

5.0 OSH SYSTEM IMPLEMENTATION: MEANS AND TOOLS

5.1 Inspection and enforcement systems

a) Department of Occupational Safety and Health (DOSH)

DOSH enforces the Factory and Machinery Act (FMA) 1967 and the Occupational Safety and Health Act (OSHA) 1994 (Act 514).

5.2 OSH Research Institutions

a) OSH Related Research Conducted by Agencies under MOHR

❖ Department of Occupational Safety and Health (DOSH)

- Plan and carry out research and development programmes aimed at enhancing the quality of products, such as the effectiveness of enforcement, compliance status, development of standards and legislations, policies, accident control, and work procedures, and occupational diseases.

❖ National Institute of Occupational Safety and Health (NIOSH)

- NIOSH has its own Research Management Centre which had been conducting research and development (R&D) activities in OSH and its related areas with cooperation from local research institute and other organizations

❖ Social Security Organizations (SOCSO)

- SOCSO has been involved in carrying out research through its Risk and Research Division which aims to establish a comprehensive risk and research system where the research unit conducts studies of funding capabilities, and the expansion of social security scope.

b) OSH Related Research Conducted by Other Agencies

❖ Ministry of Works – Construction Industry Development Board (CIDB)

- Conducted research in the benefit of construction sector

❖ Ministry of Higher Education

- Public and private universities have been conducting research in the field of OSH in various field level including Diploma, Bachelor, Masters and PhD.

- ❖ **Ministry of Science, Technology & Innovation**
 - Provided research grant to conduct viable research in OSH. This including Sciencefund, Technofund and Innofund.
- ❖ **National Poison Centre**
 - The Centre conducted research related to OSH activities related to pesticide exposure. Three main projects include pesticide exposure among agriculture workers, management of pesticides exposure, and exposure to air quality among various sectors of industries.
- ❖ **Ministry of Transportation – Malaysian Institute of Road Safety**
 - The centre for conducting strategic studies and evaluating current procedures on road safety to generate information that will help in improving road safety in Malaysia.
- ❖ **Ministry of Urban Wellbeing, Housing and Local Government – Fire and Rescue Department of Malaysia**
 - Research in fire safety, fire suppression and rescue implemented systematically and scientifically in providing efficient and effective fire rescue services.
- ❖ **Ministry of Science, Technology and Innovation – Malaysian Nuclear Agency**
 - The MNA is responsible to regulate any radiation-based work environment in Malaysia. Research scope of the Agency includes medical, energy, environment and agriculture. Among all, two main research related to OSH includes study on Radiation Metrology and radioactive environmental waste. Nuclear Malaysia provides internal R&D Grant which known as PQRD fund, available for industrial, agro-bioscience, waste and environment, radiation processing, technical service and safety and health research.
- ❖ **Ministry of Natural Resources and Environment – Department of Biosafety**
 - Research conducted under the purview of the department is mostly related to living modified organism (LMO) and products of such organism. Research is conducted under the Research and Evaluation Section of the Department.
- ❖ **Ministry of Agriculture & Agro-Based Industry Malaysia – Department of Veterinary Services**

Research projects are divided into five priorities area namely influenza diseases, respiratory-related diseases, herbal research, zoonotic diseases, and vaccine development. Most of the research conducted by DVS is done by Veterinary Research Institute (VRI). Research and development is part of the services conducted by the Zoonotic Section of VRI, which conducted research on leptospirosis, brucellosis and diphtherias infection. From 2010-2015, 7 researches had been conducted in public health concern.

❖ **Ministry of Health – National Institute of Health (NIH)**

- National Institute of Health (NIH) is a network of MOH research institutes. Among all, Institute of Medical Research (IMR) (under Environmental Health Research Centre) and Institute of Public Health (IPH) (under Occupational Health Unit) are Institute which conducted research related to occupational safety and health through the research center under research institutes, respectively.

c) Research conducted by employers – Malaysian Employer Federation (MEF)

- From 2010-2015, 36 studies on man-day loss and survey on medical benefits together with man-day loss had been carried out by MEF.

d) Research Conducted by Employees – Malaysian Trade Union Congress (MTUC)

- From 2012 to 2013, MTUC conducted research related to OSH such that, related to workers' minimum retirement age and wages.

