

Revitalizing Local Economic Potential through Ornamental Plant–Based Ecoprint Training in Malang, Indonesia

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Abstract. The Kampoeng Bunga Grangsil Service Cooperative in Jambangan Village, Malang Regency, has significant potential to develop a creative economy based on ornamental plants, yet economic activities have declined due to limited product innovation. This community service program aimed to revitalize local economic potential through ecoprint training and mentoring as a strategy for cooperative business diversification. The program was implemented through preliminary observation, participatory training, hands-on practice, and evaluation of sustainability outcomes. The results indicated a 62% increase in participants' understanding of ecoprint techniques. Approximately 85% of participants were able to produce independent ecoprint products, while 80% expressed interest in developing ecoprint-based businesses. The activity improved community technical skills and strengthened the role of the cooperative as a center for village creative-economic development. Furthermore, the program supports the achievement of SDG 8 (Decent Work and Economic Growth) and SDG 12 (Responsible Consumption and Production) through environmentally friendly technology and community-based economic empowerment.

Keywords: ecoprint; cooperative; community empowerment; creative economy

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INTRODUCTION

Cooperatives represent one of the main pillars of community economic development at the village level because they function to mobilize local resources and channel them into productive economic activities (Lestari & Sakti, 2022). As member-based economic institutions, cooperatives are expected to serve as instruments for community empowerment that not only focus on savings and loan services but also develop productive business units based on regional potential (Sari et al., 2023; Suliyanthini et al., 2024). However, many cooperatives in Indonesia have not been able to optimally perform these roles due to weak institutional management, limited innovation capacity, and minimal product diversification (Harimisa et al., 2024; Nurmasitah et al., 2024). This situation is also experienced by the Kampoeng Bunga Grangsil Service Cooperative located in Grangsil Hamlet, Jambangan Village, Malang Regency, which was established with significant local potential but still faces challenges in developing sustainable community-based economic activities.

Preliminary observations indicate that the community of Grangsil Hamlet possesses considerable economic potential derived from ornamental plants, tropical flowers, and handicraft products. These commodities previously served as important sources of income for local residents and were distributed to several regions outside the village, including Bali and Malang City. However, in recent years, the ornamental plant trade has experienced a decline due to shifts in market trends, increased competition from businesses utilizing digital marketing systems, and limited product innovation (Priya et al., 2021). Consequently, local resources that once supported the village economy no longer contribute significantly to improving community welfare (Dewantara et al., 2025).

The primary challenge lies not in the availability of resources but rather in the limited capacity to transform these resources into innovative products with higher economic value (Priya et al., 2021). Ornamental plants are generally sold as raw materials without further processing, while cooperatives as local economic

institutions have not yet developed strategies to generate value-added products from these resources (Dewantara et al., 2025). In addition, most cooperative members have limited creative and entrepreneurial skills relevant to current market demands, resulting in economic activities that remain conventional and less sustainable (Andini et al., 2024; Reflin et al., 2023).

To address these challenges, the community service team implemented ecoprint training as an innovative intervention that utilizes local ornamental plants to produce creative textile products with economic value (Nuryawan et al., 2021; Putri et al., 2025). Ecoprint refers to a natural textile printing technique that transfers the pigments and shapes of leaves or flowers onto fabric, creating unique artistic motifs that are environmentally friendly and increasingly demanded in the creative industry (Das & Gunaseelan, 2024; Mangiradja et al., 2025). Through this training, community members are expected not only to acquire new technical skills but also to develop entrepreneurial awareness and strengthen the role of cooperatives as centers for production, management, and marketing of creative products. Therefore, this activity aims to revitalize village economic potential through innovation based on local resources and cooperative empowerment.

This community service program aims to improve community skills in processing ornamental plants into ecoprint products with economic value, strengthen cooperative capacity in supporting creative business development, and encourage sustainable village economic revitalization (Das & Gunaseelan, 2024). Previous studies have shown that ecoprint training based on local resources can enhance creativity, increase the economic participation of rural women, and create new entrepreneurial opportunities in the sustainable creative industry sector. (Nurmasitah et al., 2023). These findings demonstrate that innovations utilizing local resources can promote economic independence while strengthening social cohesion within rural communities.

