

## **IDENTIFICATION AND TECHNICAL GUIDANCE OF WORK HEALTH AND SAFETY HANDLING OF BATIK ARTISANS AT “KEBON INDAH”, BAYAT, KLATEN, CENTRAL JAVA, INDONESIA**

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### **ABSTRACT**

*This community service activity has goals including: (1) improving work health and safety of batik artisans at the Batik Tulis Kebon Indah Group; (2) providing Technical Guidance of Work Health and Safety Standardization to batik artisans in Batik Tulis Kebon Indah Group; and (3) increasing the economic value and productivity of the batik artisans in Batik Tulis Kebon Indah Group particularly and Bayat Community in general. The method that is used are namely: (1) discussion model with batik artisans at Batik Tulis Kebon Indah Group, especially the one related to Work Health and Safety; (2) carrying out a technical guidance of Work Health and Safety to batik artisans at Batik Tulis Kebon Indah Group; and (3) validation of the standard operational procedure of Work Health and Safety. The results of the activities obtained are namely: (1) improving the production process of Kebon Indah batik artisans in the Work Health and Safety standardization; (2) providing insight and knowledge to Kebon Indah batik artisans about the importance of work implementation using the right health and safety guidance; (3) adding motivation to Kebon Indah batik artisans to always be enthusiastic and creative in carrying out the batik activities; and (4) providing guidance in the form of a book of Work Health and Safety Standardization of Batik Tulis Kebon Indah Group.*

**Keywords:** health and safety, Technical Guidance, Community Service Activity, Batik artisants

### **INTRODUCTION**

Kebon Village that is located in Bayat Sub district, Klaten Regency, Central Java Province is one of the centers of handmade batik using natural dyes. Before the 2006 Yogyakarta-Central Java earthquake, some of the batik artisans in this village became laborers in the place of batik business which already had names in big cities, such as Jogja and Solo (Diharto et al., 2018). Yet, after the earthquake, most of them returned to the village and only did the batik making process if there were orders from entrepreneurs in big cities. The Batik Tulis Kebon Indah Group was founded in February 2009. Based on an interview with one of the founders, Mrs. Dalmini, there 5 groups of batik artisans that consist of 169 women who worked in the handicraft sector with natural dyes in Kebon Village. Each group consists of 28 to 35 batik artisans. The natural dyes that are used include *jambal*, mahogany, *secang*, *teger*, and also mango and teak leaves. The process that is done in order to make this natural dyes to become pasta which will be used for batik making process takes 3 months to process. Some foreign buyers also come to visit and shop in the Kebon Bayat Klaten Village, such as from Malaysia and America.

This group has received assistance and training from universities such as the Indonesia Islamic University, NGOs, and the Office of Industry and Trade of Klaten in helping to manage their business. But in general, one of the problems faced is the problem of work

health and safety that still tends to be ignored by the batik artisans (Krisdiyanti, 2011). However, this problem is very important to ensure that the batik artisans can work safely, comfortably, and healthy (Moenir, 2006; Mathis and Jackson, 2002). It is also added by Sahab (1997) that accidents and disease that caused by work occur because of the presence of sources of danger in the work environment. The result of field observation of Indonesia Islamic University team at Batik Tulis Kebon Indah Group identified that there are some danger potentials which at the same time become problems in the batik activity process as shown in Table 1.

