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Empowering Communities Through Budikdamber: Sustainable Food Production in Banjararum Village

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ABSTRACT

Urban and peri-urban areas in Indonesia face challenges in food production due to shrinking agricultural land from residential and industrial expansion. Banjararum Village, Singosari District, Malang Regency, represents a community with strong local agricultural potential, particularly in mustard and pakcoy cultivation. This study reports on a community service program introducing Budikdamber (fish cultivation in buckets) to enhance household food security. The program involved socialization, hands-on demonstrations, and interactive discussions with members of the Women Farmers Group and Brassican youth. Participants actively engaged in the sessions, asking questions about fish species, water management, and nutrient supplementation, and successfully practiced preparing media, planting seedlings, and transferring acclimatized fish into buckets. Budikdamber proved to be a simple, cost-effective, and space-efficient system, allowing dual harvests of vegetables in approximately 30 days and fish in around 90 days. The program improved participants' knowledge and skills, strengthened community empowerment, and promoted sustainable food production. This approach aligns with Sustainable Development Goals, particularly in achieving food security and improving health and well-being. The findings indicate that Budikdamber is a practical, scalable, and sustainable model for small-scale households facing limited land availability, offering opportunities for innovation, economic development, and increased local resilience.

Keywords: *Budikdamber, Urban Agriculture, Community Empowerment, Food Security, Sustainable Development.*

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INTRODUCTION

Global agriculture today faces pressing challenges driven by rapid urbanization, land conversion, and population growth. According to the Food and Agriculture Organization, the world loses approximately 10 million

hectares of arable land each year due to industrial expansion, infrastructure development, and climate-related degradation (FAO, 2022). This issue is especially critical in developing countries such as Indonesia, where the increasing demand for fresh food clashes with the decreasing availability of productive agricultural land. In urban and peri-urban areas, households are often unable to rely on conventional farming methods due to spatial limitations, while at the same time, the need for affordable, nutritious food continues to rise. In Indonesia, the pressure on agricultural land has become increasingly visible (Firmansyah et al., 2019). Data from Statistics Indonesia reported that between 2013 and 2022, the country lost more than 700,000 hectares of rice fields due to land-use change, particularly in Java, the most densely populated island (Kallenberg, n.d.). This alarming trend poses a direct threat to national food security and rural livelihoods, as rice remains the staple food for the majority of Indonesians. The reduction of productive farmland has forced communities and policymakers to explore innovative strategies to sustain agricultural output despite spatial limitations.

One of the adaptive responses that has gained significant attention is urban farming, which utilizes unused land or even household spaces to cultivate crops and sometimes combine them with aquaculture. Urban farming has emerged as a promising approach, providing efficient and sustainable food production methods within limited spaces (Sriyanto et al., 2025). Beyond ensuring food availability, this practice also contributes to environmental management, waste reduction, and the empowerment of communities in both rural and urban areas. At the household level, urban farming strengthens food access, improves nutrition diversity, and enhances economic resilience, particularly for families vulnerable to fluctuating food prices (Warren et al., 2015).

Banjararum Village, located in Singosari District, Malang Regency, offers an illustrative example of how community-based agriculture can thrive even with limited resources. The village is widely recognized for its Edu-Tourism Mustard Village, where mustard and pakcoy cultivation has become both a local identity and an educational attraction. According to local agricultural records, more than 60% of Banjararum's households are directly or indirectly

involved in vegetable farming, making it a central pillar of the village economy. These Brassica crops not only meet local consumption needs but also contribute to market supply in Malang and neighboring areas (Dangkung et al., 2020). With growing consumer demand for fresh, healthy, and pesticide-free vegetables, Banjararum has positioned itself as a strategic contributor to the regional food system.

The success of agricultural practices in Banjararum has been strongly supported by the active role of the Kelompok Wanita Tani (KWT) or Women Farmer Group and the youth community known as Brassican. The KWT, consisting mainly of housewives, has consistently engaged in small-scale vegetable cultivation as both a household food strategy and an additional income source. Their collective efforts ensure that knowledge about planting, maintaining, and marketing crops is continuously shared and improved within the community. On the other hand, the Brassican youth serve as agents of innovation, introducing modern agricultural ideas, digital promotion, and eco-tourism development that expand the reach of local products. This intergenerational collaboration forms a valuable social capital, as it combines experience-based farming wisdom with youthful creativity and adaptability.

