations

During the stagnation and recovery phases of the industry, exports to Japan and Korea accounted for most of Myanmar’s garment exports. As of 2012, 38 per cent of Myanmar garments were exported to Japan and 26 per cent to Korea. This has changed in recent years. Japan and Korea accounted for approximately 38 per cent of garment exports (19 per cent each) in 2015, while exports to Europe grew consistently since 2011. For example, exports to Germany grew from 10 per cent in 2012 to 15 per cent in 2015, and six of the top ten garment importing countries from Myanmar are European. Exports to the US, due to the recent lifting of American sanctions, hovered at around 4 per cent in 2015, but are expected to grow considerably.

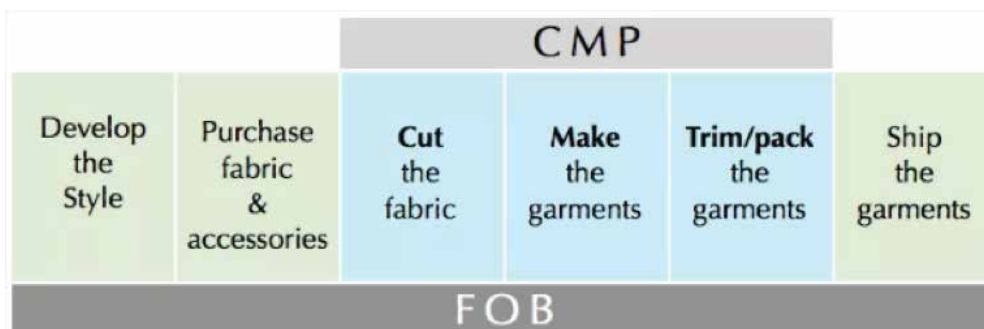
Figure 6 - Export destinations, percentage of total value¹⁷



2.4 Production system

Currently 80 per cent of Myanmar factories are registered as producing under a Cut, Make and Package (CMP) system (sometimes referred to as Cut-Make-Trim system). Under this production framework, which is usually the entry stage for manufacturers in the international supply chain, buyers (either directly or through regional agents), source all the necessary production inputs from input suppliers and have them shipped to the local manufacturers. International buyers also provide locally based manufacturers with all necessary designs and instructions to follow during the production process. The manufacturers simply assemble these inputs and ships them back to the final buyer. This is a low margin, low value-added activity, as all the sourcing, procurement and design decisions are made outside of the country.

Figure 8 - CMP vs. FOB operations¹⁸



Manufacturers with the capacity for higher value activities along the supply chain operate under a “Freight on Board” or “Free on Board” system (FOB). This system includes developing garment styles with only high-level directions from the final buyers, procuring all inputs and accessories independently and shipping the garments to the final buyer. While manufacturers in other countries such as Viet Nam and Bangladesh have been able to move towards these higher value systems, Myanmar is lagging far behind due to a set of challenges as well as incentives that lead manufacturers towards the CMP model.

Challenges to making this shift in Myanmar include a lack of easily available inputs that are of the quality requested by the international garment market. Lower capacity levels of both local managers and workers and low infrastructure that keeps costs high and reduces the sector’s efficiency are also concerns. The lack of available inputs, available trade finance products and low levels of social and labour compliance, prevent most locally owned manufacturers from dealing directly with international brands. Instead, they interact with regional agents. International brands commission these agents to place their orders and manage the entire process. Without clear pressure from the international brands, lower incentives to improve social and labour conditions exist and local manufacturers report lower margins. More details regarding this issue are discussed in section 3, Legal Framework.

¹⁷ Comtrade Database. 2017. Mirror import data from importing partners.

¹⁸ MGMA. Available at: myanmargarments.org/factory-information/cmp-versus-fob/

Table 7 - Challenges and incentives leading to CMP production

Production challenges	Incentives towards CMP
<ul style="list-style-type: none"> Lack of locally available quality inputs: cotton, zippers, buttons, etc. Lack of access to capital: difficulty accessing cheap, working capital loans and letters of credit. Low management systems: difficulty managing complex, long term orders from suppliers Low skill sets: local workforce lacking skills needed for quality control, product design, and waste management. Poor infrastructure: electricity provision and road conditions. Turnover: between 3% and 30% of workers leave monthly. 	<ul style="list-style-type: none"> A manufacturer can obtain a certification from MGMA (for Myanmar Kyat (MMK) 5,000 or the equivalent of US\$ 3.3). This certification allows them to obtain tax exemption on imports value through customs.

3. Legal framework

The legal framework for regulating safety and health in Myanmar has been in a fluid state for a long time, especially since the OSH Law has been discussed for years but was only recently passed by parliament. The workers’ right to Occupational Health and Safety (OSH) is recognized under Myanmar law in various pieces of legislation. Section 24 of the 2008 constitution reads, under various sections:

- 24: “The Union shall enact necessary laws to protect the rights of workers.”
- 31: “The Union shall, to the extent possible, assist to reduce unemployment among the people.”
- 349 (b): “Citizens shall enjoy equal opportunity in carrying out occupation.”
- 350: “Women shall be entitled to the same rights and salaries as that received by men in respect of similar work.”
- 359: “The Union prohibits forced labour except hard labour as a punishment for crime duly convicted and duties assigned by the Union in accord with the law in the interest of the public.”

Prior to March 2019, when the new OSH law was enacted, there was no single overarching piece of legislation regulating a national OSH system in Myanmar. OSH, in Myanmar, was pieced together by a plethora of laws, with complications raising from the lack of cohesion.

Table 8 - OSH legal framework

Legislation	Year	Coverage
Constitution	2008	Provides general statements about the right to safe work.
Factories Act	1951	Clarifies hours of work, safety and health across all factory facilities in Myanmar.
Leave and Holiday Act	1951	Regulates workers’ right to have earned leave, casual leave, maternity leave, and medical leave.
Social Security Law	2012	Regulates sickness, maternity, death, employment injury, and invalidity benefits, as well as establishes various Social Security Schemes (11 schemes exist, of which seven are active).
Workman’s Compensation Act	1923	Provides employment injury protection to workers not covered by the Social Security Law.
Employment and Skill Development Law	2013	Although not directly OSH related, it asks employers to make sure workers are aware of their rights (including OSH).

Regulations for the new OSH Law¹⁹ are expected to be drafted by 2020 and to be implemented in 2023.²⁰ The Law is intended to address the current legal fragmentation regarding OSH. The objectives of the new law are to implement measures related to safety and health in related industries; to establish the duties and responsibilities of different stakeholders; to prevent workplace accidents and occupational diseases and increase productivity as a result; to set OSH standards and create safe and healthy workplaces, and support research activities on OSH.²¹

A National OSH Council will be formed to coordinate the different components of OSH. In the workplace, the new OSH Law will regulate:

- The establishment of a Workplace Safety and Health Committee and the appointment of a work place-based Safety and Health Officer.
- The employer/employee composition or a bipartite collaboration of such committees.
- The overall arrangement of OSH cooperation - who does what - at the workplace level and in respect to guidance provided by the ILO Convention C187 on Promotional Framework for Occupational Safety and Health.²²

FGLIID will take on the role of Secretariat of the National OSH Council. It will see its mandate on inspection and compliance expanded to new sectors. Moreover, additional demands on FGLIID will be imposed to include oversight and communication with workplace OSH committees and a new emphasis on prevention, including prevention and identification of occupational diseases envisaged in the draft OSH Law.

It is unclear whether FGLIID is fully prepared for the increase of demands on its financial, technical and administrative resources, in addition to the challenges its current mandate on labour and OSH inspection under the Factories Act (1951) requires. Reorganization of their internal structures and other preparations for the implementation of the OSH Law is underway, though specific regulations and budget allocations for such new tasks and functions have yet to be clarified. Linkages with other government departments, including within MOLIP, have not yet outlined the need, timing or how and to whom responsibilities will be allocated. In addition, reallocation, new information flows or transitional/joint activity plans have not yet been set.

Workplace committees will be responsible for:

- Regularly checking any conditions that impair OSH and reporting the findings at the relevant committee's meeting;
- Advising the Employer to lay down precautionary and educational plans to minimize occupational accidents;
- Improving the coordination between the Employer and Workers to gain better access to facilities and provide training for developing positive OSH conditions;
- Supervising the relevant risk assessments of its factory's OSH management plan; and
- Performing OSH duties assigned by the Ministry and Department.

The Law also requires employers to adhere to certain elements of OSH Management Systems. These elements include conducting risk assessments, allowing inspectors to come and visit the factories at will, displaying safety instructions and hazard signs, designing prevention plans, providing OSH trainings, collecting information on OSH including work-related accidents, and providing a clinic with a registered doctor and nurses with medicines and supporting equipment.

Additionally, the new OSH Law sets specific non-compliance penalties for factory owners, managers, as well as workers, doctors and auditors. A set of directives, regulations and implementing guidelines will need to be developed to regulate the specific OSH requirements for each type of establishment and business.

¹⁹SCM Legal. 2019. OSH Law Unofficial Translation.

²⁰OSH Stakeholder Forum, Naypyidaw, May 5 6 2019

²¹SCM Legal. 2019. OSH Law Unofficial Translation.

²²Note: ILO Convention C187 promotes the development and maintenance of a preventative safety and health culture and the application of a management systems approach to OSH at the workplace.

Moreover, the OSH law defines the figure of the “Authorized Examiner”, a person officially recognized and certified by the FGLLID in accordance with any drafted regulations.

A further, more detailed examination of the contents of the OSH law is provided in the Annex to this report.

The 2012 Social Security Law covers a variety of risks and life events such as sickness, maternity, death, employment injury, and invalidity benefits. The Law instituted a list of social security schemes. Seven of these can be considered currently active, while four of them are not:

Table 9 - Active and inactive social security schemes²³

Group	Scheme	Description
Active	Medical care	Medical treatment and delivery (out-patient, in-patient, medicine, laboratory, and transportation if referred outside of urban areas) for a maximum of 26 weeks. Free in all Social Security Board (SSB) facilities except for retired workers. Retired workers have a co-payment of 50% of the cost of treatment. Reimbursement based on fixed rates in case of referral to other public facilities. Covers the worker only. In case of maternity, the newborn is covered during his or her first year.
	Funeral grant	Lump sum. Funeral allowance benefit = average wages or income over the past four months x (number of contributed months/18) + 1.
	Sickness cash benefit	Periodical benefit: 60% of the average salary of the past four months. Weekly instalments. Up to 26 weeks.
	Maternity cash benefit	70% of the average salary of the last six months. Weekly instalments or lump sum. Up to 14 weeks.
	Paternity cash benefit	70% of the average salary of the last six months for up to 15 days. Bonus: half of the provisions of maternity benefit for the uninsured spouse.
	Family benefit	(a) Educational allowance means-tested benefit. Periodical benefit: Monthly benefit (ten months a year), per child in primary school, 10% of the average parent's wage. (b) Natural disaster 40% of average wage over the past 12 months (lump sum).
	Work Injury	(a) Temporary disability benefit periodical benefit: 70% of the average wage received over the past four months. Weekly instalments. Up to 12 months. (b) Permanent disability benefit: Benefit amount depending on the loss of working capacity with a maximum of 70% of the average wage received over the past four months. Benefit granted for a length which depends on the percentage of loss of working capacity. Weekly instalments or lump sum. (c) Survivor benefit weekly instalments or lump sum. Between 30 and 80 times the average monthly wage of the deceased over the past four months depending on the deceased contribution period (from less than 60 months to over 240 months).
Inactive	Disability benefit	In instalment or in lump sum: <ul style="list-style-type: none"> • 15 months of the average wage received over the total period of contribution if contributions were paid for 180 months. • 40% of the amount of collected contributions (employer + worker) if contributions were paid for at least 12 months and less than 180 months. • Right to retrieve the amount of workers' contributions collected by the SSB if contributions were paid for less than 12 months in lump sum.
	Superannuation benefit	In instalment or in lump sum: <ul style="list-style-type: none"> • 15 months of the average wage received over the total period of contribution if contributions were paid for 180 months. • 40% of the amount of collected contributions (employer + worker) if contributions were paid for at least 12 months and less than 180 months. • Right to retrieve the amount of worker's contributions collected by the SSB if contributions were paid for less than 12 months in lump sum.

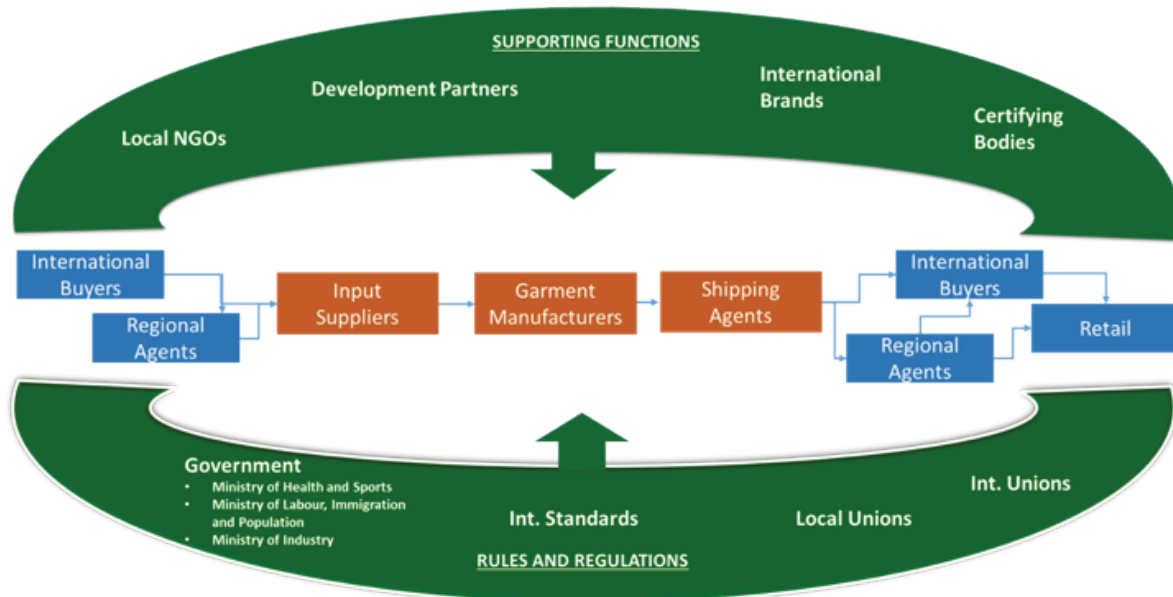
Group	Scheme	Description
Inactive	Survivor's benefit	In instalment or in lump sum: <ul style="list-style-type: none"> • 15 months of the average wage received over the total period of contribution if contributions were paid for 180 months. • 40% of the amount of collected contributions (employer + worker) if contributions were paid for at least 12 months and less than 180 months. • Right to retrieve the amount of worker's contributions collected by the SSB if contributions were paid for less than 12 months in lump sum.
	Unemployment insurance	In instalment or in lump sum: 50% of the average wage received over the past year. Up to six months. Additional cash awarded if married with dependents. One additional month of benefit awarded for each additional years of contribution (over 36 months). Deductible from severance packages paid by the employer.

The 1923 Workman's Compensation Act is an old law but is still active and applies to employers who have failed to comply with the requirements or are not covered by the Social Securities Law. It stipulates that employers must pay out-of-pocket expenses for injuries or deaths that happen as a result of employment in their establishments (employers' liability scheme). A draft Workmen's Compensation Law has been prepared by the Department of Labour, MOLIP.

4. Value chain structure and OSH stakeholders

OSH responsibilities, actions, and power to influence dynamics are currently spread across several private and public sector stakeholders.

Figure 9 - OSH stakeholder mapping



4.1 Government stakeholders

The key ministry in charge of OSH is the Ministry of Labour, Immigration and Population (MOLIP). MOLIP oversees factory inspections through the Factories and General Labour Laws Inspection Department (FGLLID) and secondly, it oversees administering health and compensation insurance schemes through the Social Security Board (SSB). There are no diagnostic criteria in Myanmar to guide doctors identifying occupational diseases. Three lists of occupational diseases are available from: The Workman's Compensation Act, the SSB, the Occupational and Environmental Health Division (OEHD).

Table 10 - Main OSH institutional stakeholders related to the garment industry

Ministry	Department
Ministry of Labour, Immigration and Population	Factories and General Labour Laws Inspection Department
	Social Security Board
Ministry of Industry	Boiler and Electrical Inspection Departments
Ministry of Health	Occupational and Environmental Health Division

The FGLLID

The FGLLID, set with the objective to “enhance the productivity of labour by ensuring workers to enjoy their legal rights regularly and fully under the existing labour laws,” is placed directly under the purview of the minister, and comprises of two sub-departments: Factory Inspection (safety, health and welfare), and Labour Laws Inspection (overtime, wages). Each has its own directors, deputies and inspectors. The functions of the department include: Inspection, Investigation, Training, Awareness Raising,

OSH Management System Implementation, Work Environment Measurement, and finally cooperation with regional and international OSH agencies. As of 2017, the department had a total of 205 inspectors, 105 OSH Factory Inspectors, and 100 General Labour Law Inspectors.²⁴ Data from 2015 indicates there were 12,451 companies registered with FGLLID, receiving regular audits and support. By 2017, the department included a total of 502 staffers (173 officers and 329 assistants). While its staff size grew, its growth is disproportionate compared to the total number of establishments under its purview.

The FGLLID is responsible for investigating and monitoring the OSH conditions within factories but remains underfunded and understaffed.²⁵ Previous research revealed that surprise inspections are often announced well in advance to factory owners who can hide or correct hazardous situations before the inspectors arrive. When infractions are discovered, garment owners are given very low penalties; sometimes owners disregard the verdicts of the Arbitration Council altogether.²⁶ As it stands, the department is not yet able to guarantee thorough inspections of garment factories to a standard acceptable to many international brands. Currently, brands must conduct inspections either through their own staff or through third party auditors.

FGLLID is also responsible for collecting information about the number of accidents that have occurred in the sector, report them, and to draw policy conclusions on the risk profiles of different sectors. FGLLID should then coordinate with the SSB to ensure that both bodies are aligned on the number of accidents as well as their consequences. In reality, this coordination does not often happen. Regrettably, factory managers do not always report accidents to the department, nor do they rely on the SSB for health services when these accidents do occur. Many still do not have the OSH Management Systems necessary to monitor and report accidents properly. As a result, obtaining a clear picture of the number of accidents and the overall risk profile of garment workers from either the SSB or the FGLLID is difficult.

