



# NEWSLETTER

On Occupational Safety and Health & Working Environment

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Viet Nam National Institute of Occupational Safety and Health - VNNIOSH

## VNNIOSH RESEARCH ON OCCUPATIONAL SAFETY AND HEALTH IN 2020



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In recent times, to actively study and propose additional insured occupational diseases, especially for the ones related to industries of production and new technologies; to research on solutions to control occupational safety and health (OSH) risks, and to contribute to minimizing occupational accidents and occupational diseases in production facilities... is considered the focus in OSH activities of VNNIOSH.

Based on focused scientific and technology issues on OSH, in the year 2020, VNNIOSH chaired and carried out 21 scientific projects consisting of:

- 04 projects under the Cooperation Program between the Ministry of Science and Technology and Vietnam General Confederation of Labour (VGCL). These projects focus on researching scientific bases and methods to assess and classify working conditions, control occupational risks and complete policies on insurance coverage for occupational accidents and diseases in Vietnam's current situation with the aim of protecting the legitimate rights and interests of workers.

- 05 projects under the Key program of VGCL-level. These projects focus mainly on researching and proposing drafts for standards of occupational safety and health, pollution treatment processes and procedures of standard and conformity assessment for some personal protective equipment.

- 12 VGCL-level projects focusing on research and development of OSH risk assessment processes in 11 occupations that require assessment of OSH risks according to legal regulations. Additionally, they also aim at researching and applying measures to prevent occupational accidents and diseases; using scientific and technical solutions to ensure the working environment and occupational diseases.



In the coming time, VNNIOSH will continue strengthening and supplementing the studies to complete a number of state management models on OSH and adaptive models at production facilities towards the step-by-step modernization, unification and completion of a set of tools for OSH management, monitoring, analysis and assessment, contributing to improving the effectiveness and efficiency of state management on OSH. At the same time, the Institute will promote research and application of measures to prevent occupational accidents and diseases, scientific and technical solutions to ensure the environment and working conditions, and industries at risk of occupational accidents and occupational diseases such as high-rise building construction, underground mining, new chemicals and materials... Research on scientific basis to build and develop solutions to prevent and control OSH risks; developing methods and tools to statistic and evaluate the occupational accident situation; issues of improving working conditions in small and medium enterprises, craft villages, informal employment... contribute to ensuring safety, protecting workers' health and protecting the environment.

# ASSESSING OCCUPATIONAL SAFETY AND HEALTH RISKS IN STONE MINING AND PROCESSING FACILITIES

Loi Nguyen, PhD

Quarrying is an active field of mining. Stone mining and processing is considered one of the industries causing the most occupational accidents and diseases. The main reason is that the quarrying activities always pose many dangers, without proper identification and control, the possibility of causing occupational accidents and diseases is very high.

In Vietnam, stone mining and processing belong to the group of occupation required to carry out risk assessments to have better measures for preventing occupational accidents and occupational diseases. The need for a method, risk assessment process and OSH management

system is urgent. To meet that demand of production reality, VNNIOSH has selected and established the method and process for assessing and controlling OSH risks at stone mining and processing facilities.

## Risk assessment methods

**\*For OSH risks:** Employ quantitative risk assessment method with 5x5 risk assessment matrix (Fig.1).

**\*Against health risks:** Using the semi-quantitative assessment method of VNNIOSH based on Russian method and Vietnam's current standards on OSH. The risk is determined based on results of categorizing working conditions (Fig. 2).

