

RESEARCH ARTICLE



Utilization of Areca Palm Midribs into Pinara Organic Flowers as a Creative Economy Innovation in Aceh Besar

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ABSTRACT

The community service program in Seumet Village, Montasik District, Aceh Besar, aimed to empower local communities through the utilization of areca palm sheaths into a creative product called organic flower PINARA (Pinang Ramah Lingkungan). Previously, areca sheaths were mostly burned or discarded, causing environmental pollution. Using a participatory approach, the program was carried out in three stages: preparation, implementation, and mentoring. The results showed a significant improvement in community capacity, with knowledge increasing from 30% to 80%, skills from 25% to 75%, environmental awareness from 40% to 85%, and participation from 35% to 78%. The program successfully produced Pinara flowers with aesthetic and economic value, while also initiating small community-based business groups. This activity not only provided new skills and business opportunities but also fostered awareness of sustainable environmental management. Therefore, processing areca palm sheaths into PINARA organic flowers has proven to be an innovative and sustainable solution to address agricultural waste, improve community welfare, and support the development of creative economy based on local resources.

KEYWORDS

Management; teacher development; Islamic religious education; students with disabilities; social evolution model

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1. Introduction

Seumet Village, Montasik District, Aceh Besar Regency, is one of the areas in Aceh Province that has great potential in agriculture, especially areca nut cultivation. Areca nut is one of the important commodities widely grown by the local community and contributes to household economies. However, in addition to its useful fruit, the areca nut tree also produces waste in the form of fronds in abundance. So far, these areca nut fronds have not been optimally utilized; most of them are simply left to rot, discarded, or even burned. This burning practice causes environmental problems such as air pollution and soil contamination (Hertati et al., 2021). In fact, areca nut fronds

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actually contain strong natural fibers and have the potential to be processed into various products with economic value. Research shows that palm frond fiber can be used as a base material for handicrafts, environmentally friendly packaging, and alternative household products (Suryani & Apriana, 2020). Creative utilization of palm fronds not only supports environmental sustainability but can also increase community income through local resource-based economic activities.

The main problems faced by the people of Seumet Village can be identified in several aspects. First, the utilization of agricultural waste is not optimal, resulting in wasted economic potential. Second, the community's sources of income are still limited to the traditional agricultural sector, resulting in high economic vulnerability. Third, the community's creative skills in processing local materials into value-added products are still low, resulting in dependence on conventional economic activities. Fourth, environmental hygiene issues remain urgent, as the practice of disposing of and burning crop waste contributes to pollution (Rahmawati, 2019). Through the Abulyatama University's Real Work Lecture (KKN) program, community service activities focused on empowering the Seumet Village community were initiated. This program not only aims to reduce environmental problems caused by palm frond waste but also to open up new business opportunities for the community. The innovation offered is the processing of palm fronds into organic flowers called PINARA (Pinang Ramah Lingkungan or Environmentally Friendly Palm). This product was chosen because it is easy to make, has high aesthetic value, and can be marketed as an environmentally friendly handicraft product with marketability in local and regional markets. Additionally, this program is in line with the Sustainable Development Goals (SDGs), particularly Goal 8 (Decent Work and Economic Growth) and Goal 12 (Responsible Consumption and Production). By empowering the community through new skills, it is hoped that economic independence based on the utilization of local resources will be created while preserving the environment (United Nations, 2015).

Previous studies have shown that skills training based on local potential can improve community welfare. For example, community empowerment through the utilization of agricultural waste in other areas has been proven to increase creativity, expand business networks, and foster entrepreneurship (Sari et al., 2022). Therefore, this activity is expected to be a significant first step in changing the perception of the Seumet Village community towards palm frond waste, from what was previously considered garbage to a valuable resource.

This community service program also emphasizes active participation. The community is not only the beneficiary, but also directly involved in every stage of the activity, from socialization and training to product marketing. Thus, the skills acquired

will remain with the community and have the potential to continue to be developed even after the KKN activities have ended.

The main objective of this community service activity is to empower the community of Seumet Village through the utilization of areca nut waste, which has not been optimally managed. First, this activity aims to provide new skills to the community so that they are able to process areca nut waste into value-added products, particularly PINARA organic flowers. Second, this program is also aimed at raising community awareness of the importance of environmentally friendly and sustainable management, thereby reducing the practice of burning waste that pollutes the air. Third, this activity is expected to open up opportunities for creative businesses based on local potential, which in turn will increase community income and strengthen the village economy.

