

# Risk management exploration of occupational safety and health for coconut tappers of Nira Satria Cooperative in Banyumas regency

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## ABSTRACT

**Background:** Occupational safety and health (K3) for informal sector is still low, as evidenced by the increasing trend of work accidents by 5-10%, including work accidents experienced by coconut tappers. Currently, there are only few research discussing about the implementation of SMK3, especially those dealing with risk management in reducing and preventing work accidents for coconut tappers. The objective is to explore the implementation of risk management for coconut tappers in working group of Nira Satria Cooperative, Banyumas Regency.

**Method:** This qualitative research used a case study approach. It was conducted in two villages, namely Sokawera and Pageraji. There were ten research informants involved in this research consisting of the Chief of Pageraji and the Chief of Sokawera, the staff of community health center, the staff of Cooperative, the family of coconut tappers, and the coconut tappers of Nira Satria Cooperative. Data collection was carried out by in-depth interviews and field observations.

**Results:** A total of 702 coconut tappers in Banyumas Regency were reported to have had accidents over the last five years. The work accidents experienced by coconut tappers of Nira Satria Cooperative were influenced by three factors, namely knowledge, availability of PPE, and behavior. The informants' knowledge of risk management was very limited, five out of nine informants interviewed were still unable to identify and assess risk at work. The availability of PPEs is only 10% of the total tappers and when used they hindered the tappers' time and work. The behavior of coconut tappers at work did not reflect good practice of risk management.

**Conclusion:** Coconut tappers of Nira Satria Cooperative had not implemented risk management properly, there were no strict rules from the Cooperative and there was no support from the stakeholders. The coconut tappers and the stakeholders should have awareness to prioritize the safety and health of the coconut tappers in Banyumas Regency, especially those of Nira Satria Cooperative.



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## 1. Introduction

Informal sector workers in Indonesia are not protected in terms of Occupational Safety and Health (K3) aspects. Even most informal sector workers are still unfamiliar with the term K3. Neglecting the K3 aspect has adverse impacts including increased work accidents that show an increasing trend of 5 to 10% (Badan Pusat Statistik, 2020). The number of work accidents in Indonesia is predicted to increase every year (Kemenkes, 2018). The informal sector needs to be equipped with understanding of K3 (Tagueha et al., 2018). One of the informal sectors in Indonesia is the coconut tapping working group in Banyumas Regency, which is the largest coconut sugar production center in Indonesia (Primasadi, 2019). The number of coconut tappers in Banyumas continues to decrease due to the high rate of work accidents (Imran & Kusmawati, 2018; Dinas Pertanian, 2020). There are various cooperatives involved in the production of coconut sugar, one of them is the Nira Satria Cooperative. This cooperative serves as an employer that is the place of collecting coconut sugar. The job of tapping coconut juice is a job that has a lot of risks. Risks need to be managed properly so as not to cause losses. There are 3 factors that influence a person in behaving while working, namely individual factors, psychological factors, and organizational factors (Saragih, 2020). In the preliminary studies conducted by interviewing informants in the field, the researchers examined the background of K3 problems including (a) the coconut tappers did not understand the risk of harm while working (b) the coconut tappers were not aware of protecting themselves (c) the coconut tappers did not use safety belts while working because it took time (d) the coconut tappers only focused on the results of coconut juice, and ignored safety risks, (e) the lack of stakeholders' understanding of the actual needs of coconut tappers.

## 2. Method

This research is a type of qualitative observational research with a case study method or approach that aims to explore K3 risk management of Nira Satria coconut tapping. The research was conducted in 2 villages, namely Sokawera Village and Pageraji Village. Key informants in this study were selected using purposive sampling including coconut tappers who were members of the Cooperative and informants supporting parties related to the Nira Satria Cooperative. In total, there were 10 informants consisting of 5 coconut tappers as key informants and supporting informants, namely the Head of Pageraji Village and the Head of Sokawera Village, a Puskesmas staff, a Cooperative staff, and a family member of one of coconut tappers. Data collection was carried out by in-depth interviews and field observations.

