Occupational Safety and Health Risk Management in Pineapple Plantation

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Abstract: Risk management in the agricultural setting are considered an important element in rising up the quality of working life among workers. A descriptive cross sectional study had been conducted at Rompine Integrated Pineapple Plantation (RIPP) to disseminate knowledge to workers and management in relation to occupational safety and health (OSH) risk management. A series of data collection activities had been conducted through a walkthrough observation, interviews and video recording. Subsequently, the research team had developed and delivered a comprehensive four units' module from February to August 2017. This module had been developed clearly based on the identified issues or problems at the pineapple plantation. A number of 10 identified hazards had been analysed and were added to the module mainly to be discussed and clarify to the audience emphasizing on way how to reduce the risk. Two hours of face to face lecturing session were performed by the instructors for each module. Notably, it is proven that audience had improved their knowledge and awareness after the session finish. Knowledge and awareness of occupational safety and health had been transferred through these four modules to the audience. It can be shown through their willingness to perform safe work practice as well as to participate in activities related to safety and health awareness such as campaign and group discussion. The successful of the knowledge transfer program (KTP) at RIPP also spread to other branches of pineapple plantation under Malaysia Pineapple Industry Board (MPIB). The awareness on OSH among top management was improved. The demand on OSH training and education in multiple state also increased. It was indirectly improved MPIB reputation local and globally. In conclusion, workers and management team had successfully increased their knowledge and awareness towards safety and health issues arises at their plantation, by participating in the four units modules developed. Indeed, results from this positive outcome had increase generally the economic gain and pineapple production capability in RIPP.

Keywords: Occupational Safety and Health (OSH); Pineapple Plantation

INTRODUCTION

Prime Minister of Malaysia has launched Occupational Safety and Health (OSH) Master Plan 2020 (OSH MP 2020). The OSH MP 2020 is expected to the reduced rate of occupational accidents and diseases and thus assists the Malaysian government in raising the quality of life of the people. The government of Malaysia is giving full support in transforming OSH throughout the country. OSH-MP 2020 employs five main strategies founded on the endeavour to increase stakeholder awareness, responsibility and commitment to OSH. All quarters must move together to fulfil their respective responsibilities and roles to create a safe and healthy workplace through the inculcation of the values of the Preventive Culture. To ensure its success, aside from the commitment of employers and workers, the OSH-MP 2020 outlines the duties and responsibilities of all stakeholders which are the Government, associations, competent persons and relevant parties with influence over employers and workers.

University Malaysia Pahang as a higher education provider takes the challenge in sharing the knowledge, attitude and practice of OSH among workers in Rompine Integrated Pineapple Plantation (RIPP). The academia of UMP believes that, transferring knowledge is about to create emergence among academia, and emergence between UMP and industry. For examples, this KTP are creating opportunity for all academia to learn and share their experiences among them and then collaborate to shift the experience to community of practice. With the aim to cultivate OSH in a remote area (RIPP), we work as a small team, using local efforts and eventually we hope that it will become a global force for change. KTP project is proven as one mechanism that is very effective as good ideas move rapidly amongst members and the knowledge and practices can be implemented quickly (Wheatley and Frieze 2006). Figure 1 shows how KTP project in line with co-creation demand of science and practices model. Academia do their works to contribute in the body of knowledge and then transfer to the industry. Meanwhile industry provides a platform for academia to provide industrial driven projects and at the same time the productivity in the industry uninterrupted.