Moreover, the integration of agriculture into educational tourism has amplified the visibility of Banjararum's local identity. Visitors, including students and researchers, frequently come to learn about sustainable farming practices, which not only strengthens knowledge exchange but also provides additional income opportunities for the community. Such dynamics highlight how localized agricultural systems, when coupled with strong social networks, can become models of resilience in the face of broader challenges such as land-use change, climate variability, and economic uncertainty. In this context, the introduction of simple yet impactful agricultural technologies like Budikdamber finds fertile ground, as the community already possesses the organizational capacity, social cohesion, and motivation to adopt and sustain innovations that directly contribute to household food security and local economic development.

One such technology is *Budidaya Ikan dalam Ember* (Budikdamber), or fish cultivation in buckets. Budikdamber represents a simplified form of

aquaponics, where fish and plants are grown together in a single container (Hasanah et al., 2025). Fish waste provides essential nutrients for the plants, while the plants improve water quality and oxygenation for the fish. The system enables dual harvests, vegetables in about 30 days and fish in around 90 days, making it highly efficient and practical for households. Research has shown that Budikdamber can reduce household food expenditures by up to 20% while ensuring access to fresh vegetables and protein sources (Kurniawan et al., 2020). In addition to its economic benefits, Budikdamber also addresses ecological concerns. Compared to conventional agriculture, the system is water-efficient, using up to 80% less water, and requires minimal land space (Mallareddy et al., 2023). Its closed-loop nature reduces waste and supports environmentally friendly food production, aligning well with the principles of sustainable agriculture. For communities like Banjararum, where land conversion threatens traditional farming practices, Budikdamber offers a low-cost and adaptable solution that integrates seamlessly with existing agricultural knowledge and resources.

Higher education institutions hold a strategic role in introducing and promoting such innovations to society. Universities are not only knowledge producers but also key actors in community empowerment through service programs (Mbah, 2019). The Sobat Bumi Action Program #1, initiated by scholarship recipients from the Pertamina Foundation at Universitas Brawijaya, represents one such effort. This initiative combined academic expertise with community participation by engaging students as facilitators and 15 Sobat Bumi Volunteers (Volbi) to assist in knowledge transfer. Through this program, Budikdamber was introduced to Banjararum residents as both an educational tool and a practical livelihood strategy.

The primary goal of this program was to provide education and hands-on training to equip Banjararum's residents with the knowledge and skills required to implement Budikdamber independently. By optimizing limited household spaces into sustainable food production systems, the community could strengthen food security, reduce dependency on external food supplies, and even explore small-scale entrepreneurship. Furthermore, the initiative directly supports the Sustainable Development Goals (SDGs), particularly

Goal 2 (Zero Hunger) and Goal 3 (Good Health and Well-Being). Ultimately, the integration of technology, community participation, and academic involvement demonstrates how local-scale interventions can contribute meaningfully to sustainable rural development.

METHODS

This community service activity was conducted on September 6, 2025, in Banjararum Village, Singosari District, Malang Regency, an area known for its potential in mustard and pakcoy cultivation. The participants involved were members of the *Kelompok Wanita Tani* (KWT) and the Brassican youth community, both of whom play active roles in local agricultural practices and innovation. The activity focused on the introduction of Budikdamber (*Budidaya Ikan dalam Ember)*, a simple aquaponics system that integrates fish and vegetable cultivation in a single container(Irfayanti & Ningsih, 2021; Saputri & Rachmawatie, 2020). This method is considered a low-cost and space-efficient technology that supports household food security, particularly in areas with limited land availability (Herjayanto et al., 2021). The program used a participatory approach with three main stages: socialization, demonstration, and interactive discussion. In the socialization stage, participants received information about the concept, benefits, and relevance of Budikdamber. The demonstration stage provided hands-on practice, including bucket preparation, net pot installation, seedling placement in rockwool, and fish transfer after acclimatization. Finally, the interactive discussion enabled participants to ask questions, share experiences, and identify possible challenges in adopting the system. To evaluate effectiveness, observations and participant feedback were conducted. The results showed strong enthusiasm and active involvement, suggesting that the knowledge and skills delivered were well understood and had potential for independent application at the household level.

