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Creative Economic Empowerment Tulip Dasawisma Group, Sukorejo Village Through Environmentally Friendly Ecoprint Art Skills

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Abstract
The Dasawisma (Dawis) "Tulip" Family Welfare Empowerment (PKK) Group of RT 13 RW 05 Sukorejo Village need a featured product that can be developed into a pioneering Micro Small Medium Enterprise (MSME/ UMKM). Ecoprint has the potential to be a featured product because the materials are available around the Dawis environment, such as Yellow trumpet tree (tabebuya), Jamaica cherry (kersen), Mahogany, Tropical almond (ketapang), and Cosmos (kenikir). The leaves and bark of these plants can be used as ecoprint materials and natural dyes. On this basis, two solutions are offered: 1) increasing the knowledge of the Dawis members in developing eco-friendly ecoprint, 2) increasing the skills of the Dawis members in making ecoprint as a pioneer to create a business unit. These can be achieved through the introduction of eco-friendly ecoprint, increasing the capacity of skills through training and mentoring, as well as monitoring and evaluation of ecoprint products as a pioneering business unit. The results of community service show that: 1) increased knowledge of Dasawisma group members about ecoprint, 2) an increase in ecoprint-making skills of Dasawisma Tulip members, 3) produced hijab, pashmina, and clutch products. The outputs achieved are 1) news in electronic mass media, 2) copyright on ecoprint making procedures, 3) publication of activity videos, and 5) journal publications that are in the process of being submitted. This community service activity is in line with SDGs 4 (Quality Education) and SDGs 9 (Industry, Innovation, and Infrastructure).

Keywords: Tulip Dasawisma; creative economy; skills ; ecoprint; eco-friendly

INTRODUCTION

The Family Welfare Empowerment Group (PKK) is a community organization that empowers women or mothers to participate in the national development program [1]. The PKK group has an important and strategic role in society, especially in improving skills, empowering women and family welfare. [2]. The PKK has 10 PKK Main Programs, which include: 1) Appreciation and practice of Pancasila, 2) cooperation, 3) food, 4) clothing, 5) housing and household management, 6) education and skills, 7) health, 8) development of cooperative life, 9) environmental sustainability, and 10) healthy planning. These ten programs aim to promote family welfare, as the family is the smallest unit in society, influencing national development and supporting government programs. The Dasawisma Tulip PKK Group RT 13 RW 05 Sukorejo Village has implemented the 10 PKK Main Programs, but does not have a featured program to be implemented. In their monthly meetings, the 20-member Dawis group not only reports on routine PKK activities but also shares information and skills training for members, such as planting, cooking, sewing, and basic ecoprinting (Figure 1). However, they do not yet have a featured product that aligns with the creative economy.

Based on interviews and discussions with the Dasawisma Tulip Group, they need a featured product utilizing local resources in the Dasawisma area, such as ecoprinting. The materials can be found around the dasawisma environment, such as Yellow trumpet tree (tabebuya), Jamaica cherry (kersen), Mahogany, Tropical almond (ketapang), and Cosmos (kenikir), whose leaves and bark can be used in making ecoprint.

The Dawis group, consisting of 5 members, had received a basic ecoprinting course; however,

their knowledge and skills were still minimal due to the lack of ongoing mentoring, resulting in less than optimal product results, with the leaf motif appearing less clear (Figure 3). Therefore, based on the agreement, a creative economy-based community services program was chosen through ecoprinting art, which implements two main PKK programs: 1) Education and Skills and 2) Environmental Sustainability.Well-known as a technique for dyeing and patterning fabrics, ecoprint art has good market potential and keep developing in this era [3][4]. The term of "ecoprint" consists of the word 'eco' which means 'nature' and 'print' which means 'to print'. In the ecoprint making process, natural materials from plants such as leaves, flowers, bark, and so on are used. The patterns from the plants are transferred to the surface of the fabric that has been cleaned and treated [5]. In addition to having an aesthetic appeal, ecoprint is a development of eco-fashion that is environmentally friendly [6]. This is because in the ecoprint making process, it uses minimal chemicals like the textile production process in general. Thus, the empowerment of ecoprint art skills is expected to not only empower PKK groups in the economic aspect, but also increase their awareness of environmental issues.