5.3 Occupational Safety and Health Laboratory

Generally, the Department of Occupational Safety and Health requires that all equipment used for monitoring or sampling and analysis of samples related to OSH activities to be carried out in accredited laboratory. In supporting the requirement, Department of Standards is the lead authority in accrediting laboratories to the MS ISO/IEC 170025.

5.4 OSH Information Centre and Awareness-raising structures

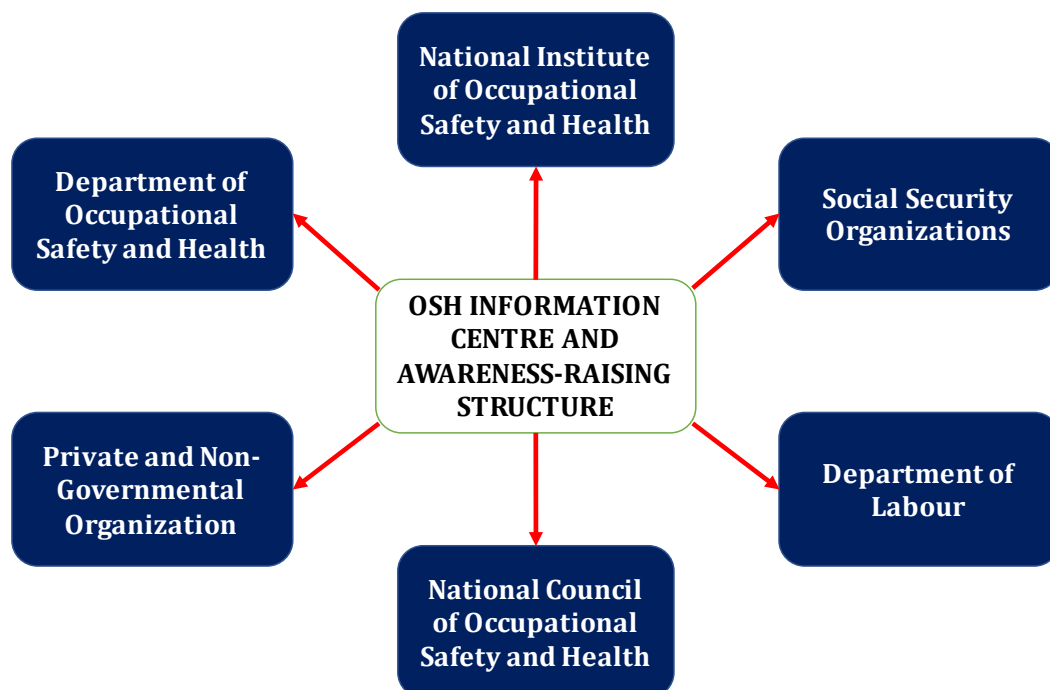


Figure 5.1: Main organization in promoting and dissemination of information in OSH

5.4.1 Main Organization

a) Department of Occupational Safety and Health (DOSH)

DOSH promote OSH through various division with the Department including at Federal and State level. The Department also worked closely with other government agencies and stake holders in supporting initiatives either through direct funding for program, through technical expert from the Department and awarding continuous education point for OSH related program. The information can be disseminated through DOSH's website, newspaper and social media.

b) National Council of Occupational Safety and Health (NCOSH)

The NCOSH had been active in promoting awareness of OSH through various industrial and community. NCOSH organizes annual programs to promote awareness, specifically the OSH Day in conjunction with World OSH Day, the OSH Week and the National OSH Award.

c) National Institute of Occupational Safety and Health (NIOSH)

The NIOSH disseminates information through several channels including:

- web service
- annual publication, newsletter and posters
- organizing and participating in various exhibitions, seminars and conferences held nationwide as well as advice and support industries in their safety and health campaign activities.
- Media statement in local newspaper
- Corporate Social Responsibility Program

d) Social Security Organization (SOCSO)

SOCSO disseminate OSH information through various means including training grant for NGO, SOCSO's outreach programme and online publication.

e) Department of Labour

The Department of Labour disseminate information of OSH through various means which include industrial dialog, labour advice and online publication.

