Improving the Capacity of Mutual Cooperation Through Construction and OHS Management Training in Krebet Community

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Abstract. Mutual cooperation (gotong royong) is carried out by the community to achieve common goals. Some activities carried out through mutual cooperation include the construction of places of worship, community parks, village roads, and other public facilities. Because mutual cooperation is done voluntarily and for communal purposes, in its implementation, important aspects are often overlooked, resulting in the quality of mutual cooperation falling far short of expectations. Two commonly overlooked aspects in the importance of mutual cooperation in the construction of public facilities are construction management and occupational safety. Therefore, efforts need to be made to improve the quality of mutual cooperation through education on the importance of construction management in the construction of public facilities, as well as the importance of considering health and occupational safety (K3). The proposed solution to address this problem is to conduct training on construction management and occupational safety. The methods applied in this partnership scheme are direct practice and collaborative learning in a community playground construction project. Some management techniques applied in the service activities include Participatory Impact Monitoring (PIM) and Focus Group Discussion (FGD). The result of this program is an increased understanding of the community regarding construction management and health and occupational safety.

1 Introduction

Mutual cooperation (gotong royong) is considered a cultural heritage from the ancestors that has become the character of the Indonesian nation (Bintarto, 1980). Among these noble values are the values of togetherness, tolerance, work ethic, and mutual assistance. The value of mutual assistance in mutual cooperation is reflected in the voluntary participation of the community in carrying out their tasks during mutual cooperation activities. Furthermore, according to Meta Rolitia et al.'s research (2016), the values in mutual cooperation are able to enhance solidarity in community life. Mutual cooperation is usually carried out by the community to achieve common goals. Some activities carried out through mutual cooperation include the construction of places of worship, community parks, village roads, and other public facilities. By working together, the community is able to lighten the workload and save time in completing a task. Because of these benefits, mutual cooperation

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is often practiced by various layers of society, from rural to urban communities, ranging from neighborhood units to tourism villages. In Bantul Regency, one of the hamlets where its residents frequently engage in mutual cooperation is Krebet. There are two aspects that are often overlooked in mutual cooperation for the construction of public facilities, namely construction management and occupational safety. This service focuses on efforts to improve the quality of mutual cooperation among the residents of Krebet, specifically the residents of Ndalem Pulosari Housing, through training in construction management and occupational safety and health. Use 170 x 250 mm paper size (W x H mm) and adjust the margins to those shown in Table 1. The final printed area will be 130 x 210 mm. Do not add any page numbers.

1.1 Observation of situations and conditions

From the results of a brief interview with several residents of Ndalem Pulosari regarding the previous mutual cooperation activities, such as building a mosque and a warehouse, there are two aspects that are often overlooked, leading to a decrease in the quality of mutual cooperation from being effective and efficient. First, the uncertain duration of the work (figure 1), where unscheduled personnel for mutual cooperation result in cost overruns, such as worker's consumption expenses, equipment rental costs, and others. Second, the lack of attention from the residents to occupational safety and health (K3) during mutual cooperation activities.

![Figure 1. Mutual cooperation in the construction of the mosque by the residents of Ndalem Pulosari](image)

However, in construction projects, occupational health and safety are among the top priorities that should be considered. Neglecting occupational safety and health can have fatal consequences, such as accidents occurring during work or mutual cooperation. According to Manlian and Rendy (2012), in their research on the identification of risk factors for workplace accidents in building construction activities, there are two highest human errors that cause accidents: first, construction workers not using personal protective equipment, and second, workers making small mistakes such as falling, slipping, bumping, etc.
1.2 Problems, solutions, and targets

Based on the above observations, it is necessary to analyze and find solutions to address the identified issues and determine the targets for each solution. The following is the problem-solution-target matrix aimed to be achieved in this service:

<table>
<thead>
<tr>
<th>Problem Area</th>
<th>Problems</th>
<th>Solutions</th>
<th>Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction management</td>
<td>The lack of understanding of human resources about the science of construction management in the construction of public facilities in mutual cooperation</td>
<td>- Conduct construction management training for residents who will carry out mutual cooperation in the construction of public facilities</td>
<td>- Increased understanding in construction management</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Improving skills in managing human resources, costs and time when implementing development</td>
</tr>
<tr>
<td>Occupational safety and health (K3)</td>
<td>The lack of HR understanding of the importance of OSH in carrying out the construction of public facilities in mutual cooperation</td>
<td>- Conduct introduction, socialization and basic OSH training for residents who will carry out mutual cooperation in the construction of public facilities</td>
<td>- Increased understanding of OHS residents</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Implementation of OHS during the implementation of mutual cooperation in the construction of public facilities</td>
</tr>
<tr>
<td>Public facilities</td>
<td>Residents are still having difficulty designing the playground to be built</td>
<td>- Assistance in making playground designs</td>
<td>- Playground design and site plan</td>
</tr>
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<td></td>
<td></td>
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<td>- Child friendly play facilities</td>
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</tbody>
</table>

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 Ndalem Pulosari Kapanewon, Padukuhan Krebet Sendangsari, Bantul Regency. This program was intended to provide a basis for training in construction management and occupational health and safety (OHS), as well as assistance with development planning. The implementation of method used is as follows:
2.1 Preparation phase

The purpose of this activity was to find out the real conditions of the community and local craftsmen. This preparatory stage is 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 (Padukuhan, RT, and worker builders).

2.2 Implementation Phase

- Community Meeting (Socialization). 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 to have 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 will formulate PPE needs related to OHS as a demonstration/practice. For this reason, efforts are made to demonstrate technology that can be directly understood and implemented in society.
- OHS training. OHS 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 Padukuhan Program Planning Simulation. Armed 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. 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
  - Being a basis for forming a project team
  - Being a basis for estimation, scheduling, and project control

2.3 Monitoring and Evaluation Phase

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 hamlet (dukuh) parties, especially concerning presentation material and the practice of using PPE in the community.

Implementation stages

The training was attended by approximately 20 people, consisting of residents of Ndalem Pulosari and several residents of Krebet. The training began with the delivery of materials on project construction management and occupational safety and health (K3), followed by a brief question-and-answer session about the presented materials. During the training, participants were also introduced to some basic work safety equipment used in construction projects. At the end of the training, a demonstration of the use of K3 equipment such as project helmets, boots, gloves, and coveralls was conducted.
In the next meeting, a training session on creating architectural drawings for a building was held, and the training was conducted by inviting a speaker from CV. Sarana Reka Mandiri, a construction consultant.

There are two outcomes from this community service. First, an improvement in the community's understanding of project construction management. Second, the design of a playground and reading park. These two outcomes, however, cannot be considered sufficient to guide the residents in implementing their newfound knowledge of project construction management and occupational safety and health (K3). Further mentoring is needed to ensure that the activities carried out in this community service agenda have a greater impact on the residents.

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