The previous lack of a single law, duplication of legislation, lack of implementing guidelines, and other legislative challenges, coupled with an understaffed and underfunded inspection department, was detrimental to Myanmar's health and safety practices. The passage of the OSH Law, and the upcoming development of its implementing guidelines provide an opportunity for national change as well as change across the sector.

The Social Security Board

The Social Security Board was launched in 1956 shortly after the promulgation of the first Social Security Law (1954).²⁷ Its main task is to implement social security schemes as stated in the Social Security Law (2012). Its responsibilities include ensuring workers' rights and protection, providing social security for workers, promoting labour productivity, and participating in international labour affairs. The board membership includes representatives of the government, workers and unions, as well as employers' organizations. The SSB is responsible for offering health services to workers across the sector. However, an assessment of SSB's operations conducted by the ILO in 2014²⁸ found the SSB to feature a set of weaknesses, including long wait times for delivery of cash benefits to beneficiaries,²⁴ a limited network of facilities, and relatively low-quality services offered.

In 2018, the ILO conducted internal research in Hlaing Tharyar (Yangon), Bago (Bago) and Pyi Gyi Tha Kone (Mandalay), townships with high presence of garment and textile factories. Results of the survey indicated.³⁰

²⁴ILO, National OSH Profile, 2018. Discussions in the Osh Stakeholder Forum of May 2019 mentioned fewer OSH inspectors (91 out of which 66 were OSH inspectors, 25 of which were experienced inspectors.

²⁵SOMO. 2017. "The Myanmar Dilemma. Can the garment industry deliver decent jobs for workers in Myanmar?"

²⁶Ibid.

²⁷ILO. 2014a. "Evaluation of the operations of the Social Security Board, Ministry of Labour, Employment and Social Security of Myanmar."

²⁸Ibid.

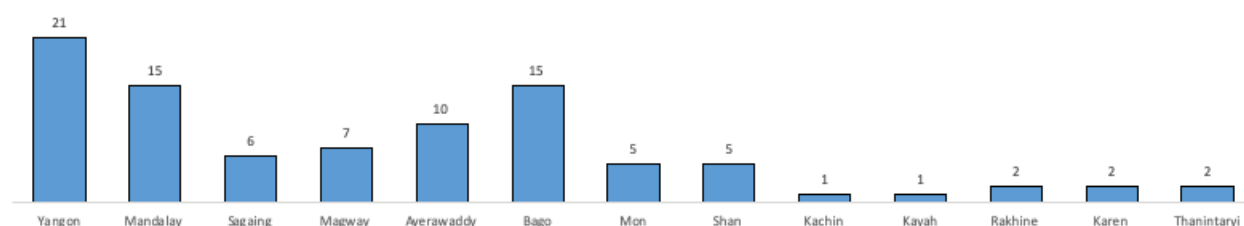
²⁹Note: The SSB is undertaking an administrative reform that will see mainstreamed processes to improve client satisfaction, piloting enhanced procedures in Hlaing Tharyar and Pyi Gyi Tha Kone townships with technical support from ILO-VZF.

³⁰Internal ILO Research, 2018.Unpublished.

- Approximately 13 per cent of workers have had a work-related accident. Of these accidents, only a few were reported to the SSB by employers.
- Only 60 per cent of workers were aware of existing cash benefits earmarked for workplace related accidents, and only 21 per cent knew how to request them.
- General satisfaction with SSB is relatively high; 61 per cent of employers and 62 per cent of workers were satisfied with the SSB's medical services, even if both indicated possible improvements that could be made in quality, efficiency and waiting times. Therefore, although satisfactions is relatively high, 69 per cent of respondents visited a private clinic last time they were sick or injured.
- 31 per cent of workers had difficulty paying for medical services and in being reimbursed afterwards. Workers have also indicated that the claim process is cumbersome and complex.
- Information about these services reaches workers mainly through word of mouth, and workers indicated that they would appreciate more readily available information about sick leave, claim processes, benefits structure, among many others.

The department has 77 township offices covering 110 townships, which is roughly a third of Myanmar's townships. It is responsible for administering the country's social security programmes. The board also operates three hospitals and 92 clinics. Of the SSB clinics, 21 are in Yangon, followed by 15 clinics in Mandalay and another 15 in Bago.

Figure 10 - Geographical distribution of SSB clinics³¹



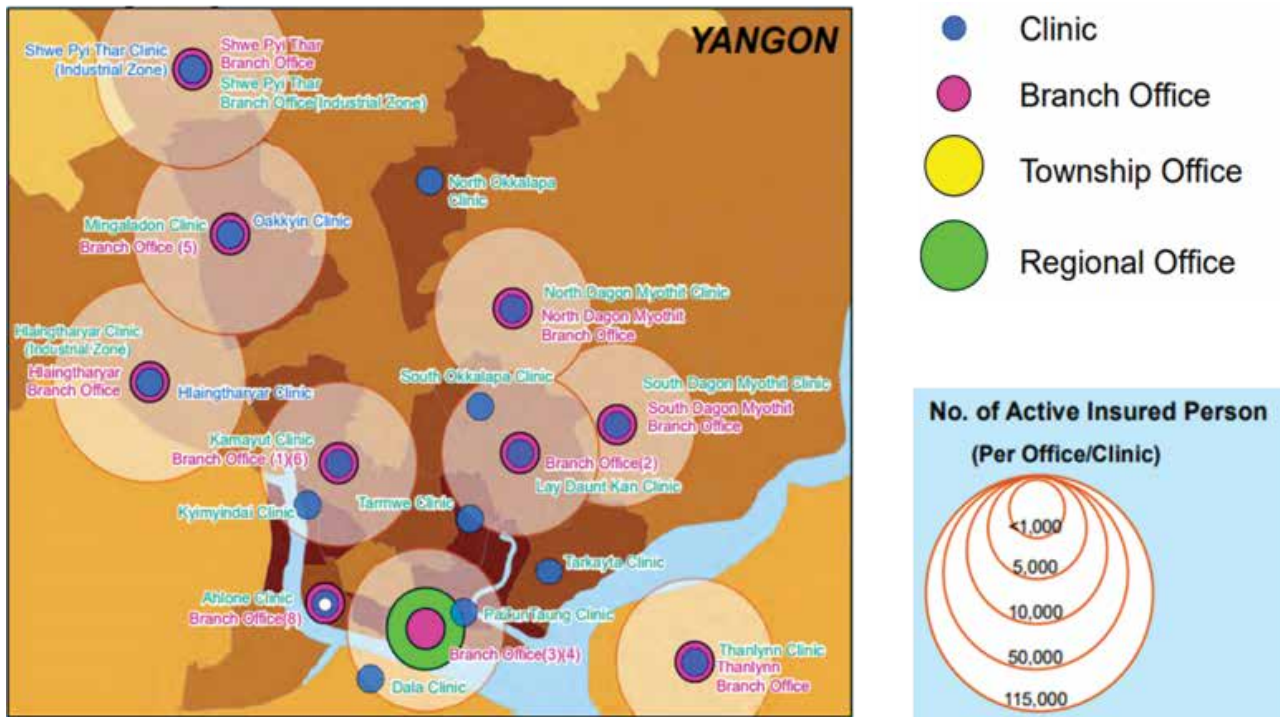
According to MOLIP, SSB clinics are less utilized than other healthcare facilities, with notable exceptions. While on average SSB clinics tend to serve ten to 20 cases per day, in garment manufacturing areas such as Hlaing Thar Yar Township, clinics can see up to 120 cases per day. The SSB clinic in Hlaing Thar Yar Township is responsible for approximately 115,000 insured workers, justifying the need for longer opening hours and additional facilities. This higher demand pushed the SSB to pilot a programme whereby clinics in the industrial zone will extend opening hours. Most clinics open at 9AM and close at 4PM. Public-Private partnerships are also being piloted in Hlaing Thar Yar with private clinics serving high-demand areas (see figure 10).

Supporting the SSB to improve its provision of health services will benefit workers both in and outside of the sector. However, it is crucial to increase access to SSB's services for garment workers. While being one of the largest contributors to the SSB, garment sector workers are far from being one of its largest beneficiaries. Women can especially benefit from the SSB's protection mechanisms as they provide coverage for maternity and newborn care. Currently, a large, unspecified number of workers are left out of the SSB's protection mechanisms. Interviews with both workers and employers indicated that they rarely rely on SSB clinics for health services. In cases where long term injury occurs, a worker obtaining services from providers other than the SSB, loses the chance to obtain disability benefits. These findings are also aligned with ILO research in 2018.

Interviews with workers highlighted that some employers do not always abide fully with their responsibilities. One example provided involved a worker injured by a forklift. While the factory owner was willing to pay for his immediate medical expenses out of pocket, the owner was not willing to report the

accident. By not reporting, the employee was unable to claim disability benefits through the SSB. Another example shared by workers referred to women who were laid off from a factory due to pregnancy. Although they were promised to be reinstated after childbirth, these dismissals meant no access to SSB maternity benefits or medical care. With more awareness about the SSB, from both employers and employees, garment workers might benefit from a much broader suite of benefits.

Figure 11 - Distribution of SSB clinics in Yangon ³²



The Occupational Health Division

The Occupational Health Division is situated within the Ministry of Health (MOH) and was established in 1971 as part of the Public Health Division of the Department of Health. At its core, its activities are aimed at preventing work-related deaths and accidents. The department is responsible for coordinating the MOH’s national health policies along with the agendas put forward by MOLIP and MOI. Its activities include:

- Surveying the work environment.
- Providing trainings and information sharing on occupational health principles and practices to employers, workers and aid workers.
- Assessing environmental health risks.

The Boiler and Electrical Inspection Departments

The Boiler and Electrical Inspection departments, under the Directorate of Industrial Supervision and Inspection (DISI), Ministry of Industry is highly relevant to the Myanmar garment sector. It is responsible for conducting inspections on business premises to check that boilers and electrical appliances are in accordance with the Law and to issue licenses as a result of these inspections. The inspectorate is also in charge of providing boiler operator training courses.

³²MIMU. 2015. SSB Branches and Population Active Insured Person.

Partners like SMART and the Responsible Business Fund indicated that antiquated boilers and unsafe electrical installations represent a hazard across the sector. Training services provided to boiler and electrical operators in the garment industry are often insufficient and curriculums are ad hoc, reflecting short comings in the training process for inspectors. The boiler department is meant to conduct a yearly assessment of each factory's boiler and issue a compliance certificate, but interviews specified that these certificates do not always mean that the boiler is safe or compliant. This highlights the need to support training and strengthen inspection practices on boiler and electrical safety.

The City Development Committees

The City Development Committees, like Yangon City Development Committee (YCDC), is responsible for promoting a set of safety regulations across the cities they manage. This includes regulating construction directives, providing people and enterprises with information about standards to respect and conducting basic inspections.

4.2 International buyers and regional agents

International brands place their orders with locally based manufacturers, either directly, or through regional buying agents or buying houses. Buyers are highly involved in the operations of locally based manufacturers, have a clear understanding of their production processes, costs and profitability and have a strong degree of influence on them. This situation makes international buyers one of the strongest drivers of change in the Myanmar garment sector, both in terms of production capabilities and in terms of the social, environmental standards that the manufacturers are expected to adhere to within Myanmar and globally.

4.3 Workers and Workers' organizations

As of 2011, trade unions can legally represent workers, but the concept of social dialogue is still very much in its infancy. The Confederation of Trade Unions of Myanmar (CTUM), funded in 1991, has a constituency of 763 trade unions in 2019, and a total of 65,002 members. Officially recognized by the government in 2015, CTUM has an OSH mandate to monitor and warn of hazardous conditions in the factories, ensure the use of protective equipment, and an overall mandate to make sure that safety measures are designed, and workers are trained. CTUM is the largest confederation of trade unions and includes the Industrial Workers Federation of Myanmar (IWF) covering garment sector workers. The Myanmar Industries Craft and Services Unions Federation (MICS) is the second largest confederation and is an important player in terms of labour organizations in the garment sector.

4.4 Business associations

The MGMA is the leading business association representing the needs and interests of Myanmar garment manufacturers. All factories manufacturing garments in the country need to register with MGMA, as they are the organization providing the CMP import certificate that allows businesses to claim tax incentives on import duties. While both locally and internationally owned manufacturers are registered as MGMA members, fully foreign owned are not allowed to sit on its board. Services provided by MGMA include:

- Business matchmaking: international with both buyers and technical specialists.
- Trainings: The Myanmar Garment Human Resources Development Center (MGHRDC) offers basic sewing and supervisory trainings.
- Worker Support Services: MGMA provides recommendations to managers and workers to support the establishment of effective labour relations. For example, they might help a factory to establish committees and dialogue platforms with worker representatives.
- Supplier listing
- Event exhibition

MGMA is strengthening its service provision of OSH by recruiting experts and supporting staff, while OSH is often sub-topics of their trainings and advisory. As OSH becomes more relevant in the Myanmar garment sector, OSH support will also become more relevant and demanded by manufacturers. Informal business networks between foreign invested garment manufacturing firms have already developed, for example among groups of Korean and Chinese owned factories.

The MGMA, within the National Export Strategy (NES) developed by the Myanmar Ministry of Commerce (MOC), has developed a ten-year strategy to increase the quality and value added of the Myanmar garment sector. The revised, Investment Law, amended by the Government of Myanmar in 2015 strongly encourages foreign investment through tax holidays incentives that are not available to local manufacturers.

The MGMA's strategy spells out four key areas of activities to support sector growth in volume and value as well as to move towards a FOB production system:

1. Secure public policies that will enable transformation of the Myanmar textile and garment sector from the CMP mode of manufacturing to the FOB mode.
2. Substantially increase production and exports of textiles and apparel according to international quality standards.
3. Greatly improve efficiency and reduce costs of the sector through the public provision of critical infrastructure in sector dedicated zones and port facilities.
4. Achieve widespread adoption of workers' protections and environmentally friendly technologies and practices.

Attention to Occupational Safety and Health (OSH) falls within the fourth dimension of the activities spelled out in the MGMA's garment strategy.

The MGMA's has also drafted a set of targets to obtain by the end of its ten-year strategy:

- Export more than US\$10 million worth of garments to 12 of the top 25 national markets.
- Exceed market share of 1 per cent in five of the top 25 national markets.
- Export more than US\$50 million worth of garments to the United States.
- Quadruple the value of garment exports by 2020.

MGMA's strategy is to support Myanmar moving in the direction of other garment production countries that have evolved into higher value production systems over time, usually along these steps: Original Equipment Manufacturer (OEM), Original Design Manufacturer (ODM), and Original Brand Manufacturing (OBM).

5. OSH assessment

The aim of this section is to summarize the findings from primary and secondary research conducted in 2017 and 2018 by the ILO team. The section will present various OSH dimensions, and whenever possible, present findings from a combination of secondary research, expert interviews, the SMART and the Brand Suppliers' databases, as well as from the ILO Research team's primary observations, as described in table 10. Since the two datasets utilized different assessment methodologies, the data are not fully compatible, and will therefore be discussed separately.

Table 11 - OSH assessment research sources

#	Study	Methodology
1	An OSH mapping of the Myanmar garment sector.	The first study's methodology was based on a combination of a secondary literature review (laws, policy briefs, and publications) and interviews with key sector stakeholders.
2	An analysis of factory level OSH data and information.	The report utilized secondary data from existing literature as well as primary data drawn from two databases: <ul style="list-style-type: none"> • SMART Myanmar's Factory Assessments: within SMART's Social Compliance Academy programme, factories are assessed on a variety of components, including OSH. • A Database of self-reported OSH information from suppliers of an international brand: this data was provided by an international brand and provides information about OSH conditions in their suppliers' factories. • Primary observations in six, Yangon-based garment factories to verify findings from the literature review and the available data and two Mandalay-based textile factories. • Discussions with workers outside factories, in meetings organized by trade unions and labour organizations.

5.1 Typology of risks

The risks that can be identified in garment factories located in Myanmar are classified into three main categories:

- **Infrastructural:** these issues include all building-related aspects that can create a safety or health hazard for workers. These includes sub-categories like fire, electrical, structural and ventilation. While factories in Myanmar tend to be perceived as relatively safe, issues remain, especially connected to electrical malfunctions that could spark fires. The most prominent of these issues is related to factories utilizing very old boilers, which are considered unsafe.
- **Individual:** includes all the risks associated with an individual's behaviour. These include issues related to personal hygiene, lack of appropriate OSH training, and the availability and proper use of personal protective equipment (PPE).
- **Management:** the last category includes risks related to the factory management's ability and commitment to establish good OSH Management Systems and practices.

Table 12 - Categorization of OSH issues in garment factories³³

Group	Subgroup
Infrastructural	<ul style="list-style-type: none"> • Fire: exit doors, smoke detection, sprinkler systems, extinguishers and alarms. • Electrical: boilers, wiring, conductors, generators. • Structural: facilities' layout, pillars, and columns, escape routes. • Ventilation: availability and quality of ventilation and temperature control systems.

Group	Subgroup
Individual	<ul style="list-style-type: none"> • Personal Protective Equipment (PPE) • Hygiene practices, and facilities. • First aid kits and trainings. • Emergency trainings.
Management	<ul style="list-style-type: none"> • OSH Policies and Standard Operating Procedures (SOPs). • Trainings and exercises (fire drills). • Establishment of OSH committees. • Workers', managers and owner's communication channels. • Document and information management. • Information and warning signs distribution across the facility. • Material Safety Data Sheets (MSDS) availability.

5.2 Underlying risk factors

Type of ownership

A study conducted by Impactt found that 77 per cent of workers had witnessed at least one accident in their factories, while 76 per cent of workers indicated feeling unsafe at work³⁴. All workers in Myanmar-owned factories reported at least some level of dissatisfaction with the safety levels in their workplace. Of the 24 per cent of workers who indicated feeling safe in the factories, all worked for foreign-owned establishments.