RESULT AND DISCUSSION

The community service activity conducted in Banjararum Village, Singosari District, Malang Regency, was successfully implemented according to the

planned schedule. The program consisted of three main stages: socialization, practical demonstration, and interactive discussion, and all stages were executed without major obstacles. Participants, comprising members of the Women Farmers Group (Kelompok Wanita Tani) and the Brassican youth community, showed high levels of attendance and engagement. This suggests that the chosen time and location were appropriate, allowing participants to fully participate in all sessions. Moreover, the smooth execution reflects the effectiveness of prior preparations, including technical meetings, task allocation, and equipment readiness, which ensured that materials and tools were available and activities ran efficiently.

During the socialization session, participants demonstrated remarkable interest and enthusiasm, actively engaging with the material presented. They listened attentively to detailed explanations about the principles and concepts of Budikdamber, including how fish and plants can be cultivated together in a single container, the synergistic relationship between fish waste and plant nutrients, and the ecological advantages of this system. Facilitators emphasized the practical relevance of Budikdamber for household-level food production, highlighting how even small spaces around homes can be transformed into productive areas for both vegetables and protein sources. The socialization session also underscored the potential economic benefits, such as reducing household food expenses, generating supplementary income, and contributing to sustainable local livelihoods.

Figure 1. Preparation Stage Before the Event

In the subsequent question-and-answer session, participants were highly engaged, asking a wide range of technical and practical questions. Queries included identifying the most suitable fish species for the system, determining appropriate schedules for water replacement to minimize stress and disease in fish, and understanding the types and amounts of supplemental inputs, such as vitamins or organic fertilizers, needed to optimize plant growth. Participants also discussed challenges related to maintaining water quality, pest management, and ways to maximize the dual-harvest potential of Budikdamber. This proactive participation demonstrates that the socialization activity went beyond mere information delivery, it fostered critical thinking, problem-solving, and knowledge application skills. Participants not only absorbed the theoretical concepts but also began envisioning how to adapt and implement these practices in their own households, taking into account their unique spatial limitations, available resources, and daily routines.

Moreover, the socialization session created an interactive environment that encouraged sharing experiences and local insights among participants. Older KWT members contributed their practical knowledge of vegetable cultivation, while the younger Brassican participants offered innovative ideas about system optimization and digital promotion of produce. This exchange of

knowledge enhanced the learning experience, built community cohesion, and reinforced the participants' confidence in experimenting with Budikdamber independently. Overall, the socialization and interactive discussion stages successfully established a strong foundation for subsequent hands-on practice, ensuring that participants were well-prepared, motivated, and capable of applying the Budikdamber system effectively in their own homes.

Figure 2. Budikdamber Material Presentation and Q&A Session

The practical demonstration of Budikdamber offered participants a unique opportunity to gain direct, hands-on experience with an innovative yet simple aquaponic system. Both KWT members and the Brassican youth were guided meticulously through each step of the process, starting with the preparation of the growth media, including wetting and properly arranging the rockwool, followed by careful planting of vegetable seedlings, and finally the acclimatized transfer of fish into the buckets. The pre-preparation of buckets by the organizing committee allowed participants to focus entirely on the technical aspects under the attentive supervision of facilitators, ensuring that each participant could follow the procedures accurately and safely. Despite the fact that most participants were encountering this aquaponic method for the first time, their ability to successfully complete each stage highlighted the intuitive and accessible nature of the Budikdamber system, reinforcing its

feasibility as a practical household-level solution for food production even in limited spaces.