The implementation of this activity brings multidimensional benefits to the community, the environment, universities, and the local economy. For the community of Seumet Village, this activity provides new skills, increases family income, and reduces pollution caused by waste burning. From an environmental perspective, this program reduces the volume of agricultural waste and supports the principles of a circular economy through the use of waste as raw material for new products. For Abulyatama University, this activity is a tangible manifestation of the Tri Dharma Perguruan Tinggi (Three Pillars of Higher Education), strengthening ties with the community while providing practical experience for students. For the local economy, this program has given rise to new creative products, opened opportunities for the development of environmentally friendly craft-based MSMEs, and driven the village economy. Thus, this activity not only provides a solution for agricultural waste management but also serves as an inspiring model that can be replicated in other areas in Aceh and Indonesia.

2. Literature review

2.1. Utilization of Agricultural Waste

Agricultural waste is a by-product of crop cultivation activities, such as stems, leaves, fronds, and unused harvest residues. Improper waste management can cause environmental pollution and have a negative impact on public health (Arvanitoyannis & Bosnea, 2004). Therefore, utilizing waste into useful products is an important strategy in sustainable development. According to Yernisa and Oktaria (2019), the practice of burning agricultural waste is still widely carried out in Indonesia, thereby increasing air pollution. Alternative waste management using a circular economy approach can provide added value and reduce negative environmental impacts (Sari et

al., 2022). Thus, agricultural waste can be seen not as a problem, but as an opportunity to improve community welfare while preserving the environment.

2.2. Potential Uses of Areca Nut Fronds

The areca nut palm (*Areca catechu*) is widely distributed in Southeast Asia, including Indonesia. In addition to its seeds, areca nut palm fronds have strong, environmentally friendly fibers, making them suitable for processing into various products such as disposable containers, composite boards, and handicrafts (Raghupathy et al., 2002; Palan et al., 2018). Research by Hertati et al. (2021) reveals that the creative industry based on areca nut fronds can open up new business opportunities for rural communities. In addition to the economic aspect, the use of areca nut fronds also supports environmental preservation through the reduction of organic waste. This is in line with the findings of Ramli et al. (2023), which emphasize the importance of technology transfer in the development of products made from areca nut fronds. Furthermore, Suryani and Apriana (2020) added that the community's creativity in processing palm fronds can produce products with high selling value while strengthening local identity.

2.3. Creative Economy Based on Local Potential

The creative economy is an economic development approach that focuses on creativity, skills, and innovation in producing products and services (Hertati et al., 2021). The utilization of local potential such as palm fronds is one of the concrete implementations of a creative economy based on local wisdom. According to Pardi and Santoso (2021), the development of palm frond-based businesses contributes not only to increasing additional income but also to strengthening the independence of rural communities. Areca nut frond-based products, such as PINARA organic flowers, have the potential to become a distinctive regional craft identity with artistic and economic value. This is reinforced by Howkins (2013), who states that the creative economy can grow rapidly when communities are able to transform local potential into competitive products. Thus, the development of areca nut fronds is part of a long-term strategy to improve the economy of communities based on local resources.

2.4. Community Empowerment through Training

Community service in the form of skills training is a concrete implementation of the Tri Dharma Perguruan Tinggi (Three Pillars of Higher Education). According to Kurniawana et al. (2018), skills training can increase knowledge, confidence, and capacity of the

community in utilizing local resources. This training focuses not only on the transfer of technical skills, but also on building environmental awareness and entrepreneurship. In the context of Seumet Village, community empowerment through training in processing areca nut fronds into PINARA organic flowers has strategic value. This program is a means to increase creativity, open up new business opportunities, and strengthen collaboration between the community, the village government, and universities. According to Adi (2012), participatory empowerment can create program sustainability because the community feels ownership of the initiative. Therefore, it is hoped that the results of this training can develop into small and medium enterprises (SMEs) that are competitive in local and regional markets.

3. Methods

The implementation of this community service program is carried out through three main stages, namely preparation, implementation, and mentoring. This approach was chosen so that activities run systematically, participatively, and produce sustainable results. According to Creswell (2014), a stage-based method is very important to ensure clarity in the research process and intervention program. In addition, the concept of participation in community service is believed to increase community ownership of the program (Adi, 2012).