The same frequency of accidents or the same difference between locally and foreign owned factories cannot be identified, at first, in the findings from the ILO-survey in 2017. As shown in figure 12, domestically owned factories reported a much lower number of accidents in their facilities over the last 12 months. As the number was self-reported by factory managers, this finding is more likely to indicate monitoring and reporting concerns, rather than a lower incidence of accidents in these factories compared to foreigner-owned ones. It is additionally worth highlighting that the number of accidents reported by locally owned factories does not grow proportionally with their workforce size. Larger factories tend to perform better than smaller ones, as they can often dedicate larger resources and attention to OSH. Further research into working conditions and the actual numbers of accidents would be necessary to draw conclusions about trends in Myanmar's garment sector.

Figure 13 - Number of accidents reported, average over the last 12 months³⁵

Ownership		Workforce size			
		Less than 500	500 to 1,000	1,000 to 2,000	More than 2,000
Ownership	Domestic owned	12	6	15	
	Foreign owned	28	31	30	12
	JV - Mainly domestic		4		
	Domestic owned	6	5	120	

An apparent higher incidence of accidents in locally owned factories can be explained by several factors.

1. Old establishments: Many active Myanmar factories are located within older establishments, built before any attention was paid to OSH conditions. Interviews with sector stakeholders indicated that, while building conditions are not as worrisome as the ones present in Bangladesh, several locally owned factories are housed in old buildings that require upgrades. The current safety conditions prevent these factories from working directly for socially responsible brands. The research team even heard of factories located in wooden structures, which are highly prone to fires.

2. Poor linkages with socially responsible brands: Locally owned garment factories are less likely to supply to large, sustainability-oriented, auditing-friendly, international brands, and therefore have fewer incentives to invest in OSH. Old and unsafe structures are one of the limitations, as described above, together with lower management and production capacity, which has so far made international brands more likely and willing to work directly with foreign owned factories.
3. Access to capital: Locally owned factories have less access to affordable financing options. While foreign owned factories are able to access lower interest rates from abroad, and make use of trade financing products like letters of credit, locally owned manufacturers are subject to higher interest rates, higher collateral requirements, and are often unable to access trade finance, which is not yet commonly offered by local banks.

These factors constitute part of a difficult cycle preventing locally owned factories from supplying directly for conscious, sustainability oriented, socially responsible brands. These brands are the ones offering price premiums for compliance, quality and sustainability, therefore creating an incentive for OSH compliance. Being left outside of these premiums and incentives, locally owned factories are less likely to be willing to make necessary OSH investments. The recently published findings of a study³⁶ focusing on the impact of multinationals sourcing in Myanmar reveal that exporting factories offer their workers better working and safety conditions. Moreover, it finds that European buyers request much higher OSH standards from their suppliers, and as a result these factories tend to have higher standards than other exporting factories. Factories exporting to Japan, in comparison, were found to pay the least attention to safety and health among exporting factories.

Labour and contractual relations

Overtime in Myanmar is currently regulated by the Factories Act, which requires each factory to:

- Limit overtime to less than 16 hours per week or for continuous work less than 12 hours per week.
- Pay overtime a wage double that of the basic wage paid to the worker.
- To obtain approval by the inspection department for a constant overtime policy.

Overtime is a recurring reality in the Myanmar garment sector. The ILO workers' survey confirmed that only a few factories discourage overtime or do not allow it. Nevertheless, there are various perceptions about overtime and if it is optional or mandatory. Overtime is perceived as mandatory more often by workers in factories exporting to Japan (49 per cent) and Korea (37 per cent), than to Europe (33 per cent). Additionally, foreign owned factories seemed to be requiring overtime more often (41 per cent) than locally owned factories do (38 per cent).

Excessive and/or forced overtime has negative effects for all workers. Exhaustion is a real health concern. Reaching excessive levels of fatigue can be detrimental to both the health and safety of workers and can diminish productivity overtime.

Table 13 - Perception of overtime by workers³⁷

	No overtime	Optional	Required
Europe	1%	74%	33%
Japan	0%	57%	49%
Korea	0%	67%	37%
Domestic owned	0%	73%	38%
Foreign owned	2%	64%	41%
JV - Mainly domestic	0%	100%	0%
JV - Mainly foreign	0%	70%	40%

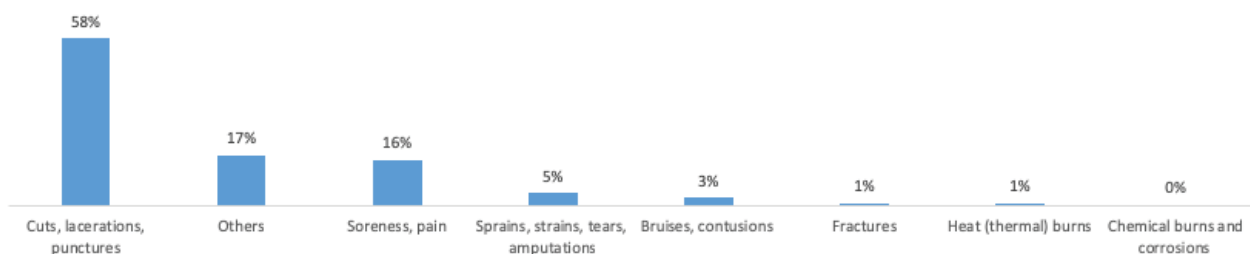
Subcontracting

Subcontracting is the practice by which a factory obtains a set of orders to produce for a buyer. Instead of fulfilling the entire order internally, the factory outsources part of its work to a third factory. Subcontracting has a negative effect on the buyers' ability to monitor and manage their supply chain, both in terms of production quality (i.e. sub-contracting factory might produce to a lower quality standard) and in terms of safety (i.e. sub-contracting factory might be less safe than the primary one approved by the buyer). This practice has led, in Bangladesh, to many issues, including situations where orders of international brands were subcontracted to factories where accidents with large numbers of fatalities occurred. No data is currently available about the extent of this issue in Myanmar. However, interviews with local stakeholders (brands, development partners, and factory managers) provided anecdotal indications that the practice does indeed occur and that little to no oversight is given by subcontracting factories on OSH or, in this situation, the brands.

Type of production

The hazards workers are exposed to are linked to the use of sewing machinery (cuts, lacerations and punctures), falls (bruises and contusions), limbs stuck in machinery and transport equipment (resulting in fractures). Issues are also attributable to bad ventilation in the factories (exhaustion, breathing issues, and tiredness), as well as faulty machinery (electric shocks). This was found both by the Impactt³⁸ study, and the 2017 ILO survey. As pictured in figure 12, cuts and lacerations from sewing machinery are the most prevalent cause of harm to the workers (58 per cent of observed accidents).

Figure 13 - Type of Accidents, percentage of responses³⁹



Chemical burns and corrosions from chemical products such as dyes and paints are not common in the Myanmar garment sector given that the industry mainly produces under the CMP model, and therefore does little of the washing and dyeing onsite that would cause these hazards. Overall, only 4 per cent of garment workers interviewed in the ILO survey indicated that they were exposed to chemical and hazardous substances during their work.

These findings were additionally confirmed through the first-hand observations reported by workers in the ILO survey. These workers indicated witnessing predominantly (96 per cent) cuts, lacerations and punctures,⁴⁰ connected to the use of sewing machinery.

Factory conditions

The different studies and datasets reviewed for this assessment offer different inputs regarding factory conditions. Most workers interviewed in the ILO study felt comfortable with the levels of noise (94 per cent), dust (94 per cent) and humidity (98 per cent) in their workplaces. In addition, 99 per cent felt the lighting conditions were adequate.

³⁸Impactt. 2016. "From Boycott to Boom? A Socio-Environmental Map of Myanmar's Garment Industry in 2016."

³⁹ILO. 2017b. Enterprise Survey.

⁴⁰ILO. 2017c. Workers' Survey.

Table 14 - Perception of factory conditions, percentage of workers⁴¹

		Comfortable	Neutral	Uncomfortable
Noise	Overall	94%	1%	5%
	Domestic owned	95%	1%	4%
	Foreign owned	94%	1%	5%
Dust	Overall	94%	0%	6%
	Domestic owned	95%	0%	5%
	Foreign owned	95%	0%	5%
Humidity	Overall	98%	0%	2%
	Domestic owned	98%	0%	3%
	Foreign owned	98%	0%	2%
		Adequate		
Lighting	Overall	99%		
	Domestic owned	99%		
	Foreign owned	99%		

It is worth mentioning that 60 per cent of workers surveyed did not consider their workplace to be dangerous (having a high risk of accidents or illnesses). Workers in foreign owned factories were slightly more likely to feel safer than workers in locally owned ones. Workers in factories exporting to Korea were only slightly more likely to think that their workplaces are dangerous than workers in factories that export to Japan.

Table 15 - Percentage of workers who perceive factory as risky⁴²

		Disagree	Neutral	Agree
Ownership F/D	Domestic owned	58%	1%	42%
	Foreign owned	61%	1%	38%

These findings differ from what was identified by the Impactt study, which found that 76% of workers felt unsafe in their factories. This discrepancy in the findings seems to indicate the need for further research in Myanmar regarding the health and safety of garment factories.

The Impactt study also found that men tended to feel more unsafe in factories than women did (62 versus 45 per cent). This might reflect the type of work performed and that men often work with heavier machinery. However, as the Impactt study suggests, women face other types of hazards, such as harassment in the workplace and assault during the commute to and from work.

Blocked fire exits were the chief concern among all workers. As shown in table 15, emergency exits were present in nearly all (94 per cent) of factories exporting to Europe but found to a lower extent in factories exporting to Japan and Korea (85 per cent and 88 per cent respectively). The Action Labour Right's (ALR) 2016 study found instead that 67 per cent of workers indicated that their factories had safety escapes, of which 26 per cent were reported as blocked, locked or inaccessible. Additionally, 70 per cent of these workers had never received fire drills or trainings. Moreover, the team conducting the research for Mari Tanaka's (2017) study (see table 1) observed fire exits in 83 per cent of exporting factories and only 40 per cent of non-exporting ones.

Additional concerns expressed by development partners interviewed were air and ventilation issues, unsanitary conditions in canteens and unacceptable toilets and sanitary facilities. Air quality concerns, especially in conjunction with long working hours and high temperatures, increases the likelihood of exhaustion. The study conducted by ALR (2016) in Korean owned factories found even more glaring concerns around these issues. Specifically, 67 per cent of workers found their factories uncomfortably hot, and 45 per cent believed them to be poorly ventilated and negatively effecting productivity.

Table 16 - Emergency exits⁴³

Primary export destination	Emergency exits / escape routes clearly marked			Emergency exits ever found obstructed or locked		Emergency drills ever conducted	
	Europe	Japan	Korea	94%	1%	62%	
				85%	7%	57%	
				88%	1%	34%	

5.3 OSH Management Systems

The ILO guidelines (2001)⁴⁴ for establishing an OSH management system suggest several steps that should be taken to ensure effectiveness and inclusiveness. First, the employer, in consultation with workers and their representatives, should write an OSH policy that complies with relevant local and international laws and regulations. Secondly, workers should be consulted and encouraged to participate in all aspects of an OSH management system. And finally, the established OSH management system should be compatible or integrated with other management systems in the organization. The overall system should contain elements of policy, organizing, planning and implementation, evaluation and action for improvement.

From the review of available literature

OSH Policy

Most managers interviewed in the ILO survey (77 per cent) acknowledged an established OSH policy exists in the factory. Most exporting factories (81 per cent) indicated having an OSH policy, while the figure is much lower for non-exporting ones (43 per cent). There are some discernable differences across factories depending on their export destination: while 85 per cent of factories exporting to Japan and 84 per cent of factories exporting to Europe had a policy, the figure goes down slightly to 78 per cent for factories exporting to Korea.

OSH Management Systems

While most factory managers interviewed in the ILO study specified having a functioning OSH policy in their factories, there appear to be gaps in the implementation of the associated OSH Systems. In 44 per cent of locally owned factories and in 30 per cent of foreign owned factories, no clear reporting line for OSH issues was found (affecting the ability to monitor and report accidents and hazards). Moreover, in 56 per cent of locally owned factories and 41 per cent of foreign owned factories, no OSH officer was appointed, therefore limiting the ability to assess the factory conditions and to make changes on the premises.

Table 17 - Percentage of factories with OSH Management Systems⁴⁵

	Locally owned	Foreign owned factories
Factories where OSH line of reporting / organizational charts are clearly spelled out	56%	70%
Factories where an OSH officer has been appointed.	44%	59%

A similar picture is provided by the number of factories that established a formal procedure to systematically record work-related accidents and health problems. As shown in figure 13, foreign owned factories outperform locally owned ones, and factories exporting primarily to Europe and Japan outperform factories exporting to Korea.

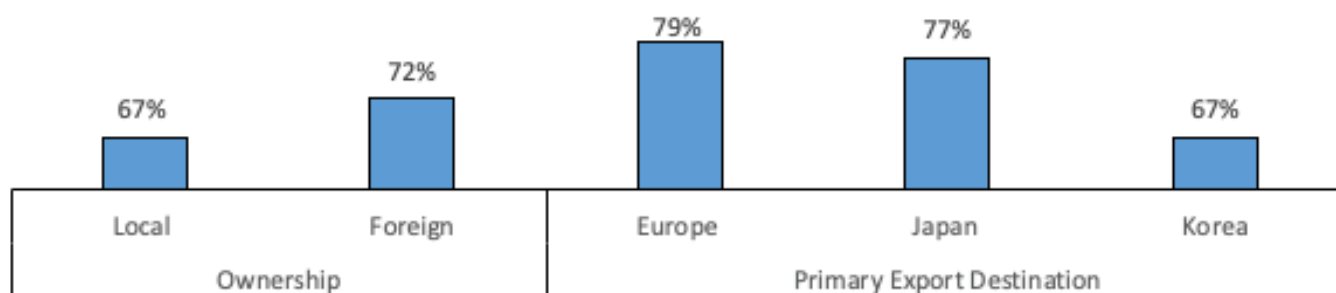
⁴³Ibid

⁴⁴Available at:

https://www.ilo.org/wcmsp5/groups/public/@ed_protect/@protrav/@safework/documents/normativeinstrument/wcms_107727.pdf

⁴⁵ILO. 2017b. Enterprise Survey.

Figure 14 - Percentage of factories with an established procedure to record accidents⁴⁶



Notwithstanding these findings, 85 per cent of workers in the ILO Study indicated confidence in their management’s ability to protect workers from work related accidents and illnesses.

OSH Committees

More than half (65 per cent) of factories in the ILO survey clarified that there is a functioning joint worker-manager health and safety committee.⁴⁷ Nearly all (96 per cent) of managers interviewed specified that the decisions taken by the committee are immediately implemented. However, in only 47 per cent of these factories, workers are elected to the committee; that means that 53 per cent are appointed by management. However, only in 53 per cent does the committee meet regularly.

The situation changes when ownership of the factory is considered: 68 per cent of fully foreign owned factories (58 per cent of whom meet regularly) have a working committee, while only 42 per cent of fully domestically owned factories do (40 per cent of whom meet regularly). However, the issue of committee members being appointed by management remains both in locally and foreign owned factories. Factories exporting to Japan appear more likely (69 per cent) to have an established committee, followed by those exporting to Korea (67 per cent), and the EU (63 per cent). The issue of workers’ representatives being appointed by the management instead is prevalent especially in factories exporting to China (100 per cent), Korea (83 per cent), and Japan (56 per cent).

For an OSH committee to work well, it is important that at least a portion of workers are appointed independently of the management’s will. The ILO’s guidelines for establishing an OSH committee read: “As joint OSH committees are bipartite; workers should have equal representation as employers. Workers’ representatives should be elected by their co-workers freely through a direct and secret vote.”⁴⁸ However, Myanmar does not yet have regulations concerning the establishment of joint OSH committees, but are expected to be regulated by the upcoming OSH law. Workers appointed by management might be less independent and put forward fewer requests and place fewer complaints. Supervisors, loyal to the management are more likely to be appointed than independent or union representatives of the workers.

Figure 15 - OSH Committees in factories, percentage of factories per primary export destination⁴⁹

	Europe	Japan	North America	Korea	China
Have an OSH committee	63%	69%	57%	67%	50%
Worker members appointed by management	42%	56%	25%	83%	100%

⁴⁶Ibid

⁴⁷Note: As of this publication, these committees are established voluntarily, or under buyers’ requirements.

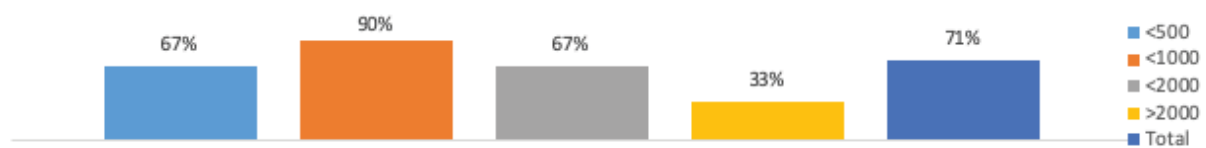
⁴⁸ILO. 2015. “Joint OSH Committees.”

⁴⁹ILO. 2017b. Enterprise Survey.

Workers' and Safety Committees

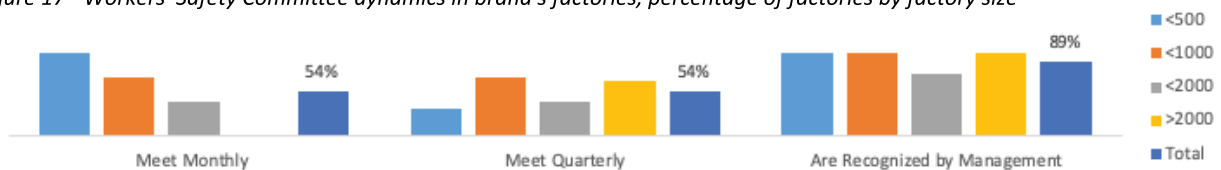
In Myanmar, businesses that employ more than 30 employees are mandated to establish a Worker Coordinating Committee (WCC). The WCC should be composed of at least two elected worker representatives and two employer representatives. The new OSH Law mandates factories to appoint “workplace OSH personnel” and establish a “workplace safety committee”⁵⁰ who will have the mandate to solicit feedback from workers on safety and coordinating OSH efforts in the factory. Within the brand’s factories, 29 per cent of factories reported not having a functioning workers’ safety committee. This is especially true within the largest factories, where 67 per cent of factories do not have a safety committee. This finding is further confirmed by the SMART’s assessments, indicating that such a committee - one charged to take responsibility for safety management systems - was often not in place.

