



## APPLICATION OF BAMBOO PROCESSING TECHNOLOGY TO INCREASE ADDED VALUE IN LEGOK VILLAGE, BANTARKAWUNG DISTRICT

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**Abstract.** Legok Village, District Bantarkawung, Brebes Regency, is facing problem poverty and welfare residents who affected 452 of 824 families. The lack of level of education which results in limited knowledge and skills self residents of Legok Village. On the other hand, there are potential source Power natural big that can cause mark economical that is abundance bamboo. Through the community service program community (PKM), a processing program was proposed bamboo for increase mark he added with apply technology. Activities This aiming for increase knowledge, skills, and income Legok Village Community in matter processing product bamboo. Expected results covers skill product confinement bamboo and furniture from bamboo. The implementation model uses a participatory approach with training and mentoring. This activity has been carried out through counseling and training on bamboo cages and furniture in June - September 2024, which was attended by village cadres. The training is expected to improve community skills in bamboo processing which can increase income.

**Keywords:** bamboo, cages, furniture, Legok Village

### A. Introduction

Legok Village located in the District Bantarkawung Brebes Regency. This village own wide approximately 608.99372 Ha, area 122 ha of rice fields and land 201.5 ha yard partly big planted plant bamboo. Number residents in the village this was recorded in December 2023 as many as 3,201 people. Most of them its population one-eyed livelihood as farmer with a low level of education. Of the total 3,201 people as many as 550 souls no finished / not finished school, 505 not yet graduated from elementary school, 540 graduated from elementary school, 1,349 graduated from junior high school, 202 graduated from high school and only as many as 55 people who received education height. Amount head family in the village This as many as 824 of which 54.85% were that is as many as 452 Heads Family is number of poor families. In the District Bantarkawung there are 28,304 people poor people. Therefore That effort improvement income for people in the village this is very urgent.

Product craft bamboo is product planned flagship will developed based on RPJMDes 2023-2028. Musrenbang Results village Legok on December 25, 2023 decided for carry bamboo business as product Featured village from upstream until downstream. In the village This especially in RW 03 Dusun Cibirus there are more than 200 people owner plantation bamboo.



One person has an average of 500 bamboo stems. tree bamboo. Types of bamboo planted are Bamboo Rope and Bamboo Betung. Each day farmer bamboo in Legok Village can sell bamboo average 500 to 1,000 stems to Brebes and surrounding areas with price Rp6.000,- per stick. Only a few small just results production farmer bamboo Legok Village is produced become product crafts. This is very unfortunate. Because if bamboo can processed become product various crafts Variety so will have mark add a big one.

Based on Presidential Regulation Number 72 of 2015 concerning the Creative Economy Agency, there are 17 sub-sectors of the creative economy, including crafts. The GDP of the creative economy sector continues to increase after the Covid-19 pandemic. In fact, the GDP value of the creative economy in 2023 will reach IDR 1,300 trillion by providing more than 22 million jobs (Ministry of Tourism and Creative Economy, 2023). Meanwhile, quoting from the website of the Ministry of Tourism and Creative Economy (2023), crafts are defined as crafts made of wood, bamboo, metal, leather, glass, ceramics, and textiles.

Quoting from on the website of the Ministry of Tourism and Creative Economy, there are 17 sub-sectors from economy creative among them is a craft. Since In 2015, craft was one of the from three subsector contributor to economic GDP creative the largest in Indonesia, namely more from 15.40% for creative economy GDP. One of crafts that are classified as to in the type of craft is craft from Bamboo. Crafts from bamboo has also been give contribution by 20-30% of Product Largest Gross Domestic Product (GDP) third in subsector economy creative. While that, quoting from the website of the Ministry of Tourism and Creative Economy, crafts are defined as as crafts made from wood, bamboo, metal, leather, glass, ceramics, and textiles.

Craft bamboo besides in the form of weaving and handicraft for need House stairs and decorations, when this is also growing in form furniture, components building and construction bamboo. Location Geographically, Legok Village is one of the villages in Brebes Regency that are too late road going to Mother Jakarta city is very supportive in control market share. Throughout Brebes Jakarta has many roads stand roadside stall Eat from simple bamboo so that become a product market for craftsmen from Legok Village.

