



Improving the Quality of Selat Village Bamboo Sunshade Crafts through the Bamboo Preservation Process

Dwi Sukma Rini¹, Irwan Mahakam Lesmono Aji¹, Rima Vera Ningsih¹, Sitti Latifah¹, Hairil Anwar¹

¹Department of Forestry, Faculty of Agriculture, University of Mataram, Mataram, Indonesia

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Corresponding Author:

Dwi Sukma Rini

dwisukmarini@unram.ac.id

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Abstract: Selat Village in West Lombok Regency is known as a bamboo sunshade craft center with abundant bamboo resources. However, the production of bamboo blinds is still done traditionally without the application of preservation technology, making it vulnerable to attacks by destructive organisms such as powder beetles and fungi. Lack of information on effective preservation techniques leads to low product quality and selling value. Therefore, this service activity aims to provide training and assistance to artisan groups in applying simple and environmentally friendly preservation methods. The methods used include an initial survey to understand the condition of the craftsmen, counseling with a Focus Group Discussion (FGD) approach, and the design and implementation of a bamboo preservation tool based on soaking in 5% borax solution. Socialization was conducted to 30 craftsmen from the “Karya Mandiri” group and involved the village and surrounding community. The results of the activity show that the soaking preservation method is more suitable for the needs of craftsmen than the VSD method because the bamboo raw materials used are already in the form of blades. The application of this method can increase the durability of bamboo, speed up the curing process from 1 month to 7-10 days, and increase the selling value of bamboo blinds. The follow-up plan includes periodic evaluation, further training on product finishing and packaging, and promotion through social media to expand the market. This activity contributes to improving the quality and competitiveness of bamboo sunshade products, which is expected to strengthen the economy of the Selat Village community through more effective and sustainable bamboo processing.

Keywords: Selat Village; Bamboo Blinds; Preservation; Bamboo Soaking.

Introduction

Selat Village is a village known as the center of kerai handicrafts in West Lombok Regency. Almost the entire community has bamboo weaving and processing skills. One of the main products produced is bamboo blinds. The village also has abundant bamboo raw material resources, so the sustainability of the business carried out by the community can be maintained. The making of bamboo blinds in this village is still very traditional without any technological assistance, so the quality of the blinds produced is still relatively low. Although the craft of blinds has helped the community's economy a lot, quality improvement must still be done. One of the efforts that can be made to improve the quality of

bamboo blinds is to apply preservation technology to raw materials before being processed into blinds or other handicraft products.

Bamboo is a plant that contains lignocellulose and can be utilized for many purposes (Sulastiningsih & Santoso, 2012). Some bamboo species can be used as industrial materials, chopsticks, kitchen utensils, hats, bags, musical instruments, curtains, pens, and others ((Muhtar et al., 2017); (Sulistyono et al., 2018)). Community knowledge in managing bamboo handicrafts needs to be empowered (Syukur, 2017). Products made from bamboo will reduce the effects that can pollute the environment, both in production, distribution, and use (Kusumawati, 2019). However, just like other lignocellulose materials, bamboo is also

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susceptible to attack by destructive organisms that can shorten its lifespan. Therefore, bamboo products often require protection against damage by chemical preservation. Its application is hindered by the structural form of the bamboo itself, the creation of curing facilities, and its adverse effects on the environment.

There are several bamboo preservation methods that can be applied to the community-based bamboo handicraft industry. The technology used must use simple principles, so that it is easily understood and practiced in the community. In this case, the role of academics and researchers is needed to introduce preservation methods that can be applied in community groups, conduct mentoring activities and bamboo preservation training for people who are members of bamboo crafts groups. Therefore, this service focuses on training and assisting one group of bamboo craftsmen who have not applied preservation treatment to the raw materials used, namely the bamboo sunshade craftsmen group in Selat Village, Narmada.

In order to improve the quality of kerai handicraft products produced in Selat Village, Narmada Subdistrict, West Lombok, various efforts and assistance have been made to bamboo craftsmen groups in this village. One of the activities that has been carried out is the branding of kerai products carried out through the UNRAM student community service program in 2021 targeting the "Bajang Salut" bamboo craftsmen group (Latifah et al., 2023). However, the quality of a product is strongly influenced by the quality of its raw material, in this case, bamboo. Bamboo has long been recognized as a raw material for crafts and construction. Despite its good properties, bamboo is easily attacked by destructive organisms such as powder beetles, termites, and fungi. This is also the case with bamboo blinds produced in Salut village, Narmada sub-district. The bamboo blinds produced are susceptible to attack by powder beetles and fungi which cause the blinds to be easily damaged and weathered. This causes the quality of the blinds produced to decrease and the selling value is also low. Therefore, preliminary treatment must be given to the bamboo used before it is transformed into blinds and released to the market. So far, the preservation process has not been carried out due to a lack of information regarding post-harvest bamboo treatment as well as the craftsmen group's ignorance of simple and effective bamboo preservation methods that can be carried out in the community.