Figure 16 - Brand's suppliers reporting that a Health and Safety Worker Committee Exists, percentage of factories by factory size



Of the 71 per cent of factories that have such committees, in nearly all cases (89 per cent), workers took part, and their running was not left to management. However, dynamics relating to workers’ committees tend to change depending on the factories’ workforce size. While in almost all factories (89 per cent), committees tend to be recognized by management, committees in smaller factories tend to meet more regularly (at least monthly).

Figure 17 - Workers' Safety Committee dynamics in brand's factories, percentage of factories by factory size



A majority, or 84 per cent of factories, appear to have an active safety committee. However, the committee reviews safety issues and tracks corrective actions in only 62 per cent. Moreover, only 62 per cent of factories have a designated responsible safety manager. SMART’s commentary also suggests assessments rarely identify an appropriate record or analysis of accidents that happened at the factories. Conversations between factory managers and the ILO Research team, as well as visual observations of the OSH issues on the factory floors confirm the findings above. They also show that, to a large extent, there is a lack of management attention related to OSH issues, as exemplified by the following instances:

- No factory had evidence of an OSH investment or improvement plan. While investments in issues such as temperature and ventilation were observed, these were mostly ad hoc and not part of a coherent and participatory plan to improve OSH outcomes.
- No factory had evidence of a system to record and monitor inspections or maintenance.
- In all factories, the responsibility to coordinate OSH activities fell on the HR Manager (or similar roles), as a secondary mandate of that job.
- In most factories, there was no evidence of an established and properly functioning OSH committee. As discussed above, the currently existing committees are not properly reviewing safety issues nor are they keeping records or analysing findings. While this was not required by the Law until very recently, it impedes feedback to managers from workers regarding their safety concerns.

5.4 Workers' OSH training and capacity

Equipment

OSH Training is an important element often missing in Myanmar garment factories. Given the type and level of production in the Myanmar garment sector, Personal Protective Equipment (PPE) is only necessary for a few, very specific tasks (i.e. cutting, printing, washing, dyeing, etc.) and the provision of adequate PPE and training on its correct use is key to its effectiveness. When required, it appears that export-oriented factories are much more likely to provide PPE, compared to non-exporting factories. This is shown in figure 17 below. However, while a sizeable percentage of workers confirmed receiving PPE, only a very small percentage (8 per cent) of workers indicated receiving any training on how to use the equipment provided. Similar findings were provided by the ALR (2016) study, where 99 per cent of interviewed workers indicated that fire safety equipment (i.e. extinguishers) was available, but only 55 per cent knew what to do with it in case of fire.

Figure 18 - Factories providing protective equipment, percentage of factories⁵¹

		Eye/face	Hand	Respiratory	Thermal
Exporting	No	14%	57%	71%	43%
	Yes	64%	97%	93%	63%
Primary export destination	Europe	68%	89%	89%	68%
	Japan	62%	100%	96%	62%
	Korea	56%	100%	100%	67%

These situations where OSH training was lacking were encountered by the team during factory visits and discussions with Workers' organizations and factory managers. Fire safety drills were mentioned in many occasions to be provided by factories but other than that, correct use of PPE and machine safety were not topics that workers or managers mentioned having received or provided training. Observations confirmed that many workers do not use machine guards consistently (see section on Machine Safety). The team was told by factory managers and owners that workers were purposely disregarding safety instructions, but workers mentioned supervisors were concerned about production targets and did not follow-up on safety issues. There seems to be a case for emphasizing safety and adequate provision and use of PPE in Myanmar garment factories.

Workers' access to information

From the ILO (2017c) survey, the knowledge shown by garment workers about their rights is inconsistent. Table 17 summarizes workers' opinions related to ease of access of OSH related information.

Table 18 - Workers' opinions related to ease of access of OSH information⁵²

Ownership	Finding information is not a problem	Information available is too brief	Information available is unclear
Overall	96%	71%	54%
Domestic owned	96%	78%	52%
Foreign owned	97%	69%	57%

Only 18 per cent of workers knew the correct amount of personal leave they are entitled to⁵³ and only 11 per cent knew the number of medical leave days.⁵⁴ Regarding maternity leave, workers seemed to be slightly better informed,

⁵¹ILO. 2017b. Enterprise Survey.

⁵²ILO. 2017c. Workers' Survey.

⁵³Note: 10 days after 12 months of service.

⁵⁴Note: 30 days after 6 months of service.

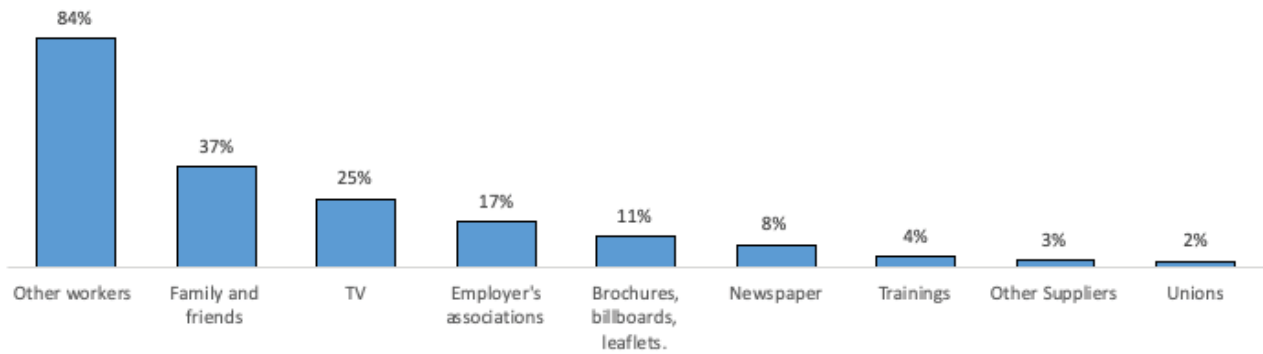
with 47 per cent indicating that they are entitled to 90⁵⁵ days of leave. However, 23 per cent of workers answered that they did not know what maternity benefits existed. Additionally, 95 per cent of workers answered that they did not believe workers with young children were entitled to breast feeding breaks.

Table 19 - Workers' understanding of personal and medical leave days⁵⁶

	Paid leave			Medical leave		
	Overall	Locally owned	Foreign Owned	Overall	Locally owned	Foreign Owned
Correct	18%	23%	19%	11%	8%	11%
Less than correct amount	56%	48%	55%	74%	73%	75%
More than correct amount	8%	10%	9%	0%	0%	1%
Don't know	18%	18%	18%	15%	19%	14%

Most (84 per cent) workers access information through word of mouth from other workers, as well as from family and friends (37 per cent). Other relevant sources of information include television (25 per cent), as well as employers (17 per cent). Unions, however, ranked last as a source of OSH information. Only 2 per cent of workers obtained information from their union.

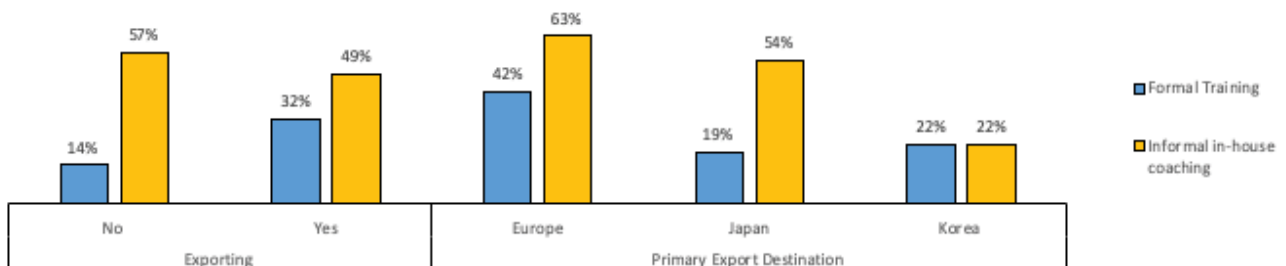
Figure 19 - Workers' access to OSH information ⁵⁷



Workers' trainings

Under the 2013 Employment and Skill Development Law, it is the employers' responsibility to make sure that workers are aware of their OSH rights. However, provision of OSH related trainings in Myanmar garment factories appears to be low. From the ILO study, only 32 per cent of the factory managers of exporting factories, and 14 per cent of non-exporting ones indicated providing formal OSH trainings to their workers. A higher percentage indicated providing in-house, informal trainings. Overall, factories exporting to Europe appeared to be the best performing in terms of providing both formal and informal OSH trainings to their workers.

Figure 20 - Percentage of factories providing OSH trainings ⁵⁸



⁵⁵Note: Myanmar law allows for 6 weeks maternity leave before confinement and at least (8) weeks after confinement. However, the question in the survey was asked in number of days, which makes it a challenge to assess workers' knowledge.

⁵⁶ILO. 2017c. Workers' Survey.

⁵⁷ILO. 2017c. Workers' Survey.

⁵⁸ILO. 2017b. Enterprise Survey.

However, the workers interviewed in those same factories provided a different picture. As indicated in table 19, a very low percentage of workers indicated receiving OSH trainings. Instead, the majority received OSH related information from their management through either written or verbal communication.

Table 20 - Percentage of workers who were provided with OSH information ⁵⁹

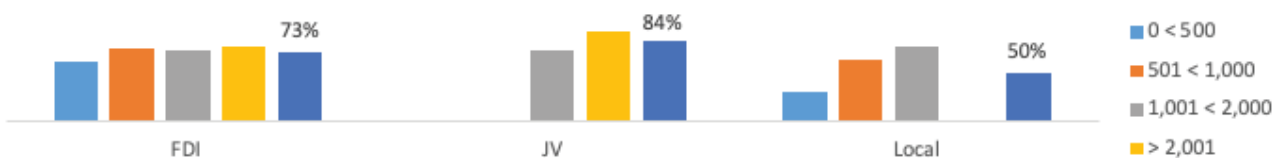
		Formal training	Informal in-house training	Written communication	Verbal communication	Other
Primary export destination	Europe	10%	1%	25%	46%	18%
	Japan	16%	2%	28%	41%	13%
	Korea	3%	0%	42%	43%	11%

5.5 Emergency planning & fire safety

Most of the brand's factories self-reported fire safety related indicators, including maintaining a fire alarm, conducting fire drills, appropriate placing of fire extinguishers and regularly checking them, and properly storing and segregating flammable chemicals. However, issues identified within the brand's factories were identified. Some 22 per cent of factories had not yet established and formalized an emergency response plan. Of those that had, only 57 per cent annually review the plan to ensure appropriate responses to possible emergency situations.

SMART's observations indicate four key issues within their factories: firefighting equipment, evacuation systems, fire safety teams, and fire safety trainings. Firefighting equipment is often of an insufficient quantity or is blocked by other materials, making it inaccessible in an emergency. Signage and installation are inadequate and regular checks are not conducted. Evacuation systems appear lacking as well, with no proper evacuation routes designed or mapped and without appropriate emergency lights. Exit routes are sometimes blocked by objects. Fire safety teams (including fighting, rescue or evacuation) have not been assigned or organized, and no fire safety trainings were properly conducted. As shown in the figure 20, foreign invested and joint venture factories perform better than locally owned ones in this regard.

Figure 21 - SMART fire safety, percentage of satisfactory items in factory inspections by factory size



Direct observations by the ILO research team confirmed some of these findings, showing that factories are investing time and resources in trainings and in detection systems. Management interviews indicated that fire safety is a main concern for garment factory owners and managers. However, issues remain, especially with alarm systems, extinguishers and evacuation routes. All six factories visited indicated having received trainings twice a year for their workers from the local fire department. The trainings were described to include basics such as how to use extinguishers and escape a fire and potential fire hazards. However, because factories experience a high and constant turnover, a large percentage of the factory's workers will not be trained or knowledgeable about fire safety issues. In one factory, observations found missing fire extinguishers in a few locations on the factory floor. In all other establishments the extinguishers were present and signalled. Evacuation and escape routes are an area of potential improvement for garment factories. The observations found instances where:

- Signage for emergency exit doors was either missing, not illuminated or not written in Burmese language (posted only in English).
- Missing or badly placed fire extinguishers.

- Stairs which were not marked, were dark or did not extend the full length of the doorway.
- Escape routes were blocked by various items (production materials, desks) or because of the architectural design of the building.
- Locked doors: In one factory, a large escape door was locked with a padlock.

5.6 Hazards

There are a variety of hazards that affect workers' safety and how well the factories are prepared for these situations. Subsections further clarify these hazards; Physical, Electrical, Machine, Chemical, Structural and Personal Safety.

Electrical safety

The brand's suppliers reported compliance with the two electrical safety requirements: appropriateness of the electrical wiring to the local regulation and whether it is maintained by qualified electricians. The 2014 Myanmar Electricity Law simply provides the definition of an authorized person, as "a person who is permitted to perform electricity-related work". The term "qualified electrician" therefore, is subjective.

While factories rely on external professionals for their electrical installations, the skills and capabilities of electricians in Myanmar would likely need to be investigated. The ILO research team has identified several occasions in which the electrical wiring had been done in a way that could create hazards. The VZF team is working with the Electrical Inspection Department of the Ministry of Industry to strengthen their training curriculum for inspectors and operators.

Among SMART's factories, foreign invested ones complied with 81 per cent of electrical safety issues, while locally owned factories reported compliance at 47 per cent. SMART's assessments identified the following issues as raising their electrical risks:

- Lack of appropriate coverage for electric panels and switches.
- Lack of warning signs.
- Lack of fireproof lighting in the warehouses.⁶⁰
- Raw and packaging materials left too close to lighting tubes (the vicinity is not clearly specified but left to the individual judgement of the person assessing the factory).

Observations from the ILO research team found instances in which cables were wired in a way that could result in potential fire ignitions through sparks as well as shocks. Examples of this type of electrical hazards include:

- Electric multiple plug sockets designed for fixed circuits (i.e. on a wall) hanging from suspended wires.
- Wires were not protected and were exposed.

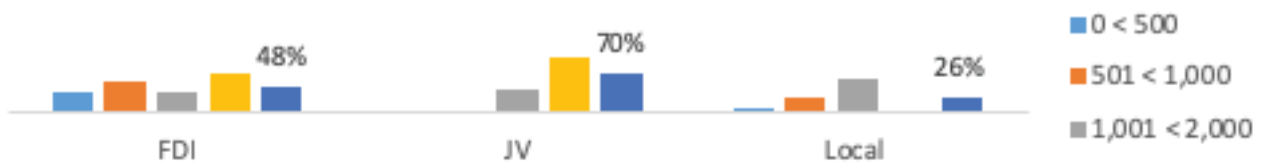
Machine safety

Nearly all (92 per cent) the brand's factories self-reported that machines with a pinching, puncturing or cutting risk have properly functioning safety guards, safety controls and/or emergency stops in place. Within the SMART's database foreign invested factories comply with an average of 48 per cent of machine safety issues, locally owned factories report compliance as low as 26 per cent. Within SMART's commentary, latent issues included:

- Lack of safety guards (needle guard, eye guards, etc.), maintenance and inspection and provision of Protective Personal Equipment (PPE).
- No trainings and certification for operators of risky machines (forklift, air compressor, boiler, generator).

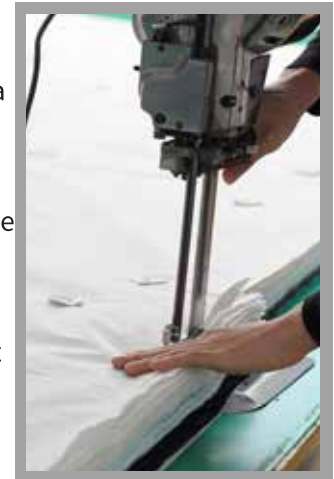
- No regular safety maintenance and inspections of machines conducted by third parties.
- No training or instructions on the correct handling of dangerous machines.⁶¹

Figure 22 - SMART machine safety, percentage of satisfactory items in factory inspections by factory size



The most common risks are that workers might puncture themselves with a moving needle, that a needle might shatter and hurt their eyes, or that workers might hurt their hands if it were caught by a button press. Specific examples of issues identified during the factory visits include:

- In all but one single case, the ILO research team witnessed workers using PPE for the most hazardous activities, such as cutting fabric. In one case, however, a worker was found cutting fabric without a protective, metal glove.⁶²
- While most machines, in most of the factories visited, were equipped with the appropriate guards, several machines were not, including some with moving parts.
- The ILO research team also identified positive examples in which custom-made guards were developed for certain machines that did not have them. However, even in these cases, these guards were missing from a few machines. This would seem to indicate a lack of oversight from supervisors and management.

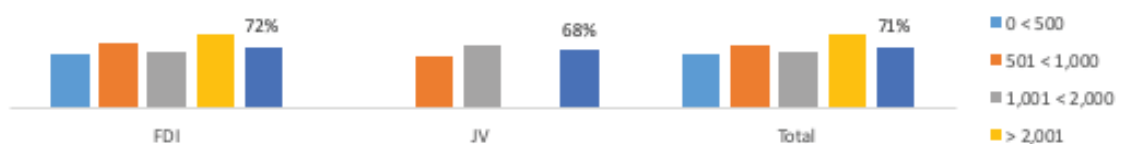


One largely recurring issue across all factories is that even when a guard is installed, workers avoid using it. Guards can make work slower or less efficient and workers, paid by the piece or unit, are therefore tempted to avoid using it to be more productive.

Chemical safety

The brand's factories reported an average overall 71 per cent score on chemical safety indicators, across all factory sizes and ownerships. As for other indicators, the largest factories (over 2,000 workers) performed better than smaller ones. Specific issues identified include that only 14 per cent of factories have a specific process to identify alternatives to hazardous chemicals, that 30 per cent of factories do not carry out monthly checks (of the chemicals used, processes applied, and maintaining the correct MSDS. In 19 per cent of factories there was no chemical hazards safety programme or job safety analysis related to chemicals. It is, however, important to highlight that the current use of chemicals within Myanmar's garment industry is limited. Most factories produce under a CMP production model, meaning that the use of washing and dyeing chemicals is limited on-site. However, as mentioned earlier, the MGMA is hoping the industry grows towards a FOB model, and a few foreign invested factories have already started to vertically integrate to include their own washing and dyeing within their facilities. In the medium term, this sector growth and move towards FOB might bring a larger use of chemicals, and with it, additional safety risks.