5.4.2 Other Agency on Awareness Raising Structure

a) Construction Industrial Development Board (CIDB)

The Construction Industrial Development Board (CIDB) disseminates information primarily through their website. As the Board is empowered by legislative requirement, the Board is well known to construction industry generally which improve penetration to various level of contractors.

b) Ministry of Education

The Safe School Programme is to create a safe school environment. Through a blueprint for a Safe School Programme in Malaysia, known as the Safe School Concept and Manual: Implementation Guide to Create a Safe School, Community and Family for Children (Ministry of Education, 2002). The aim of the blueprint, is to disseminate safety through support of families and local communities.

c) Ministry of Health

Ministry of Health increase awareness of OSH only among their workers coordinated by the Occupational Health Unit. This includes:

- Occupational Disease and Injury
- Pesticide and chemical poisoning
- Lung Diseases
- Noise Induced Hearing Loss
- Skin diseases

d) Ministry of Science, Technology and Innovation

Awareness program is conducted through Malaysian Nuclear Agency Training Centre. The course on radiation safety is primarily directed to the safety of workers, members of the public and the environment by emphasizing aspects of radiation protection, in line with the requirement of the Atomic Energy Licensing Act 1984.

e) Ministry of Natural Resources and Environment

The Department of Biosafety under MNRE had jointly organized the Biosafety Training Workshop with several institutions/organizations with objective to create awareness among the researchers, lecturers and laboratory personnel on the Biosafety Act 2007 and Biosafety Regulations 2010 including some biosafety modules.

f) Ministry of Urban Wellbeing, Housing and Local Government

Campaigns, seminars and trainings on fire safety has been conducted by the National Fire and Rescue Department of Malaysia throughout the nation in order to maintain the level of awareness.

5.4.3 Private Support on Awareness Raising in OSH

There is numerous website hosted by OSH practitioners in various social media including Blogspot, Facebook, twitter, Linkedin, Youtube and others.

5.4.4 Social Partner

Social partners including employers and employees' association are actively involved in increasing awareness on OSH among their members. This includes:

- Malaysian Employer Federation and associates
- Federated Malaysian Manufacturing
- Malaysian Trade Union Congress and associates

In addition, NGO in OSH actively promote awareness through workshop, seminar, and roadshow.

5.5 Occupational Health Services (OHS)

Occupational Health Services refers to services entrusted with essentially preventive functions and responsible for advising and assisting the employer, the workers and their representatives in the undertakings on:

- ❖ The requirements for establishing and maintaining a safe and healthy working environment which will facilitate optimal physical and mental health in relation to work, and performing the work,
- ❖ The adaptation of work to the capabilities of workers considering their state of physical and mental health

They can be government, semi-government and private agencies, which comprised of:

- a) Department of Occupational Safety and Health (DOSH), Ministry of Human Resources
- b) National Institute of Occupational Safety and Health (NIOSH)
- c) Occupational Health Unit, Public Health Department, Ministry of Health Malaysia
- d) Social Security Organization (SOCSO)
- e) Local universities

5.6 Social Protection and Compensation

5.6.1 Private Sector

a) Social Security Organization (SOCSO)

SOSCO provides coverage to eligible employees through the Invalidity Pension Scheme and the Employment Injury Insurance Scheme. Coverage is compulsory for

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Malaysian workers and permanent residents employed under a contract of service or apprenticeship and earning RM 2,000 per month or below. Government employees and self-employed persons are exempted.

b) Employee Provident Fund (EPF)

The EPF is a social security institution formed under the Employees Provident Fund Act 1991 which provides for the:

- (i) retirement benefits for members through management of their savings,
- (ii) incapacitation and Death Benefits payable to the member/guardian or beneficiary to help lessen the financial burden when the member suffers from incapacitation or in the event of death.

c) Private Insurance Scheme

Some large employers provide medical benefits to the employees through their panel clinics and hospitals. They may also buy private health insurance to cover hospitalization charges in the government or private hospitals. There are 19 licensed insurance companies and Takaful operator by Bank Negara Malaysia.

5.6.2 Government Sector

a) Government Pension

The Government developed a form of Compensation Scheme for personnel who are required to retire or passed away due to an injury or contracted a disease because of exposure to harm in the course of carrying out his/her duties and to provide the life subsistence for the dependents of personnel who have passed away during the term of service with the Government or after their retirement.

b) Ex-gratia Scheme

The Ex-Gratia Compensation Scheme was introduced to provide compensation, which is not covered by any prior legislation, for all its workers suffering from injuries and illnesses due to work including oppression by bad social elements while carrying out official duties.

