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Community Empowerment through Corn Husk Waste Utilization for Value-Added Crafts Using Circular Economy in Toyoresmi Village

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Abstract
This community service activity aims to improve the skills of the residents of Toyoresmi Village in utilizing corn husk waste to create handicrafts with economic value through the application of the circular economy concept. The activity was carried out using a participatory approach involving 15 participants who subsequently joined the Pijar Karya Community Business Group (KUB). The implementation methods included needs assessment, outreach, training, production assistance, marketing development, business group formation, as well as monitoring and evaluation. Training was conducted through hands-on practice in corn husk processing, ranging from cleaning, drying, and dyeing, to shaping petals, assembling flowers, and packaging the products into bouquets. The results of the activity showed that participants were able to process corn husks into several product variations, namely single bouquets, single bouquets with lights, and large bouquets, and were able to carry out the production and marketing processes more independently. The utilization of corn husks also provided economic added value while reducing agricultural waste that had previously not been utilized optimally. This activity demonstrates that the processing of corn husk waste can serve as an alternative for community empowerment that supports the development of businesses based on local potential and sustainability through the implementation of a circular economy.

Keywords: Community empowerment, Corn husk waste, Handicrafts, Circular economy, Community entrepreneurship.

INTRODUCTION

Corn is a strategic food commodity with the potential to be developed not only as a food source but also as a raw material for value-added products. During processing, corn produces various byproducts—such as husks, cobs, and stalks—that must be managed to prevent them from becoming waste that could potentially pollute the environment (Suhaimi et al., 2025). This situation is also found in Toyoresmi Village, Ngasem Subdistrict, Kediri Regency. Toyoresmi Village covers an area of 157.76 hectares with a population of 2,521, and approximately 55% of its residents work as farmers. Field corn (Zea mays L.) is one of the village's leading crops, with a cultivated area of 62 hectares and a productivity rate of 66.73 quintals per hectare, resulting in a production potential of approximately 4,137 quintals. This significant production potential also results in a substantial amount of corn husks after harvest; however, their utilization remains limited and has not yet provided economic value to the community.

Based on observations and focus group discussions with partners, it was found that most of the corn harvest in Toyoresmi Village is still sold as dried kernels, while the corn husks are generally discarded and not yet put to productive use. This situation contributes to the limited value added that the community derives from corn. The average farmer's income

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remains around Rp1,000,000 per month because most still rely on middlemen. On the other hand, the PKK women and the general public—as the target groups—do not yet possess the skills to process corn husk waste into products with economic value. Another issue is the lack of organized production units and marketing facilities capable of supporting the development of community-based products. In fact, the presence of a souvenir center in the village could serve as a potential local market opportunity worth developing.

This issue highlights a gap between the potential of corn husks as waste and their utilization as an economic resource for the community. One approach that can be applied to address this issue is the circular economy—an approach that promotes the reuse of resources and the processing of waste into value-added products while reducing production waste and environmental impact (Asyifa, 2025). Utilizing previously discarded parts of the corn plant is also in line with the zero-waste principle in agricultural product management (Barkah et al., 2025). In the context of community empowerment, processing corn husks into handicrafts can be developed as a business opportunity that not only generates economic value but also supports the implementation of green entrepreneurship principles and the sustainability of rural communities (Alhafidz, 2025).

The use of corn husks as a craft material has been implemented in various community service activities. Darmayanti (2021) shows that the utilization of corn husk waste can contribute to the improvement of the village economy. Corn husk waste processing activities have also been carried out in Kalisat Village through technical assistance to produce high-quality handicrafts (Almuzhid et al., 2023), in Parunggalih Village, Pemalang, through handicraft skills training (Nadzifa et al., 2023), and in Asam Kumbang Village, Medan Selayang District, through community empowerment to produce handicrafts with economic value (Hutauruk et al., 2026). However, these activities tend to focus on improving processing skills and product quality. The integration of waste utilization, strengthening of business institutions, digital-based business management, and marketing linked to the potential of the village market still needs to be developed.