Fig 1. Risk assessment matrix

Risk of accidents happening	The severity of occupational accident				
	Minor	Slight	Moderate	Serious	Severity
Improbable	Extremely low	Very low	Low	Low	Moderate
Very unlikely	Very low	Low	Moderate	Moderate	High
Likely	Low	Moderate	Moderate	High	Very high
High possibility	Low	Moderate	High	Very High	Extremely high
Inevitable	Moderate	High	Very high	Extremely high	Extremely high

Fig 2. Categorizing working conditions and corresponding occupational health risks

No.	Categories of working conditions	Statistics of occupational health risk	Level of occupational health risks
1	Optimized	-	Extremely low risk
2	Met the standards	< 0.05	Very low risk
3	Slightly noxious	0.05 – 0.11	Low risk
4	Moderately noxious	0.12 – 0.24	Moderate risk
5	Heavily noxious	0.25 – 0.49	High risk
6	Severely noxious	0.5 – 1.0	Very high risk
7	Hazardous	> 1.0	Extremely high risk

## Results of risk assessment

The results of VNNIOSH's risk assessment at 03 facilities showed that stone mining and processing in general have a high level of OSH risks, of which, the quarrying stage generally has higher risk level than the stone processing stage. Many hazards during extraction range from high, very high to extremely high levels such as landslides/rock displacement, mines explosion due to out of control, combustion of explosives, extreme microclimate, falling from height, vehicle accidents, collision with the moving part of machines (saw plates), noises and vibrations.

**Landslide/rock displacement; mines explosion due to out of control, combustion of explosives:** These are characteristic hazards needing to be mentioned first because of their particularly serious consequences. Landslides and rock displacement are determined to be due to the instability of the rock mass at the slope. Impacts on the rock layer during extraction (such as blasting, loading and unloading rock) or sudden changes in the rock layer structure due to prolonged heavy rains could be the final direct cause of landslide/rock displacement. In the process of storing, transporting and using explosives, there is also the explosion hazard due to uncontrolled explosion and combustion of explosive materials. Risk assessment results showed that at facilities using blasting as mining technology, the chance of creating hazards such as landslides/rock displacement, combustion of explosives materials and uncontrolled blasting are always extremely high. Meanwhile, in facilities using diamond wire cutting technology, these hazards are eliminated as explosives are not in use.

**Microclimate:** The level of risk caused by the microclimate is determined on the basis of the Wet Bulb Global Temperature (WBGT), taking into account the simultaneous impact of the microclimate parameters, including temperature, humidity, wind speed, and solar radiant heat, to the heat stress workers are exposed to. The risk assessment results showed that in hot days of summer-autumn, microclimate is also an extremely high and very high level risk. Heat can cause a number of health conditions such as

cramps, dehydration (or heatstroke) exhaustion, at worse can cause heat shock, leading to death. The result of this assessment is a necessary warning to help stone mining and processing facilities identify and proactively apply corresponding control measures to minimize health risks to workers during hot days.

**Falling from height:** The risk of falling from height can occur to workers operating hand drills, self-propelled drills, crusher and screener composition, diamond wire cutters, and machine maintenance/repair. There are no guardrails and seat belts at these overhead work positions. Workers operating hand drills, working in steep terrain, narrow ground face higher probability of falling and a very high level of risk; Meanwhile, operators of self-propelled drilling machines, screener and crusher composition, diamond wire cutters, machine/equipment repair are exposed to high risks.

**Vehicle-caused accidents:** Many vehicles such as trucks, forklifts, bucket excavators, loaders, and hydraulic hammers are likely to cause accidents to their own operator and to other people working around during working and traveling. Workers are warned to keep a safe distance from the working vehicle. However, steep terrains, sharp curves, sight obstructions, etc., may be the cause of the accident. The level of risk is assessed at a high level for trucks that transport rocks from the mountains, while for the rest of the vehicles, it is moderate.

**Collision with machine moving parts:** The danger of collision with the moving part of the machine (saw plate) arises in both the stone slitting machine and the stone cutting machine, but the levels of risk are different. The worker operating the cutting machine is exposed to a high risk of having to push the stone plate towards the cutting plate with his hand during the cutting process, easily losing momentum and putting his hand into the saw plate. Meanwhile, with the sawing machine, the worker uses the winch to position the block, fix the block, then push the sawing machine control button, the saw plate automatically moves towards the block and slits the stone, so take only medium risk.