The scheme covers all government servants except those in the military, police and fire services; those engaged under services with the Government Trustee Fund (Tabung Amanah); attached officers and daily paid workers who have been covered under different schemes accordingly.

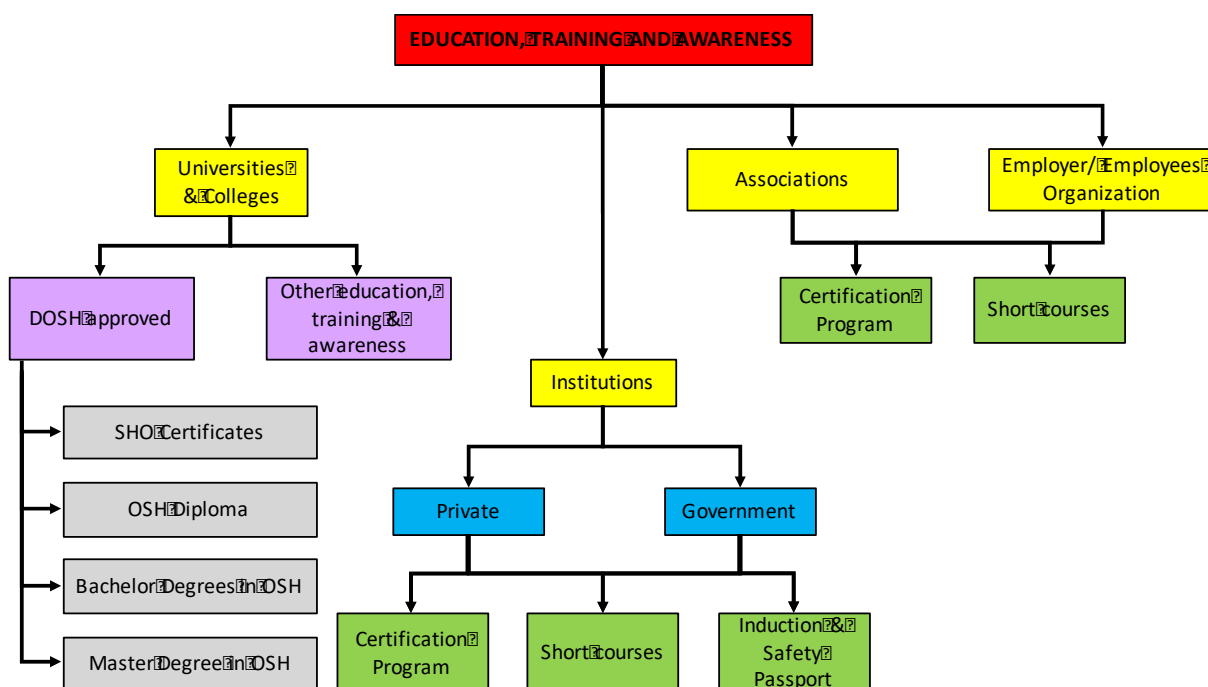
c) Foreign Workers' Compensation

Foreign workers who work in Malaysia are covered under the Workmen's Compensation Act 1952. The scheme provides foreign workers with personal accident and repatriation benefits during and outside of working hours. Foreign workers who are under the employment of the insured company will enjoy coverage that include:

- Death and disability due to an accident
- Disease arising out of and in the course of employment
- Medical expenses
- Repatriation expenses

In Malaysia, there are three Labour Departments responsible to manage foreign workers namely Department of Labour Semenanjung Malaysia, Department of Labour Sabah and Department of Labour Sarawak. The Malaysian Labour Department is responsible for employee welfare, employer advantage, national labour policy implementation through administrative and labour legislation enforcement, as well as effective promotional activities towards productive and committed human resources.