Figure 23 - Brand's suppliers' chemical safety scores, percentage of total score obtained by factory size



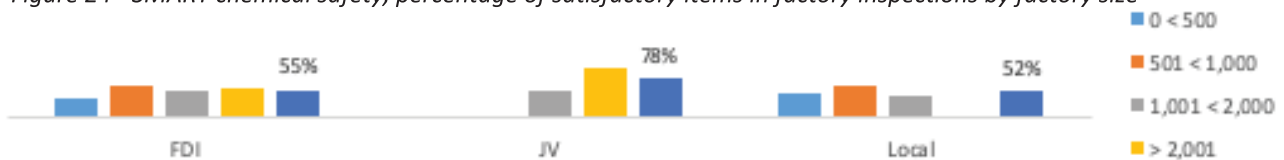
⁶¹Note: Loosely defined as machines with a higher potential risk to their users.

⁶²Picture provided by workers to the research team.

Foreign invested factories in the SMART dataset comply with an average of 55 per cent of chemical safety items, only slightly higher than the 52 per cent scored by locally owned ones. Again, it is important to stress that these factories tend to not make a large use of chemicals. However, SMART's assessment highlighted the following issues:

- No MSDS was used. Similarly, safety labels were not found on secondary containers for hazardous chemicals.
- Proper PPE was not provided and an occupational health check for chemical users was not done.
- Trainings on the use of chemicals or its management or storage were not conducted. This was especially true for the few footwear producing factories in the sample.

Figure 24 - SMART chemical safety, percentage of satisfactory items in factory inspections by factory size

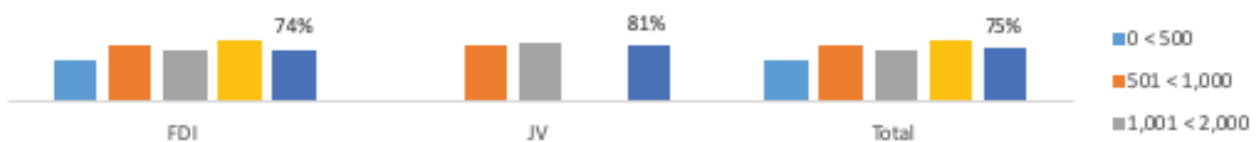


Direct observations in the factories confirmed what had been indicated by the brand's suppliers and by SMART's data. Only a few chemicals were used in the factories, which included stain remover sprays, glues and paints for leather products.

Structural safety

Overall, in structural safety, the brand's factories reported an average score of 75 per cent of the total possible compliance score. As in previous instances, larger factories tended to perform better than smaller ones, as shown in figure 24. It was also identified that 19 per cent of factories do not have their facilities audited by an independent third-party engineer, and that for 14 per cent of factories, no authentic construction certificate was initially made available. The brand has made it a requirement for all its suppliers to undergo a third-party engineering assessment.

Figure 25 - Brand's structural safety scores, percentage of of total score obtained by factory size



While indicators specific to structural safety were not available from SMART's assessments, the SMART review indicated that no building safety checks and inspections were conducted.

Working Environment

Temperature

From SMART's observations, the temperature within the factories does not appear to be regularly checked. SMART's assessments also identified that when the temperature is identified as being too hot for workers, no action seem to be taken to reduce it. The observations by the ILO research team differed somewhat from this finding. Temperatures in Myanmar factories can get quite high, especially during the pre-rainy season months (April to July) when outside temperatures go above 40°C. This is especially true in factories located inside warehouses with metal roofs. However, interviews with managers indicated that high temperatures were among their biggest concerns, often cited right after fire safety. Observations found that management, in nearly all the factories, had invested in ventilation systems to better air flow and lower inside temperature. In cases where the investment of a factory wide ventilation system had not been made, fans were present across the factory, some of which were equipped with water nebulizers.

Ergonomics and workstations

An issue witnessed by this research team across all visited factories and confirmed in workers' interviews was the set of hazards posed by working positions. Observations indicated several people working in positions that could cause musculoskeletal disorders. This term covers any injury, damage or disorder of the joints or other tissues in the upper/lower limbs or the back. Examples are varied, but include:

- In all visited factories, working stations were adjustable, but none had been adjusted for the height of the worker standing or sitting in it.
- Operators end up working in crouching positions that, in the long term, can be detrimental.
- In a few factories, workers carried out certain activities while sitting on the floor. This behaviour can also have long term consequences.
- Workers at various stations (cutting, quality control, etc.) were seen standing for long periods of time. Standing on the hard floor can be painful or uncomfortable. Several workers improvised solutions, such as standing on cardboard boxes or other materials.

Noise

While, in general, non-threatening levels of noise exist across most parts of the visited factories, there are exceptions. One key example is the noise level inside filling rooms equipped with automatic filling machines. On-site noise measurements conducted by the ILO research team found a range between 80 and 85 decibels. Long term exposure at these levels can cause hearing loss. The worker using the filler was not wearing any ear protection. Additional noise was created in the room by a group of workers bashing the filled bags with cardboard and wooden tubes. Moreover, several other workers were in the same filling room carrying out activities that could have been done elsewhere.

Work at heights

Work at heights in Myanmar's ready-made garment (RMG) factories can be found in warehouses receiving production inputs (mainly fabric rolls). These inputs are usually stored on metal shelves that can be as high as two or three meters from the ground. Out of the six factories visited, only one provided movable ladders and platforms with a rail guard to protect from falls. In all other factories, workers were required to climb up the shelves and manually load and unload the materials. This constitutes an immediate hazard for the workers, who run the risk of falling from a height significant enough to cause injuries.

Dust

From visual observations, dust did not appear to be a significant risk factor. However, a few specific instances did stand out as being potentially harmful for workers. One such example was in a factory that featured an isolated filling room for jackets. Inside the room several airborne particles were visible. While the actual hazard posed to workers was not quantifiable by the ILO research team, managers should nevertheless pay more attention to and address these instances.

Drinking water

From SMART's observations, the drinking water provided to workers does not seem to be regularly tested for the presence of heavy metals or bacteria. Additionally, many workers share just a few cups, increasing the potential for bacterial transmission. Direct observations in the factories found that drinking stations are readily available and access to drinking water is largely un-restricted. However, including during our interviews with workers, there were instances when workers were only allowed to go to the water stations during breaks or after completing a set of tasks (complete x number of products). In the first case, this can create lines and waiting times for workers, while the second example constitutes a restriction of workers' access to drinking water.

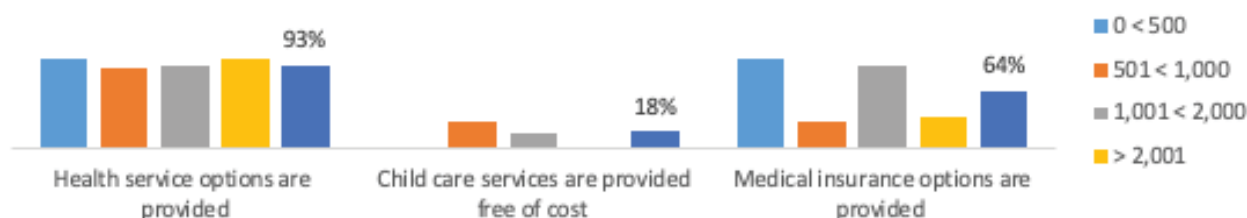
Medical and sanitary services and facilities

Only 64 per cent of factories in the brand's sample reported using medical tests of prospective workers to assess fitness to work. Direct conversations with factory managers and workers indicate that only a few of them rely on the SSB clinics in case of accidents.⁶³ Additionally, most factories visited do not employ a full-time doctor but are more likely to employ certified or trained nurses. There appears to also be confusion regarding who conducts these medical check-ups. It was additionally identified that only 11 per cent of factories offer free, voluntary and confidential medical check-ups to employees.

Data shows that almost the entirety of factories studied provide both social insurance options and additional health service options (95 per cent respectively).⁶⁴ Alternative, private medical insurance options are provided at a much lower extent, with 64 per cent of factories offering them to their workers.⁶⁵ These options, reported in the brand's database as private insurance options, mean that some factory managers prefer sending their workers to local, non-SSB clinics, if and when accidents occur. According to the Social Security Law, using non-SSB clinics can jeopardize workers' access to the employment injury insurance scheme.

Additionally, childcare services are provided free of cost in 14 per cent of the brand's factories. One of the most noticeable findings from figure 25 is that none of the largest factories appear to be offering free childcare services on their facilities. The provision of free childcare is not mandated by law but decided by the factory depending on workers' needs. It is not clear how many women would need such services. The data also shows that 27 per cent of factories in the sample currently provide a lactation room for new mothers. Provision of childcare differs from the provision of lactation rooms since dedicated staff needs to be available to take care of the children on-site while the mother is working.

Figure 26 - Brand's suppliers who reported providing medical services to workers, percentage of factories by factory size



Finally, SMART's commentary of their assessments highlighted insufficient first aid preparedness. Even if all factories in the SMART sample are above the 200 people workforce size that would require them by law to provide a functioning clinic staffed by a doctor, no doctor was present. First aid boxes were scarcely available and often contained insufficient materials. Additionally, no trained personnel were found able to administer first aid. Direct observations largely confirmed these secondary findings. Clinics were found in all six visited factories, but none had a resident, full time doctor in charge of it. In two factories, a doctor visited the facility twice a week, while in all other factories, the clinic was managed by a nurse. While the quality of the medical staff or the quality of the medicinal inventory within the clinics were not assessed as part of the research, visual observations found some of the medicines and equipment looked old and improperly maintained.

⁶³Note: A 2018 survey on social security access and awareness (commissioned by the ILO to inform SSB's reform process and communication strategy) found similar results on access to health services.

⁶⁴Note: 95% of factories in the brand's sample specifically report providing Social Insurance and Health Service Options, while the data for two factories (5%) is unavailable. This does not necessarily imply that they do not. As the data is self-reported, it might be a reporting error that needs to be verified.

⁶⁵Note: This is a surprising finding; a survey on social security access and awareness (commissioned by the ILO to inform SSB's reform process and communication strategy) found no single garment factory in the sample in Hlaing Tharyar, Pyi Gyi Tha Kone, and Bago offering private medical insurance. However, if understood as "expenses" on private medical services rather than private "insurance," the findings could align: most workers in the sample (79%) chose to go private clinics, though it is unclear if employers reimburse for these costs.

Breastfeeding rooms were only present in two out of the six visited factories. Further attention should be paid to this topic, as over 90 per cent of the garment workforce in Myanmar is female. While most of these female workers are young (18 to 21 years old predominantly), a case can be made for the need to ensure that workers are empowered to go back to work after childbirth.

Finally, first aid kits were available on the factory floor in five out of the six factories. In the remaining one, the management indicated that a first aid kit was available but housed in the clinic. In that case, the resident nurse is said to attend to anyone who might need first aid. It was noted that in one case the first aid kit was empty, and in two other factories, it appeared understocked.

6. Textile factories

On top of visiting six garment factories, the ILO research team also visited two textile factories in the Mandalay region. Since growth in the sector is expected, a rapid assessment of the main OSH conditions in Myanmar textile factories was performed. Instead of providing a comprehensive analysis of OSH in the sector, the rapid assessment identified areas for further research and possible overlap between textiles and the garment global supply chain.

The Myanmar textile sector can be divided into two separate sub-sectors: a household-based cottage industry and a larger scale, industrial one. Small scale, cottage manufacturing is dominated by individual households making textiles for local consumption. This activity has traditionally been done with wooden hand looms across all Myanmar states, but an interesting mechanization of this process has taken place. This research has highlighted a change across at least four townships: Amarapura, Wandun, Meiktla and Shwebo. Under this new process, machines are owned by an entrepreneur and placed in the home of the weavers, using a profit share agreement.

Larger scale manufacturing is prevalent in the Mandalay region. Production can also be identified in Mon state, Magwe Division, Kachin State, and Sagaing State. Factories in this sub-sector includes both private factories, as well as large State-Owned Enterprises (SOEs) and formerly SOEs. There is an estimated total of 21 private factories and 15 SOEs.⁶⁶

Local private factories, ranging between 40 and 400 workers,⁶⁷ produce solely for the domestic market with fabrics they mainly import from China. They experience a set of challenges that prevent them from being able to produce fabric for the export-oriented garment sector, including:

- Machinery improvements: most of these factories operate with outdated machinery, which makes producing at the same speed or quality levels required by the international market impossible.
- Access to finance: the type of investment (mainly in production machinery) necessary to upgrade these facilities is often prohibitive to local entrepreneurs.

The ILO research team identified hazardous and dangerous working conditions in one of these private, local factories. One key issue was the type of machinery utilized, assembled directly by the factory owners. These extremely outdated machines are composed of many mechanical moving parts but have little or no protective guards. It would be extremely costly to update the machinery and to invest in increasing their production quality and decreasing their risk profile.



Several unguarded holes on the factory floors could cause workers to easily trip and fall, resulting in an emergency. Additionally, the ILO research team observed that little attention to chemical storage safety (chemicals were stored in a non-secluded area), was made. In addition, the research team did not see PPE used or provided to workers who had access to hazardous chemicals.

Contractual arrangements were also cause for concern. Workers seem to not have labour contracts in many cottage industries or to be covered by labour protection such as the social security scheme.

It seems unlikely, or even more strongly, that no potential exists, for this type of textile factory to become part of the export-oriented garment value chain, due to its production quality, capacity and safety constraints. As the Myanmar garment sector grows, and the incentive for vertical integration into textile manufacturing becomes stronger, it is likely that foreign investors will increasingly look to privatize large, formerly state owned, textile factories and to produce textiles directly within Myanmar. As of 2019, two former SOEs have been privatized in the textile sector.

Further research is needed to conduct a thorough risk assessment of the textile sector in Myanmar. However preliminary findings confirm the need for such an assessment.

7. Business case analysis

The goal of this section is to build on the findings of the previous sections and to showcase nine OSH investments by presenting possible returns that can be obtained from either a business or risk reduction viewpoint.

Enterprise level data about the return of selected investments in OSH in Myanmar garment factories is limited. This analysis, therefore, relies predominantly on secondary research. An OSH CBA is highly relevant to the Myanmar garment sector for a variety of reasons:

- **Turnover:** workers' turnover rates are reported to be extremely high in the sector, with different factory managers reporting turnover rates ranging from 3 to 30 per cent per month. OSH investments around the world have been shown to positively contribute to turnover reduction.
- **Absenteeism:** has also been reported to have a strong, and destructive, effect on productivity in Myanmar. As shown in the later sections, certain OSH investments contribute positively to absenteeism reduction.
- **Productivity limitations:** specific OSH investments described below have the potential to positively improve productivity.
- **Legislation requirements:** specific investments described in section 7.2 of this report would bring factories closer to complying with the OSH Law requirements.

There are very few studies that address the return on investment in OSH in emerging economies, as a result, table 20 will focus predominantly on studies from the developed world.

- **Drivers:** while buyers' demands are a strong driver of OSH improvements, research has found that the strongest driver is legal compliance. Now that the OSH Law has been enacted, factories will have a much stronger incentive to improve their OSH conditions.
- **Return on Investment:** while returns will depend on the manufacturing activity, country of operations, and starting point of the factory, OSH investments have been found to have an economic return. These returns, depending on the investment, can manifest themselves in the form of direct savings (i.e. energy efficiency), reduced turnover and absenteeism, and increased levels of productivity.
- **OSH Management Systems:** the research shows that factories able to implement a functioning OSH Management system experience a variety of benefits, including:
 - o Accident reduction
 - o Improved worker's morale
 - o Reduced turnover and absenteeism
 - o Better ability to analyse safety data and to prevent hazards and injuries

7.1 OSH Investments identified by previous research

OSH Management Systems

The OSH Risk Assessment found a lack of structured attention to OSH in Myanmar garment factories. While factories have clearly invested in specific items, like fire safety equipment and ventilation systems, there does not appear to be a systematic approach to OSH. Most factories tend to delegate OSH responsibilities to HR managers, many of whom have a reactionary approach to OSH. While effort might be made to remediate concerns or items indicated by their buyers or the auditors, Myanmar factories tend not to

have a formalized OSH strategy or investment plan. Many of the issues identified by this research could be resolved with greater attention to health and safety by managers and through the role of supervisors strengthening OSH in the workplace. This is of particular importance given the requirements mandated by the OSH Law in terms of OSH Personnel supporting specific components of OSH Management Systems at the workplace.

Data collection

Accidents, of various degrees of severity, in garment factories in Myanmar are largely underreported. A more systematic approach to data collection would provide factories with an analytical tool to consider key factory hazards and to prioritize investments in OSH in areas needing improvement.

Working environment

Several establishments made investments in ventilation systems. In addition to better air quality, a better ventilated and cooler environment is expected to correlate with higher productivity.

Ergonomics was an issue identified in all factories. Workers were found to work sitting on the ground, or standing for hours on hard floors, and mainly sitting on non-adjustable chairs and benches that offered no back support. All these situations could cause musculoskeletal disorders.

Noise was only identified as an issue in a few instances by this research. Detailed risk assessments of their factory floors, to identify hazards, even if only in selected parts of the facilities, did not appear to happen regularly or systematically.

Work at Heights was also identified as a widespread issue. In factories' receiving warehouses, workers climbing shelves higher than two meters was seen. The risk of falling from these shelves is considerable and should be mitigated by providing movable ladders and platforms with a rail guard to protect from falls.

Chemical management

While the use of chemicals is limited in the Myanmar garment sector, it is expected to grow in the coming years. This research finds a lack of knowledge and awareness in the industry about the appropriate way to handle and manage chemicals. This includes lack of proper recording, MSDS for the various chemicals and either unnecessary or ineffective use of PPEs.

Medical services and sanitary facilities

This research suggests factories verify whether first aid boxes available on the factory floors contain the necessary medicines and tools and are accessible to workers. Further attention could be paid to clinics within the factories, to verify whether necessary services are offered to workers, and to assess whether the medicines and equipment used are up to date and appropriate.

Boilers

In garment factories, the steam generated from a boiler is often used to iron new garments. In numerous factories globally, but especially in emerging markets, boilers are often old and inefficient. Myanmar is no exception, with SMART Myanmar reporting that boilers are often dirty and inefficient, and that coal, wood and diesel are the typical fuel sources.⁶⁸

Fire and electrical safety

There is a need to improve and to focus attention on specific fire and electrical safety concerns. While a large amount of attention has been paid by factories on the topic of fire safety, issues remain, related to access to escape routes, signalling, and availability of fire extinguishers. Another, potentially related issue in Myanmar is electrical safety. Many factories visited by the ILO research team were found to have faulty wiring that has the potential to lead to sparks and ultimately to fires. Investing in more suitable wiring and cabling would not cost significant amounts of money but would increase the factories' safety profiles.