Furthermore, this activity contributes to the achievement of the Sustainable Development Goals (SDGs), particularly Goal 8 (Decent Work and Economic Growth) and Goal 12 (Responsible Consumption and Production). Through environmentally friendly ecoprint training and cooperative-based empowerment, the program supports sustainable, inclusive, and locally driven rural economic development.

METHODS

This community service program employed a participatory and collaborative approach involving the implementation team and community partners. The partners consisted of ten cooperative administrators and community members from the Kampoeng Bunga Grangsil Service Cooperative. The program was implemented through four main stages: (1) observation and problem identification, (2) preparation of training materials, (3) material delivery, practice, and mentoring, and (4) evaluation of program sustainability.

The initial stage involved coordination with cooperative administrators and preliminary observations to identify existing problems, map the potential of local ornamental plants, and assess the readiness of the cooperative to support ecoprint production activities. The results of this assessment were used as the basis for designing training materials and preparing an ecoprint training module that included an introduction to ecoprint concepts, identification of suitable leaves and flowers, and techniques for transferring natural motifs onto fabric.

The training activities were conducted using participatory methods through demonstrations and hands-on practice. Participants were guided through each stage of the ecoprint production process, including material selection, pattern arrangement, natural dye transfer, and fabric fixation. During the training, mentoring sessions were provided to ensure that participants could apply the techniques independently and understand the potential of ecoprint products as creative economic commodities.

The final stage involved evaluating the effectiveness and sustainability of the program. Evaluation was conducted by assessing participants' technical skills, the quality of ecoprint products produced, and the readiness of the cooperative to continue the initiative through the formation of a community-based ecoprint entrepreneurship group. The results of the evaluation were used to formulate recommendations for the sustainability of ecoprint-based creative economic activities managed by the cooperative.

The stages of the community service implementation are illustrated in Figure 1.



Figure 1. PKM Implementation Method Flowchart

RESULTS AND DISCUSSION

The three-month community service program implemented at the Kampoeng Bunga Grangsil Service Cooperative in Jambangan Village, Malang Regency demonstrated significant progress in strengthening community entrepreneurial capacity and optimizing the utilization of ornamental plants as raw materials for creative products. This activity was designed not only as a training program but also as a strategic intervention to revitalize the village economy through innovation based on local natural resources. The community of Grangsil Hamlet possesses considerable potential derived from ornamental plants and tropical flowers, yet these resources had previously been marketed primarily as raw commodities without additional processing. As a result, the economic value generated from these resources remained relatively limited. The implementation of ecoprint training therefore aimed to transform the utilization of local plant resources into creative textile products with higher economic value.

The evaluation of the program outcomes was conducted through both qualitative and quantitative approaches. Qualitative evaluation included field observations during training sessions, informal interviews with cooperative administrators and participants, and assessment of the production process carried out during the workshops. Quantitative evaluation focused on several indicators, including the level of participant understanding, technical skills in ecoprint production, the number of products produced during the training period, the entrepreneurial interest of cooperative members, and the institutional development of the cooperative as a creative economic center. These

indicators were used to measure the effectiveness of the community service intervention and to assess the potential sustainability of the program.

The results indicate that the ecoprint training program successfully improved community skills, increased entrepreneurial awareness, and strengthened the institutional capacity of the cooperative to support creative economic activities. Participants demonstrated a significant improvement in their understanding of ecoprint production techniques as well as an increased motivation to develop new business opportunities based on locally available resources. The participatory approach implemented in the training also played an important role in encouraging active community engagement, enabling participants to learn directly through practical experience and collaborative discussion. The comparison of activity indicators before and after the intervention is summarized in **Table 1**, which illustrates the measurable impact of the training program on participant capacity and cooperative development.

The data presented in Table 1 demonstrate a substantial increase in participants' understanding and skills related to ecoprint production. Prior to the implementation of the training program, only 28% of participants possessed a basic understanding of ecoprint techniques, and most cooperative members were unfamiliar with natural textile printing methods. The majority of community members were previously engaged in the cultivation and sale of ornamental plants without further processing into higher value products. This condition limited the economic benefits obtained from local plant resources and reduced the competitiveness of community-based enterprises.