Partners in activity devotion This is group Bamboo Farmers “Tunas Karya Lestari” and their groups Bamboo Craftsmen "Berkah Bambu Lestari" located in Legok Village Subdistrict Bantarkawung. Group The “Tunas Karya Lestari” Bamboo Farmers group has 20 members with an average age of 60.7 years and most of them are big only graduated from elementary school (one person did not) graduated from elementary school and one person graduated from junior high school). The area of land owned by the 20 people as much as 25,555 M2 with amount bamboo owned as many as 33,400 sticks, or an average of 1,670 sticks per person (craftsmen data) bamboo is in Appendix 6 page 2). Group This chaired by Mr. Umar whose address is Rt 04/03 Legok Village Bantarkawung District Brebes Regency. The problems faced by Partner 1 (the “Tunas Karya Lestari” Group) are : 1) low income from business cultivation bamboo ; 2) Limitations ability partner in overcome pest disease plant bamboo ; 3) lack of information and knowledge about cultivation types bamboo and effort appropriate utilization ;4) Lack of information and knowledge about utilization type bamboo For make appropriate products ; 5) limited skills farmer bamboo For increase mark sell products;6) limited equipment owned farmer For increase mark sell its products ; 7) limited knowledge in matter management business ; 8) limited knowledge in matter management and administration group ; 9) limited ability market product Good both offline and online.

The second PKM partner is group Bamboo Craftsmen “Berkah Bambu Lestari.” Group This consisting of 20 people with average age 37.7 years. Group This chaired by Mr. Karwa whose address is Rt 04/01 Legok Village Bantarkawung District. Of the 20 members craftsman bamboo, recorded 11 people with elementary school education, 3 people with junior high school education, 4 people with high school education, 2 people with Diploma IV/Bachelor's degree. Production results group craftsman moment This Still simple in the form of confinement

chicken, cage birds, and ceting with capacity average production of one fruit products per person per day, even though capacity marketing for each type 1 Kodi product per day (20 pieces each per day) or 60 pieces for 3 kinds product) with area marketing in Brebes, Banyumas, Banjarnegara and Cilacap Regencies. Currently results production group taken to location by consumers who become his subscription.

Problems faced by Partner 2 ( group) craftsmen of "Berkah Bambu Lestari") namely 1) Not mastering technology preservation bamboo ; 2) Has skills make craft bamboo limited ; 3) Still using equipment traditional that is not in accordance For make products quality high ; 4) Production process No efficient, cost production height and power competition weak ; 5) Product types and diversification very few products ; 6) Not mastered technology making laminating bamboo ; 7) Limited ability in matter management finance as well as ways compilation report standardized finance 8) Not counting price main production so that price sell determined based on estimation only ; 9) Limited ability market product Good both offline and online ; 10) Limited ability management and administration group.

Potential and Plans make Legok Village as center business bamboo in Brebes Regency. With consider availability material standard abundant bamboo and the presence of opportunity produce various type product craft bamboo, members group farmers "Tunas Karya Lestari" and groups The bamboo craftsmen of "Berkah Bambu Lestari" who are supported by the Legok Village Government really hope given mentoring for can realize Legok Village Dream as a Bamboo Craft Center. For realize matter This is the PDB Scheme PKM Team has coordinate with the Village Head, the "Tunas Karya Lestari" group, the "Berkah Bambu Lestari" group as well as with The Chancellor of UNSOED is very supportive because Legok Village is also a UNSOED Foster Village. The PKM PDB Team together with all partners involved agreed for invite source person training craft bamboo that has been truly experienced operate business craft bamboo.

Various the product that will be developed planned in three year. At the beginning activities, partner 1 namely group farmer will given chance for increase mark sell the product by also becoming craftsmen. It is estimated that will there are 50% of member partner 1 who will also profession as craftsmen. Products that will be made in the year First in the form of cages, furniture and furnishings seen in Figure 1. In the year second partner will taught make product partition space, gazebo, various type place lamps and wall clock holders. Photos the product that will be produced in the year second can seen in Figures 2. In year to three will given training making bamboo products use technology bamboo laminating for produce various type product as shown in Figure 3.



Figure 1. The cages, furniture and furnishings



Figure 2. The various type place lamps and wall clock holders



Figure 3. Bamboo laminating

## B. Method

In the process of running a program to provide maximum results, the following activity implementation methods are applied.