7.2 The business case for OSH

Based on findings from previous research, a broad literature review was conducted to identify nine OSH investments relevant to the Myanmar garment sector. The aim was to estimate their potential impact on both risk reduction and business dynamics. From the available literature suggests most OSH investments positively impact on absenteeism, turnover and productivity. Moreover, specific investments in systems upgrades and/or specific equipment and materials have a direct impact on the risk profiles of the manufacturing establishments. Table 20 highlights how the nine investments can potentially impact on risk reduction and business dynamics.

Table 21 - Identified OSH business cases

Intervention	Risk reduction			Business dynamics				
	Accident reduction	Fire and explosions	Chemical safety	Absenteeism	Turnover	Productivity	Energy efficiency	Cost savings
Boiler upgrades								
Ventilation systems								
Childcare facilities								
Healthcare facilities								
Load reducing equipment								
OSH Trainings								
OSH Management Systems								
Ergonomics								
Data collection								

7.3 Potentially relevant business cases for Myanmar

This section reviews the identified cases and explores how each could strengthen OSH within Myanmar's garment sector. While cost savings and productivity improvements are key motivators for investing in OSH, avoiding accidents and any related human loss are even more important. Hence, as necessary, we have also considered the consequences of neglecting OSH, to include reputational risks, and failing to invest in opportunities to strengthen OSH-related outcomes.

Business case 1: Boiler upgrades

Intervention	Boiler upgrades
Intervention description	A boiler is an enclosed vessel in which water is heated and circulated, either as hot water, steam, or superheated steam for the purpose of heating, powering, and/or producing electricity. It is typically the most important part of a central heating system. In garment factories, the steam generated from a boiler is often used to iron new garments. In numerous factories globally, but especially in emerging markets boilers are often old and inefficient. Myanmar is no exception, with SMART Myanmar reporting that boilers are often dirty, inefficient, using dirty coal, wood and diesel as their typical fuel sources. ⁶⁹ In turn, they contribute to deforestation and, combined with poor ventilation, increase exposure of workers to harmful emissions. There are also numerous cases of poorly maintained and poor quality boilers exploding, resulting in fatalities. ⁷⁰ Upgrades to boilers can be one of the most sensible, but costly, investments a factory can make: it can reduce exposure to harmful contaminants, improve health in a factory and lead to significant savings in electricity costs.
Intervention details	Employers can: <ul style="list-style-type: none"> o Replace old boilers or install and maintain better quality boilers. o Place boiler in sensible location away from workers. o Hire boiler experts to recommend better quality boilers that suit the needs of an employer's given business. o Hire boiler experts to regularly maintain and check current boilers. o Assess energy inefficiency of current boiler and determine if it is contributing to harmful air contaminants. o Examine fuel profile of boiler to see if better options are available, for example, switching from coal to wood or biofuel. o Consider new technologies such as solar thermal assist, fabric scrap boilers or steam condensate recovery systems.⁷¹
Intervention benefits ⁷²	Boiler upgrades can lead to: <ul style="list-style-type: none"> o Reduced likelihood of serious accidents such as boiler explosions. o Improved ability to maintain temperature and humidity at comfortable and productive levels. o Reduced greenhouse gas emissions. o The removal or dilution of airborne contaminants and worker exposure to them. o Improved energy efficiency of the building in which it is installed. o Significant cost savings on electricity and fuel.

Evidence from literature

Country	Sector	Organization	Intervention description	Intervention results (qualitative)	Intervention results (quantitative)	
United States	Healthcare	United States Veterans Administration (VA) Hospitals ⁷³	Upgraded boiler systems in 1,200 VA hospitals to meet new air quality regulations.	<ul style="list-style-type: none"> • Assessed boiler suitability across 1,200 VA hospitals using age of the system as a key indicator. • Upgraded or replaced boiler systems across 1,200 VA hospitals to meet new air quality standards in several US states. • Upgraded or replaced boilers were located more sensibly to reduce maintenance cost and hours. 	<ul style="list-style-type: none"> • Significant reduction in electricity costs • Cost savings by using "boiler turndown ratio" to adjust output according to demand. • Cost savings by allowing boilers to offer dual source capability with both gas and oil firing. • Improved environmental impact and safety profile of the entire VA. • Reduction in maintenance hours and costs. • Reduction in harmful Nitric Oxide (NOx) emissions that can contribute to acid rain and ground level ozone. 	<p>Example from one hospital: The V.A. Erie Medical Center in Erie, Pennsylvania:</p> <ul style="list-style-type: none"> • 60% reduction in electricity demand from boiler plants. • 2-5% reduction in fuel demands. • Annual cost saving of US\$ 62,500 in fuel costs.
Cambodia	Garments	Korng Sun Factory ⁷⁴	• No intervention made to boiler systems; boiler exploded		• 19 Injuries in 2017	
Bangladesh	Garments	Multifabs ⁷⁵	• Boiler inspected but not appropriate, boiler exploded.		• 10 fatalities in 2017	
Bangladesh	Garments	Eurotex ⁷⁶	• No intervention made to boiler systems; boiler exploded		• 2 fatalities, 64 injured in 2011	

⁶⁹Ibid.

⁷⁰Clean Clothes Campaign. 2012. Hazardous workplaces: Making the Bangladesh Garment industry safe.

⁷¹SMART Myanmar. 2019a. Environmental impacts in the Myanmar Garment Industry.

⁷²Canadian Centre for Occupational Health and Safety. 2019. OSH Answers Fact Sheets, Industrial Ventilation.

⁷³Power Engineering. 2018. VA Hospitals Invest in Boiler System Upgrades for Money and Energy Savings.

⁷⁴Phnom Penh Post. 2017. Boiler explosion injures 19.

⁷⁵Reuters. 2017. Blast in Bangladesh garment factory kills 10, investigation underway.

⁷⁶Clean Clothes Campaign. 2012. Hazardous workplaces: Making the Bangladesh Garment industry safe.

Business case 2: Ventilation systems

Intervention	Ventilation systems
Intervention description	Ventilation is used to control exposure to airborne contaminants and control temperatures. It is commonly used to remove contaminants such as fumes, dusts, and vapours, to provide a healthy and safe working environment. OSH investments into effective ventilation systems are particularly effective in the manufacturing sector - and particularly in factories with high numbers of workers. As Myanmar seeks to move up manufacturing value chains, for example in garments, the use of dyes and other chemicals (and exposure of workers to them) are likely to increase. Effective ventilation systems can reduce exposure to harmful chemicals and airborne particles, manage factory temperatures, and overall can improve the health and productivity of the workforce.
Intervention details	Employers can: <ul style="list-style-type: none"> o Assess risk profile of chemicals / particles in use. o Invest in ventilation systems that facilitate air flow, such as an evaporative cooling system. o Ensure hot, stale air rises to the roof where it can be removed. o Invest in fans and water nebulisers. o Make sure air flow from fans is not blocked. o Consult workers to understand issues and find efficient ventilation systems. o Regularly inspect and maintain fans, ventilation systems and internal thermostats.
Intervention benefits ⁷⁷	<ul style="list-style-type: none"> o Provides a continuous supply of fresh outside air. o Maintain temperature and humidity at comfortable and productive levels. o Reduces potential fire or explosion hazards. o Removes or dilute airborne contaminants, and worker exposure to them. o Improved worker morale. o Reduced absenteeism and turnover. o Prevents heat exhaustion / fainting.

Evidence from literature

Country	Sector	Organization	Intervention description	Intervention results (qualitative)	Intervention results (quantitative)
Lithuania	Manufacturing	Statga ⁷⁸ A metal manufacturer employing 80 people. Workers faced risks of exposure and injury from dust, fumes and metal particles.	<ul style="list-style-type: none"> • Built HR system to receive complaints on inadequacy of ventilation system. • In collaboration with workers, individual air cleaning and supply systems with face shields were tested and installed. • New personal protective equipment was purchased. 	<ul style="list-style-type: none"> • The new equipment saved money on spare parts and accessories - it was safer and lasted longer. • Workers felt safer and more comfortable. • Worker morale improved. • Statga was awarded a Lithuanian "National Good Practice" award. 	<ul style="list-style-type: none"> • New equipment cost EUR 49,483, creating an average annual saving of EUR 37,769 against the cost of the old equipment of EUR 87,252. • Investment payback period was 1 year.
Germany	Manufacturing	Bäckerei Hans Gebert ⁷⁹ A bakery employing ten people was reporting cases of baker's asthma, leading to significant time off work.	<ul style="list-style-type: none"> • Manager attended course on removal of airborne particles (dust flour). • Installed a new exhaust system and flour moistening machine. • Purchased dust reduced flour. • Sent one staff member a year to a three-day course on removal of airborne particles (dust flour). 	<ul style="list-style-type: none"> • Reduction in exposure to airborne particles. • Absenteeism was reduced. • Reduced turnover due to ability to retain highly skilled and experienced staff members. 	<ul style="list-style-type: none"> • Savings of over EUR 16,435 in reduced staff days off work. • Intervention cost EUR 49,820 • Payback period was 3.4 years

⁷⁷ Canadian Centre for Occupational Health and Safety. 2019. OSH Answers Fact Sheets, Industrial Ventilation.

⁷⁸ Elsler, D., 2018. Benefits of OSH for small businesses.

⁷⁹ EU-OSHA, 2014. The business case for safety and health at work: cost-benefit analyses.

Business case 3: Childcare facilities

Intervention	Childcare facilities
Intervention description	In developing countries such as Myanmar, women who want to enter the workforce often lack robust, affordable childcare infrastructure, which can present a major barrier to their ability to keep paid employment. Garment factory employees are mostly lower-skilled women, who are not likely to return to their job after giving birth due to the lack of affordable childcare facilities.
Intervention details	<ul style="list-style-type: none"> Employers can offer on-site childcare service support at affordable price or for free; Employers can offer free transportation to and from the factories for mothers and children; At a policy level, implement paid maternity and paternity leave as well as flexible work arrangements for parents; Employers can provide on-site breastfeeding accommodations.
Intervention benefits ⁷⁷	<ul style="list-style-type: none"> Recruitment/Retention: childcare supports enhance a company's ability to attract and recruit staff.⁸⁰ Reduced absenteeism⁸¹ and turnover. A study estimated that as much as 21% of unscheduled absences are due to family issues.⁸² Productivity: childcare supports can substantially impact productivity by improving motivation, commitment, and focus at work and improving production quality.⁸³ Respect legislation (compliance, risk management, health and safety). Improve corporate values and reputation of the company.

Evidence from literature

Country	Sector	Organization	Intervention description	Intervention results (qualitative)	Intervention results (quantitative)
South Africa	Agribusiness	Afrifresh ⁸⁴ Offers fresh fruit produce to chain stores.	<ul style="list-style-type: none"> Nursery provided at workplace. Transport for children to/from school. Flexible work arrangements for professional workers. 	<ul style="list-style-type: none"> Enhanced status as an "employer of choice". Overtime and productivity gains. Increased safety for workers' children living on-site. Ongoing market access and enhanced profile with buyers. 	All six women that went on maternity leave in the last three years returned. While no baseline data for Afrifresh is available, this represents a 100% maternal return to the workplace, in a country where maternal turnover is a large issue.
India	Information technology	Mindtree ⁸⁵ A multinational information technology and outsourcing company.	<ul style="list-style-type: none"> Nursery provided at workplace. Free childcare for night shift workers. Paid maternity and paternity leave. Designated room for lactation. Work-from-home options. 	<ul style="list-style-type: none"> Award-winning employer in a tight labour market. High retention of new mothers, and of parents more generally. Key building block for Mindtree's diversity and inclusion goals. 	Maternity Return Rates at Mindtree (2013–2014 and 2015–2016): <ul style="list-style-type: none"> 873 women went on maternity leave, out of whom, 758 (87%) returned from maternity leave and were still employed a year later.
Jordan	Garment manufacturing	MAS Kreedaa Al Safi-Madaba ⁸⁶ Manufacturing arm in Jordan of MAS Holdings, a design-to-delivery conglomerate.	<ul style="list-style-type: none"> On-site childcare centre. Free transportation to and from the factory for mothers and children. Doctor and nurses on-site to serve employees and children. On-site breastfeeding accommodations 	<ul style="list-style-type: none"> Recruitment and retention of female employees in a region with low maternal employment. The company's reputation for supporting working mothers is attracting a new pool of applicants. The childcare centre has resulted in reduced volatility in attendance and turnover among beneficiaries. Productivity has increased as well as overall well-being. Access to buyers requiring compliance with national labour laws. 	Maternity leave benefits at MAS Kreedaa Al Safi Madaba: <ul style="list-style-type: none"> 25 women took maternity leave in the last three years. 19 women (76%) returned from maternity leave and were still employed a year later. 16 women (64%) returned from maternity leave in the last three years and used or are using the childcare centre.

⁸⁰EY. 2015. In a survey of nearly 10,000 working-age adults across Brazil, China, Germany, Japan, Mexico, the United Kingdom, and the United States, over 60% of millennials and around 50% of respondents older than 45 said that on-site childcare was important in choosing a job.

⁸¹IFC. 2013. Taking steps to reduce employee absenteeism, such as investing in childcare, can result in substantial cost savings for firms.

⁸²Navarro and Bass (2006) estimate that as much as 21% of unscheduled absences are due to family issues.

⁸³MORI Social Research Institute. 2002. In a survey of large UK employers, over 40% noted that childcare problems were impacting them because of the tiredness, irritability, and stress they caused to employees.

⁸⁴IFC. 2017. Tackling Childcare: The Business Case for Employer-Supported Childcare, p. 87.

⁸⁵Ibid. p. 177.

⁸⁶Ibid. p. 163.

Business case 4: Healthcare facilities

Intervention	Healthcare facilities
Intervention description	Employers are increasingly recognizing the value of employee health and well-being to their organizations and their people. The trend toward further globalization of wellness programmes continues, as does a greater emphasis on improving worker productivity through health promotion. In developing countries, and even more in rural areas, healthcare services provided by private companies to their workers is a way to compensate for the shortage or lack of public services. ⁸⁷
Intervention details	<ul style="list-style-type: none"> o Provide free basic medical services (check-up, vaccinations, first aid, etc.); o Promote health culture in the company; o Focus also on mental health and stress issues (cited as top health risk at work);⁸⁸ o Develop partnerships with external health actors; o Provide nutritive and healthy food; o Encourage and promote physical activity and exercise; o Implement an OSH management system with dedicated programmes and sufficient funding.
Intervention benefits	<ul style="list-style-type: none"> o Enhance productivity; o Improve capacity to recruit and retain workforce; o Reduce absenteeism and turnover rate; o Increase worker's health level and well-being; o Enhancing healthcare initiative at work can provide high rate of return from US\$ 1:1 to US\$ 20:1;⁸⁹ o Promote company's corporate image.

Evidence from literature

Country	Sector	Organization	Intervention description	Intervention results (qualitative)	Intervention results (quantitative)
Saudi Arabia	Oil/ Energy	<p>Saudi Aramco⁹⁰</p> <p>Owned by the Saudi Arabian Government, Saudi Aramco is a fully integrated global petroleum enterprise.</p>	<ul style="list-style-type: none"> • Launched the “Saudi Aramco Wellness Programme” (“SAWP”) in 2005. • The programme is based on a population health management model, consisting of online and on-site health improvement and injury prevention resources, physical activity classes, lifestyle wellness coaching courses, health screening clinics, healthy lifestyle modification classes and injury prevention programmes. 	<ul style="list-style-type: none"> • Reduced turnover rate. • Better disease prevention. • Reduction of health risks. • Increase of physical activity • Increase in employee participation and productivity. 	<ul style="list-style-type: none"> • A study, using data of 1,157 participants from 2005 to 2011, showed that the effect the workplace wellness programme has saved US\$ 3.5 million to the company. • Employees have improved other work and health factors, such as: <ul style="list-style-type: none"> - job satisfaction (60%), - stress management (61%), - improved work engagement (60%), - enhanced productivity (70%).
Singapore	Pharmaceutical	<p>Novartis⁹¹</p> <p>Novartis is a global healthcare company that provides solutions to address the evolving needs of patients worldwide.</p>	<ul style="list-style-type: none"> • Launched a “Be Healthy” campaign that reached 95% of the 120,000 company associates worldwide. • It is a health promotion initiative to support healthy lifestyles, share knowledge and help employees to reduce injury and disease. • Provides free medical check-up and smoking cessation support • Offers a 50% gym subsidy as well as a football team at each location. 	<ul style="list-style-type: none"> • Reduced absence and turnover rates. • Improved well-being. • Corporate recognition (awards from the Singapore Health Promotion Board for promoting workplace health). 	<ul style="list-style-type: none"> • In two out of the three Be Healthy sites that launched in 2011: • Absences rate have fallen between 20-40% (lower than average in Singapore). • There has been a 5% decrease in voluntary turnover.

⁸⁷World Health Organization (WHO). 2008. Primary health care.

⁸⁸Bucks Consultant. 2016. Working Well: A Global Survey of Health Promotion and Workplace Wellness Strategies.

⁸⁹World Economic Forum. 2013. The Workplace Wellness Alliance Making the Right Investment: Employee Health and the Power of Metrics, citing Alliance for Wellness. ROI, Inc. 2008.

⁹⁰World Economic Forum. 2013. The Workplace Wellness Alliance Making the Right Investment: Employee Health and the Power of Metrics, p.31.

⁹¹Ibid. p. 32.

