Improvement The Capacity Building of Sanden Workers Through OSH Training

Muhammad Heri Zulfiar*,

1Civil Engineering Department, Universitas Muhammadiyah Yogyakarta, Indonesia

Abstract. Gotong royong (mutual cooperation) is one of the local wisdom that reflects the noble values of achieving common goals. Some of the activities carried out in gotong royong include the construction of places of worship, irrigation booths, village roads, and other public facilities. With a voluntary spirit and for the common goal of Bonggalan Padukuhan (sub-village) which has 3 RTs, gotong royong activities often ignore aspects of occupational safety and health (K3). Therefore, it is necessary to seek a way to improve the quality of gotong royong through education about the importance of occupational safety and health work. The proposed solution to overcome this problem is to conduct Occupational Safety and Health (K3) training. The method applied to this capacity-building scheme is brainstorming and lesson learning (field practice) on a construction project planned by residents. The technique for community development that was applied is Focus Group Discussion (FGD). Based on the method and stages of the program, this community development is targeted to have funding in the form of publications in journals/proceedings, mass media, and social media.

Keywords: occupational safety and health, worker, profession of carpenters

1. Introduction

Gotong royong (mutual cooperation) is one of the local wisdoms that is still commonly found today. This is considered because it is an ancestral cultural heritage that has become the character of the Indonesian nation (Bintarto, 1980). In gotong royong, there are noble values that reflect the values of togetherness, tolerance, work ethic, and mutual help. This is reflected because of the voluntary element of the community in carrying out their duties when gotong royong takes place. The character of gotong royong can be seen in several activities including; the construction of places of worship, irrigation booths, village roads, and other public facilities. By working together, the community is able to lessen the work and save time in completing a job. Because of these benefits, gotong royong is often carried out by various levels of society, ranging from rural to urban communities. One of the spearheads of gotong royong in the community, especially in terms of carrying out physical work, is the residents who work as builders.

The ability of carpenters (profession of carpenters) among Padukuhan Srigading Sanden residents is self-taught and hereditary. Based on the profile data of the Bonggalan hamlet, the population in this hamlet is 118 people with 87 households (Bonggalan Padukuhan Profile). Out of the total number of residents, there are at least 15-20 residents who work as carpenters, both working as commuters (working in Yogyakarta) and around it. From the development planning in Padukuhan, the closest activity is working

* Corresponding author: herizulfiar@umy.ac.id
together in building public facilities in the form of Road Rebates. Reflecting on previous gotong royong activities, namely when paving village roads and cutting trees, there were occupational safety and health (K3) issues that were often ignored by residents, especially in the use of Personal Protective Equipment (PPE).

The lack of promotion and counseling about PPE results in the minimum attention from residents on occupational safety and health (K3) when gotong royong takes place. From a study conducted on OSH, it was found that the problem of understanding and urgency of OSH was still minimal among the community because there was no counseling from related parties about OSH (Muhammad Sabiq Ridlo). This condition is certainly very ironic, where every year the Ministry of Manpower issues regulations regarding the K3 theme of the national month designed from 2015 to 2022, as follows;

**Table 1.** Manpower issues regulations.

<table>
<thead>
<tr>
<th>Year</th>
<th>K3 Monthly Theme</th>
</tr>
</thead>
<tbody>
<tr>
<td>2022</td>
<td>Implementing K3 Culture in Every Business Activity to Support Workforce Protection in the Digitalization Era</td>
</tr>
<tr>
<td>2021</td>
<td>Strengthening Excellent and K3-Cultured Human Resources in All Business Sectors</td>
</tr>
<tr>
<td>2020</td>
<td>Optimizing the Independence of K3-Cultured Communities in the Information Technology-Based Industrial Revolution Era 4.0</td>
</tr>
<tr>
<td>2019</td>
<td>Realizing the Independence of Indonesian Communities with a Culture of Occupational Safety and Health (K3) to Support National Economic Stability</td>
</tr>
<tr>
<td>2018</td>
<td>Through a Culture of Occupational Safety and Health (K3), We Form a Nation with Character</td>
</tr>
<tr>
<td>2017</td>
<td>With K3 Culture, We Improve Human Life Quality Toward a Safe, Healthy, and Productive Society.</td>
</tr>
<tr>
<td>2016</td>
<td>Improving Culture To Drive Productivity And 2016 Competitiveness In The International Market</td>
</tr>
<tr>
<td>2015</td>
<td>Through the Implementation of SMK3, We Realize Indonesia with a Culture of K3 in Facing Free Trade</td>
</tr>
</tbody>
</table>

Resources: Agus M, andiballado.com

The fact, in building construction projects, occupational safety and health are a priority that must be considered. Ignoring occupational safety and health can have fatal consequences, such as an accident at work/in the gotong royong. According to Manlian and Rendy (2012), in their research on identifying the causes of work accident risks in building construction activities, there are two highest human errors causing work accidents, namely; first, the construction workers do not wear personal protective equipment. Secondly, workers make minor mistakes such as falling, slipping, tripping, etc. In a society that still upholds noble values; various efforts before carrying out activities often carry out the slametan ritual which means getting rid of unwanted incidents. The slametan ceremony is a tradition that is considered to keep away from disaster. The slametan is a universal concept
that has a different name in every place. This is due to weak self-awareness in the face of forces outside human beings (Clifford Geertz, 1960). However, this noble effort needs to be balanced with understanding and technical knowledge (K3).