**Noise:** Most of the machines/equipment used

in both quarrying and processing (sawn stone processing and screening-crushing) generate noise. Workers operating hydraulic hammer, stone cutting, stone cutting, stone chipping are exposed to a high level of risk (noise levels 96-105 dBA equivalent); Meanwhile, workers operating bucket excavators, wheel loaders, rotary kilns, stone grinders, stone shavings, manual stone grinders, and truck drivers are only exposed to moderate risks (noise levels 91 to 95 dBA equivalent). In some other working positions such as operating diamond wire cutting machines, driving forklifts, repairing machine/equipment, the risk of noise caused is only low.

**Vibration:** Full body vibration is also a hazard while using most machines/equipment in stone mining and processing. Workers operating forklifts, loaders, buckets, hydraulic hammers bear a high level of risk, meanwhile workers driving trucks, slashing machines, chipping, spinning chunks, grinding stones manually has medium risk and workers operating hand drills, self-driving drills, stone cutting, stone grinding, machine/equipment repair are at low risk. In some other positions such as operating hand drill, self-propelled drill, cutter, grinder, planer, machine/equipment repair, the risk is low.

**Electric shock:** The danger of electric shock arises mainly in the stone processing area (sawn stone processing and screening-crushing) where there are many machines/equipment using electricity. The risk of electric shock in stone cutting, stone sawing, stone cutting, stone rotary kilns, screen grinding, and machine/equipment maintenance repairs are moderate.

**Winded, trapped inside or between machine parts:** At the position of operating cutting machine, grinder, chopper, screen mill, machine/equipment maintenance, repair, workers are at risk of hair curl/jam between the pulley and belt of the belt due to the unsealed cover structure, the foot slipped between the grinding shafts of the jaw crusher... Risk is assessed as moderate.

**Flying objects, shrapnels:** Workers operating diamond wire cutters are in danger of being cut by torn diamond wire hitting their bodies. Workers operating the screen mill, driving the

excavator in the screening area are at risk of being hit by stones from the jaw clamping machine. Risk is assessed as moderate.

**Silica dust:** The activities of mining and processing stone generate dust with the silicon content fluctuating in the range of 2.7-3.7%. The dust risk is assessed based on the concentration of free silicon in inhaled dust at workplace. Measurement results showed that the concentration of free silicon in inhaled dust at the dust-generating working positions of 10 surveyed facilities is 1.1 to 4 times higher than the permitted limit according to the standard QCVN 02:2019/BYT, and the corresponding level of risk is assessed from low to medium. Hand drill operator, truck driver, bucket excavator, wheel loader, screen mill and machine/equipment repair worker is at medium risk, meanwhile, operator of self-propelled drill machine, hydraulic hammers bear only a low risk.

**Falling objects due to lifting and transporting:** At locations such as: operating hand drill, cutter, grinder, stone chipper, planer, stone rotary kiln, manual stone grinding, machine maintenance/repair equipment, workers must lift/transport the machine or stones by hand, thus presenting the risk of falling objects. For workers operating hand drills, cutters, grinders, chippers, and manual stone grinders, the risk level is assessed as moderate; Meanwhile, for workers operating planer, stone rotary kiln, machine/equipment maintenance and repair, the level of risk is low. The reason is due to the difference in the severity of the accident.

**Lifting equipment used at stone mining and processing facilities includes:** Cranes/winch (sawmill area, machine/equipment maintenance and repair), bucket excavator (mining area, crushing screen), wheel loaders (crushing and screening area), forklift (sawn stone processing area). The risk of falling objects while using bucket excavator, truck (mining area), stone saw, forklift and machine/equipment maintenance and repair locations is assessed as moderate; meanwhile, for bucket excavators, wheel loaders (crushing and screening areas), the risk level is low. The reason is due to the difference in the severity of the accident.