Business case 5: Data collection

Intervention	Data collection
Intervention description	It is necessary for companies to establish effective OSH data collection systems. These systems result in the collection of reliable documentation of occupational accidents and diseases that may be used to detect new and emerging hazards and risks, identify hazardous sectors, occupations, business models and practices, develop OSH Management Systems and set priorities and measure progress. ⁹²
Intervention details	<ul style="list-style-type: none"> o Data collected should be reliable and quantitative where possible; o Basic data can include occupational risks, workload and exposure, organizational and technical measure for prevention and their costs, and outcomes (i.e. well-being and health or adverse effects, such as accidents and diseases);⁹³ o To measure OSH performance, data collected require precise indicators such as: <ul style="list-style-type: none"> • Indicators on occupational risk factors and staff health (exposure to chemical elements, accident rates, health and well-being work-related illnesses), • System indicators (human and financial resources for OSH, expertise of OSH trainers), • Procedure indicators (communication, risk assessment, introduction of standards). o Employees can provide information with respect to their individual situation as well as that of their co-workers.⁹⁴
Intervention benefits	<ul style="list-style-type: none"> o Lower rates of absence; o Fewer accidents and diseases; o Higher productivity due to increased production time; o Help determine the best OHS management system for the company; o Raise employee and management awareness on OHS issues.

Evidence from literature

Country	Sector	Organization	Intervention description	Intervention results (qualitative)	Intervention results (quantitative)
United States/ Canada	Services for the pharmaceutical industries	Jubilant ⁹⁵ Jubilant is specialized manufacturing services for the pharmaceutical and biopharmaceutical industries.	<ul style="list-style-type: none"> • Transparent approach taken in metrics collection and monitoring of claims data and costs. • Records participation rates in different activities and initiatives and screenings take place every six months for regular follow-up. • Some of the biometrics measured include cholesterol, blood pressure, BMI, blood glucose and percentage of body fat. 	<ul style="list-style-type: none"> • Improved biometric and economic indicators. • The measurement processes raised awareness on OHS issues. 	<ul style="list-style-type: none"> • Since 2009, an improvement in biometric results over time, with an average improvement in cholesterol results by 5% and reduced blood pressure by an average of 7%.
Ghana	Construction	Abasa General Enterprise Limited ⁹⁶ Engineering construction company	<ul style="list-style-type: none"> • Using simple, random sampling technique, 60 questionnaires were distributed to investigate employees' awareness and attitudes to occupational health issues. • All questionnaires were retrieved representing a 100% response rate. • The data was analysed using descriptive statistics and scale ranking. 	<ul style="list-style-type: none"> • The company knows in which area to focus its effort to provide OSH. • First-aid equipment, safe drinking water, sanitary facilities, provision PPEs and training of workers on safety procedures measures are needed. 	<ul style="list-style-type: none"> • 70.4% employees stated that OSH issues were of much concern to them. Workers indicated appreciation for factories investing in OSH improvements.

⁹²ILO. 2017a. Data Sources for Optimizing the Collection and Use of OSH data.

⁹³OSH Performance Indicators – and their application in the monitoring and evaluation of OSH-infrastructure, OSH-policies and OSH legislation.

⁹⁴ILO. 2017a. Data Sources for Optimizing the Collection and Use of OSH data.

⁹⁵World Economic Forum. 2013. The Workplace Wellness Alliance Making the Right Investment: Employee Health and the Power of Metrics.

⁹⁶Benyakowa A-Y. 2012. Assessing the Impact of Occupational Health and Safety Needs on the lives of Construction Workers.

Business case 6: Load reducing equipment

Intervention	Load reducing equipment
Intervention description	Manual materials handling (MMH) means moving or handling things by lifting, lowering, pushing, pulling, carrying, holding, or restraining. MMH is also one of the most common causes of occupational fatigue, low back pain and lower back injuries. ⁹⁷ In countries such as Myanmar, in which mechanisation is still relatively underdeveloped, manufacturing workers can be particularly at risk. Purchasing and utilising load reducing equipment can lower workers' exposure to MMH activities and in turn reduce cases of these issues occurring - often leading to simultaneous boosts in productivity.
Intervention details	Employers can: <ul style="list-style-type: none"> o Conduct simple risk assessments in response to workplace injuries. o Provide equipment that can reduce the physical load on workers. o Identify high-risk jobs or processes that involve high task repetition, forceful exertions, by lifting, lowering, pushing, pulling, carrying, holding, or restraining. o Provide training on proper body mechanics for high risk roles.
Intervention benefits	Load reducing equipment can lead to: <ul style="list-style-type: none"> o Reduced occupational fatigue, low back pain and lower back injuries. o Reduced turnover, absenteeism, lost or restricted workdays. o Reduced incidence of costly musculoskeletal and Cumulative Trauma Disorder (CTD) injuries. o Improved employee engagement as efforts to ensure their health and safety are noticed. o Improves safety culture of a workspace, leading to cross-functional benefits and reduced accidents. o Improved productivity through more efficient processes.

Evidence from literature

Country	Sector	Organization	Intervention description	Intervention results (qualitative)	Intervention results (quantitative)
Austria	Construction	Artbau Zagler GMBH ⁹⁸ Approximately 90 house builders were complaining of severe back pain and other musculoskeletal injuries.	<ul style="list-style-type: none"> • Purchased goods hoist lift. • Paid for continuous training on use of the materials lift. • Alongside new equipment, also paid for continuous training on supporting an OSH culture. 	<ul style="list-style-type: none"> • Workers were less exposed to the adverse effects of manual materials handling (MMH). • Workers were less exposed to noise and dust in staircases. • Workers were able to work more efficiently with the new equipment. • Construction times were shortened. • Sickness rates fell continuously. 	<ul style="list-style-type: none"> • Productivity raised by 30%. • Reduction in sick leave from 12.73 days to 9.97 days per employee per annum. • Annual saving of EUR 24,288 from reduced sick leave. • Payback period of investment was 1.31 years.
Greece	Manufacturing (Food)	Viotros ⁹⁹ Viotros employs 110 workers in its cheese processing factory - workers were complaining of back pain.	<ul style="list-style-type: none"> • Purchased nine electrical lifting machines for pallet handling. • Purchased a film-stretching machine in the packaging sector to reduce repetitive strain and movements. • Invested in training for staff on how use all new equipment safely and effectively. 	<ul style="list-style-type: none"> • Workers were less exposed to the adverse effects of manual materials handling (MMH). • Workers were able to work more efficiently with the new equipment, leading to improvements in productivity and reliability. • New equipment reduced food processing times. 	<ul style="list-style-type: none"> • Reduction in cases of back pain. • Productivity raised by 30%. • Annual saving of EUR 17,852 from reduced food processing times. • Payback period of investment was 2 years.
Netherlands	Construction	Nota Straatmakers ¹⁰⁰ Employs 150 workers in paving activities - workers were complaining of back pain.	<ul style="list-style-type: none"> • Automatization in paving through provision of load bearing equipment; paving machines, automatic shovels. • Invested in training for staff on how use all new equipment safely and effectively. 	<ul style="list-style-type: none"> • Nota's jobs were done mechanically for road owners willing to pay for it. • Workers were less exposed to the adverse effects of manual materials handling (MMH). • Reduction in accident risks and physical strain • Improvements in company productivity - new equipment meant work could be done faster. 	<ul style="list-style-type: none"> • Absenteeism due to occupational injuries is almost zero. • New machines allowed EUR 162,500 of extra income per year via new "premium" business unit. • Payback period of investment was 3.2 years.

⁹⁷Canadian Centre for Occupational Health and Safety. 2019. Lifting, pushing, pulling.

⁹⁸EU-OSHA. 2014. The business case for safety and health at work: cost-benefit analyses.

⁹⁹Ibid.

¹⁰⁰Ibid.

Business case 7: Training

Intervention	Training
Intervention description	<p>Work-related accidents are very costly and can have many serious direct and indirect effects and outcomes on both the lives of workers, their families and on the financial status of the enterprises.¹⁰¹</p> <p>Training is a fundamental requirement for any company to achieve OSH goals and targets and reduce accidents. Training includes:</p> <ul style="list-style-type: none"> • Generic OSH Training - OSH skills and knowledge which is commonly required, e.g. induction training, risk management training, evacuation; • Risk Specific OSH Training – OSH training required for those persons conducting OSH verification activities, e.g. OHS committee training, first aid training.¹⁰²
Intervention details	<ul style="list-style-type: none"> o Increase OSH training and awareness; o Discuss with employees and identify the risk areas that require the most attention; o Provide a safety and health training centre or a dedicated room for training sessions;¹⁰³ o Establish evaluation and follow-up of training; o Organize distinct training sessions for workers, technicians, supervisors and managers.
Intervention benefits	<ul style="list-style-type: none"> o Higher average skill level of the workforce; o Reduced absenteeism and turnover rate since employees feel more valued and implicated; o Decrease rate of accident frequency and severity; o Respect the Garment Industry Code of Conduct that regular trainings on OSH matters shall be provided at no cost to all workers.¹⁰⁴

Evidence from literature

Country	Sector	Organization	Intervention description	Intervention results (qualitative)	Intervention results (quantitative)
Turkey	Mechanical/ Agricultural	<p>Türk Tractor & Agricultural Machinery Corporation¹⁰⁵</p> <p>Tractor and engine manufacturer based in Ankara.</p>	<p>Improved workers' awareness on health and safety issues and gave practical information in the field rather than theoretical knowledge.</p> <p>Topics covered in trainings are as follows:</p> <ul style="list-style-type: none"> • awareness of occupational safety, • importance of using personal protective equipment, • emergency evacuation plans, • warning signs. 	<ul style="list-style-type: none"> • Increase in labour productivity. • Reduction in accident rate and severity of accidents. 	<ul style="list-style-type: none"> • Accident frequency rate decreased by 14.5 %. • Workplace accident severity rate decreased by 16 % in 2012 compared to the preceding year.

¹⁰¹ILO. 2013. Introduction to Health and Safety at Work: A Vision for Sustainable Prevention.

¹⁰²ASEAN Secretariat. 2013. ASEAN Guidelines for Occupational Safety and Health.

¹⁰³JICA. 2017. Training on Improvement of Policy on occupational safety and health.

¹⁰⁴MGMA. 2015. Code of Conduct for the member companies of the Myanmar Garment Manufacturers Association.

¹⁰⁵Hesapro. 2013. The Link between Productivity and Health and Safety at Work, p. 19.

Business case 8: OSH Management Systems

Intervention	Investing in OSH Management Systems
Intervention description	An OSH Management System (MS) is a means of effectively managing hazards and risks at work. Key elements for its successful application include management's commitment and the active participation of workers in its joint implementation. The system should contain the main elements of policy, organizing, planning and implementation, evaluation and action for improvement.
Intervention details	<ul style="list-style-type: none"> o An OSH MS should include all components of OSH that are relevant to the members of the organization and to the business process, including: <ul style="list-style-type: none"> • Designing OSH Policies, • Hiring an OSH Manager, appoint workplace health committees. • Designing a clear OSH Management System, with detailed responsibilities and functions. • Designing clear communication channels on OSH topics, including between workers and supervisors. o OSH MS objectives should be defined by the organization and may include ethical, economic, legal and organizational goals; o Its main function should be to increase the effectiveness of OSH management, to guarantee compliance with existing legislation and to improve OSH performance;¹⁰⁸ o The functioning of an OSH MS should be evaluated on a regular basis (through OSH audits).¹⁰⁹
Intervention benefits	<ul style="list-style-type: none"> o Improve OSH performance; o Assure compliance with legislative requirements; o Reduce compensation premiums; o Show that the organization cares for its employees and is a good employer; o Reduce legal liabilities.

Evidence from literature

Country	Sector	Organization	Intervention description	Intervention results (qualitative)	Intervention results (quantitative)
Australia	Services	Stellar Asia Pacific ¹¹⁰ A call centre outsourcing company in Australia employing more than 3,200 staff.	<ul style="list-style-type: none"> • Injured workers are given the option to be taken to the clinic as soon as they report an injury. • Practitioners have a plan to start rehabilitation strategies straight away. • Recommendations for progress are emailed to Stellar on the day of the consultation. • Workers who are unable to recover at work are contacted every two days to keep them informed about what is happening at the workplace. 	<ul style="list-style-type: none"> • Injured workers who are absent from work feel more 'connected' to the workplace. • Workers perceive that Stellar cares about its employees while they are at home recovering. • Team leaders say they feel more empowered and participate more actively in the rehabilitation process. • Other Queensland-based Stellar call centres are now referring to the same provider, creating a streamlined approach to injury management that focuses on early intervention. 	<ul style="list-style-type: none"> • Stellar's premium was reduced by 61% in 2012-2013, as compared to 2011-2012. • This reduction was due to factors, including a decline in common law claims costs and the implementation of injury prevention and management strategies that have reduced claims costs.
Poland	Various sectors	20 Polish enterprises (not specified) ¹¹¹	<ul style="list-style-type: none"> • Developed a method to assess the economic effect of an implemented OSH MS, which was then tested in selected enterprises. • Questionnaires were used to assess the cost and benefits generated as a result of implementing and maintaining an OSH MS. 	<ul style="list-style-type: none"> • Representatives of those enterprises indicated that the employment structure better reflected the way the enterprises were organised • In some enterprises, the increase in work efficiency trend had been observed for some years, whereas in others it increased earlier and reached a high, European level, which ensured profitability. 	<ul style="list-style-type: none"> • The analysis of accidents at work for 2003-2006 in the enterprises included in the study shows an average decline of around 20% in terms of both the number of accidents and their rate. • Enterprise B sickness absence decreased by 20% per employee for 2003-2006.
UK	Manufacturing	British Polythene Industries ¹¹² A manufacturer suffering from a high number of musculoskeletal issues.	<ul style="list-style-type: none"> • Implemented a musculoskeletal injury management system (MIMS) granting access to 3,000 osteopaths, chiropractors and physiotherapists across the UK. • Concerned all musculoskeletal injuries that affected work time, whether they happened at home or work. 	<ul style="list-style-type: none"> • Higher quality and faster treatment of musculoskeletal injuries. • Reduced time off work, more workers placed on restricted duties instead of not working. • Reduction in civil compensation claims 	<ul style="list-style-type: none"> • 400 treatments via the MIMS took place in year 1. • Time off per musculoskeletal injury dropped from 26 days to just 4 days on average. • Savings of GBP 192,000 per annum in reduced time off and compensation pay-outs.

¹⁰⁶Hale A.R., Hovden J. 1998. Management and culture: the third age of safety.

¹⁰⁷SAI Global. 2018. Occupational Health & Safety Training.

¹⁰⁸Visser R., Zwetsloot G. 2004. OSH Management in companies.

¹⁰⁹Gallagher et al. 2001. Occupational Health and Safety Management Systems: A Review of their Effectiveness in Securing Healthy and Safe Workplaces.

¹¹⁰Workplace Health and Safety Queensland. 2013. Injury prevention and management case study: Stellar Asia Pacific.

¹¹¹Rzepecki, J. 2012. Cost and Benefits of Implementing an Occupational Safety and Health Management System (OSH MS) in Enterprises in Poland.

¹¹²British Safety Council. 2014. The business benefits of health and safety: A literature review.

Business case 9: Improved ergonomics

Intervention	Improved ergonomics
Intervention description	Ergonomics is the study of people's efficiency in their working environment. In developing countries such as Myanmar, manufacturing roles typically rely on the ability of workers to perform high frequency, repetitive tasks in a sustained position for long time periods. This makes them particularly vulnerable to musculoskeletal injuries, which can impact the lives of workers, their families. It also creates a potential, financial risk for the enterprise . ¹¹³
Intervention details	Employers can: <ul style="list-style-type: none"> o Conduct simple ergonomic risk assessments in response to workplace injuries; o Identify high-risk jobs or processes that involve high task repetition, forceful exertions, repetitive or strained postures; o Establish administrative controls that reduce identified injury risks, such as job rotations, stretch breaks, work practise controls; o Provide training on proper body mechanics for high risk roles; o Establish engineering controls that reduce identified injury risks, particularly musculoskeletal injuries.
Intervention benefits	A 2008 study on 250 investments into improved ergonomics revealed an average payback period of 0.7 years. ¹¹⁴ Ergonomics improvements can lead to: ¹¹⁵ <ul style="list-style-type: none"> o Reduced employee compensation and healthcare costs; o Reduced turnover, absenteeism, lost or restricted workdays; o Reduced incidence of costly musculoskeletal and cumulative trauma disorder (CTD) injuries; o Improved productivity via more efficient workspaces - better employee posture; less exertion, fewer motions, fewer reaches and heights; o Improved employee engagement as efforts to ensure their health and safety are noticed; o Improves safety culture of a workspace, leading to cross-functional benefits and reduced accidents.

Evidence from literature

Country	Sector	Organization	Intervention description	Intervention results (qualitative)	Intervention results (quantitative)
United States	Automotive Electronics	Siemens Automotive ¹¹⁶ Siemens Automotive hired 14,000 workers to design and manufacture electronic automobile systems. Workers were reporting CTD injuries due to inefficient workstations. Workers leant to grab a computer mouse and stretched their necks to read important documents.	<ul style="list-style-type: none"> • Collected data on injury incidence. • Performed evaluation of injured workers. • Trained workers on stretch exercises. • Encouraged short, frequent breaks. • Conducted "back to school" training for all new employees on key ergonomic risks. • Provided glasses, adjustable desks and chairs. 	<ul style="list-style-type: none"> • All workers had reduced exposure to CTD risk factors. • Workers felt part of Siemens health culture and actively contributed to the further development of safe working. 	<ul style="list-style-type: none"> • 20,000 hours of lost time per year were saved by the reduction in CTD related injuries. • Significant reduction in complaints of pain in shoulders, back, elbow and fingers from 43% before intervention.
United States	Electronics Manufacture	Silicon Graphics ¹¹⁷ A high-performance computer manufacturer hiring 3,800 workers. Employees were reporting trauma and upper limb injuries associated with heavy lifting and awkward lifting postures.	<ul style="list-style-type: none"> • Assessed injuries and costs over several years • Hired consultant to perform workspace evaluations. • Created ergonomics training manual for employees. • Created an internal ergonomics helpline and website for injuries. • Adjusted workstation heights for each worker. • Provided back supports for workers in seated positions. • Used raised racks to eliminate awkward twisting and lifting. 	<ul style="list-style-type: none"> • All workers had reduced exposure to trauma injuries and upper limb injuries. • Workers felt part of health culture and actively contributed to its development. • Allowed the company to standardise ergonomic safety across 3,800 workers at a time of rapid company scaling. 	<ul style="list-style-type: none"> • 50% decrease in reportable cases of CTD injuries within the first year. • 41% drop in upper limb disorders. • 64.2% drop in reportable cases of CTD injury within 2-year period.

¹¹³ILO. 2013. Introduction to Health and Safety at Work.