Given these conditions, empowerment initiatives are needed that go beyond training in handicraft production to also foster the development of sustainable business activities. The Karya Toyoresmi program was developed by transforming corn husk waste into handicraft products using a circular economy approach. These activities include training in corn husk waste processing, hands-on craft-making workshops, the formation of a Joint Business Group (KUB), and marketing development through digital platforms and the village souvenir center. Through this approach, corn husk waste—which was previously left unused—is transformed into raw material for products that hold economic value while also serving as part of community empowerment efforts.

This community service activity is designed to address several key issues, namely:

1. How can the utilization of corn husk waste through a circular economy approach improve the skills and economic well-being of the Toyoresmi Village community?
2. How can the formation and strengthening of business groups support the sustainability of corn husk craft production?
3. How can the use of digital marketing and a village souvenir center support the expansion of marketing for corn husk craft products?

Based on these issues, the objectives of this community service activity are:

1. To improve the skills of the Toyoresmi Village community in processing corn husk waste into economically valuable craft products through a circular economy approach.

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2. To form and strengthen community business groups so that the production of corn husk crafts can proceed in an organized and sustainable manner.

To develop the marketing of craft products through digital platforms and the village souvenir center as an effort to increase the economic value and market reach of the community's products.

RESEARCH METHODS

1. Location, Time, and Activity Partners

This community service activity was carried out in Toyoresmi Village, Ngasem Subdistrict, Kediri Regency, over a period of four months, from July through September. The primary partner for this activity was the Pijar Karya Joint Business Group (KUB), a community group engaged in processing waste into useful products. The Toyoresmi Village Government served as a supporting partner in securing permits, providing a venue for the activities, facilitating coordination with residents, and ensuring the program's sustainability after the mentoring period ended.

There were 15 participants, all of whom were members of the Pijar Karya KUB. The group was predominantly made up of homemakers with limited business experience and only basic waste processing skills. These characteristics served as the basis for developing practical and easy-to-apply training materials and methods.

2. Activity-Based Approach

The activities employed a participatory approach, in which partners were actively involved from the identification of problems, through planning and implementation, to evaluation. The community service team served as facilitators, while members of the KUB and village officials acted as the primary implementers. This approach was chosen to ensure the program aligned with local needs and fostered a sense of ownership, enabling the activities to continue independently.

Conceptually, the activities were designed within a circular economy framework, which views waste as a resource rather than as something to be discarded. The developed process includes five components: (1) waste as raw material collected from the village environment; (2) processing through cleaning, drying, and dyeing; (3) products in the form of marketable handicrafts; (4) markets through direct and online sales; and (5) utilization of production residues to prevent them from becoming waste again. With this process, the material cycle is closed-loop and provides both economic and environmental benefits.

3. Stages of Activity Implementation

The community service program was carried out over four months through seven sequential and interrelated stages: needs assessment, outreach, training, production mentoring, marketing and branding, the inauguration of the Pijar Karya Business Group (KUB) and the handover of equipment, as well as monitoring and evaluation. The business group was not formed at the beginning of the program. It was formed from participants who had completed the training and was officially established at the end of the program. At each stage, partners were actively involved as key participants in the activities.

1) **Needs Assessment.** A needs assessment was conducted before the program proposal was approved for funding and served as the basis for developing the activity proposal. This stage aimed to obtain an overview of community conditions before the program was designed. Data was collected through field visits and discussions with village officials, corn

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farmers, and women residents of Toyoresmi Village. The assessment focused on four aspects: raw material potential, residents' capabilities and interests, production facilities, and business opportunities.



Figure 1. 1 observation

2) **Outreach.** An outreach session was held during the first month at the pumpkin farm, involving village officials and representatives of the women's group. At this stage, the women were invited to participate in training on how to process corn husks into marketable handicrafts. The team outlined the program's objectives, the series of activities, the schedule, and the benefits to be gained, including plans to form a business group at the end of the program.



Figure 1. 2 Outreach to the target audience

3) **Training.** The training was conducted over a period of two months in ten sessions. The methods used included short lectures, demonstrations, and hands-on practice, with each session beginning with a theoretical presentation followed by practical exercises. The material was organized into four modules based on the processing workflow.