5.7 Education, Training and Raising of Awareness



Both government and private (profit-based) institution provide OSH-related training and continuous educational program, such as certification program, short courses, and training or customized industrial OSH-related training programmes which are based on demand. Besides that, non-governmental organizations (NGO) were also equally and

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actively providing specific professional education and training programmes to their members. Education and training are delivered in different form, such as through private and/or government institution, university or college, association and employer's/workers' organization.

a) Government and private institution which provide OSH-related training and continuous education program include

Government institution	
National Institute of Occupational Safety and Health (NIOSH)	<ul style="list-style-type: none">• Certification Programmes for competency courses• OSH Practitioners Programmes• Trainer's Programme• Safety Passport Programme
Construction Industry - Construction Industrial Development Board (CIDB)	<ul style="list-style-type: none">• Training course: Building, Crane and Plant Operation, Mechanical and Electrical, Drafting, Welding, Blasting & Painting and Non-destructive testing• CIDB Green Card
Atomic Energy Licensing Board (AELB)	Radiation Protection Officer (RPO)
Ministry of Science, Technology and Innovation (MOSTI)	<ul style="list-style-type: none">• Environmental safety and health program• Radiation safety and health program.
Ministry of Natural Resources and Environment (MNRE)	Biosafety Training Workshop
Ministry of Transportation (MOT), Malaysia	SPAD Industrial Code of Practice Safety Training Programme (ICOP-Safety)
Ministry of Agriculture (MOA), Malaysia	National Agriculture Training Programme: <ul style="list-style-type: none">• Safe Handling of Toxic Substances• Toxic Waste Management,• Control and Management of Pesticides• Safe Pesticide Spraying Procedures• Integrated Pesticide Management
Private institution	
Oil and Gas Industry – Offshore Petroleum Industry Training Organization	<ul style="list-style-type: none">• Emergency Response (Training and Competence)• Emergency Response and Rescue Vessel• Others Non-Emergency Response Based (Training and Competence)
NEBOSH International Technical Certificate in Oil and Gas Operational Safety	International standards and management systems
Other Occupational Safety and Health Training Provider	<ul style="list-style-type: none">• CLASS Regulation• Crane Operator• Scaffold• Safety and Health Officer Program – all levels• Site Safety Supervisor Program• Confines Space Courses• Radiation Protection Officer Program