1. Discussion, is the initial stage used to analyze the needs, potential, and limitations of target partners. Through discussion, the analysis will be assisted by a brainstorming process between the service team together with target partners and the relevant village government. This discussion results in an agreement on a series of relevant and solution-oriented program activities.
2. Dissemination of technological information, is the stage of channeling knowledge about the technology that will be carried out. The aim is to encourage understanding of target partners so that they know and understand the benefits, work procedures, and potential of utilizing the technology.
3. Training (Technology transfer), is a stage to introduce technology to target partners technically. This training encourages technical understanding to target partners regarding the independent operation of the technology.
4. Provision of production equipment, is the process of distributing the necessary infrastructure facilities to run the technology that has been taught.
5. Application of technology, is a production activity process using technology that has been taught in daily operations. In this process, the community can utilize the technology as a solution to existing problems.
6. Product assistance, the process of assisting target partners in applying technology effectively. This mentoring process aims to ensure that the technology is implemented correctly
7. Business development, is a stage that is carried out to help target partners develop their business by utilizing the technology that has been implemented. This process includes business management, determining selling prices, and product marketing.
8. Monitoring and evaluation, is the monitoring and evaluation stage regarding the process and results of the implementation of technology. This monitoring and evaluation is carried out routinely to maintain the smoothness of the process and measure the success of the program.





9. Publication and management of HKI, is the process of expanding the results of activities through mass media, conferences, and scientific journals to encourage the benefits of the program widely. In addition, with IPR related to legal protection claims for technological innovations taught

### C. Results and Discussion

1. Socialization and Consolidation Activity year 1 with partner

Activity started with socialization and consolidation activity through coordination with all partner. Next is done mapping member group farmer use grouping member farmer bamboo that is not own skills or no willing become craftsman bamboo and members group farmers ready to move up a class become craftsmen. Mapping results This used as initial data for involving member farmer bamboo ready to move up a class follow training various type craft bamboo together with group craftsman bamboo. Group Bamboo Farmers are put to work as Supplier bamboo. Based on results identification of farmers bamboo more choose For still become farmer bamboo and become Supplier material standard for the craftsmen bamboo.

2. Dissemination information and knowledge about cultivation and utilization type bamboo f or make suitable product

This activity focuses on the selection and utilization of bamboo types for each product to be made. The method used to solve the lack of knowledge about the cultivation and utilization of bamboo types to make appropriate products is by providing counseling to partners.

3. Dissemination information and knowledge about Handling pest disease plant bamboo

The method used to solve the problem of lack of knowledge about handling bamboo plant pests and diseases is by providing counseling to partners. In this activity, the community service team invited resource person Dr. Rostaman who is a plant pest expert from the Faculty of Agriculture, Unsoed, while the partners acted as training objects.

The method of controlling bamboo pests is carried out by 1) Proper harvesting of bamboo reeds. Harvesting of bamboo reeds is carried out when the plant is old. This is characterized by yellowing leaves and hard stems and dark flesh color. At that time, the starch or glucose content is very low. This condition is very much disliked by beetles because (1) it is hard and (2) there is no suitable food. Beetle larvae prefer bamboo reeds that contain a lot of starch. The starch content is high when the bamboo reeds are still young; 2) Soaking in water. Soaking in running water or a pond aims to remove the starch content in the bamboo reeds or slices for several months. After soaking, the bamboo is cleaned and dried in the sun until dry. Powder beetles will not attack bamboo that has been treated; 3) Soaking in a chemical compound solution. This soaking aims to remove starch and protect bamboo from powderpost beetle attacks. Powderpost beetles that attack bamboo that has been treated with this compound will die (Abdurachman and Ismanto, 2017)

4. Counseling preservation bamboo in a way traditional and with the Vertical Soak Diffusion (VSD) Method

The method used to solve the problem of lack of knowledge of partners about bamboo preservation is through counseling and direct practice to partners. In this activity, the community service team acts as a resource person while the partner acts as the object of training. In this activity, it was agreed that 2 bamboo preservation tanks would be built, each measuring 1x1x 4 m, one placed at the location of the bamboo farmer group leader and one at the location of the bamboo craftsman group leader.



#### 5. Training preservation bamboo with the Vertical Soak Diffusion (VSD) Method

Bamboo training was conducted and received active participation from the participants. There was an increase in understanding of how to preserve bamboo using the Vertical Soak Diffusion (VSD) method technically.