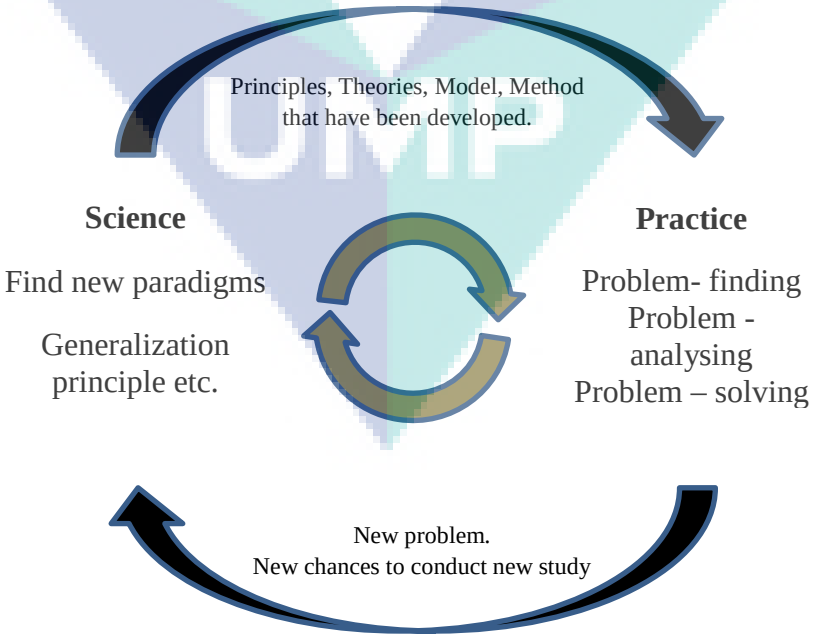

Figure 1 Knowledge transfer program and co-creation of demand

There are THREE (3) objective of this project:

1. To disseminate the knowledge of occupational safety and health in order to cultivate safe and healthy working condition in daily work activities.
2. To increase workers wellbeing and work performance through safe work practice.
3. To increase the economic gain and production capability of the industry through this technology.

PROBLEM STATEMENT

Pineapple was introduced to Malaya in the 16th century by the Portuguese. Recently, pineapple plantation in Malaysia is rapidly growing because of well-known in producing quality, golden-yellow coloured canned pineapples which is favourable to outside markets. As the product demand is increasing, the work force has also increasing and concurrently has increased the risk of new incidents and accidents in agricultural sector. According to the statistics of occupational accident recorded from Department of Occupational Safety and Health Malaysia (DOSH), the agricultural sector had the second highest occupational accidents compared to other sectors with more than 535 cases in 2013. Pineapple plantation sector has the second highest of occupational injuries after rubber plantation. The number of accidents reported continued to increase annually and some of the accident cases have never been reported. It was found that the possible causal factor that was associated with non-reporting accident was lack of awareness, lack of safety management system and lack of reporting system (Tamrin et al., 2014). This study is intend to answer two question. (1) Do management stakeholder and workers from Rompine Integrated Pineapple Plantation (RIPP) are aware about the existence of Occupational Safety and Health Act 1994? (2) Do the workers of RIPP exposed to any occupational safety and health issue?

METHODOLOGY

Field work

Series of field work were conducted to understand the whole process in RIPP. Walkthrough observation, interview session and video recording were performed. The findings are then used for developing specific module for this project.

Module development

To fulfil the objective of this project, the knowledge of occupational safety and health risk management are delivered to both management and workers. The knowledge is translated into module that was designed to be specific to the nature of work in pineapple plantations. The explanations and examples that been given in the delivering knowledge are gathered from real cases from the engaged industry. Figure 2 shows the extractions of module that have been developed to be transfer to workers at RIPP. The module is based on Hazard Identification, Risk Analysis and Risk Control (HIRARC) as it is one of the elements in practicing OSH Management System.