**Slippery, falling:** In the machine/equipment repairing area, there are many obstructions and/or grease, thus the level of risk is defined as moderate; Meanwhile, at the locations where hand drills, self-propelled drills, stone cutters, stone grinders, stone chippers, stone rotary kilns and hand grinders are operating, the risk is low.

**Cut/clamped by the tool:** When operating the cutting machine, the worker uses the crowbar to elevate stones, uses a small piece of rock to support a large rock, thus there is a risk of finger/hand clamping. The risk level is assessed to be moderate, whereas at the machine/equipment

maintenance site, the cut/clamp risk is low.

**Heavy duty:** Workers operating hand drills, self-propelled drills, bucket excavators, wheel loaders, hydraulic hammers, saws, cutters, grinders, chippers, manual rock grinders and load-bearing trucks face moderate level of risk; Meanwhile, workers operating stone rotary kilns, machine/equipment repair and maintenance are only exposed to low risks.

**Stress level:** Workers using mines are exposed to moderate risk, while workers operating crushing-screening composite machines, repairing and maintaining machines/equipment are only exposed to low risk.

## Some results of the development of the anthropometric atlas of static and dynamic ergonomics for Vietnamese in the working age, period 2017-2019

Ngan Pham, PhD

The three published volumes of the Atlas of Ergonomics for Vietnamese in working age were compiled over 15 years (from 1982-1997), boasting a comparatively full range of anthropometric features for the research, design and evaluation of ergonomics comparable to ergonomics researches in the world. The scientificity and practicality of these volumes are not only highly appreciated by domestic scientists, but also gathered the interest of some international scientists and technologies. According to the growth law, for every 10-15 years, the stature and physical strength of the population will change due to the advance of living conditions. In fact, the anthropometric characteristics of the Vietnamese people today are highly different from those of 30 years ago, thus the development of an anthropometric Atlas for the purpose of research, design and evaluation of ergonomics in Vietnam is mandatory.

Based on the aforementioned issues, researchers of VNNIOSH have conducted stud-

ies with the aim of compiling an anthropometric Atlas of static and dynamic ergonomics for Vietnamese in the working age within the period 2017-2019.

Research subjects are Vietnamese people of working age (16-60 years old), possessing normal physique, working in the industry, agriculture; students and freelance workers in the Northern, Central, and Southern Areas of Vietnam. Subjects were divided into 5 age groups (16-19, 20-29, 30-39, 40-49, 50-59); 2 sexes (male and female); 3 regions (Northern, Central, Southern). The project was able to obtain measurements of 5,148 subjects consisting of 2,531 men and 2,617 women.

The technique employed to measure the static anthropometric indicators and movement range of joints complies with the measurement method applied in the human anthropometric Atlas of Vietnamese in working age - Static anthropometric data -1986 [1], anthropometric Atlas of Vietnamese in working age - anthropo-

metric data on joints' movement range, 1997 [3], TCVN5781: 2009, TCVN7488: 2005 (ISO 7250: 1996), ISO 7250-1: 2008. Criteria applied to the measurement of arms' range of movements according to the 90 degree vectors are implemented only in Northern and Southern areas, according to the anthropometric Atlas of Vietnamese in working age - dynamic anthropometric data of arms' range of movement [2].

The Atlas used the linear interpolation method to interpolate the anthropometric indicators closely correlated with linearity ( $r > 0.7$ ) with the basic criteria applied according to the first degree equation  $y = ax + b$ . In which:  $y$  is the anthropometric indicator that needs to be interpolated,  $a$  is the coefficient (the ratio of the indicator that needs to be interpolated with the closely correlated basic criterion calculated from the published Atlats),  $x$  is the variable (the updated measurement value of the basic indicator),  $b$  is a constant and is equal to 0.