#### 6. Giving help modern equipment for make product quality confinement

The provision of equipment assistance was carried out by the Head of the PKM Team and received by the Head of Legok Village representing both groups. The equipment provided becomes a group asset and is inventoried by the village. Group members are given the opportunity to make the best use of it to run a business. This will be observed by the group administrators and village officials, if the equipment that has been authorized to use is not used to run a business, it will be transferred to other residents who need it and will actually be used to run a business

#### 7. Dissemination information and knowledge about efficient production processes for make product cages and furniture

This activity focuses on expanding participants' understanding of the production process of cage and furniture products in training sessions.

#### 8. Training making product quality confinement

The method used to solve the problem of lack of diversification of bamboo craft products is by providing training to partners. In this activity, the community service team looked for resource persons for craftsmen from the Bambusari Group who were partners of the head of the Community Service Team in Somakaton Village, Somagede District, who are now successful in running bamboo cage businesses. The number of cage products made during and after training was 200 cages.

#### 9. Giving equipment production for furniture products

#### 10. Training making quality furniture and furnishings products

In addition to making cages, another product that will be made is furniture. In this activity, the community service team looked for a resource person, Mr. Darsito, a craftsman from Kemutug Kidul Village, Baturraden District, which is also a bamboo craft center. In this activity, the partner acts as the training object. The number of furniture products made during and after training is 100 units.

#### 11. Counseling about Business Management

In implementing this program, the Community Service Team provides knowledge about small business management including production management, HR, marketing and finance. In this activity, the community service team acts as a trainer and facilitator while the partner acts as the training object. The partner is also given counseling on the preparation of financial reports. This counseling activity is continued with the practice of preparing financial reports. In providing training on preparing financial reports. In this activity, the community service team will act as a trainer and facilitator while the partner will act as the training object. The bookkeeping provided includes recording Cash Book, Cash Purchase Book, Credit Purchase Book, Cash Sales Book, Credit Sales Book, Accounts Receivable Book, Accounts Payable Book, Balance Sheet and Profit and Loss Report. The team also provides assistance in the implementation of financial report preparation. In this activity, the community service team acts as a companion who provides direction and guidance on the implementation of financial report preparation.



12. Dissemination information and transfer technology calculation price main production, determination price sell and manufacturing report finance for product craft bamboo

Partners are given counseling and practice in calculating production costs and determining selling prices. The method used to solve the problem of lack of knowledge and ability of partners in calculating HPP and selling prices is the counseling and practice method.

13. Dissemination information and knowledge in matter management group for farmers and craftsmen bamboo

Several activities are carried out related to improving partner capabilities in terms of group management and group administration, namely: Counseling and practice on group management. This activity aims to improve the knowledge of administrators and group members about how to carry out group activities and the importance of dividing tasks within the group. This activity is continued with the practice of dividing tasks within the group. In the group, it is not enough to only form a chairman, secretary and treasurer, but it is very necessary to have a marketing officer. Among the group members, there are those who carry out tasks as product marketers and make marketing efforts, and must not be busy behind all working on production. Even though they do not produce products, the marketing department is tasked with bringing in consumers and capturing customers. The number of products sold depends on the performance of the Marketing Department, therefore the marketing department must also get the same income share as other members who produce products.

14. Dissemination information and transfer technology in matter offline and online marketing for product results cultivation bamboo, products preserved bamboo, furniture and furnishings

In this activity, the Team is trained to market products both offline and online. Partners are given social media accounts and market their products through their social media accounts. The IG account is used to socialize the bamboo business in Legok Village and as a means of selling the products.

Product results training has allocated to society, proven with bought it product results training by the community. With sold results training to public wide, next group arrange management group Where in the group Then formed part marketing that will on duty market product. The group given training on duty spread knowledge possessed to inhabitant others. The equipment provided is also right use, so that no become right owned by member group However is assets owned groups and also inventoried by the village. With thus administrator groups and parties village will supervise If tools that have been right use wear by members group No used For operate business.

#### **D. Conclusion**

All activities have been carried out according to plan. The target of this Community Service activity in the form of counseling and training in bamboo processing into cages and furniture, business management including financial practices, group management has been achieved. Even from this program it can be seen that the community's ability and understanding of the material that has been taught has been well received as evidenced by the increase in cage and furniture production capacity by 140% from 20 units to 300 units.

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society, especially in effort develop solution real for problems in the field. We are committed for utilizing grant funds This as good as maybe for the sake of giving extensive benefits for society, and hope can Keep going contribute in increase welfare public through innovative programs in the future.

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