Figure 3. Hands-On Budikdamber Practical Session

Beyond simply learning the technical procedures, the practical activities fostered a deeper understanding of integrated urban agriculture principles. Participants gained insight into the symbiotic relationship between fish and plants, the importance of maintaining water quality, and the role of nutrient cycling in achieving optimal plant growth. For the KWT members, this knowledge provided a new perspective on how vegetable cultivation can be adapted to constrained environments, empowering them to enhance household food security, reduce dependency on market-purchased produce, and potentially create additional income streams through surplus sales. Meanwhile, the Brassican youth were able to leverage the experience to cultivate innovative approaches for local agricultural development, including the potential application of digital tools for promotion, system optimization, and community outreach.

The dual-harvest feature of Budikdamber, which allows for vegetables to be ready within approximately 30 days and fish within around three months, was

particularly appreciated by participants. This characteristic provides both immediate and longer-term benefits: it ensures a steady supply of fresh produce for family consumption, supports improved nutritional intake, and can serve as a model for small-scale entrepreneurial ventures if maintained consistently. Furthermore, the practical session encouraged participants to critically assess potential challenges, such as water management, plant health, and fish acclimatization, fostering problem-solving skills and adaptive thinking. Overall, the combination of guided practice, knowledge reinforcement, and active engagement helped participants build both confidence and competence, demonstrating that Budikdamber is not only a technically viable solution but also a socially empowering tool that can enhance food security, household resilience, and community-level sustainability.

Figure 4. Photo with KWT Members and Brassican Youth

From a sustainability perspective, the Budikdamber program aligns with the Sustainable Development Goals (SDGs), particularly those targeting health and well-being. By consuming fresh and healthy produce from Budikdamber systems, households not only enhance nutritional intake but also reduce food expenditure. Academically, Budikdamber represents a simple form of aquaponics that is highly suitable for communities with limited land resources (Prasetyo et al., 2025). The system efficiently uses water and nutrients, produces two outputs simultaneously, and is environmentally friendly.

Socially, the consistent involvement of KWT members and support from the Brassican youth are critical factors ensuring the program's sustainability. The combination of easily implementable technical aspects and the spirit of collective community action makes Budikdamber a practical solution for local food security and a model that can be adapted to other regions.

Overall, the results of this community service activity highlight the importance of integrating technical knowledge with active community participation. The hands-on approach, combined with interactive discussion, encouraged participant confidence and fostered a deeper understanding of the Budikdamber system. This activity demonstrates how simple innovations, when supported by community engagement and social capital, can effectively address challenges related to land limitations, food security, and sustainable development at the household and village level.

CONCLUSION

The community service activity on fish farming in buckets (budikdamber) in Banjararum Village, Singosari District, Malang Regency, was successfully implemented and achieved its objectives. Through a series of activities including socialization, hands-on practice, and discussion sessions, participants comprising members of the Women Farmers Group and the Brassican youth community gained new insights into budikdamber as a simple form of urban farming that integrates fish and plant cultivation. Their enthusiasm was reflected in their active participation during the sessions, whether by listening attentively, practicing the techniques, or asking questions about fish and plant maintenance. The results indicate that budikdamber is an appropriate, low-cost, and easy-to-apply technology at the household level. This system provides dual benefits: vegetable harvests in a relatively short time and fish harvests over a longer period, thus strengthening household food security. Furthermore, the program highlighted the important role of KWT as the driving force and the contribution of Brassican youth in supporting

innovation and sustainability. Therefore, budikdamber not only helps meet family food needs but also has the potential to be developed into small-scale business opportunities that can improve the long-term welfare of the local community.

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INTRODUCTION

Community Service Program (KKN) is one of the real forms of student contribution to society through direct field activities (Hesti & Valeria, 2024). Over time, Thematic KKN has become a more focused strategy as it is tailored to the specific potentials and challenges of the partner village (Widiyanto et al., 2025). Thematic KKN not only emphasizes the transfer of knowledge but also aims to provide practical and sustainable solutions in supporting village development (Muluk et al., 2025). Therefore, the implementation of Thematic KKN in Jetak Village, Sukapura District, Probolinggo Regency, is directed toward exploring local potential, identifying problems, and fostering innovations that are beneficial to the community.