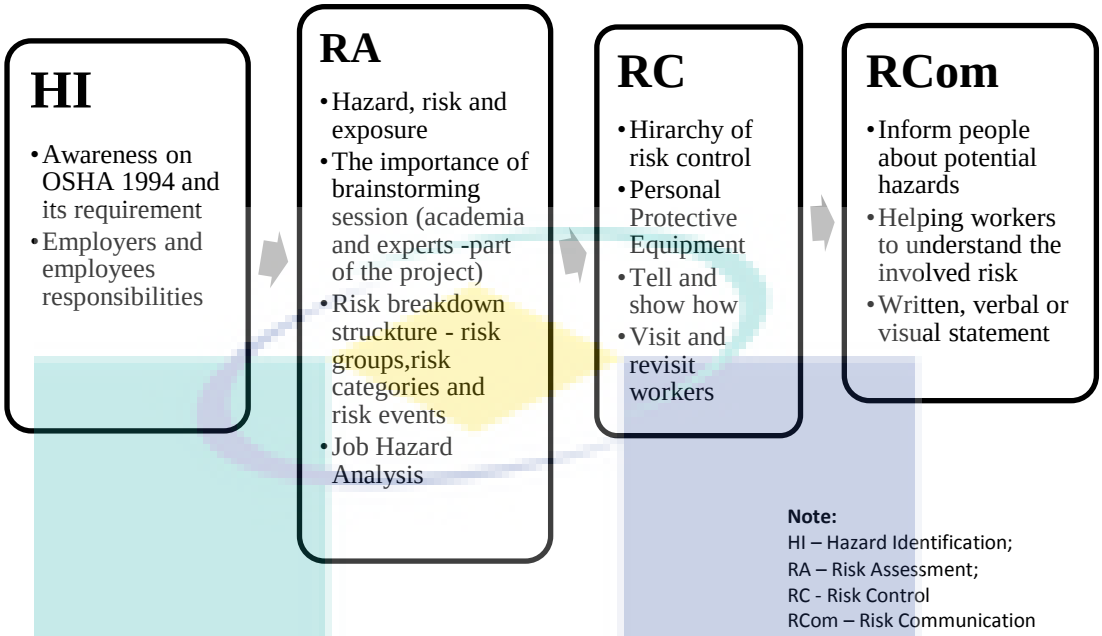

Figure 2 The extractions of module that have been developed based on HIRARC

Role of industrial partners and graduate intern

Industrial partners and graduate intern are actively involved in the process of developing and delivering each module. This is to ensure that the aim to make the session as a platform for lifelong learning that enriches the quality of human capital is achieved. Transferring knowledge sessions were conducted at the plantation so that the processes of work are not much disturbed and pineapples production for that day are also manageable with a good work plan.

Mode of delivery of the developed module

Mode of delivery is based on face to face session. As per mentioned by Garrison, Anderson and Archer (2000), face to face approach may consist of three categories such as instructional design and organisation (IDO), facilitating discourse (FD) and direct instruction (DI). All categories under face to face techniques are applied. Each category has its indicators. For example, IDO is referring to the process of setting curriculum, designing methods establishing time and available medium. FD is referring to identifying area of agreement, seeking to reach understanding, encouraging student participation. While for DI is the process of transferring knowledge with discussion on specific issues, confirming understanding through feedback, identify misconceptions, injecting knowledge from diverse sources and responding to technical concern. The speakers are from the competent academia and graduate intern in the field of occupational safety and health.

RESULTS AND DISCUSSIONS

Field work

From the conducted field work, issues relating to occupational safety and health are identified. Table 1 shows the results from field work through and observation. As per identified, the awareness among workers towards basic occupational safety and health are poor. Workers do their jobs without knowing or understand the harm of the risk that they exposed to. Although the protective equipment for some work activities that involving with hazardous substances is provided, without proper training to use it properly the effort is inoperable.

Table 1: OSH issues in pineapple plantation

No	Issues found	Remarks
1	Lacking safety signage	Poor communication of risk
2	Sharp objects used by workers (cleaver, blades)	Physical hazard
3	Inhalation, skin contact or ingestion of chemicals	Chemical hazards
4	Heavy Lifting- Carry heavy load during working hours (50 to 70 kilogram per session), total 500-600 kg in a day	Ergonomic Hazard
5	Poor and awkward postures (prolonged squatting and stooping) more than 4 hours per day	Ergonomic Hazard
6	Wild animals cross the threshold of plantation areas	Biological hazard
7	Lacking of safety awareness	Poor safety culture
8	Heat stress	Direct heat can cause overheating of body (heat stroke)
9	Numerous of poor condition containers which contain water	Mosquitoes breeding area
10	Damaged roads for entering plantation areas	Can cause vehicle accident

Module delivery and execution

Figure 3 shows the four modules of OSH Risk Management which consist of hazard identification module; risk assessment module, risk control and risk communication module Date of completion for each module are also provided.