The ecoprinting technique that will be implemented in this community services activity is the steam technique. This technique involves steaming fabric with plant motifs in a pan, allowing the dyes from the plants to came out and transfer to the fabric. The motifs and colors resulted have unique and aesthetic characteristics, because it use plant parts as motifs, no two products will be identical, even if they are made with the same color and plant.

Program-partner problem

Based on the conditions in the Tulip Dasawisma Group, the problem is how to empower the Dasawisma Tulip PKK RT 13 RW 05 Group to make featured products through eco-friendly ecoprint to support the creative economy?

Table 1. Aspects and priorities of the problem

Aspect	Problem
Human Resourches	The ecoprint knowledge and skills of the 20 members of the Tulip Dasawisma Group are still minimal
Production	Not yet having a featured product to support the creative economy of the Dasawisma Tulip Group

Problem Solution

The Dasawisma Tulip Family Welfare Movement (PKK) group does not yet have a featured product to support its creative economy program. Based on its potential and the interest of program-partners, ecoprint was chosen as a potential featured product that can support the creative economy. Furthermore, ecoprint products are also more environmentally friendly. Therefore, the program-partners need the knowledge and skills to be able to make ecoprint using the steam technique and an eco-friendly process. To achieve this goal, several aplicative-participatory activities will be carried out, detailed as follows.

Table 2. Problem and Solution

Aspect	Problem	Solution
Human Resourches	There is still minimal knowledge about ecoprint	Providing ecoprint knowledge with eco-friendly steam techniques
	There is no skill in making ecoprint using steam techniques	Providing skills through steam technique ecoprint practice
Production	There are no featured products to support the creative economy in the Dasawisma Tulip PKK Group	Creating an eco-friendly ecoprint product to support the creative economy

Based on the problems above, the aim of this community service activity is to improve the skills of the Dasawisma Tulip PKK Group in producing ecoprints using steam techniques, creating featured products to support the creative economy program of program-partners, and increasing environmental awareness in the ecoprint production process.

Table 3. Achievement target of every aspect

Num.	Aspect	Solution	Achievement target (measured/ quantitative)
1	Human Resourches	Providing knowledge about ecoprint using eco-friendly steam techniques	90% of program-partner members understand the eco-friendly aspects of producing ecoprints
		Providing skills through steam technique ecoprint practice	75% of target partner members are able to produce eco-friendly steam technique ecoprints

Num.	Aspect	Solution	Achievement target (measured/ quantitative)
2	Production	Creating an eco-friendly ecoprint product to support the creative economy of MSME startups	The creation of an ecoprint product using eco-friendly steam techniques

METHOD

The implementation of this community service activity includes three activities, (1) preparation, (2) introduction to ecoprint, (3) training and mentoring in ecoprint practice and (4) monitoring, evaluation and follow-up.

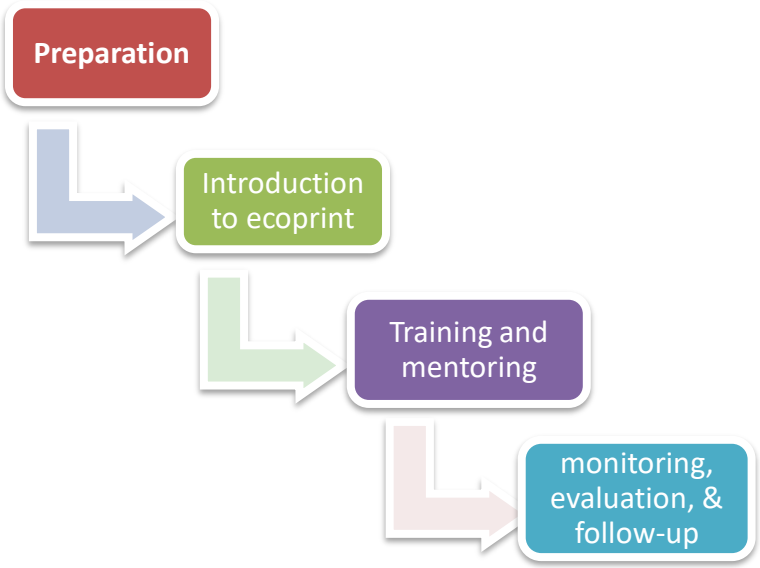

Figure 4. Flow chart of community services activity.