b) University/college offering OSH related programme

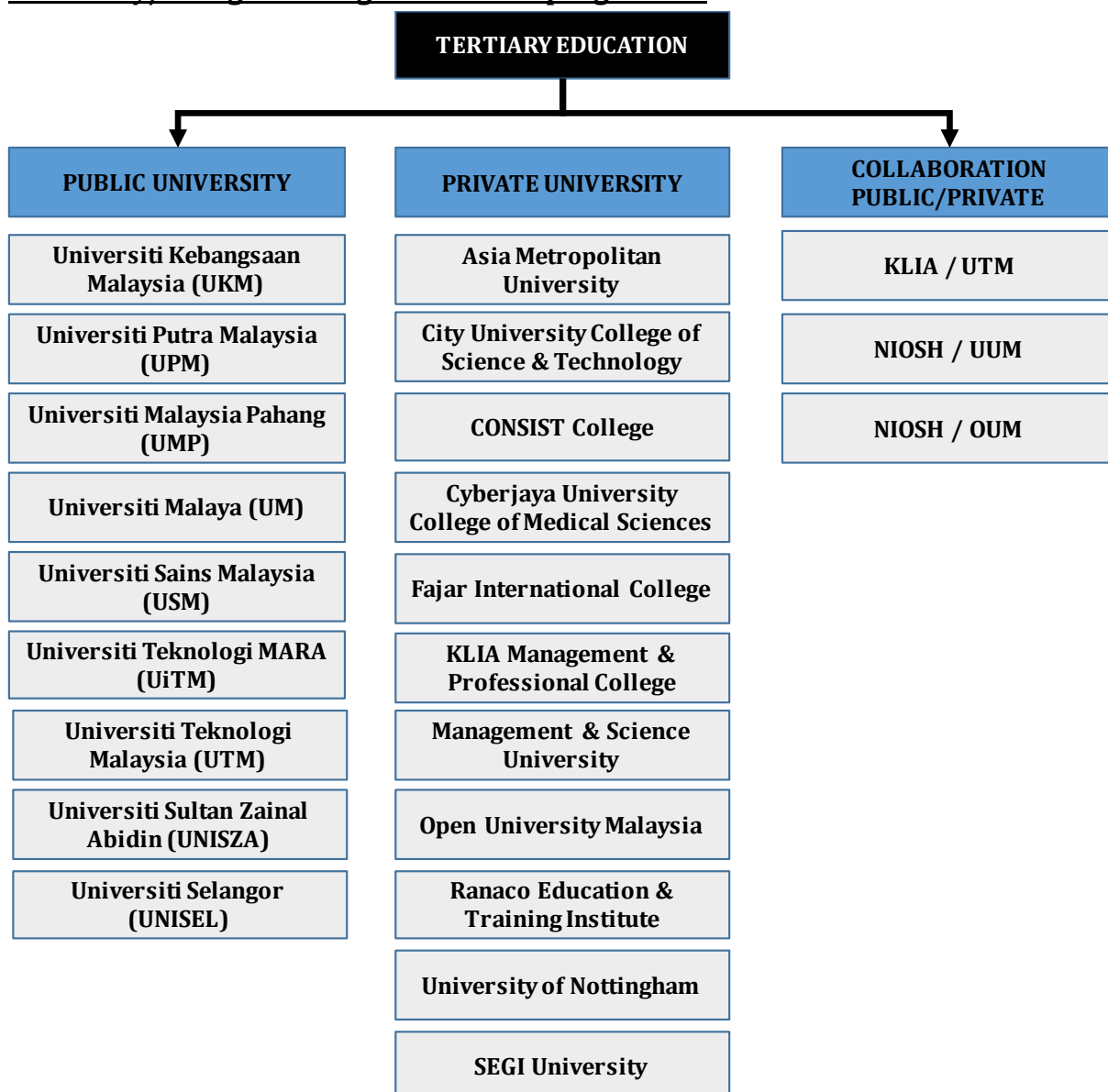


Figure 5.3: OSH Education Programs from Public and Private Institute of Higher Education

There are academic programmes in various level which are offered by higher learning educational institution in the field of OSH in Malaysia. DOSH has certified several organizations to conduct OSH programmes at the academic level. For most programmes which were not certified by DOSH, the curriculums for the programmes are accredited under the Malaysian Qualification Agency (MQA). Programmes offered by the universities/colleges related to Occupational Health and Safety include the following::

- Occupational Health
- Occupational Safety and Health Management

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- Occupational Health & Safety Leadership
- Public Health
- Environmental Health
- Ergonomic
- Emergency Response and Planning
- Industrial Safety Management
- Environmental Technology
- Environmental Management,

There are training institutes which collaborates with universities/college in offering OSH programmes such as NIOSH collaboration with Universiti Utara Malaysia (UUM) and Open University Malaysia, Business and Advance Technology Centre collaborated with Universiti Teknologi Malaysia (UTM), and Kuala Lumpur Infrastructure University College (KLIUC) also collaborates with UTM for another Diploma in Occupational Safety and Health.

c) OSH-related Association

In Malaysia, there are various OSH-related associations which make great impact in building a sustainable platform for health and safety professionals and anyone who have passion for safety and health at workplace worldwide.

Table 5.8: Associations provided CEP and DOSH-accredited certification program

Association	Example of DOSH-accredited certification program commonly offered
Malaysian Industrial Hygiene Association (MIHA)	<ul style="list-style-type: none">▪ Basic, Intermediate and Advanced course for CLASS Regulation▪ Competent Indoor Air Quality Assessor▪ The Certified Professional Industrial Hygienist (CPIH) a program recognized and endorsed by the International Occupational Hygienist Association (IOHA) Committee.
Master Builders Association Malaysia (MBAM)	<ul style="list-style-type: none">▪ Site Safety Supervisor Program
Malaysian Offshore Contractors Association (MOCA) Resources	<ul style="list-style-type: none">▪ Authorized Entrant (AE) and Standby Person (SP) for Confined Space
Other Societies usually offering OSH-related program	
<ul style="list-style-type: none">▪ Malaysian Occupational Safety and Health Practitioners Association (MOSHPA)▪ The Malaysian Society for Occupational Safety & Health (MSOSH)▪ North Region Group Safety Health Environment (NRG-SHE)▪ Malaysian Occupational Safety and Health Officer (MASHO)	