Following the implementation of the training program, approximately 90% of participants demonstrated a clear understanding of the concepts and stages involved in ecoprint production. Participants were able to identify suitable plant materials, arrange leaf compositions on fabric surfaces, and apply natural dye transfer techniques. This improvement in knowledge indicates that the training modules and participatory learning methods used during the program were effective in transferring practical knowledge and technical skills to the community.

The increase in technical competence was also reflected in the participants' ability to produce ecoprint fabrics independently. Before the intervention, none of the participants had the

Table 1. Activity Indicators and Service Outcomes

No	Indicator	Before Intervention	After Intervention
1	Understanding of ecoprint concepts	28% of participants understood the basic techniques	90% of participants understood the concepts and stages
2	Technical skills in ecoprint production	No basic skills	85% of participants were able to produce their own work
3	Number of ecoprint products produced	–	45 pieces of ecoprint fabric with various motifs
4	Entrepreneurial interest of cooperative members	Low (only producing ornamental plants)	80% of participants are interested in opening an ecoprint business
5	Cooperative business development plan	No diversification plan	Formation of the “Ecoprint Grangsil” business group

ability to create textile products using natural plant pigments. However, after completing the training and mentoring sessions, approximately 85% of participants successfully produced ecoprint fabrics with distinctive patterns derived from local leaves and flowers. Participants demonstrated the ability to carry out the complete production process, including selecting plant materials, arranging patterns, applying dye transfer techniques, and conducting the final color fixation process to ensure product durability.

In addition to improving technical skills, the training activities also produced tangible outputs in the form of ecoprint textile products created by the participants. During the training workshops, a total of forty-five pieces of ecoprint fabric were produced with a variety of natural motifs and color variations. These products illustrated the creative potential of the participants and highlighted the diversity of ornamental plant species available in the Grangsil area. Several types of plants commonly used during the training included ylang-ylang leaves, hibiscus leaves, and eucalyptus leaves. The use of these local plant materials resulted in unique natural patterns that reflected the ecological characteristics of the region.

The uniqueness of these motifs provides an important competitive advantage for ecoprint products developed by the community. Products that incorporate distinctive local plant patterns can be positioned as creative textile commodities with a strong local identity, which increases their attractiveness in the craft and creative industry markets. This characteristic also supports the development of sustainable creative industries based on local natural resources, which is one of

the primary objectives of this community service program.

The initial stage of the training activities focused on knowledge transfer regarding the basic concepts of ecoprint production. Participants were introduced to environmentally friendly production principles and the concept of using natural plant pigments as alternative textile dyes. This introduction was important because many participants initially perceived ornamental plants solely as decorative commodities rather than potential raw materials for creative industries. Through theoretical explanations and demonstrations, participants gradually developed an understanding of how these plant resources could be utilized to produce creative textile products with higher economic value.

Following the theoretical introduction, the training continued with practical sessions that allowed participants to directly experience the ecoprint production process. During these sessions, participants practiced selecting suitable leaves and flowers, arranging plant materials on fabric surfaces, and applying techniques such as pounding and steaming to transfer natural pigments onto fabric. The stages of these community service activities and participant involvement during the training process are illustrated in **Figure 2**.

The hands-on practice method enabled participants to gain practical experience and develop a deeper understanding of the importance of precision in each stage of the production process. Observations during the workshops indicated that participants were highly enthusiastic and actively engaged in



Figure 2. Implementation of Community Service Activities

experimenting with different combinations of leaves and flowers to produce unique natural patterns. The training environment encouraged creativity and allowed participants to explore new ideas in developing innovative ecoprint designs.

The participatory nature of the training played a crucial role in facilitating effective learning among the participants. Rather than relying solely on theoretical explanations, the training approach emphasized active engagement, allowing participants to learn through direct practice and collaboration. Participants were encouraged to work together in small groups to arrange plant compositions, experiment with various natural materials, and discuss the outcomes of their designs. This collaborative learning environment created opportunities for knowledge exchange and stimulated creativity among community members.

During the practical sessions, participants demonstrated increasing confidence in applying ecoprint techniques. Initially, several participants encountered difficulties in arranging leaf compositions and controlling the color transfer process. However, through continuous guidance and peer discussion, they gradually developed a better understanding of the technical aspects of the production process. This progression highlights the importance of mentoring in community-based training programs, where practical guidance can significantly accelerate the acquisition of new skills.