### Results of static anthropometric measurements

Based on the results of measuring and interpolating 136 static anthropometric indicators, the study was able to compile 136 tables of static anthropometric characteristics of the Vietnamese in working age of period 2017-2019. Analysis results of height when standing and weight are important criteria for the growth and development of the Vietnamese stature in the current period. The measurement lead to remarks as follows:

The current average height of Vietnamese men is  $164.6 \pm 5.8$ cm and the female is  $154.4 \pm 4.8$ cm. Thus, Vietnamese people possess average body height of the human kind. The difference in height between Vietnamese men and women (above and below 10cm) is also within popular limits in the world.

The average height when standing between men and women in the three regions does not significantly vary. The difference in average height when standing in the same age group between regions is not statistically significant ( $t < 1.96$ ). This is a far cry from 30 years ago, when the northerners were significantly lower than the southerners of many age groups.

Results of the body measurements showed that Vietnamese men had an average body measurement of  $52.8 \pm 0.2$  and women's were  $52.9 \pm 0.3$ . Thus, the Vietnamese people in working age have an upper body type that completely belongs to the group of people with long body. This deserves special attention when receiving machines and technological lines produced in European and American countries in technology transfer.

The average body weight of the Vietnamese adult male nowadays is  $59.2 \pm 8.9$  kg and that of the female is  $50.8 \pm 6.6$  kg, the difference between male and female is about 8.4 kg, bringing about a statistical significance ( $t > 3.29$ ). The difference in male body weight between regions by age group ranges from  $1.8 \div 3.0$ kg for men and is  $1.0 \div 2.8$ kg for women. The difference in body weight between regions was statistically significant for 5 age groups and for many other age groups ( $t > 1.96$ ). The weight between age groups ranges from 0.8 to 3.7 kg for men and from 0.4 to 3.5 kg for women. Weight tends to increase in direct proportional to age, and then decreases in the age group 50-59. The body mass index (BMI) of Vietnamese men at working age is currently  $21.8 \pm 2.9$  and  $21.3 \pm 2.6$  for women. According to the World Health Organization's classification for Asians, Vietnamese men and women currently possess normal BMI. Compared to results in the 1986 Atlas, the body weight of Vietnamese in working-age of the period 2017-2019 differs from the results published in the 1986 issue (increased by 10.6 kg for men and 6.5 kg for women).

Some other anthropometric indicators have average measurements that are different from those of the 1986 issue such as height, weight, butt width, leg length... Some indicators possess peak measurements in the age group of 16-19 and 20-29, and then gradually decrease as the age increases. Many indicators possessing average measurements which tend to be equal in northern and southern areas (such as height when standing), which is also different from the 1986 Atlas (the tendency of increasing gradually from north to south). The difference between regions and age groups in some indicators are statistically significant.

#### \* Results of dynamic anthropometric measurements for joints' range of movement

Results of measurement and interpolation for 50 indicators joints' range of movement divided into 03 regions (Northern, Central and Southern), by sex (male, female), by age groups (16-19, 20-29, 30-39, 40- 49, 50-59) showed that:

The difference in joints' range of movement in people living in the Northern, Central and Southern areas is not apparent in both men and women. Regional differences were not statistically significant. The difference in the measurement of joints' range of movement between men and women did not develop in a certain direction. There are criteria with values higher in men than women and vice versa. There are indicators with average values that are not significantly different between men and women ( $t < 1.96$ ), but many indicators have a quite large difference ( $t > 1.96$ ). Measurements of joints' range of movement for Vietnamese men and women tend to decrease gradually from young age to older ages. The absolute value of the t-test between adjacent ages is smaller than that of the distant ages, i.e the difference is statistically significant with a higher probability increase. Compared with the values for joints' range of movements in the 1997 Atlas, the ones of the period 2017-2019 has not changed much.