Jetak Village is the smallest administrative area in Sukapura District, covering only 1.62 km² with a population of 551 people. Despite its small size, Jetak has a distinctive uniqueness, as the majority of its residents belong to the Tengger ethnic group, who continue to uphold Tenggerese Hindu traditions and cultural practices, including the famous Yadnya Kasada ceremony (Berliani et al., 2023). In terms of agriculture, residents generally cultivate high–altitude crops such as leeks (bawang prei), potatoes, cabbage, and tamarillo as their main livelihood. The production of tamarillo in Jetak has begun to be explored

further, with local initiatives to process it into value-added products like jam and syrup so that it can be marketed as a specialty product. This combination of cultural richness, small-scale farming, and agro-product innovation suggests that Jetak Village holds both cultural tourism and agro-tourism potential, making it a promising site for integrated tourism development.

Nevertheless, several challenges hinder the village's development. One of the main issues is the discontinuation of the strawberry agro-tourism program, which previously served as a local tourism attraction. This activity ceased in 2022 due to both internal and external factors. The internal factor relates to the agro-tourism land, which was owned by PT. Telkom, and its contract was not renewed by the village government. The external factor involves the limited availability of water, which has negatively impacted crop maintenance. In addition, tourism infrastructure remains inadequate, such as the road leading to Bukit Kejalen, which is still a gravel road (makadam) and becomes slippery during the rainy season, making it difficult for tourists to access.

On the other hand, Jetak Village holds significant potential for future development. Geographically, the village occupies a highly strategic location as it lies on the main route to Mount Bromo, one of the leading national and international tourist destinations in East Java (Chandra, 2023). This position offers a distinct advantage for Jetak Village to attract passing tourists while also serving as a gateway for developing alternative tourism destinations (Sukmawan et al., 2025). Furthermore, the strong cultural traditions of the Tengger community, such as the Yadnya Kasada ceremony and other religious rituals, provide a unique attraction not commonly found in neighboring villages (Rafii et al., 2023). These cultural assets, combined with natural beauty and agricultural products, open opportunities for integrated tourism development. Such potential can also be expanded into educational tourism, for example through Jetak's distinctive batik, as well as creative products like eco-print tote bags and tie-dye crafts. By integrating natural, cultural, and creative educational tourism, Jetak Village could create a diverse and competitive tourism package.

The urgency of implementing a Thematic KKN program in Jetak Village lies in addressing these challenges and maximizing the existing opportunities

through a community empowerment approach. In this context, students collaborate with local residents to design and implement programs aimed at enhancing tourism appeal, strengthening cultural identity, and fostering economic growth through local MSMEs. One of the flagship initiatives proposed is the development of educational batik tourism, packaged under the concept of "Omah Batik" (House of Batik). This program not only introduces batik motifs unique to Jetak Village as a representation of cultural identity but also actively involves the community in the processes of production, skill development, and product marketing. As such, "Omah Batik" is expected to emerge as a new village icon that strengthens Jetak's tourism appeal, expands market access for creative products, and provides sustainable economic benefits for the local community.

The implementation of the Thematic Community Service Program (KKN Tematik) in Jetak Village aims to explore and develop local potential, particularly in the fields of tourism, culture, and MSMEs. Students act as facilitators by encouraging community skills through creative economy training, such as batik making, eco-print tote bags, and tie-dye products. In addition, this program is designed to strengthen the cultural identity of the Tengger community while also creating new economic opportunities for local residents. Thus, the expected benefits are not only short-term improvements in community skills and income but also long-term sustainability and self-reliance in managing local resources.

METHODS

The Thematic Community Service Program (KKN-T) in Jetak Village was conducted at the Village Hall and surrounding areas from October 10, 2024, to January 7, 2025. The program was divided into several stages to ensure systematic and well-organized implementation. The first stage was preparation and planning, which included a site survey to identify the potential and needs of Jetak Village through direct observation and interviews with residents and village officials (Naji et al., 2024). The students also held internal meetings to design detailed work programs, such as batik training, village gate renovation, and the installation of street signs (Wang, 2019). At this

stage, logistical preparation was also carried out, including providing canting tools, dyes, PVC pipes, and other supporting materials, followed by coordination with the village head and related stakeholders to align the program with the community's priorities.