Figure 1. 3 Step 1 Training

4) **Production Mentoring.** Production mentoring took place during the third month. Training participants worked in groups to produce the items, while the community service team provided on-site mentoring once a week. Tasks included preparing materials, dyeing, shaping, and finishing. The mentors monitored whether the process followed the

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procedures that had been taught, helped resolve technical issues, and provided feedback to improve quality.



Figure 1. 4 Support for the production process

5) **Marketing and Branding.** Marketing and branding activities are carried out during the third and fourth months, in conjunction with production support, so that the resulting products can quickly enter the market.



Figure 1. 5 Marketing and branding activities

6) **Equipment handover.** The inauguration of the Pijar Karya Community-Based Unit (KUB) took place during the first and second weeks of the fourth month. The KUB consists of 15 members, all of whom are women who participated in the training; as a result, the members already possessed production skills and experience before the group was officially established. The inauguration took place during a formal ceremony attended by village officials, which included the naming of the group, the appointment of the executive committee, and the assignment of roles to members.



Figure 1. 6 Handover of production equipment

7) **Monitoring and evaluation.** Monitoring is conducted throughout the program, while the final evaluation takes place during the third and fourth weeks of the fourth month.

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Monitoring includes participant attendance, production progress, product quality, the availability of corn husks, and the condition of the equipment.



Figure 1. 7Monitoring and Evaluation Activities

4. Data Collection Techniques

Data collection was conducted using five complementary techniques: observation, interviews, focus group discussions (FGDs), documentation, and recording of production and sales. Observations were conducted directly during training sessions and production mentoring activities. This technique was used to assess participants' level of engagement, their technical skills in processing corn husk waste, and group dynamics. Interviews were conducted during the needs assessment and final evaluation phases with village officials, corn farmers, and program participants. The interviews aimed to identify community needs, constraints, and perceptions regarding the program's benefits. FGDs were held during the final evaluation phase, involving the board members and members of the Pijar Karya Farmers' Group (KUB) as well as village officials to reach a shared understanding of achievements, obstacles, and follow-up plans.

Documentation in the form of photos, videos, attendance lists, and meeting minutes was compiled as evidence of implementation as well as supporting data for the activity process. In addition, quantitative data was obtained from production and sales records compiled by participants and KUB members during the mentoring period. These records included the amount of corn husks used, the quantity of products produced, material costs, and sales revenue, which were subsequently used to calculate the product's value added.

5. Success Indicators and Data Analysis

The success of the program was measured using three key indicators. The first indicator was the improvement in participants' skills, which was assessed based on their ability to independently carry out the various stages of corn husk processing—from cleaning, drying, and dyeing to product shaping. Assessment was conducted through direct observation during training and production mentoring using a practical assessment sheet. The second indicator is the number of products produced by participants during the mentoring period. The third indicator is value added, which is the difference between the selling price of the product and the cost of raw materials. This value added is significant because the raw material—corn husks—is agricultural waste that previously had no economic value. It is also hoped that through this activity, participants will be able to apply the knowledge they have gained in their own homes and villages, thereby increasing the utilization of corn husk waste while simultaneously boosting their economic income. (Ningtias et al., 2024)

The data were analyzed descriptively. Quantitative data—including the number of products, material costs, and sales revenue—were presented in the form of frequencies, percentages, averages, and tables. Qualitative data obtained from observations, interviews, and focus group discussions (FGDs) were analyzed through three stages: data reduction, narrative data presentation, and drawing conclusions. The results of the analysis of both types of data

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RESULTS AND DISCUSSION

1. Initial Conditions and Implementation of the Activity

Based on initial observations, Toyoresmi Village has a potential source of raw materials in the form of corn husks, which are available after the harvest. However, these corn husks have not yet been optimally utilized, and some are still treated as waste. This situation indicates an opportunity to develop productive activities by transforming agricultural waste into products with economic value.

The Karya Toyoresmi program was implemented through training and mentoring for 15 participants, who subsequently joined the Pijar Karya Community-Based Unit (KUB). The program was carried out in stages, beginning with an introduction to the materials, processing of corn husks, flower making, bouquet assembly, calculation of production costs, and finally, product marketing.