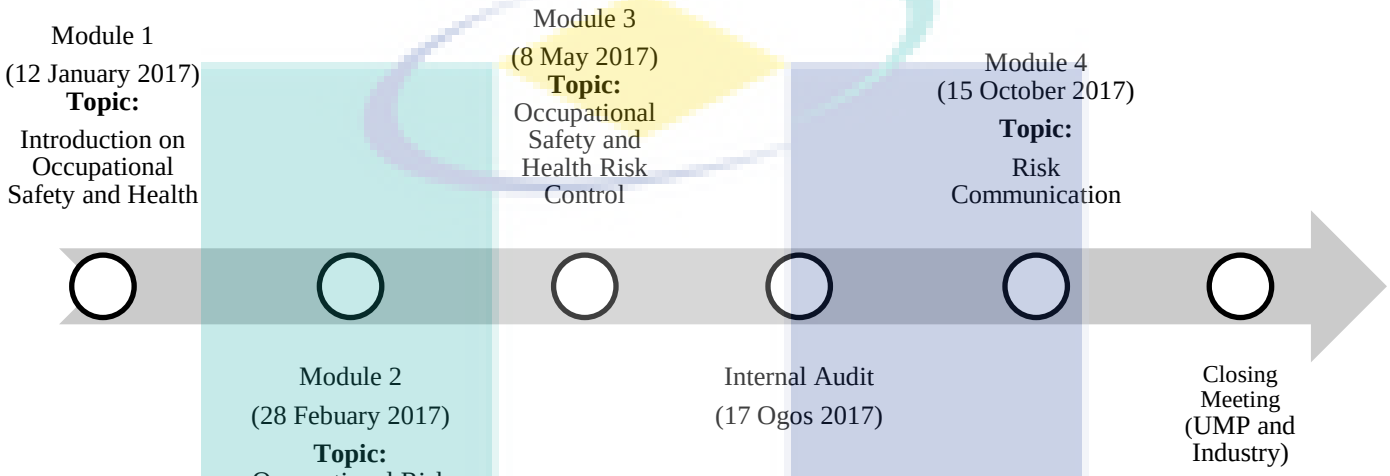

Figure 3 The time frame of module delivery and execution

Role of industrial partners and graduate intern

The industrial partners have given excellent cooperation during on the value of programme and participating in knowledge transfer session planning (refer Figure 4). They also have contributed in terms of financial and non-financial support. The graduate intern mostly involved in dealing and working closely together with the industrial partner (person in charge) in order to monitor and helping the programme to be executed efficiently. The GI will be presented and stayed earlier in RIPP for preparing the materials of programme before the learning module class is conducted. Besides, GI also actively participating in assisting in preparing modules, creating presentation slides and conducting fieldwork for Hazard Identification, Risk Analysis and Risk Control (HIRARC). A part from that, GI also received the opportunity to manage and deliver a knowledge transfer session.

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Figure 4 Execution of meeting throughout the Knowledge Transfer

Mode of delivery of the developed module

Face to face mode of delivery knowledge which consisted of three techniques (IDO, FD and DI) was adopted. Research findings, experiences and skills were practiced in front of industry and the involved community. Table 2 shows the three techniques in face to face knowledge delivery method and the summary of each technique that had been conducted throughout the project (for every knowledge transfer session). Figure 5 shows some of the pictures of module delivery sessions.

Table 3 The summary of activities based of module delivery method

Before Module delivery Adopt : Instructional Design and Organization (IDO)	Before and During Module Delivery Adopt: Facilitating Discourse (FD)	During Module Delivery Adopt: Direct Instruction (DI)
Academia, GI and indusrial partners do the planning, management and structural decision regarding content to be delivered.	Academia and GI are worked together on having appropriate skills to ensure the knowledge is delivered is a conducive environment	Experience academia in the field were successfully make the sessions run smoothly.
Series of meeting were conducted to have consensus the content of the module	It can be seen by having productive conversations in a way to deepen students' knowledge	The sessions were apply deep discipline knowledge to enable the learning process can be happen.

Figure 5 Modules delivery sessions

CONCLUSION

The results presented in this report provide some support for the adoption of a proactive approach for better OSH Management in RIPP. The premise has been introduced to OSHMS and they value and view it as part of organisational support. Furthermore, the several risk assessment conducted and evaluation approach in OSH Management can provide a valuable learning opportunity for organisations to develop proactive OSH Management culture. The effectiveness of programme is firm. The objectives to deliver education on safety and health besides cultivating safety culture and among pineapple plantation workers are considered a success. The participation of workers is excellent. This is proven as pineapple plantation workers are now implementing safe work practice through their work performance.

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