**Table 1. Partner Problems**

No	Activity	Danger List	Information
1	<b>Cutting Cloth:</b> the activity of cutting fabric in accordance with the size that have been designed	<ul style="list-style-type: none"> <li>Exposed to cutting tools</li> <li>Cutting tool is dropped</li> </ul>	Using special scissor for cloth
2	<b>Mordan:</b> the activity of boiling cloth that aims to open the pores of the fabric for easier processing and coloring.	<ul style="list-style-type: none"> <li>Exposed to hot water</li> <li>Affected by the kettle</li> <li>Exposed to fire</li> </ul>	Workplace accidents can occur at any time when the process is conducted.
3	<b>Paper Design/Nyorek:</b> the activity of designing the batik motifs on paper, which will later become a 'master' design.	There is no significant potential danger	
4	<b>Desain pola pada kain (ngeblak):</b> the activity of drawing patterns in a cloth by following the motifs that have been drawn on the paper.	<ul style="list-style-type: none"> <li>Stationery fall</li> <li>The glass plate is broken</li> </ul>	The <i>ngeblak</i> process is using a glass mat so that the artisans can see the motif design in the 'master' paper.
5	<b>Nyanting:</b> the activity that gives layer of wax to the motifs that have been drawn on the fabric. The <i>nyanting</i> process can be done up to 3 times depends on the design of the motifs that is used.	<p><i>Nyanting</i> using an electric stove</p> <ul style="list-style-type: none"> <li>Exposed to hot wax</li> <li>Exposed to a wax pan</li> <li>Exposed to an electric stove</li> <li>Electrocuted</li> <li>Short circuit</li> </ul> <p><i>Nyanting</i> using a charcoal stove</p> <ul style="list-style-type: none"> <li>Exposed to hot wax</li> <li>Exposed to a wax pan</li> <li>Exposed to the charcoal stove</li> <li>Affected by charcoal</li> <li>Fire potential</li> </ul>	There are two wax stoves that are used, which is electric and charcoal stove. Each tool has different hazard potential.
7	<b>Coloring:</b> the activity of coloring the cloth after the <i>nyanting</i> process has finished. The coloring process can take several times, depends on the batik design.	<ul style="list-style-type: none"> <li>Slipped potential</li> <li>Back pain potential</li> </ul>	The condition of coloring bucket that is too high and not in accordance with the ergonomics concept.
8	<b>Fixation:</b> the process of color locking. This process uses chemical such as alum, <i>tunjung</i> , and lime.	<p>Color fixation</p> <ul style="list-style-type: none"> <li>Allergic to certain fixation substances</li> </ul>	The fixation is using alum, lime, and <i>tunjung</i> . These chemical substances can be allergens.

No	Activity	Danger List	Information
9	<b>Drying:</b> the process of drying cloth after the fixation and it is likely to redo <i>nyanting</i> process.	<ul style="list-style-type: none"> <li>• Slipped potential</li> <li>• Potential hazard from clothesline</li> </ul>	The drying process is carried out in a less ideal place using weathered bamboo material.
10	<b>Ngelorod:</b> the process of removing wax from the cloth. In this process, the artisans will dip the cloth in a boiling water until the wax is separated from the batik cloth.	<i>Ngelorod</i> <ul style="list-style-type: none"> <li>• Exposed to fire</li> <li>• Affected by the drum</li> <li>• Exposed to hot water</li> <li>• Slipped potential</li> <li>• Back pain potential</li> </ul>	The design of <i>ngelorod</i> working system process is very dangerous, besides the dangerous position, the artisans have the potential to be exposed to hot water, kettle, and even fire.

## IMPLEMENTATION METHOD

### Activities Implementation

In order to overcome the problems that mentioned before, the activities that is proposed in this community service are as follows:

1. The activity will be done with the discussion model with the artisans in Batik Tulis Kebon Indah Group, especially the one related to work health and safety.
2. Carry out the technical guidance activity of work health and safety to the batik artisans in Batik Tulis Kebon Indah Group.
3. Validation of the standard operational procedure of work health and safety.

## RESULT AND DISCUSSION

### Implementation of the Community Service Activity

The implementation of this community service has several stages of activities, so that the implementation can be carried out systematically and in accordance with the desired target.

**First**, is by conducting activities using discussion model with the batik artisans in Batik Tulis Kebon Indah Group, especially the one related to work health and safety. This discussion was conducted in conjunction with the observation by the team in order to know more about the work system and the division of labor carried out by the women batik artisans of Kebon Indah. The discussion is conducted to each member who has different work activities, such as *mordan*, *ngeblak*/creating patterns, *nyanting*/create the batik, coloring, *ngelorod*, until drying. The discussion is done intensely to get more accurate results about work health and safety. The discussion were attended by each group representatives that are registered at the Batik Tulis Kebon Indah Group. The event was held on January 10-12, 2019 starting at 09.00-15.00 (GMT +7) which took place in the Batik Showroom of the Batik Tulis Kebon Indah Group, Kebon Village, Bayat Subdistrict, Klaten Regency, Central Java. From this first stage, the team obtained several results of identification that is related to work health and safety in the Batik Tulis Kebon Indah Group. This identification result will be the basis for the delivery of activities for technical guidance of work health and safety activities in Batik Tulis Kebon Indah Group.