## 3. Results and Discussion

### 3.1. Results

#### 3.1.1. Knowledge of Occupational Accident Risk Management

With regard to knowledge of K3 as well as occupational health and safety risks, the tappers had a simple, but very important opinion for them. The coconut tappers were also interviewed with regard to the kinds of accidents that were often experienced while working.

“[Laughed] Safety and health yes 'if we can provide the needs of children and wife” (Tappers, 49 years old).

When interviewed about the cause of the accident, the coconut tapper mentioned that the most common cause of the accident experienced by tapper was slippery footrest.

“Yes I think the most important factor is caused by the state or 'slippery footrest” (Tapper, 49 years old).

The coconut tappers understood quite well about what caused them to crash, but they still did not manage the risk. Coconut tapping knowledge related to risk management was limited to a brief understanding of managing and detecting risks. Knowledge of K3 and risk management among

coconut tappers was still very limited. There had not been much effort by the Cooperative to increase the knowledge about K3.

### *3.1.2. Risk Management Behaviour*

A coconut tapper explained that the occurrence of accidents while working was caused by internal factors, namely laziness to clean dry leaves and laziness to fix the footrests, so that they were slippery to work.

“Yes because 'lazy to fix footrest or lazy to throw dry coconut leaves', so that during emergency situations the leaves are used as footrests and cause falling-off” (Tapper, 49 years old).

Although he had been able to identify the cause of the accident while working, the coconut tapper did not prevent himself from danger.

“Yes if slipping like that is usual Mba, 'not a dangerous thing' if it's the rainy season like this it's common to slip” (Tapper, 40 years old).

The coconut tappers had not been able to assess the risk of accidents experienced, so they ignored minor accidents. The coconut tappers that had suffered from severe accidents treated themselves using alternative medicine. The Cooperative played more roles when accidents occurred.

“Yes the Cooperative is ready to standby, 'cars are also there', prepare 'BPJS' (Social Security Scheme) for those who have (Cooperative staff, 52 years old).

The Cooperative had not played much role in managing the risk of coconut tappers, there had been no effort to make the tappers realize how to manage the risk. The Cooperative focused more on curative activities when a tapper had a work accident. To date, 350 tappers out of 880 were active.

### *3.1.3. Availability of PPE for Coconut Tappers*

Personal protective equipment facilities are important and mandatory to be owned by every business, such as what has been done by the Nira Satria Cooperative which has facilitated its workers with personal protective equipment in the form of safety belts. The safety belts in the Nira Satria Cooperative were provided by Bank Indonesia in collaboration with local governments and NGOs.

“Thank God we got PPE that originated from Bank Indonesia in cooperation with the district head of Banyumas” (Tapper, 40 years).

The number of PPEs available was still very small and they were unevenly distributed. There were 95 PPEs for 880 tappers officially registered in the Cooperative.

Nira Satria Cooperative facilitated their workers with PPE (Personal Protective Equipment) in the form of safety belts. Although provided by the workplace, the coconut tappers considered that PPE made it difficult for them to work.

“Yes, I think 'if using PPE is even more complicated' and makes a lot of mind” (Tapper, 49 years old).

The Cooperative did not yet have the intention to increase the amount of PPEs on the reason that the existing PPE distribution program was not running optimally. The village chief also said the same thing:

“Our focus now is not PPE anymore Mba, because unfortunately no one uses it. Most budgeting is for the procurement of genjah entog seeds next year 2021” (Village Chief, 53 years old).

With regard to the preparation of PPE, both the Cooperative and village chief did not prioritize PPE as a way to minimize the risk of work accidents among coconut tappers.