Another important aspect observed during the training was the emergence of creativity in product design. Participants began to experiment with various combinations of leaves, flowers, and fabric arrangements to produce visually appealing patterns. These creative explorations resulted in ecoprint fabrics with distinctive aesthetic

characteristics that reflected the natural diversity of the Grangsil environment. Such creative outcomes demonstrate the potential of local plant resources to serve not only as raw materials but also as sources of artistic inspiration for community-based creative industries.

The collaborative atmosphere created during the training sessions also contributed to strengthening social relationships among cooperative members. Participants shared ideas, supported one another during the production process, and collectively evaluated the results of their work. This social interaction fostered a sense of collective ownership over the ecoprint initiative, which is an important factor in ensuring the sustainability of community-based economic programs.

Beyond the improvement of technical skills, the ecoprint training program also contributed to strengthening the institutional role of the Kampong Bunga Grangsil Service Cooperative. Before the implementation of the program, the cooperative primarily focused on savings and loan activities with limited involvement in productive economic initiatives. The lack of product diversification meant that the cooperative had not yet fully utilized its potential as an institution capable of driving local economic innovation.

Through the implementation of the ecoprint training program, the cooperative began to expand its institutional role by supporting creative economic activities among its members. Cooperative administrators participated actively in discussions regarding production management, marketing strategies, and the potential development of ecoprint products as a cooperative business unit. This involvement reflects the transformation of the cooperative from a purely

financial institution into a community-based economic facilitator.

The cooperative was encouraged to coordinate production activities among members and to provide support in the procurement of raw materials, equipment, and marketing channels. By functioning as a collective management platform, the cooperative can facilitate collaboration among members and ensure that the benefits of the ecoprint initiative are distributed fairly within the community. This collective management approach aligns with the principles of modern cooperative institutions that emphasize participation, innovation, and shared economic benefits.

One of the most significant outcomes of this community service program was the establishment of a new community-based business group called “Ecoprint Grangsil” The formation of this group represents an important milestone in the development of the local creative economy. The group was formed through discussions between cooperative administrators and participants who expressed interest in continuing ecoprint production after the training program ended.

The “Ecoprint Grangsil” group is expected to function as a production and marketing unit that coordinates the activities of members involved in ecoprint production. By organizing these activities collectively, members can share knowledge, divide production tasks, and collaborate in promoting their products to wider markets. The existence of this group also provides a structured mechanism for sustaining the skills and entrepreneurial motivation developed during the training.

From a social perspective, the training program also succeeded in encouraging greater participation of rural women in creative economic activities. The majority of participants involved in the ecoprint training were housewives who previously had limited opportunities to engage in income-generating activities outside the household. The introduction of ecoprint production provided them with new skills that can be practiced within their domestic environments using locally available resources (Lestari & Sakti, 2022).

The participation of women in the training sessions was marked by high levels of enthusiasm and creativity. Many participants showed strong interest in experimenting with different natural materials to produce unique textile patterns. The resulting ecoprint fabrics displayed a variety of visual motifs that reflected the natural richness of

the Grangsil area. This creative engagement not only improved technical skills but also contributed to strengthening the confidence of participants in exploring entrepreneurial opportunities (Harimisa et al., 2024; Sari et al., 2023).

The involvement of women in creative economic activities has broader implications for community development. Previous studies have shown that women’s participation in small-scale enterprises can significantly contribute to improving household income and strengthening social cohesion within rural communities. In this context, the ecoprint initiative provides an accessible form of entrepreneurship that can be integrated with existing household responsibilities (Nurmasitah et al., 2024; Priya et al., 2021).

During the reflective evaluation session conducted at the end of the training program, approximately eighty percent of participants expressed their readiness to continue producing ecoprint products independently. Participants indicated that they were interested in developing small-scale businesses based on the skills they had acquired during the training. They also emphasized the importance of continued support from the cooperative, particularly in facilitating product marketing and expanding access to broader markets (Dewantara et al., 2025; Reflin et al., 2023).