3.1. Preparation Stage

During the preparation stage, several important steps were taken to ensure the smooth running of the program. Activities began with field observations aimed at identifying the potential and problems that existed in Seumet Village. Next, coordination is carried out with the village government, community leaders, and resident groups who will be involved to create a common understanding of the objectives of the activity. Materials and equipment are also carefully prepared, including the preparation of a guide module for making PINARA organic flowers from palm fronds. This stage basically aims to align the perceptions of all parties while ensuring the availability of the necessary resources before the program is fully implemented.

3.2. Implementation Stage

The implementation phase focuses on the process of transferring knowledge and skills to the community. Activities carried out include socialization on the importance of organic waste management as an effort to preserve the environment, as well as direct

demonstrations of making PINARA flowers from palm fronds. In addition, participatory workshops were held involving housewives, village youth, and other community groups to ensure the active involvement of all levels of society. Discussions on the potential for product development and local-based marketing strategies are also an important part of this stage. With the active involvement of the community, the implementation of the program is expected to improve skills and raise awareness of the importance of innovation based on local potential (Pertwi & Hidayat, 2020).

3.3. Mentoring Stage

The final stage of this activity focuses on program sustainability through various forms of mentoring. Steps taken include providing technical guidance to improve product quality to meet market standards, developing innovative products made from areca nut fronds in addition to PINARA flowers, and introducing simple social media-based marketing strategies to expand market reach. This assistance is crucial to ensure that the skills acquired by the community do not end with the training, but continue to develop into sustainable productive activities. Through this assistance, it is hoped that small community-based business groups will be formed that can independently manage palm fronds while also having a positive impact on improving the village economy.

3.4. Conceptual Framework

The following is the conceptual framework of the community service program:



Figure 1. Conceptual Framework

This framework describes the flow of activities from start to finish, namely the empowerment of the Seumet Village community through the processing of palm

fronds into creative products that are both economically valuable and environmentally friendly.

Table 1. Summary of Activity Stages

Stage	Main Activities	Expected Output
Preparation	-Field observation -Coordination with villages and community leaders - Preparation of materials & modules	Completion of the PINARA flower making guide and technical readiness for implementation
Implementation	-Socialization of organic waste management -Demonstration of PINARA flower making - Participatory workshop - Discussion on marketing strategies	The community has basic skills in making PINARA flowers and understands business opportunities
Assistance	- Technical guidance on quality improvement -Innovation of derivative products - Introduction to social media-based marketing	Formation of small business groups ready to develop products sustainably

4. Results And Discussion

4.1. The most authors public policy in Islamic education

The The implementation of the community service program in Seumet Village, Montasik District, Aceh Besar Regency, has yielded a number of important achievements that are worth noting. First, this activity has successfully produced PINARA flower crafts made from old areca palm fronds. Through a process of training and mentoring, the community, especially housewives, have been able to create decorative flowers that are beautiful, aesthetic, and have economic value. These products not only serve as home decorations but also have the potential to be marketed as distinctive local handicrafts.

Second, this program has a direct impact on improving the knowledge and skills of the community. Participants in the program, both housewives and rural youth, acquire practical skills in processing areca nut fronds into handicraft products. This knowledge is applicable so that it can be developed independently without always having to rely on outside parties. In addition, these new skills open up home business opportunities that can increase family income.

Third, this activity also raises environmental awareness among residents. Before the program, palm fronds were often simply burned, causing air pollution. After

socialization and demonstrations, the community began to realize that this organic waste has a higher value if it is utilized. This change in mindset is an important first step towards more sustainable environmental management at the village level.

Fourth, the emergence of business groups is a promising achievement. A number of enthusiastic residents have started to form small groups of PINARA flower craftsmen. These groups have the potential to develop into micro-businesses that can strengthen the village economy if they receive continuous support from the government, universities, and the private sector.



Figure 2. Documentation of the PINARA flower-making process by the community]



Figure 3. Documentation of the artisan group with their PINARA flower creations]

Finally, in terms of supporting factors and obstacles, there are several things that affect the program's progress. Supporting factors include full support from the village government, high community enthusiasm, and the availability of abundant areca nut

raw materials. These factors accelerate the successful implementation of the program. However, obstacles were also encountered, including limited implementation time, limited supporting facilities, and minimal market access for widespread product marketing. These obstacles are important points that can be improved in the next phase, for example by strengthening marketing networks through social media or collaborating with MSME actors in other regions.