## **3.2. Discussion**

### *3.2.1. Knowledge of Occupational Accident Risk Management*

The coconut tappers' knowledge about K3 and risk management was still very limited. According to the coconut tappers, accidents were caused by the lack of maintenance of the footrests on coconut trees, so they became slippery. Footrest maintenance was done in a routine manner so that the feet were more comfortable when climbing. Unsafe environments and work facilities were contributing

factors to accidents. During this time, coconut tappers realized that footrest became an important factor in working, but they did not pay attention to it because they prioritized the results of coconut juice. The Cooperative tried to minimize work accidents among the coconut tappers by preparing PPEs, but the PPEs were not used because they were considered to present difficulties among the tappers. The researcher assesses the need for PPE innovation to be more comfortable to wear. Once the innovation is found, there needs to be supervision from the Cooperative, especially the supervision section related to compliance with the use of PPE (Lobis & Ariyanto, 2020).

To provide information on the K3, the Cooperative put posters around the workplace, but the existing posters had been damaged so they were no longer useful. There needs to be a change of posters every 6 months or 1 year. Posters have an influence on someone's knowledge (Latif, 2018; Latif, 2018). In addition to posters, cooperatives also produced educational movies, but the playing of the movies had not been evenly distributed. Only a few villages routinely played movies related to the making of coconut sugar which were also sidelined with K3 material. The researcher examines the need for equal distribution of movie playings by making short films that could be played individually on each tappers' mobile phone, so that they do not have to gather somewhere to watch the movie. Sharing of the movie can be done via WhatsApp. There needs to be cooperation between cooperatives and other parties who are more competent in the field of movie making and art. K3 information and risk management knowledge are also obtained from the community on a regular basis. Although they did not directly share information related to K3, the group regularly discussed the improvement of sugar quality. But in these activities the families of the tappers were never directly involved.

In addition, the researcher examines the need for a special group to discuss K3 at work as well as how coconut tappers manage risks by involving the tappers' family members. The tappers also explained that the K3 information was obtained only from the Cooperative. This is in line with what was revealed by the Puskesmas staff and village chief that there was no program that specifically discussed the safety of the tappers, although the number of tappers constituted the majority of the population.

### 3.2.2. Risk Management Behaviour

Coconut tappers had been able to identify the cause of accidents while working. They thought that accidents could occur because of internal and external factors. The researcher observed that the ability to identify risks among the coconut tappers was due to the fact that it had become a habit and had been done daily (Siregar & Nuraini, 20). Although they had been able to identify the cause of the accident, they still did not anticipate the problem that they thought was the cause of the accident. The tappers had not been able to assess the risk of an accident. This was evidenced by them judging accidents as something natural that happened at work. They still neglected and ignored minor accidents and did not pay attention to the huge impacts that could occur. The Cooperative had not played much role in managing risks, there had been no effort to make the tappers realize how to manage the risk. So far, the Cooperative was more focused on curative activities when accidents happened to the tappers such as providing a car to take coconut tappers to treatment places as well as providing directions to utilize BPJS (Social Security Scheme). Currently, 350 tappers were members of BPJS. Meanwhile, coconut tappers who did not have BPJS were only helped to the degree necessary. The researcher considers that the Cooperative needs to have fair treatment for both the coconut tappers who have been registered in BPJS and those who have not. Compensation given to the tappers not registered in BPJS experiencing accidents must still be taken into account.

The calculation of compensation may refer to PP No. 44 of 2015 concerning the Implementation of Work Accident and Death Insurance Program, in appendix III. Coconut tappers who had minor accidents usually did self-medication without reporting to any party. The researcher observed that coconut tappers were less able to assess the impact of risk from accidents. There needs to be an effort to raise awareness about accident risk management by conducting training. K3 training has been proven to improve workers' ability in managing risks in the workplace (Alfidyani et al., 2020; Ayu et al., 2019). Training to raise awareness of K3 will be very effective if it is done routinely at least once a year (Supriyatman, 2017).