- Society of Occupational and Environmental Medicine (SOEM)
- Academy of Occupational and Environmental Medicine Malaysia
- Society of Occupational and Environmental Medicine (SOEMM)
- Sabah OSHE Association (SOSHEA)
- Malaysian Occupational Safety & Health Practitioner's Association (MOSHPA)
- Persatuan Pengamal Pengurusan Keselamatan, Kesihatan dan Persekitaran Pekerjaan Malaysia (OSHEM)
- Human Factors and Ergonomics Malaysia (HFEM)
- Malaysian Occupational Scaffolding Association (MOSA)

d) Examples of Trainings Programmes Organized by Employers' and Workers' Organizations

Training programme also conducted by employers' and workers' organization such as,

- ❖ Malaysian Employers Federation (MEF)
- ❖ Malaysian Trade Union Congress (MTUC)
- ❖ Federation of Malaysian Manufacturers (FMM)

5.8 Emergency Preparedness and Its Organization

To prevent incidents before becoming disastrous, an Emergency Response Plan (ERP) is implemented to minimize the potential damage to workers, community and the environment. It is a coordinated set of protocols and an ordered list of events to take place or procedures to be followed. Important elements in a program are the overall plans and the resources required to execute the plans. The disaster management structure in Malaysia is divided into 3 escalating levels of committee; district, state and federal with respective scope, tasks and job functions.

a) Workplace Emergency and Disaster Management in Malaysia

Emergency management at any workplace comprises of four phases namely Mitigation and Prevention, Preparedness, Response and Recovery.



Figure 5.4: Emergency Management Cycle in Malaysia

b) Emergency Management Related Laws in Malaysia

The Malaysian government has recognized the need to regulate activities which have potential to cause major hazards. However, there is no single or comprehensive legislation on emergency management that covers all aspects of natural or man-made emergency situations in the industry. Regardless of the legal requirements, various governmental agencies, statutory bodies and private organizations have voluntarily published their own manual, standard operating procedures or guidelines in the management of disaster for their internal use. Related laws and standards in emergency management include:

- OSH (Control of Industrial Major Hazards Installation) Regulations 1996
- Fire Services (Fire Certificate) Regulations, 2001
- Uniform Building by-Laws (UBBL) 1984
- Environmental Quality Act (EQA) 1974
- Occupational Safety and Health Management Systems (OSHMS)