#### \* Results of dynamic anthropometric measurements for the arms' range of movement

Results of the measurement and interpolation for the arms' range of movement on 9 horizontal planes (-48, -36, -24, -12, zero, +12, +24, +36, +48 degree) in 4 age classes (16-19, 20-29, 30-39, 40-49) of two regions (the Northern and the Southern area with  $n = 2873$  people) showed that: at different altitudes, the arms' range of movement, especially the opposite side (the left to the right arm vice versa) reaches different peak values. On the -24, -12, and zero degree horizontal surfaces, the arm reach usually reaches an inverse angle of 60 degree. These are the horizontal surfaces on which the reach of the arm extends the widest to the opposite side. In contrast, on the -48 degree horizontal plane, the subjects only reached an inverse angle of 0

degree (for men) or 15 degree (for women).

As the average height when standing of males and females in Southern and Northern areas does not significantly different in all age groups ( $t < 1.96$ ), the average values of arms' range of movement of Southerner is higher than that of the Northerners, but the difference is not statistically significant ( $|t| < 1.96$ ) in all 4 age groups, in both the right and left arm, for both men and women.

The overall tendency is that the range of movement of the right arm is greater than that of the left hand, but this difference is not much. The value of t-test for arms' range of movement in men and women of all ages in both the southern and northern area classes do not exceed 1.96, which means the difference is not statistically significant.

Similar to the anthropometric characteristics, arms' range of movement yield highest value in the age group of 20-29, followed by the age group of 30-39 and the age group of 40-49. That trend is also demonstrated in the value of arms' range of movement measured on many spatial coordinates in men and women of both the Northern and the Southern area. The absolute value of the t-test between adjacent age groups is smaller than that of the distant age groups, i.e the difference is statistically significant with a higher probability of increase.

The range of movement of men's arms is 5-7cm greater than that of women. The difference in the range of movement between men and women's arms is an authentic and statistically significant feature at the highest probability level ( $t > 3.26$ ).

Tracking the measurement of arms' range of movement on the vertical surface showed that the measurement gradually increases from top to bottom, peaked at -12cm, then steadily decreases. This remark is consistent with the anatomical posture as the arms, forearms and hands placed on zero degree and -12cm surface all head to the same direction. In addition, the measurements on the lower surfaces (negative side versus zero side) are greater than the measurements on the symmetrical horizontal surface above.



## Conclusion

- The project has completed the statistical processing and measurement of static and dynamic anthropometric indicators of more than 5,148 men and women in working age living in the Northern - Central – Southern regions. From direct measurement and interpolation results, the data set of 136 static anthropometric indicators, 50 indicators of joints and arms' maximum range of movement on 9 horizontal planes were divided by gender into 5 age groups and 3 surveyed regions have been completed and used as a basis for compiling the draft of Static and dynamic Atlas of the Vietnamese in working age of the period 2017 - 2019.

- Based on the research results of the project, researchers of VNNIOSH compiled the draft of "The Atlas of static and dynamic anthropometric and ergonomics for Vietnamese people in the working age of the period 2017 - 2019" consisting of 6 chapters, classified by men and women into 5 age groups. In the draft Atlas, the first 2 chapters will present the research method, some com-

ments on the physical stature of the Vietnamese in the current period; The next 03 chapters provide static anthropometric data, data of the range of movement of Vietnamese people's arms and joints in the period of 2017-2019; The final chapter (Chapter 6) presents some principles for the use of anthropometric data when designing production equipment and workplaces.

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# TO ERADICATE FORCED LABOUR IN VIETNAM

June 8<sup>th</sup>, 2020 in Hanoi, the National Assembly of the Socialist Republic of Vietnam voted with high consensus to ratify Convention 105 of the International Labor Organization (ILO) on abolition of forced labor. This is considered a big step towards abolishing forced labor in Vietnam. As soon as the application for accession is completed, Vietnam will officially ratify the convention, and this international labor standard will take effect one year later.