**Fig. 2.** Process of taking coconut sap



**Fig. 1.** Process of making coconut sugar

After conducting training to improve risk management attitudes, recommendations that can be made to maintain the situation is providing a workplace that provides continuous motivation (Hanggraini, 2012). Motivation can increase awareness related to attitudes and behavior at work. Research shows that motivation given to workers can improve performance. Inspections can also enhance these efforts (Arifin et al., 2023). Inspections must always be carried out periodically to ascertain whether the program being attempted has been implemented or not and seek improvement and evaluation efforts in the future (Hanggraini, 2012).

### 3.2.3. Availability of PPE for Coconut Tappers

Nira Satria Cooperative was known to have provided PPEs in the form of seat belts / safety belts. The safety belts have been made available through the cooperation of the Cooperative, village parties, Bank Indonesia and several LSMs (NGOs). The total number of PPEs distributed was 95 pieces. An informant felt that there had not been much effort in the equalization of PPE distribution. This was justified by the Cooperative and village chiefs who judged that the PPEs available at that time had not been utilized optimally, so that there were no plans to equalize the distribution of PPE. Coconut tappers hoped that the Cooperative could make PPE easier and did not take their time in work. Time is a valuable thing for coconut tappers, because their job is not just to climb coconut trees. The researcher examines the need for cooperation to create PPE designs that are easier and faster to use.

Coordination can be done by involving Indonesian Rock-Climbing Federation of Central Java region (FPTI) because both tappers and rock climbers have the same characteristics in their activities, namely dealing with height. FPTI Jateng had implemented the K3 standard which was adapted to the safe climbing method (Sugiarto et al., 2013). The commitment of workplace management in actively minimizing work accidents can increase the success of reducing the number of work accidents (Anshori & Azkha, 2016; Pangkey et al., 2012)

The researcher observed that both the Cooperative and the village administration had not fully prioritized PPE as a way to minimize the risk of work accidents among coconut tappers. The village administration was more focused on proposing funding to the provincial government for the procurement of new coconut tree seedlings, namely genjah entog. The tappers' family members themselves, who should have the role of advising coconut tappers to use PPEs, did not play much role because they were worried about a conflict. The role of the Puskesmas staff was still limited in educating coconut tappers to use PPE. Puskesmas staff held K3 socialization to raise awareness of using PPE even though until now it has not been maximized. The socialization of K3 that had been held by Puskesmas 1 Cilongok allocated funds sourced from Health Operational Assistance (BOK). Health operational assistance is a government fund through the Ministry of Health for the implementation of promotional and preventive efforts. The person in charge of the socialization of K3 that had been conducted in Puskesmas 1 Cilongok was the person in charge of occupational health efforts (PJ-UKK) in the Puskesmas. To get the funding, as explained by the Puskesmas staff, they should propose the socialization activities one year in advance at the end of the year and the proposal should be agreed in a Puskesmas small meeting.

The researcher observes that the Puskesmas needs to prioritize the problem of accidents among coconut tappers by conducting health counseling specifically for coconut tappers. According to socialization research, utilizing social media such as WhatsApp can be an alternative to the sharing of information in the pandemic era. The successful use of WhatsApp media has been done in previous research (Pangkey et al., 2012). Nira Satria Cooperative also had not prioritized the supervision activities of coconut tappers. The Cooperative had a supervisory team, namely the Internal Control System (ICS). ICS only supervised the processing of coconut juice into sugar. There needs to be special supervision to monitor coconut tappers in using PPE while working. Supervision is an influential factor in the use of PPE and it is ideal to carry out every 2 weeks (Ekadinata et al., 2017; Edigan et al., 2019).

#### 4. Conclusion

Tappers' knowledge of risk management is still very limited due to the lack of OSH information obtained from both the workplace and responsible stakeholders. The knowledge of the tappers needs to be improved by implementation of various training and by increasing the intensity of providing information to reduce work accidents. Tappers' risk management behavior has not been good enough. Even though the informants have been able to identify risks while working, they have not been able to assess the impact of risks and analyze their prevention efforts. The available PPE units are still not evenly distributed. In addition, the distributed PPEs are also not used to carry out tapping work because they are considered difficult to apply and take twice as much time as usual.

#### Declaration

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