Table 1. 1 Stages of Activity Implementation

Meeting	Materials/Activities	Results Achieved
1–3	Introduction to tools and materials, soaking, and coloring corn husks	Participants are able to prepare and color corn husks
4–5	Petal formation, flower assembly, and HPP calculation	Participants are able to make flowers and calculate production costs
6–7	Flower production, bouquet assembly, and packaging	Participants are able to arrange flowers into bouquets
8–10	Product production and promotion	Participants are able to produce products independently and introduce them to consumers

The 10-session program provides participants with the opportunity to gain hands-on experience. A practical approach is used so that the skills acquired are not merely theoretical but can be independently applied in the production process.

2. The Process of Turning Corn Husks into Handicrafts

Corn husks, which previously had no economic value, are processed into flowers as the main component of bouquet products. The processing involves several stages, ranging from material preparation, dyeing, petal shaping, assembly, decoration, to packaging.

Table 1. 2 Production Process

Step	Process	Main Materials/Tools
1	Preparing and cleaning corn husks	Corn husks, scissors
2	Soaking and coloring corn husks	Corn husks, Wantex, water
3	Drying corn husks	Dyed corn husks
4	Forming flower petals	Corn husks, scissors
5	Arranging petals to form a flower	Hot glue, wire
6	Adds texture and decoration	Scissors, glitter
7	Provides a protective layer	Clear coat
8	Drying and Finishing	Flower products

Each flower is made with approximately 15 petals arranged from the center outward using a hot glue gun. Once the flower's shape is formed, the petals are trimmed and textured

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using scissors. Glitter is used as an additional decoration, then the flower is coated with Pilox Clear and dried before being arranged into a bouquet.

This process demonstrates a shift in the function of the material—from agricultural waste to a raw material for handicrafts. Thus, corn husks are no longer viewed as waste to be discarded but can be repurposed through a production process that yields products with both practical and commercial value.

3. Production and Marketing Results

The results of the mentoring program show that participants have been able to produce several variations of bouquets made from corn husks. The products are tailored to consumer needs, ranging from simple bouquets to bouquets with added lights and large-sized bouquets. Standard single bouquets are typically sold for Rp 15,000, single bouquets with lights for Rp 25,000, and large bouquets for Rp 50,000.

Table 1. 3 Production and Marketing Results

Product Type	Sold	Total Cost of Goods Sold	Total Sales	Total Profit
Single bouquet	56	Rp560.000	Rp840.000	Rp280.000
Single-light bouquet	20	Rp300.000	Rp500.000	Rp200.000
Large bouquet	10	Rp250.000	Rp500.000	Rp250.000
Total	86	Rp1.110.000	Rp1.840.000	Rp730.000

According to Table 4, the total production cost for 86 products was Rp1,110,000, while total sales reached Rp1,840,000. Thus, production activities generated a profit of Rp730,000. These results show that the use of corn husks can provide economic added value when accompanied by proper processing, packaging, and marketing.

4. Implementation of the Circular Economy Concept

Karya Toyoresmi's activities apply the principles of the circular economy by transforming materials that were previously waste into raw materials for new products with economic value. This utilization process is illustrated in Figure

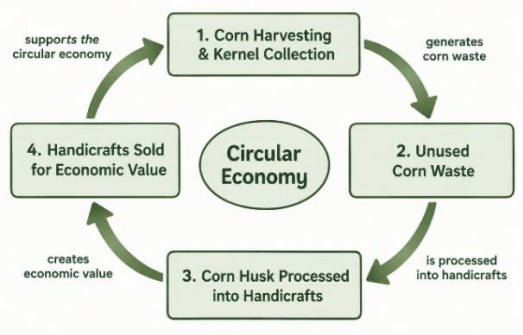


Figure 1. 8 Circular Economy

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CONCLUSION

The Karya Toyoresmi initiative demonstrates that the utilization of corn husks can serve as an alternative for community empowerment through the development of skills and businesses based on local potential. Training and mentoring have enabled participants to process corn husks into handicrafts—specifically, flower bouquets—that possess both practical and economic value. The application of circular economy principles also promotes the transformation of agricultural waste into reusable raw materials for products, while simultaneously supporting waste reduction and the development of community economic activities. The sustainability of the initiative is reinforced through the establishment of the Pijar Karya Community-Based Enterprise (KUB) as a platform to independently continue production, marketing, and product development.

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