This response indicates that the training program succeeded not only in improving technical competence but also in increasing entrepreneurial motivation among participants. The willingness of participants to continue production independently reflects the effectiveness of the training approach in empowering community members to take initiative in developing new economic activities (Andini et al., 2024; Nuryawan et al., 2021).

From an economic perspective, the implementation of ecoprint training has significant potential to generate added value for ornamental plant resources that were previously sold as raw commodities. Before the intervention, ornamental plants cultivated by community members were typically sold directly to traders or local markets with relatively low profit margins. This marketing model limited the economic benefits obtained by the community from the cultivation of ornamental plants (Mangiradja et al., 2025; Putri et al., 2025).

Through the ecoprint production process, these plant materials can be transformed into creative textile products with substantially higher market value. The ecoprint fabrics produced during the

training demonstrated that simple processing techniques can significantly increase the economic value of local resources. The estimated selling price of ecoprint fabrics produced during the training program ranged from three to four times higher than the value of the raw plant materials used (Das & Gunaseelan, 2024; Nirmalawati et al., 2025).

This increase in product value illustrates the economic potential of integrating natural resource utilization with creative industry practices. By transforming ornamental plant resources into finished products, community members can capture greater value within the local production chain. This approach also reduces dependence on external markets that often determine the prices of raw commodities (Nurmasitah et al., 2022; Pancapalaga et al., 2022).

In addition to increasing individual income opportunities, the development of ecoprint products also contributes to strengthening the economic circulation within the cooperative. Through collective marketing and profit-sharing mechanisms, the cooperative can facilitate the distribution of benefits among its members while maintaining the sustainability of the business unit. This cooperative-based management model ensures that economic gains generated from the ecoprint initiative contribute to broader community welfare (Nurmasitah et al., 2023; Yuliana & Bahari, 2023).

The integration of creative industry activities into cooperative management also represents an important step toward strengthening the institutional capacity of rural cooperatives. By expanding their role beyond financial services, cooperatives can become platforms for local innovation and entrepreneurship development. The experience of the Kampong Bunga Grangsil Service Cooperative demonstrates how community service interventions can stimulate institutional transformation and promote sustainable economic initiatives (Isfianadewi et al., 2025; Widiani, 2021).

The implementation of the ecoprint training program generated significant positive impacts on the community. The program improved the entrepreneurial capacity of cooperative members, encouraged creativity in product development, and strengthened the institutional role of the cooperative as a driver of the local creative economy. The development of ecoprint products based on ornamental plant resources illustrates how local natural assets can be transformed into value-added commodities through community-

based innovation (Musdalifah et al., 2022; Zainuddin et al., 2024).

Furthermore, the outcomes of this program contribute directly to the achievement of the Sustainable Development Goals (SDGs), particularly Goal 8 (Decent Work and Economic Growth) and Goal 12 (Responsible Consumption and Production). By promoting environmentally friendly production techniques and encouraging the sustainable utilization of local natural resources, the ecoprint initiative supports inclusive and sustainable rural economic development (Andajani et al., 2023; Kusumaningtyas et al., 2024).

CONCLUSION

This community service program successfully enhanced community entrepreneurial capacity and strengthened the role of the Kampong Bunga Grangsil Service Cooperative as a center for a creative economy based on local resources. Through ecoprint training and mentoring activities, community members who previously relied on selling raw ornamental plants were able to transform these resources into value-added textile products with distinctive local visual characteristics. The program improved participants' technical skills, increased entrepreneurial interest, and initiated the formation of a new community-based business group called "Ecoprint Grangsil," which is collectively managed under the cooperative. The implementation of ecoprint techniques proved effective in revitalizing the economic potential of ornamental plants, increasing income opportunities, and encouraging the participation of rural women in creative economic activities. Nevertheless, several limitations remain, including limited marketing networks, product standardization, and the need for continuous mentoring to ensure business sustainability. Therefore, further development of this program is recommended through advanced training in product design, digital marketing strategies, and broader promotion through scientific publications and cooperative social media platforms. This cooperative-based empowerment model has the potential to be replicated in other rural communities as a strategy to strengthen local economic independence while contributing to the achievement of Sustainable Development Goals (SDGs), particularly Goal 8 (Decent Work and Economic Growth) and Goal 12 (Responsible Consumption and Production).

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