The benefit of this service activity is that the bamboo sunshade craftsmen group in Selat Village gains an understanding of the importance of preliminary treatment, such as preservation of raw materials before use, so that the quality of the blinds produced is better, the blinds are more durable and not easily damaged by

the attack of destructive organisms such as powder beetles, termites, and fungi. In addition, through this activity it is hoped that a simple preservation tool can be designed that can be used by craftsmen and in accordance with the needs of craftsmen. It is hoped that after this activity the preservation process on bamboo can be carried out, so as to improve the quality and selling price of bamboo blinds so as to improve the community's economy.

Method

Time and Place

The community service activities were carried out in August-September 2024, located in Selat Village, Narmada District, West Lombok Regency, West Nusa Tenggara Province.

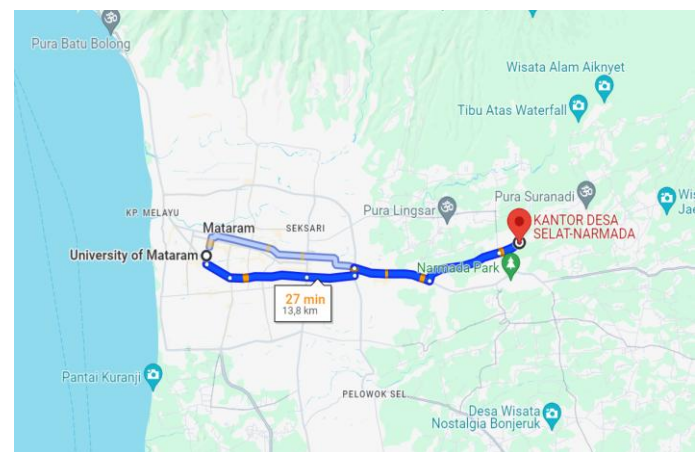


Figure 1. Partner Location Map (Source: Google Map, 2023)

Participants

The community service participants numbered 30 people with the main target of the activity being the Selat Village bamboo craftsmen community group who are members of the "Karya Mandiri" group, in addition to the involvement of village government officials, youth organizations, and other craftsmen communities in Salut Village.

Activity Implementation Method

1) Pre-Activity

In the pre-activity stage, an initial survey was conducted to understand the location conditions, build understanding with the target group, and analyze the situation in order to align the objectives and activity plans with priority needs (Maidiana, 2021). Furthermore, team consolidation was carried out to ensure the readiness of each member according to their role, namely as a speaker, facilitator, and technician, so that the activity can run smoothly.

2) Counseling

Extension activities are carried out with a participatory approach using the FGD method. Focus Group Discussion (FGD) is a form of discussion designed to bring up information about the viewpoints, beliefs, experiences, needs, desires desired by participants (Paramita Astridya & Kristiana Lusi, 2013). FGD is able to explore problem solving and solutions related to the topics discussed, this method is also able to avoid or straighten out the wrong interpretations of the participants.

The theme presented was the importance of applying preservation to bamboo raw materials before being processed into blinds to the target group. The presentation of the material was carried out by dividing the participants into small groups to discuss the obstacles faced and the wishes of the community in the future by the previously appointed facilitator.

3) Making tool designs that are tailored to the needs of craftsmen

This activity was designed with the concept of research with the community, namely determining the form of preservation tools that suit the needs of the community. It begins with looking at the production process to determine the best form of equipment so that an environmentally friendly preservation process can be carried out.

Results and Discussion

Several methods of bamboo preservation have been applied in Indonesian society, ranging from the most traditional method through harvesting to several modern methods. The following are preservation methods that have been applied in Indonesia (Zuraida & Larasati, 2015).

Tabel 1. Bamboo Preservation Method

Traditional	Trial-error	Modern
Harvesting process	Soaking with camphor and detergents	VSD with borax-boric acid
Soaking	Soaking with a solution	Injection with a chemical solution of Sarpeco 8
Lime washing	Filling or dyeing in a solution of kerosene and used oil	Boiling with borax-boric acid
		Painting

Among the methods used, the VSD method is a modern method that can be applied in both small and large scale bamboo processing industries. The VSD (Vertical Soak Diffusion) method is a preservation method that is carried out by introducing a preservative

into intact bamboo from the top of the bamboo. This method was developed by EBF and is an efficient way to preserve bamboo in a safe manner. Its application to a wide range of bamboo species will further advance the method (Liese, 2003).