¹¹⁴National Safety Council. 2008. Estimating the effectiveness of ergonomics interventions through case studies:Implications for productive cost benefit analysis.

¹¹⁵Ibid.

¹¹⁶ergoweb. 1995. Ergonomics - Siemens Automotive.

¹¹⁷ergoweb. 1995. Ergonomics - Silicon Graphics Incorporated.

8. Conclusions

This concluding section will provide a summary of the main findings presented across this report and will use them to showcase how institutional stakeholders across the sector can positively influence the growth of OSH standards.

Drivers of OSH compliance

Factory ownership is a strong driver of OSH compliance in Myanmar. Internationally owned factories have been found by the research to be located in newer, safer buildings, and more likely to provide acceptable working conditions to their workers. Locally owned factories tend to struggle to comply with acceptable OSH standards due to lack of knowledge, lack of access to finance, among other reasons.

Exporting factories have been found to be more likely to have established OSH Management Systems, appointed safety staff, and to monitor and track accidents on the workplace.

Factories exporting to western buyers tend to be subjected to higher requirements than factories exporting to regional foreign buyers from Korea and Japan.

These conclusions do not mean that Myanmar needs to rely solely on western, exporting factories to ensure safety and health in its garment sector, but rather that Myanmar factories can adopt many of the OSH practices of foreign factories. Promoting such learning will benefit the whole industry.

Table 22 - Factories OSH segmentation

		Export		
		No	Western buyers	Other (Japan, Korea)
Ownership	Locally owned			
	Foreign owned	n/a		

The type of production affects the manufacturer's risk profile. Factories where chemicals and dyes are used have the potential to expose workers to higher sets of risks than would be experienced within similar factories that use a CMP model. With the growth of the sector, we can expect a move towards the use of on-site chemicals, and with that, greater risks.

However, international research has indicated that when an OSH law is enacted and implemented, compliance with the legal requirements can become a stronger driver of OSH improvements than even buyers' requirements. The recent enacting of the OSH law is therefore a great opportunity for the Myanmar garment sector to increase its OSH performance.

Myanmar stands at the crossroads of a set of opportunities to increase its OSH profile in the coming years. This is due to a combination of factors:

- The recent approval of the new OSH Law provides a new set of incentives and directions.
- The fast growth in the number of foreign owned garment factories, while making competition more challenging for domestically owned enterprises, is also raising the bar on OSH standards, and providing additional incentives for domestically owned manufacturers to increase their awareness.
- As the sector evolves slowly towards an FOB system, more complex production processes will begin to take place (washing, dyeing), requiring greater attention to how OSH is implemented.

The business case for OSH

Findings from business cases around the world show that certain OSH investments can have a positive impact on turnover and absenteeism. Nearly all presented cases in this research have a potential impact on turnover and absenteeism. Investments such as improving ergonomics or providing improved health-care services would be affordable and cost-effective ways to support OSH improvements in the sector.

OSH investments around the world have been found to produce positive returns. These returns can be quantified in terms of risk reduction, as well as, business returns. Most of the OSH related business returns are linked with investments that reduce turnover and absenteeism, and / or have a positive impact on productivity.

In Myanmar, immediate low-cost interventions should be considered:

- Improving the ergonomics of existing workstations, which has the potential to bring positive returns at virtually no cost to the manufacturers.
- Training supervisors to increase their oversight and knowledge over the use of PPE and machine guards.
- Improving OSH Management Systems, which includes:
 - Appointing OSH Staff within the factories.
 - Establishing internal OSH Committees
 - Conducting risk and hazards assessments within the factories.
- Collecting human resources and production data in a way that allows for turnover analysis, absenteeism impact, as well as OSH investment returns.
- Providing improved health and sanitation services to the workforce, which has the potential to decrease turnover and absenteeism.
- Consider providing childcare facilities for working mothers in collaboration with local government departments.

Compliance with the OSH Law: OSH Management Systems and the role of supervisors

While the secondary research previously indicated that most factories have an OSH management system, further analysis and direct observations highlighted that this is not the case. One of the key findings of the ILO's research is a lack of structured attention to OSH. While factories have clearly invested in specific items such as fire safety equipment and ventilation systems, there does not appear to be a systematic approach to OSH. Most factories tend to delegate OSH responsibilities to the HR managers, and to have a reactionary, rather than a proactive, approach to it. This means that they will put effort in remediating items that are indicated by their buyers or the auditors, but they tend not to have a formalized OSH strategy or investment plan.

With the enactment of the new OSH Law, the formation of OSH committees and the development of elements of an OSH MS are now mandatory. The Law is expected to require factories to comply with a list of OSH provisions, including:

- Establishing a workplace safety and health committee
- Appointing safety and health officers
- Conduct in-depth risk assessment within their factories
- Providing adequate PPEs
- Developing preventive and emergency plans

- Hiring a certified doctor
- Providing workers' trainings on safety and health practices, plans and systems.
- Collecting data on accidents

OSH investments like an active OSH MS, providing healthcare services, and OSH trainings, would all contribute to increasing a factory's compliance with the Law and improving the effectiveness of individual OSH investments made by factory owners.

Investing in and building a functioning OSH MS within factories would bring closer compliance with the OSH law requirements, with buyers' OSH requirements, as well as potentially bringing turnover and absenteeism benefits. Research has shown that there is scope or spectrum of ways to improve supervisor awareness towards OSH related matters. Examples include identifying instances such as when machine guards were either missing or disengaged, as well as situations where emergency exits or routes were not freely accessible.

A first step to implement OSH improvements in Myanmar garment factories is for factory owners to understand the concept of an OSH MS, its advantages, and the need for it to be integrated into the factory's management strategy. This can serve as a base to gain OSH advice, OSH service provision (e.g. risk assessments and trainings) and encourage workplace dialogue around OSH that brings together workers, supervisors and management along the same objectives.

Based on international evidence analysed, investing in OSH Management Systems brought the following benefits, among others, to manufacturing establishments:

- A sample of 20 Polish enterprises saw a 20 per cent decrease in the number of accidents, as well as an average decrease in sickness related absences of 20 per cent per worker.
- A factory in the UK saw a large decrease (26 to 4 days per person) in the number of absences related to musculoskeletal injuries.
- A 61 per cent reduction in insurance premiums and claim costs by workers, connected with a decrease in the number of accidents which occurred.

Understanding the role of OSH in absenteeism, turnover, and productivity

Accidents, injuries and diseases in garment factories in Myanmar are largely underreported. Underreporting is not only the responsibility of factories' management, but also of institutions like the FGLLID and the SSB. One of the key challenges of this research, and of any research trying to conduct a CBA for OSH investments, is the availability of factory level data that illustrates the nature of the incident and its impact on productivity. In Myanmar, the MGMA would be perfectly placed to support garment factories collecting factory level data that can reveal the dynamics between OSH issues, turnover, absenteeism and, ultimately, productivity. Examples would include:

- Providing factories with a clear and simple way to collect accident data and the tools to estimate their impact on production and health related costs for the factory.¹¹⁸
- Working with factories that have begun certain OSH related investments (i.e. ventilation systems), to help them monitor productivity increases obtained.
- Launching small data collection pilots in willing factories, to create detailed and contextualized business cases for other factories to follow. One easily implementable pilot would be to collect data about productivity, rejection rates, absenteeism and turnover, for factories that make simple ergonomics improvements (i.e. adjusting the sewing tables to match with workers' height), and to verify its impacts on business dynamics. Such a small pilot would be virtually free for factories and might represent a positive first step.

MGMA's role in ensuring compliance with the OSH Law and helping factories enhance productivity through OSH investments

In summary, MGMA can support its members in complying with the OSH Law, and to improve their OSH performance, in multiple ways:

- Understanding the requirements of the OSH Law: MGMA is uniquely placed to support factories in gaining a better understanding of the requirements imposed by the new OSH law. The organization could consider distributing materials, organizing trainings, and providing advisory services on the topic to its members.
- Expanding Supervisor Trainings: with the new requirements imposed by the OSH Law, factories will need their supervisors to increase their OSH capacity. Again, MGMA is uniquely placed to provide this type of support, by including additional OSH components in its supervisor training module.
- Developing OSH Systems: factories will need support to identify the best way to establish functioning OSH Management Systems within their factories. MGMA is well positioned to share advice, guidance, and lessons learned with its members to assist them in meeting the requirement imposed by the OSH Law.
- Ability to identify OSH needs: MGMA can support factories to identify the needs for OSH advice, OSH service provision (e.g. risk assessments and trainings) and workplace dialogue around OSH and ensure that these needs are brought to the attention of the OSH Council and mainstreamed into the requirements for OSH service providers that need be certified by FGLLID.
- Integration of locally owned factories: MGMA should ensure that compliance promotes the integration of locally owned factories into the global supply chain and facilitates the upgrading of cost-effective production systems.

The role of international brands and Private Compliance Initiatives

As previously stated, international buyers are among the strongest drivers of OSH improvements and compliance. While buyers have been a positive influence in establishing and promoting OSH standards in Myanmar, they have largely followed a “checklist” or “audit driven” approach to OSH. As a result, suppliers in Myanmar have focused attention on ways in which to “pass” buyer audits rather than on a strategic investment of time and resources to address the root causes of non-compliance, for example, by establishing proper OSH Management Systems.

International brands should consider complementing current auditing practices with additional support to suppliers on how to identify and address the root causes of non-compliance to prevent factories from continuously cycling in and out of compliance. It would be important for PCIs and sector stakeholders to provide incentives and support to their suppliers to develop OSH Management Systems. This includes ensuring that:

- OSH management is integrated into the overall management strategy of garment factories, including through Key Performance Indicators for relevant staff (e.g. safety officers and line supervisors).
- Functioning OSH committees consisting of both worker and management representatives are established.
- Safety officers with clear OSH-focused roles and responsibilities are appointed.
- OSH risk assessments and prevention and response plans are developed with the active involvement of workers and management.
- An OSH investment plan is developed, with clear goals and financial commitments.

The role of the Government

While the promulgation of the OSH Law is an important step, implementing the regulations and guidelines (to be drafted and approved) will ultimately determine the Law's effectiveness. The Government of Myanmar (the OSH Council and FGLLID as Secretariat) can take a series of steps to ensure that this law has a lasting positive impact on the sector. These steps include the following:

- Ensure proper consultations with tripartite stakeholders and other interested parties that would inform the content of the enabling regulations.
- Ensure that the FGLLID is appropriately funded and equipped to take on the additional responsibilities imposed by the new OSH law, which significantly broadens its mandate.
- Ensure that training standards and curricula for OSH inspectors and technical personnel (i.e. qualified electricians) are developed and implemented.
- Ensure that the appropriate mechanisms are developed to ensure effective inter-ministerial coordination between responsible ministries.

The role of Workers' organizations

Workers' organizations have an important role to play to improve OSH compliance in Myanmar. Workers' organizations can raise workers' awareness of their rights and responsibilities under the new OSH Law, provide information on social security benefits, in particular employment injury benefits, and clarify for workers what constitutes a safe working environment. The OSH Law provides an opportunity for workers to play an active role in the development, implementation and monitoring of OSH Management Systems at the factory level. For workers to effectively represent their colleagues' health and safety interests on OSH Committees, they would need to build capacity on OSH and strengthen negotiation techniques. Worker organizations are perfectly placed to provide the necessary guidance and training.

Finally, the new OSH Council provides Workers' organizations with the unique opportunity to participate in policy level discussions with other tripartite constituents and influence national OSH policy for the benefit of workers in all the covered sectors.

Review of the 2019 approved OSH Law

At Government level

The new Law¹¹⁹ confirms the role of FGLLID as the lead agency on OSH affairs.

The bill also establishes a National Council, composed of representatives of all the ministries involved in OSH dynamics: MOLIP, Ministry of Construction, Ministry of Health and Sports, Ministry of Natural Resources and Environmental Conservation, Ministry of Electricity and Energy, Ministry of Transport and Telecommunications, Ministry of Industry, Ministry of Home Affairs, Ministry of Agriculture, Ministry of Education, Ministry of Hotels and Tourism, as well as representatives from Employers Organizations, Labour Organizations, OSH experts, and the FGLLID.

The Council will be responsible for:

- Recommending national level policies and procedures, reviewing, re-assessing and amending them for the provisions of this Law to be successfully implemented;
- Coordinating with the relevant government departments, government entities, local and international organizations for Occupational Safety and Health purposes;
- Recommending the list of occupational diseases, occupational contamination, hazardous events, hazardous materials, hazardous machines, hazardous industries/businesses and workplaces and the level or grade of hazards thereof;
- Collecting statistics and information regarding occupational accidents, occupational diseases, occupational contamination, major and serious occupational accidents and hazardous events and announcing the precautionary actions to be conducted to prevent occurrence thereof;
- Managing and teaching Occupational Safety and Health related courses in educational and training sectors;
- Forming the Appellate Committee and other required committees with the members of Council elected by the Chairman of the Council and determining the duties to hear and inspect appeal cases filed under Sections 44 and 45; and
- Submitting a report about the performance of its duties to the Government.

At Employers' level

The Employers are now requested to appoint a Safety and Health Officer, and to established, inside their businesses, a Workplace Safety and Health Committee.

The Committee is responsible for:

- Regularly checking any conditions that can impair OSH and reporting the results at the relevant committee's meeting;
- Advising the employer to lay down precautionary and educational plans to minimize occupational accidents;
- Improving the coordination between the Employer and Workers to access t facilities and provide training for developing OSH improvements;
- Overseeing the relevant OSH management plan risk assessment; and
- Performing Occupational Safety and Health duties assigned by the Ministry and Department.

The Law also makes a series of requirements employers need to respect, which includes conducting assessments, allowing inspectors to freely come and visit the factories at will, displaying safety instructions and hazard signs, designing safety plans, providing safety trainings, and providing a clinic

with a registered doctor and nurses, and to provide medicines and supporting equipment. Moreover, the employer is requested to inform the relevant department of any accident and hazardous event. It further requests the registered doctor working within the factory to provide a report for any patient they treat in relation to OSH within the factory.

At Workers' level

Under the new Law, workers are requested, upon threat of legal dismissal, to follow safety regulations, wear the right equipment, and participate in trainings. It additionally requests workers to report any unsafe conditions and protects him or her from persecution for doing so.

At Suppliers' level

Suppliers of production inputs, machinery, equipment, chemicals, construction and installation services and all other items to provide a certification of quality and safety, as well as guidelines and manuals for safe use.

At Auditors' level

Examiners, trainers and training centers will need to obtain a set of stipulated certifications and obtain a Registration Certificate.

Auditors, certification bodies, and training providers are required to obtain a license from the FGDLLI to ensure that they comply with all requirements under the OSH Law.

Penalties for non-compliance

Each of the groups described above is liable under the law for punishment if they do not comply with the requirements of the law.

Safety officers can be liable on conviction to imprisonment for a term not exceeding three months or to a fine not exceeding 1,000,000 (MMK) kyats or not lower than 500,000 kyats or to both.

Employers can be liable for jail to not exceeding three months or to a fine not exceeding 5,000,000 kyats or not lower than 1,000,000 kyats or to both.

Workers can be liable, depending on the infraction, for jail up to three months, and fines of up to 100,000 kyats.

Building developers, input suppliers, and equipment manufacturers can be liable on conviction to imprisonment for a term not exceeding three months or to a fine not exceeding 5,000,000 kyats.

Doctors can be liable to a fine not exceeding 500,000 kyats.

Auditors and trainers can be liable on conviction to imprisonment for a term not exceeding three months or to a fine not exceeding 5,000,000 kyats.

Tool to estimate economic cost of accidents¹²⁰

I. WORKING TIME LOST FOLLOWING THE ACCIDENT					
No.	Persons	Number of persons	Time (hours)	Wage cost (hourly rate)	Cost
A. On the day of the accident:					
1	Injured person				
2	Person organizing first aid				
3	Person providing first aid at the accident site				
4	Person in charge of rearranging work				
5	Other persons				
Cost of time lost on the day of accident					
B. Injured person's absence period					
C. Time spent on accident investigation:					
1	Supervision personnel				
2	Accident witness(-es)				
3	Other persons				
Cost of time spent on accident investigation					
D. Planning and time spent on the implementation of preventive measures and prophylaxis					
1	Manager				
2	Supervision personnel				
3	Technical construction or technology engineer				
4	Other				
Time spent on planning and research-development activities					
E. Other (for e.g. time to retrain the replacement worker or the injured person upon return to work etc.)					
1					
2					
3					
Other costs - Subtotal					
COST OF TIME LOST DUE TO ACCIDENT					
II. MEDICAL AID AND TRANSPORT					
COST OF TRANSPORTING THE INJURED PERSON HOME / TO THE DOCTORS					
Working time of medical personnel at the in-house medical unit					
Dressing materials and medication used at the in-house medical unit					
Cost of external medical care					
Other items					
Cost of medical transport and aid					
III OVERTIME					
No.	Worker	Working time (hours)	Wage cost (hourly rate)	Cost	
Overtime on the day of accident					
1					
2					
Overtime during the absence of the injured person					
1					
2					
COST OF OVERTIME:					

IV. REPLACEMENTS

No.	Replacement	Working time (hours)	Wage cost (hourly rate)	Cost
Replacement on the day of accident				
1				
2				
Replacement during the absence of the injured person				
1				
2				
COST OF REPLACEMENT:				

V. PRODUCTION DISTURBANCES

No	Type of disturbance	Duration of disturbance	Cost of disturbance	Cost
1	Production stopped at the division			
2	Production stopped at other divisions			
3	Revenue losses due to reduced productivity			
4	Revenue losses due to lower production output quality			
5	Production assigned to subcontractor			
6	Machine rent			
7	Other			
COST OF PRODUCTION DISTURBANCES				

VII. REPAIRS

Repairs made in house

No.	Type of repair	Number of workers	Working time (hours)	Wage cost (hourly rate)	Cost
1					
2					
Repairs done by subcontractors:					
No.	Type of repair				Cost
1					
2					
COST OF REPAIRS					

VIII. COMPENSATIONS

No	Type of benefit	Cost
1	Single compensations	
2	Compensation benefits	
3	Compensation allowances due to transfer to another workplace	
4	Compensation allowances due to vocational rehabilitation	
5	Compensation due to the loss of personal property items	
6	Funeral allowance	
7	Fatality payment	
8	Death compensation payment	
9	Others	
COST OF COMPENSATIONS		

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