Overall, the results of this activity show that utilizing palm frond waste to produce PINARA organic flowers can be a creative and sustainable solution to environmental problems, while also opening up new economic opportunities for the people of Seumet Village. This program also demonstrates how synergy between the community, village government, and universities can lead to innovations that have a direct impact on improving community welfare.

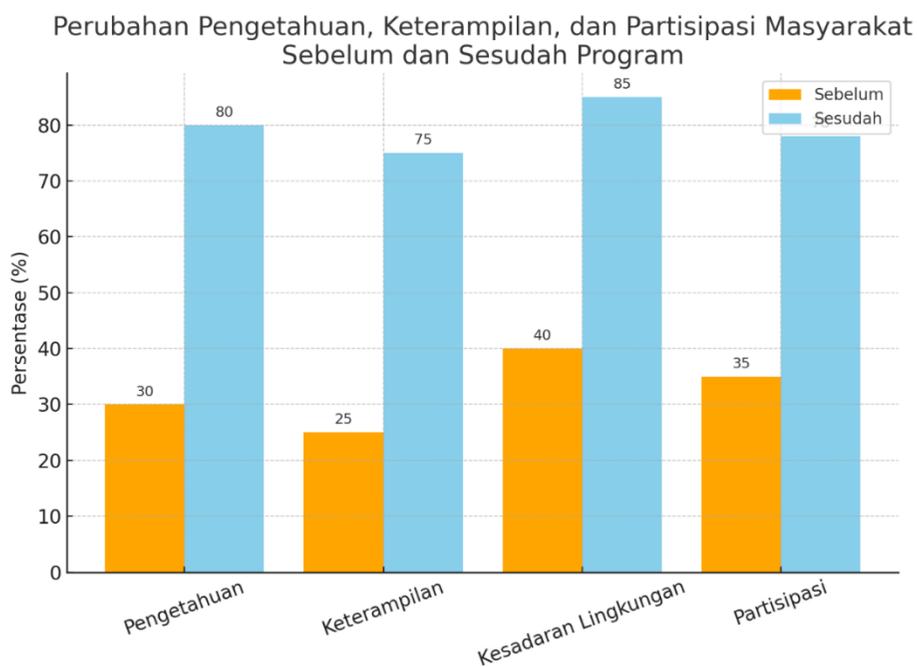


Figure 4. Level of knowledge, skills, environmental awareness

The Figure 4 shows significant changes in the level of knowledge, skills, environmental awareness, and community participation before and after the community service program was implemented. Before the program, the community's level of knowledge was only around 30%, skills 25%, environmental awareness 40%, and participation 35%. After socialization, training, and mentoring activities were carried out, there was a significant increase in all indicators. Community knowledge increased to 80%, skills reached 75%, environmental awareness rose to 85%, and participation stood at 78%.

This confirms that the PINARA program for processing palm fronds into organic flowers has not only succeeded in improving the technical capabilities of the community, but has also succeeded in building awareness and active involvement in protecting the environment while developing local economic potential.

5. Conclusion

The The community service activities carried out in Seumet Village have successfully demonstrated that palm frond waste can be processed into creative products in the form of PINARA organic flowers that have aesthetic and economic value. Through a series of preparation, implementation, and mentoring stages, the community has acquired new practical skills and an understanding of the importance of preserving the environment. This program not only produces handicrafts but also encourages the emergence of business initiatives that have the potential to develop into MSME units. The change in the community's mindset from burning waste to processing it is clear evidence of increased environmental awareness. Thus, this activity has a multidimensional impact that encompasses social, economic, and environmental aspects.

For the program to continue, ongoing support from various parties is needed, including village governments, universities, and private institutions, so that palm frond-based business initiatives can continue to develop . The community also needs to be given additional training on product innovation and modern marketing strategies, particularly the use of social media as a promotional tool. In addition, access to capital and product distribution networks must be strengthened so that community businesses can reach a wider market. Collaboration with other MSMEs and creative economy support institutions is also important to increase product competitiveness. With continuous synergy, it is hoped that Seumet Village can become a model for environmentally friendly and economically valuable agricultural waste management.

Conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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