## In line with the innovation, international integration

According to the 2019 Labor Code, which came into force on January 1, 2021, in addition to the concept of forced labor in Clause 7, Article

3 and the provisions on the prohibition of forced labor in Clause 2, Article 8, the 2019 Labor Code provides many specific instruction on preventing and combating forced labor corresponding to the cases under ILO's guidance, including:

Article 17 prohibits employers from keeping originals of identity papers, diplomas and certificates of employees; requesting employees to provide money or other property as security for the performance of labor contracts; forcing the employee to perform the labor contract to pay the employer debt.

Article 35 provides that the employee has the right to unilaterally terminate the labor contract without stating the reason, but only need to noti-

fy the employer in advance. In some cases, the employee has the right to unilaterally terminate the labor contract immediately without prior notice such as in the case of inadequate salary payment or on-time salary payment; being mistreated, beaten, or verbally abused by the employer, or behavior affecting health, dignity or honor; forced labor.

Article 102 stipulates that employers are only allowed to deduct an employee's salary in certain cases. The employee has the right to know the reason for withholding his salary and the monthly salary deduction rate must not exceed 30% of the employee's real monthly salary.

Clause 2 of Article 107 stipulates that the employer is only allowed to ask the employee to work overtime with the consent of the employee and the satisfaction of the conditions specified in the Labor Code.

Article 124 provides that forms of labor discipline only consist of: Reprimand; extension of salary increase period for no more than 6 months; dismiss; lay off. Employers are not allowed to self-impose disciplinary actions other than the four above such as forced labor.

Article 127 specifies the prohibited acts when dealing with the labor discipline, consisting: violation of the employee's health, honor, life, reputation and dignity; imposing fines, reducing wages in lieu of the labor discipline; disciplining an employee who has committed a violation that is not specified in the internal labor regulations or does not reach an agreement in the signed labor contract or is not regulated by the law on labor.

**Commitment on fighting against forced labor in all forms**

As soon as the National Assembly of Vietnam officially passed Convention 105, ILO congratulated Vietnam with this ratification decision, bringing the total ILO fundamental conventions ratified by Vietnam to seven out of eight.

Convention 105 compliments Convention 29 on Forced Labour - another core convention which Viet Nam already ratified in 2007. "Through this ratification, Viet Nam is demonstrating its firm commitment to combating forced labour in all its forms. This ratification is all the



*National Assembly deputies pressing the button to pass the resolution on participating in ILO Convention 105*

more important since the ILO's global estimates show the urgency of adopting immediate and effective measures to eradicate forced labour," ILO Director of International Labour Standards Department, Corrine Vargha, praised.

"Moreover, by ratifying the Convention, Viet Nam is moving ahead towards the achievement of decent work and the delivering at the country-level of the 2030 UN Sustainable Development Goals, in particular SDG target 8.7."

Forced labour can be understood as work that is performed involuntarily and under the menace of any penalty. It refers to situations in which persons are coerced to work through the use of violence or intimidation, or by more subtle means such as manipulated debt, retention of identity papers or threats of denunciation to immigration authorities. Forced labour degrades human dignity and denies the worker the ability to pursue material well-being and spiritual development based on free will.

According to ILO representative, in most of the countries around the world today, the import of products made by forced labour are prohibited by laws. One type of forced labour – forced prison labour – is the only condition on the basis of which all the World Trade Organization member States are expressly authorized to ban the import of goods produced using it. People of developed countries have adopted a habit of boycotting products related to forced labour.

Therefore the prevention and combating the

use of forced labour in enterprises helps enterprises avoid the risks of their products being rejected or boycotted by importing countries. The non-use of forced labour in the goods production or services is also considered as the “laissez-passer” for the goods and services to get access to global markets.

According to ILO global estimates, there are 24.9 million victims of forced labour throughout the world. Among them, 16 million people are exploited in the private sector such as domestic work, construction or agriculture; 4.8 million persons in forced sexual exploitation, and 4 million persons in forced labour imposed by state authorities. In the private sector, forced labour generates US\$150 billion in illegal prof-

its every year.