**Second**, is by carrying out Work Health and Safety Technical Guidance activities for batik artisans in Batik Tulis Kebon Indah Group. This activity was presented in the form of socialization of work health and safety application. The activity was conducted by the team on Saturday, January 12, 2019 which took place at the Batik Tulis Kebon Indah Group Showroom, Kebon Village, Bayat Subdistrict, Klaten Regency, Central Java. The activity was attended by 55 members from each of the batik group representatives which are registered in Batik Tulis Kebon Indah Group. The socialization took place from 09.00 – 15.00 (GMT +7) which was about the delivery of topic on work health and safety at Batik Tulis Kebon Indah Group.

In addition to the topic about work health and safety standardization, the activities were also complemented by the practice of displaying positions or how to carry out work with the correct standards. One of the students who helped the team demonstrated better activity standardization for the batik process, such as *ngeblak*, *nyanting*, coloring, *ngelorod*, and drying. The audience of the activity were enthusiastically followed the activity and asked several questions, so that the forum was more communicative. It is hoped that the women batik artisans can do their batik process in accordance with the correct guidelines or standards, so that they can implement the material presented. Besides, the desire to obtain Work Health and Safety certification also becomes the hope of the community to expand its market to foreign market which sometimes has the administrative requirement in a form of Work Health and Safety certificate.

The community service in the form of Technical Guidance for Work Health and Safety Standardization that have been carried out is expected to be able to increase knowledge and skills of the batik artisans at Kebon Indah and become their motivation to increase their enthusiasm in carrying out their batik activities. The community service team also hopes that the community service activities at Batik Tulis Kebon Indah Group will not stop here, but can carry out the following community service activities that can encourage the development of Batik Tulis Kebon Indah Group. The success of this activity was measured by the number of participants, dissemination of socialization material, and enthusiasm of the socialization participants. There were many questions raised by the women batik artisans related to what they have done at this time. Changes in motivation were also seen in the women batik artisans when they learned that work health and safety certification could help and encourage marketing activities abroad. The community service activities were not only stopped at the socialization stage, but also continued with the creation of work safety and health standardization for Batik Tulis Kebon Indah Group so that the topic that was presented could be slowly implemented by the women batik artisans. With the submission of the work health and safety standardization guide book, the participants felt it was very beneficial because they could always see and remember the work health and safety standardization material that have been delivered.

## **CONCLUSIONS AND RECOMMENDATIONS**

### **Conclusions**

Batik activities are labor intensive industrial activities that really requires high creativity and skill. Batik activities have several stages that are long and relatively complicated at each stage. Batik activities include cutting cloth, *mordan*, *ngeblak*, *nyanting*, fixation/coloring, *ngelorod*, until drying cloth. Each of these activities has different levels of safety and health risks. The biggest risk is during the process of *ngelorod*, where the artisans have to deal with fire and big drums for the process of boiling batik cloth. From the overall technical guidance

of work health and safety standardization, there were some benefits that had an impact on the community, namely:

- a. Improving the production process of Kebon Indah batik in the work health and safety standardization.
- b. Providing insight and knowledge to the Kebon Indah batik artisans about the importance of work using the right guidance of work health and safety.
- c. Increasing the motivation of Kebon Indah batik artisans to always be enthusiastic and creative in carrying out the batik making process.
- d. Providing guidance in a form of book of work health and safety standardization of Batik Tulis Kebon Indah Group.

This community service activity has been carried out well, starting from the discussion and observation, to socialization activities and work health and safety practices. This activity received a positive response with a high enthusiasm of all members that participated in the activities.

## **RECOMMENDATIONS**

Based on the evaluation result that is conducted after the implementation of all service activities, there are 3 main recommendations that need to be considered. The first is the guidance book of work health and safety standardization of Batik Tulis Kebon Indah Group that has been existed, to always be considered and be a guide when artisans carry out their work, so that the purpose of this community service will be truly carried out perfectly. The second is the arrangement of the work health and safety certificate that is able to support the marketing of batik industry, especially Kebon Indah so that it can penetrate the foreign markets that provide administrative requirements for work health and safety certificate as a mandatory requirement the buying and selling transaction. Third, it is expected that there will be further activities that can help the progress of Batik Tulis Kebon Indah Group, such as socialization about Marketing, Intellectual Property Rights, Work Motivation, enrichment of natural dyes, and et cetera. So that it could add insight, knowledge, and skills of the batik artisans of Batik Tulis Kebon Indah Group.

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