However, this method cannot be applied in Salut Village, as the bamboo to be preserved has already been split to the size of the blinds to be made. Therefore, bamboo preservation in this village can be done using the soaking method. The shape of the soaking tool is adjusted to the length of the blade and the location of the bamboo preservation.

Some information obtained from the discussion is as follows:

1. The blinds produced by craftsmen in Salut Village have sizes of 135x 150 cm and 150 x 200 cm. Larger sizes will be made according to the buyer's request, but not all craftsmen can make larger sizes due to limited tools owned. As additional information, the making of blinds in Salut Hamlet still uses manual equipment and methods. Assistance with bamboo splitting tools has been provided by the government, but the specifications of the tools are not in accordance with what the craftsmen need, so the tools are not used.
2. The bamboo raw materials used come from outside the area because there are no bamboo plantations in this area. Bamboo harvesting is done using the selection method, where only bamboo that is old enough (usually 3-4 years old) is harvested. Harvested bamboo is split directly at the harvesting location to facilitate the transportation process and transportation costs. However, there are also those who purchase bamboo and transport the bamboo without splitting it first.
3. The bamboo slats that have been obtained are immediately routed in a wet state because it is easier to do than bamboo that has dried slightly. After routing, the bamboo is marked for ease of assembly. Next, it is dried in the sun in the yard. After it is half dry, the assembly process using blinds is carried out. The making of these blinds is done by housewives. In one day, a sunshade craftsman can produce 5-10 sunshades.
4. The blinds produced are sold directly to collectors at very low prices, ranging from Rp25,000 to Rp35,000. The price obtained is classified as very cheap because the blinds are sold with makeshift conditions and quality.

Based on the results of the discussion, information was also obtained that there are also craftsmen who have made sales independently. The blinds that have been assembled are not immediately sold but are preserved first in the traditional way, namely by soaking the finished blinds in a mud pool. This process takes a very

long time, up to one month. However, the selling price of the blinds can be higher. Some blinds are also sold according to customer requests, such as larger sizes, applying paint/colors to the blinds, making paintings and adding fabric elements to the blinds.

Socialization of Preservation Methods

The socialization activities were conducted with a participatory approach using the FGD method. This activity was attended by village administrators and farmer group members. The total number of participants was 33 people. The socialization was carried out in the mushola which also doubles as a hamlet meeting room. In the socialization activity, the community service team provided material related to bamboo materials, advantages and disadvantages of bamboo materials, insects and pests that can reduce the quality of bamboo, and how to handle them. After the presentation of the material, the activity continued with a discussion related to the conditions and problems faced by the craftsmen group, as well as the possibility of implementing a bamboo preservation process before making blinds.



Figure 2. Preservation Method Socialization Activities

Some of the information obtained from the discussion is as follows:

1. The blinds produced by craftsmen in Salut Village have sizes of 135x 150 cm and 150 x 200 cm. Larger sizes will be made according to the buyer's request, but not all craftsmen can make larger sizes due to limited tools owned. As additional information, the making of blinds in Salut Hamlet still uses manual equipment and methods. Assistance with bamboo splitting tools was once provided by the government, but the specifications of the tools did not match what the craftsmen needed, so the tools were not used.
2. The bamboo raw materials used come from outside the area because there are no bamboo plantations in this area. Bamboo harvesting is done using the selection method, where only bamboo that is old enough (usually 3-4 years old) is harvested. Harvested bamboo is split directly at the harvesting location to facilitate the transportation process and transportation costs. However, there are also those who purchase bamboo and transport the bamboo without splitting it first.

3. The bamboo slats that have been obtained are immediately routed in a wet state as it is easier to do than bamboo that has dried slightly. After routing, the bamboo is marked for ease of assembly. Next, the bamboo is dried in the sun in the yard. After it is half dry, the assembly process using blinds is carried out. The making of these blinds is done by housewives. In one day, a sunshade craftsman can produce 5-10 sunshades.
4. The blinds produced are sold directly to collectors at a very cheap price, which ranges from Rp25,000 to Rp35,000. The price obtained is relatively cheap because the blinds are sold in a rough condition and quality.

Based on the results of the discussion, information was also obtained that there are also craftsmen who have conducted sales independently. The blinds that have been assembled are not immediately sold but are preserved first in the traditional way, namely by soaking the finished blinds in a mud pool. This process takes a very long time, up to one month. However, the selling price of the blinds can be higher. Some blinds are also sold according to customer requests, such as larger sizes, applying paint/colors to the blinds, making paintings and adding fabric elements to the blinds.



Figure 3. The process of manually making bamboo slats for blind products.