“The Government and social partners have been making consistent efforts in bettering its legal framework to pave the way for Viet Nam to move towards an upper-middle income country in sustainable manner,” said ILO Viet Nam Director, Chang-Hee Lee.

The new generation of free trade agreements, including the one between the EU and Viet Nam (EVFTA), requires member countries to make continued and sustained efforts towards ratifying all of these fundamental conventions to ensure that it contributes to the protection of workers’ rights and fairer share of economic gains from free trade.

## Current situation of occupational accidents in the first 6 months of 2020

According to MOLISA’s statistics, the actual situation of occupational accidents in the first 6 months of 2020 in the sector without labour relations and the sector of laborers without contracts have reduced in comparison to the first 6 month of 2019 regarding the number of death and fatal accidents.

According to reports of 59/63 provinces and cities directly under the Central Government, in the first 6 months of 2020, there were 3,349 cases of occupational accidents occurring nationwide, resulting in 3,450 victims. In which: In the sector with labor relation, there were 256 cases of fatal occupational accidents causing 274 deaths; In the sector without labor contracts, 104 cases of occupational accidents occurred, causing 104 deaths; The number of seriously injured people was 806; The victims were 1,151 female workers. Expenses for medicine, funeral, compensation for the family of the dead and the injured... are 516 billion VND; property damage was nearly 518 billion VND; The total number of days off due to occupation-

al accidents is 49,438 days.

Basic statistics showed that the situation of occupational accidents in the first 6 months of 2020 in the sector with labor relations and the sector of workers working without labor contracts decreased compared to the first 6 months of 2019 both in terms of number of deaths and number of fatal occupational accidents. Specifically: The number of fatal occupational accidents in the sector having labor relations decreased by 9 cases, equivalent to 3.4%. In the sector where the workers did not work under labor contracts, the number of occupational accidents decreased by 29 cases, equivalent to 21.8%. The number of people dying from an occupational accident in the sector with labor relations decreased by 10 people, corresponding to 3.5%; In the sector without labor contracts, the number of deaths due to occupational accidents decreased by 37, corresponding to 26.2%.

Many fatal occupational accidents occurred in sectors of production and business: Construction sector accounted for 23.24% of the

# NEWSLETTER

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total number of accidents and 28.71% of the total number of deaths; The service sector accounted for 12.35% of the total number of cases and 13.64% of the total number of deaths; The mining sector accounted for 10.08% of the total number of cases and 10.2% of the total number of deaths; The sector of construction materials production accounted for 9.22% of the total number of cases and 8.93% of the total number of deaths; The sectors of mechanical and metallurgy accounted for 8.11% of the total number of cases and 8.26% of the total number of deaths.

Major traumatic factors that cause the most deaths are: Falling from height, accounting for 23.81% of the total number of cases and 25.63% of the total number of deaths; Traffic accident accounted for 19.25% of the total number of cases and 14.41% of the total number of deaths; Collapse accounts for 15.71% of total cases and 20.2% of total deaths; Rolling and clamping equipment and machines accounted for 13.07% of the total number of cases and 12.17% of the total number of deaths; Electric shock accounted for 12.7% of the total number of cases and 12.12% of the total number of deaths.

Causes of occupational accidents originated from employers accounted for 53.09% of the total number of cases and 57.35% of the total number of deaths (such as employers not building safe working procedures and methods accounted for 29.15% of the total number of cases and 32.8% of the total number of deaths; Employers not providing OSH or inadequate OSH training for employees accounted for 10.72% of the total number of cases and 10.09% of the total number of deaths, organization of labor and working conditions accounted for 8.84% of the total number of cases and 10.39% of the total number of deaths...); Workers violating occupational safety regulations accounted for 15.69% of the total number of cases and 14.96% of the total number of deaths. The remaining 31.22% of the total number of occupational accidents and 27.69% of the total number of deaths occur due to other causes such as traffic accident, occupational accident caused by other people, difficult-to-avoid objectivity.

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