The second stage was socialization and community engagement, aimed at building awareness and encouraging active participation from the villagers. This was done through meetings with the community and village officials, where the work programs were explained in detail. Counseling and discussions were also conducted to emphasize the benefits of each program, for example, how batik training could strengthen the creative economy or how installing street signs could improve village accessibility. In addition, local organizations such as PKK (women's groups), Karang Taruna (youth associations), and village officials were mobilized and organized into working groups to support training sessions and cultural exhibitions.

The first stage was preparation and planning, which included a site survey to identify the potential and needs of Jetak Village through direct observation and interviews with residents and village officials. This reflects the needs assessment approach, considered a critical foundation for designing relevant community development programs (Permatasari et al., 2021). Students also held internal meetings to design detailed work programs, such as batik training, village gate renovation, and the installation of street signs [9]. At this stage, logistical preparation was also carried out, including providing canting tools, dyes, PVC pipes, and other supporting materials, followed by coordination with the village head and related stakeholders to align the program with the community's priorities.

The final stage was program implementation, which consisted of both main and supporting activities. The primary focus was the development of "Omah Batik," an educational tourism initiative that transformed one of the villagers' houses into a batik learning center. This program included site renovation, the provision of batik-making tools and materials, and training sessions to equip villagers with the skills to become artisans and guides for batik-based educational tourism. In addition, creative training workshops were held on Batik Udeng, Eco-print Tote Bags, and Tie-Dye Tote Bags, engaging PKK and

Karang Taruna members in hands-on activities such as collecting leaves and flowers, designing motifs, canting, dyeing, and finishing products. Through these stages, the KKN-T program not only provided practical skills to the community but also fostered collaboration and empowerment, laying the groundwork for sustainable tourism and creative economy development in Jetak Village.

RESULT AND DISCUSSION

The establishment of *Omah Batik* in Jetak Village is one of the flagship programs in the implementation of the Thematic KKN. This initiative emerged from the need to create a platform that not only functions as a training center but also as a hub for developing creative economies and preserving cultural heritage. Until now, the cultural potential of the Tengger community, particularly in the art of batik, has not been optimally managed and has tended to remain within a limited scope. Through *Omah Batik*, this potential is transformed into a structured program, starting from the introduction of basic batik techniques to strengthening cultural identity through the distinctive *Udeng* Batik of Tengger. Furthermore, the presence of *Omah Batik* is expected to provide new opportunities for the community, both in terms of skills and economic growth. This space not only allows residents to gain knowledge and hands-on practice but also encourages them to develop their creativity in producing motifs rooted in local wisdom. The resulting batik products carry not only artistic value but also market potential as unique village souvenirs, thus opening opportunities for the formation of new MSMEs. Therefore, *Omah Batik* is not merely a training facility but also a driving force in promoting local potential, strengthening Tengger cultural identity, and creating sustainable tourism attractions with economic value.

The initial stage of the training focused on simple yet engaging activities, namely the making of eco-print tote bags and tie-dye tote bags. This training served as an introduction for the community to the world of creative fabric crafts. The eco-print technique utilizes leaves and flowers available in the surrounding environment, making it easy to apply as well as environmentally friendly. Meanwhile, the tie-dye technique introduces variations in fabric

coloring by tying and dipping the fabric into dye to produce diverse and dynamic patterns. These two activities were chosen because they are easy to understand, require minimal capital, and are capable of producing products with considerable aesthetic and economic value. Through this stage, the community began to realize that simple creative skills could become a new source of income if managed properly.

Fig. 1. Eco-print and Tie-dye Totebag Making

After completing the introductory stage, the training was directed toward the core activity, namely Batik Udeng Tengger. This activity carries a deeper value, not only in terms of technical skills but also in the preservation of cultural heritage and the strengthening of local identity. The process began with the creation of batik motif sketches, which were largely inspired by local wisdom. The designs drew upon the natural mountain panoramas surrounding the village, cultural symbols unique to the Tengger community, and the philosophies of life embedded in their traditions. These motifs were not merely decorative but embodied stories, values, and meanings that reflect the character of the Tengger people.