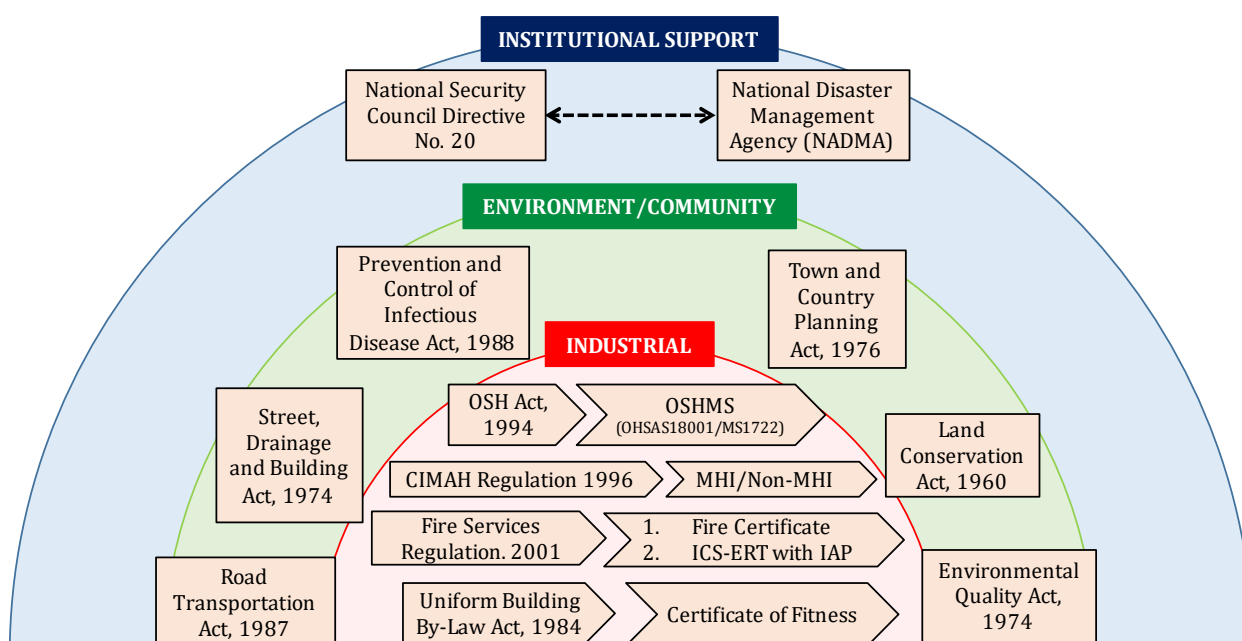


Figure 5.6: Framework for Emergency Management in Malaysia

c) District, State and National (Local) Emergency and Disaster Management

In the event that emergency situation escalates to disaster which is beyond the capability of the organization to respond, the management of the situation shall be handed over to the appropriate authority by notifying the emergency responders via MERS 999 which is the general line for emergency linked to various authorities on standby. Commonly, the activation of emergency system in most major hazard installation is automated to directly trigger the response of emergency services hence shortening the response time.

5.9 Occupational Safety and Health Practitioners, Professional/Competent Persons

OSH practitioner refers to individual who trained and tasked to implement occupational safety and health programs, as well as support the occupational safety and health system in the workplace in accordance with the provisions of the OSH-related regulation.

- ❖ Safety and Health Officer (SHO)
- ❖ Site Safety Supervisor

OSH professional or competent persons are refers to any qualified person or group of persons who duly-accredited to practice and render occupational safety and health

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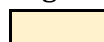
services in a defined and specific scope or core competency. They may also provide consultative and/or advisory services on occupational safety and health fields.

- ❖ Major Hazard Competent Person
- ❖ Engineers and Drivers
- ❖ Scaffolder Fitter
- ❖ Crane Operator
- ❖ Lift Competent Person
- ❖ Designated Person (Hoisting Machine)
- ❖ Occupational Health Doctor (OHD)
- ❖ Occupational Health Nurse (OHN)
- ❖ Industrial Hygienist I and II
- ❖ Authorized Gas Tester / Entry Supervisor
- ❖ Indoor Air Quality Assessor
- ❖ Ergonomist/Trained Person
- ❖ Noise Competent Person
- ❖ Assessor (Chemical Health Risk Assessor)

Table 5.13: Number of OSH Competent Person

No	Competent Person	2010	2011	2012	2013	2014	2015	2016	Source
1	Safety and Health Officer	4,148	4,087	5,306	5,601	2,406	2,030	1,405	Industrial Safety Division
2	Lift Competent Person	118	106	123	169	268	198	217	
3	Steam Engineer	1,924	2,054	2,192	2,362	2,519	2,721	2,872	
4	Internal Combustion Engine Engineer	254	282	341	319	355	372	432	
5	Hoisting Machine	73	56	73	83	61	83	120	
6	Site Safety Supervisor	NA	12	219	568	778	1,253	1,408	
7	Major Hazard	36	24	25	23	16	23	23	Petroleum Safety Division
8	Steam Engine Driver	10,083	10,216	1,855	1,637	2,490	4,248	6,923	DOSHS State Office
9	Internal Combustion Engine Driver	4,344	4,366	885	826	1,495	2,323	4,181	
10	Scaffolder Fitter	5,716	6,733	3,710	4,593	5,923	5,645	2,801	
11	Crane Operator	12,626	14,866	5,082	6,042	3,200	2,527	3,393	
12	Occupational Health Doctor	785	838	471	647	752	527	559	Occupational Health Division
13	Occupational Health and Safety Nurse	NA	NA	NA	NA	20	NA	NA	Ministry of Health
14	Assessor (CHRA)	281	303	320	342	358	150	171	Chemical Management Division
15	Indoor Air Quality Assessor	15	19	21	23	30	18	20	
16	Hygiene Technician I	160	172	370	382	393	88	77	
17	Hygiene Technician II	167	180				66	71	Industrial Hygiene and Division
18	Authorized Gas Tester	124	748	1792	2946	4459	1750	1761	
19	Noise Monitoring	113	118	121	123	142	72	100	

Legend:

 Cumulative value