A good understanding of OSH and its implementation in gotong royong activities in building public facilities will minimize the risk of work accidents that may hinder the smooth running of construction projects. If a work accident occurs during the implementation of a construction project, the use of costs, time, and energy in carrying out the project until the construction of a building will be in vain (Putu Indra, 2012). Islam as Rahmatan Lil A’lamin (a blessing for all humans and nature) has also given signs that no calamity will befall a person except with Allah’s permission and whoever believes in Allah, He will surely guide his heart. And Allah knows everything (At Taghabun (64): 11, 940). Some of the benefits of a good understanding of K3 for the course of building construction, especially for workers are (Suma'mur, 1992):

a. Protecting workers for their rights and safety in carrying out their work for the welfare of life and improving performance.
b. Ensuring the safety of others who are in the workplace.
c. Maintaining and using production resources safely and efficiently.

![Figure 1. Gotong Royong on Sub Village Street without APD](image)

From the discussion process with community leaders and the community figures, minimizing the impacts that occur in gotong royong activities needs to be given solutions and resolutions. The following is a matrix of problems, solutions, and targets that will be pursued in this service:

<table>
<thead>
<tr>
<th>Scope</th>
<th>Problem</th>
<th>Solution</th>
<th>Result Target</th>
</tr>
</thead>
</table>
| Occupational safety and health (K3) | The lack of HR understanding of the importance of OSH in carrying out the construction of public facilities in gotong royong. | Conduct introduction, socialization, and basic OSH training for residents who will carry out gotong royong in the construction of public facilities | - Increased understanding of K3 residents  
- Implementation of K3 during the implementation of gotong royong in the construction of public facilities |

2. Methodology

The KKN-PPM program was carried out together with students as a Field Team with the target of residents who work as builders in the Padukuhan Bonggalan Srigading Kapanewon Sanden, Bantul Regency. This service aimed to provide a basis for training in
construction management and K3, as well as assistance with development planning. The implementation method used is as follows:

2.1 Preparation phase

The purpose of this activity is to find out the real conditions of the community and local craftsmen. This preparatory stage was carried out through the initial coordination stages and data collection surveys. For this reason, the Team compiled a list of questions to be submitted by respondents. After that, the Team went to the field (survey) and explored the obstacles or problems faced by partners through question and answer with community leaders (Sub-village, neighborhood associations, and builders).

2.2. Implementation Stage

- Promotion (Community Meeting)

At this stage, the Team held meetings with community leaders and residents to stay in touch and convey the aims and objectives of the activities to be carried out. The target of this meeting was to share a common vision and mission so that the program can be accepted and supported by the community.

- Technology Preparation and PPE Implementation

Based on the results of the socialization above, the Team would formulate PPE needs related to K3 as a demonstration/practice. For this reason, efforts were made to demonstrate technology that can be directly understood and implemented in society.

- K3 Training

K3 training aims to reduce the risk of work accidents when gotong royong is carried out. Three main factors cause work accidents, namely the human factor, the type of work and the method of implementation, and environmental factors.

- Focus Group Discussion (FGD) and Sub Village Program Simulation

Equipped with the questions that had been prepared previously, based on the stages that had been carried out previously, an FGD was held to finalize the park development plan. The result of this stage is in the form of a Work Breakdown Structure (WBS) matrix where this document is a document that describes a hierarchy of project component arrangements, the scope of the project is broken down into smaller pieces and in detail. This document has the following functions:

- Defining the activities to be implemented
- Identifying the skills needed for each type of activity
- Serving as a basis for forming a project team
- Serving as a basis for estimation, scheduling, and project control

2.3 Monitoring and Evaluation Stage

Monitoring as an effort to improve programs and feedback on programs that are already running is carried out by filling in questionnaires from the organizers and direct discussions with the Head of sub-village parties, especially concerning presentation material and the practice of using PPE in the community.
3. Result and Discussion

The KKN-PPM program was carried out together with students as a Field Team with the target of the community who work as builders in the Padukuhan Bonggalan Srigading Kapanewon Sanden, Bantul Regency. This service seeks to provide a basis for training in construction management and K3, as well as assistance with development planning. The implementation method used is as follows:

3.1 Survey and Mapping

Padukuhan Bonggalan Srigading Sanden Bantul has 3 RTs (Neighborhood Associations) (15, 16, 17) with a total of 85 families. The data mining process was carried out with community leaders, housewives, and young carpenters, around 20 people. The distribution of the masonry profession in the RT areas is as follows:

<table>
<thead>
<tr>
<th>NO</th>
<th>RT</th>
<th>Number of Workers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>RT 15</td>
<td>6</td>
</tr>
<tr>
<td>2.</td>
<td>RT 16</td>
<td>6</td>
</tr>
<tr>
<td>3.</td>
<td>RT 17</td>
<td>8</td>
</tr>
</tbody>
</table>

3.2. Identification of Problems Mapping

At this stage, the Team coordinated with the limited figures above related to K3 problems among residents and builders. The identification results found several points as follows:
1. The profession of a carpenter is self-taught and hereditary.
2. Formal carpentry training activities and regulations related to carpentry are very rare or even never encountered.
3. Lack of time available for carpenters to be able to gather with residents/families except only on Sundays (holidays).
4. Gotong royong activities related to the construction of public facilities do not use PPE

After the data is identified, the TIM coordinates to determine the program socialization schedule for the community, the training design related to material boundaries, the discussion model that is carried out, and the schedule for implementing training activities with technology related to PPE.

Figure 2. Coordination and survey
3.3. Implementation Stage

3.3.1 Promotion (Community Meeting)

At this stage, the Team held meetings with community leaders and residents to stay in touch and convey the aims and objectives of the activities to be carried out. The target of this meeting is that the program is accepted by the community and there is program support and commitment. The community also conveyed information on *gotong royong* activities which were carried out usually in making ditches, dukuh roads, and cutting trees/branches that hit power lines. This meeting also agreed on a schedule of training activities, namely February 12, 2023 after Isya Prayers at the Sub-village Mosque.

![Figure 3. Promotion Meeting](image)

3.3.2 Preparation of APD Technology

Based on the information above, the application of technology related to OSH is prepared as a demonstration/practice to the community as implementation in society. The PPE technology as a PPE demonstration is related to *gotong royong* activities in the community, including:

- Helmet with 5 colors namely; green, white, red, yellow, and blue.
- Wearpack (work clothes).
- Boots.
- Masks.
- Gloves.

3.3.3 FGD and K3 Training

K3 basic training is carried out by presenting material to the audience through the Risk Management Approach. The presentation was held for about 15 minutes, what risks and their measurements, causes of work accidents, potential accidents and impacts, and efforts to reduce impacts.

After the presentation, there was dialogue and sharing of experiences in the field. Participants are invited to identify and map the risks and potential accidents in the field, including for certain cases or based on field findings. The examples of identification and mapping are as follows;
Table 4. Mapping of Potential Accident

<table>
<thead>
<tr>
<th>Working Space</th>
<th>Accident Potential</th>
<th>Impact</th>
<th>APD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scaffolding Installations at some heights</td>
<td>1. Fall from height</td>
<td>The lowest: skin abrasions/wounds and the highest fracture or concussion</td>
<td>Wearing pack, Helmet, Strap/Hanger, Boots, Gloves.</td>
</tr>
<tr>
<td></td>
<td>2. Pinched</td>
<td>Bruises, sprains, pinched nerves, broken fingers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Crushed</td>
<td>Bruises, broken bones</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. Pierched Nail</td>
<td>Injury until Tetanus</td>
<td></td>
</tr>
</tbody>
</table>

From the identification and mapping above, participants can map the main factors that cause work accidents originating from human factors, types of work and implementation methods, as well as environmental factors.

3.4. Monitoring and Evaluation

Monitoring as an effort to improve programs and feedback on programs that are already running is carried out by filling in questionnaires from the organizers and direct discussions with the dukuh parties, especially concerning presentation material and the practice of using PPE in the community.

4. Conclusion

K3 training as a statutory mandate carried out in the community/society, is very beneficial for the community. Because formal training in Construction Management and K3 is very rare, it is implementable and intersects with the daily life of the masonry profession. From the results of monitoring and evaluation with the community, it is recommended to rearrange the training schedule which can be attended by residents and is full of practice.

Acknowledgments

Special thanks to the Community Service Institute (LPM) Muhammadiyah University of Yogyakarta for financial support for the 2022/2023 fiscal year. Thanks were also given to the Bonggalan Sub-village Srigading Sanden Bantul and community leaders who provided opportunities and contributed to the success of the KKN-PPM program as well as to KKN students who accompany the program without compensation from the author.
References

[1]. Al Qur’an dan Terjemahannya, 1971. At Taghabun (64) : 11
[7]. Muhammad Sabiq Ridlo, Upaya Peningkatan Budaya K3 Pada Masyarakat Desa Sambi Kabupaten Boyolali
[9]. Profile Padukuhan Bonggalan Srigading Sanden Bantul