Once the sketches were completed, they were transferred onto cloth through the mencanting process, in which molten wax is carefully applied using a special tool called a *canting*. This stage required patience, precision, and technical mastery, as even small mistakes could affect the final outcome. Beyond being a practical skill, the act of *mencanting* also became a medium of

cultural expression—each line and pattern serving as a representation of the community's worldview. Thus, the Batik Udeng Tengger training was not only a technical exercise but also an immersive cultural experience that encouraged participants to take pride in their heritage while simultaneously gaining valuable creative and entrepreneurial skills.

Fig. 2. Batik Udeng Tengger Waxing Process

The next stage was coloring and water glass treatment. Coloring was carried out using specific techniques to ensure that the shades produced matched the character of the motifs that had been designed, while the water glass process served to strengthen the colors, making them more durable. Following this, the batik cloth entered the nglorot process, which involved boiling the fabric to remove the wax so that the original batik patterns appeared clearly. This stage became the most anticipated moment, as it revealed the final result of all the preceding steps.

Fig. 3. Batik Udeng Tengger Coloring Process

The entire series of training activities, ranging from eco-print and tie-dye to Tengger Udeng Batik, not only provided practical experience but also offered the community a deeper understanding of the cultural values embedded in each product. The residents of Jetak Village began to realize that batik is not merely patterned fabric but also a medium for preserving traditions and expressing local identity. This program equipped them with applicable skills while fostering a sense of pride in their cultural heritage.

The results of the training were subsequently showcased in an exhibition of Tengger Udeng Batik at *Omah Batik*. The exhibition served as an important platform to display the community's hard work and to introduce Jetak Village batik products to a wider audience. Beyond being an appreciation event, the exhibition also formed part of the village's tourism promotion strategy. Through the exhibition, the community could directly observe that their creations possessed market value and appeal, making them suitable to be marketed as creative products or unique village souvenirs.

Fig. 4. Omah Batik Exhibition

The impact of this activity is felt not only economically but also socially and culturally. Economically, the exhibition opened opportunities for new markets, both through direct sales to tourists and collaborations with external partners. The batik products displayed have the potential to become flagship commodities of the village, supporting the development of local MSMEs. Socially, the exhibition strengthened community cohesion and self-confidence, as residents could directly witness recognition of their work. Culturally, the batik exhibition reinforced Jetak Village's unique identity and broadened the community's understanding of the importance of preserving cultural heritage through creative innovation.

The implementation of Thematic KKN in Jetak Village highlights the importance of a participatory approach in developing local potential, particularly in the fields of culture and the creative economy. Activities such as eco-print, tie-dye, and Tengger Udeng Batik training reflect efforts to integrate cultural preservation with community empowerment through practical skills. This approach aligns with the principles of sustainable tourism development, where local communities are not merely objects of tourism but also key actors in creating economic and social value (Aquino et al., 2018; Nursanty & Wulandari, 2023; Widagdo et al., 2017). Furthermore, introducing traditional batik techniques to the local community strengthens Tengger cultural identity while serving as a strategy to expand market access for the village's creative products. Therefore, the Thematic KKN program in Jetak

Village can be considered a best-practice example of community empowerment and culture-based tourism development, which can be further analyzed by referencing literature on community development, creative economy, and cultural preservation..

CONCLUSION

The implementation of the Thematic KKN program in Jetak Village, particularly through the establishment of *Omah Batik*, has demonstrated significant contributions to community empowerment, cultural preservation, and local economic development. The series of training activities, from eco-print and tie-dye tote bags to Tengger Udeng Batik, successfully enhanced the skills of the residents while fostering a deeper understanding of their cultural heritage. The batik products created not only have artistic and economic value but also serve as a medium for expressing and preserving Tengger identity. Moreover, the exhibition of these works provided a platform for recognition, strengthened community cohesion, and opened opportunities for local MSMEs. Through this program, students have played an active role in promoting sustainable creative economic practices and cultural tourism in the village. Therefore, the continuation and expansion of such initiatives are essential to ensure long-term benefits, sustainable development, and the preservation of Jetak Village's unique cultural identity for future generations.

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