Figure 4. Bamboo curtains made by Selat Village

Based on the information provided from the community, the Faculty of Agriculture Service Team responded with several solutions that could be done, including:

1. To increase the price of bamboo blinds, it is necessary to make innovations on the blinds such as adding

- paintings, adding other materials, and finishing bamboo blinds.
- Improving the quality of the blinds, especially in relation to the durability of the blinds, can be done by applying preservation methods that are suitable for the bamboo used. Traditional preservation that has been applied takes a very long time reaching 1 month, therefore this process needs to be shortened by using chemical preservation, and the right process. If chemicals are used, the curing process can be shortened to 7-10 days.
 - The preservation method can be vertical or soaking with a 5% borax solution. Babu preservation installation must be adjusted to the needs and ensure that the process is environmentally friendly.
 - Promotions are conducted to increase demand for the blinds. Promotion can be done on social media and bamboo blinds can also be purchased online.
 - Packaging and labeling of blinds also needs to be provided. Market-ready blinds should be labeled as having been preserved using environmentally friendly processes, and then attractively packaged.

Desain Alat Pengawetan Bambu

Based on the results of the discussions that have been carried out, it is concluded that the vertical method that was originally applied to preserve bamboo raw materials before being processed into blinds is not suitable, considering that the raw materials received by craftsmen are bamboo slats. So it was agreed that the preservation installation would be made with a soaking tub model with additional modifications for draining the preserved bamboo.

As an initial step, the application of the preservation process will be carried out by a small group as a pilot project which is expected to be emulated by other craftsmen. The steps taken in the curing process are as follows:

- Bamboo that has been split, washed thoroughly to remove fine hairs on the bamboo skin that can cause itching on the skin.
- Then the bamboo is sharpened according to the needs of the blinds, and grouped for easy assembly (tied together).
- The slats that have been routed and grouped are put into a cement tub that has been prepared containing a 5% borax solution.
- The slats were soaked for 7 days.
- After that, they were removed and drained on a drain made above the soaking tub, so that the remaining solution could re-enter the tub.
- Once there was no dripping solution, said bamboo was air dried, and ready to be assembled into blinds.

The agreed design form:

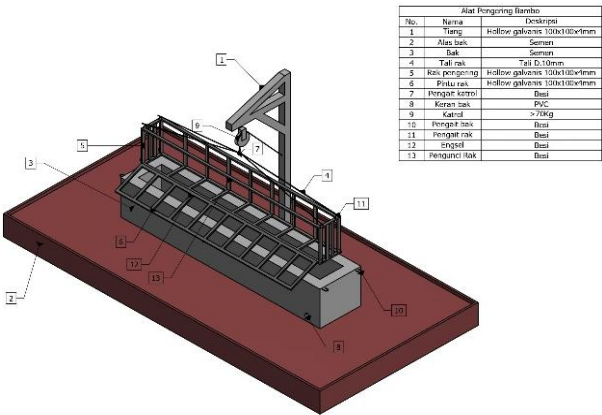


Figure 5. Bamboo Preservation Tools

The bamboo curing device in Figure 5 is used in a few simple and efficient steps. First, ensure that the device is properly installed in a stable area, and then fill the catch basin with enough curing liquid to submerge the bamboo. The prepared bamboo is placed neatly on the drying rack to ensure that all parts are evenly submerged. Using a pulley system, the racks containing the bamboo are lowered into the tub and left to soak for the required time. Once the soaking process is complete, the racks are lifted back up using the pulley, and any dripping preservative liquid is collected in the trough to avoid environmental pollution. The racks are then positioned for drying, with good air circulation until the bamboo is completely dry. Any remaining curing liquid can be released through the trough tap for reuse or disposal in a safe manner. Upon completion, the device is cleaned, and all components such as tubs, racks, ropes, and pulleys are checked to ensure their reliability and longevity. As such, it enables an efficient, safe and environmentally friendly bamboo curing process.

The Follow-up Plan

Some follow-up plans that will be carried out after the community service activities are carried out include:

- The service team will periodically evaluate the results of the preservation that has been carried out by the craftsmen group.
- The sustainable assistance to improve the quality of the blinds is also being provided. It is planned to continue the activity in the form of training on finishing and packing kerai products.
- Creating promotional media and conducting online promotions using Instagram and Facebook.
- Sunshade products will also be made in several sizes so that they can be easily carried as souvenirs. Modification of the sunshade into a tablecloth, the principle of making is almost the same as the sunshade but with a smaller size.

Conclusion

The socialization and training activities were successfully held. The technology offered by the Community Service Team was well received by the community. The preservation technology in the form of the vertical soak diffusion method is not suitable for application in the Selat village ceramic craftsmen group. The preservation installation planned to be built in the village was replaced with a preservation installation using a soaking tub with a modified bamboo drainer rack above it. This soaking preservation model is very useful and suitable for applications. Furthermore, the Community Service Team will continue to provide assistance to improve the quality of bamboo blinds. Assistance will be provided for the promotion, finishing, and packing of blind products.

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