Preparation

The first step is coordination and preparing materials and tools for the ecoprint production, as well as practical and mentoring sessions for ecoprint. The team coordinates with the program-partners to discuss what will be needed during the activity, including potential plants near the program-partner's location suitable for ecoprint, as well as the tools and materials needed to make ecoprints.

Introduction to ecoprint

In this step, the knowledge about ecoprint dan its utilization is delivered by ecoprint partitioners. Prior to the presentation, a pre-test was conducted to determine the program-partners' knowledge.

Training and mentoring in ecoprint practice

Demonstration is conducted to demonstrate the ecoprint production process to program-partners. The program-partners then practice according to the instructions. The training is planned to take place at the program-partner's location, the Dasawisma Tulip Family Welfare Movement (PKK) group, which consists of 20 members. Participants will practice ecoprinting using steam techniques, guided by experienced ecoprint practitioners. Afterward, the program-partners will be given a project to independently produce eco-friendly ecoprint fabric as a featured product for their ecoprinting business.

Several step will be carried out in this ecoprint practice and mentoring activity, including: 1) fabric preparation, which includes scouring to remove chemical residues and mordanting to open the pores; 2) leaf preparation, which involves selecting leaves or plant parts to be used in the ecoprinting process; 3) the ecoprinting process, which involves arranging the leaves on the fabric according to creativity; 4) steaming for 90-120 minutes; and 5) post-production fabric care.

Monitoring, evaluation and follow-up

To determine the level of knowledge, understanding, and skills acquired by participants, a post-test was conducted. The post-test results were compared with the results of the previous pre-test to

determine the improvement in partners' knowledge about ecoprint. The ecoprint products produced by participants were evaluated for quality, including pattern and color clarity, creativity, and neatness. A discussion was also held to assess any obstacles encountered during the production process. After determining the level of knowledge and skills in ecoprint production, follow-up actions were taken to start an ecoprint business.

Table 4. Methods

Num.	Solution	Program planning	activity	Program-partner partisipation
1	Providing ecoprint knowledge using eco-friendly steam techniques	Eco-friendly steam technique ecoprint training	Presentation and discussion	Providing training place
2	Providing skills through steam ecoprint technique	Eco-friendly ecoprinting practices using steam techniques	Demonstration and practice	Providing training place
3	Creating an eco-friendly ecoprint product to support the creative economy	Mentoring in the independent creation of ecoprint products by program-partners	Product mentoring, monitoring and evaluation	Making product independently

RESULT AND DISCUSSION

Preparation

Members of Dasawisma Tulip RT 13 Sukorejo Village are mostly housewives, but are always active in various activities and want to increase their knowledge and skills. Following up on the wishes of group members that they want a featured product by utilizing the potential that exists in the surrounding environment. One potential that can be developed is that they need knowledge of making ecoprint with better results. So far they have tried to make it, but the results are not good. The leaf motifs of ecoprint are not bright enough, as well as the coloring technique is still not good. Therefore, this community service implementing batik diversification training through ecoprint making using stem technique, as well labeling and packaging. Ecoprint is one of the activities of making batik through a process to transfer color and shape to fabric through direct contact. "The ecoprint technique is a development of ecofashion, by producing environmentally friendly fashion products" [7]. Making ecoprint batik is different from hand-drawn batik or stamped batik in general which requires chemicals in certain steps. While ecoprint batik uses natural elements without synthetic or chemical materials [8][9]. The eco-printing technique aims to provide an alternative for producing eco-friendly textile motifs and convey the importance of consuming and producing environmentally friendly products [10].

The activity began with coordination of the implementation with group members, which coincided with the regular Dasawisma meeting on April 19, 2025 (Figure 5). The coordination resulted in an agreement that the activity would be held on May 15, 2025, with 15 participants from the Dasawisma Tulip group. The location of the activity was agreed upon at the home of the Dasawisma Tulip Chairperson. In addition, coordination was conducted regarding the tools and materials to be prepared for the training.

Figure 5. Coordination with program-partner

Some of the tools and materials that must be prepared include plant materials, a large steamer, a stove, a digital scale, a bucket, cotton cloth, chalk, plastic, insulation, scissors, a small pipe or PVC pipe with a length of 1-1.5 meters, and a small iron. The leaves prepared, especially those found around

the community, include Eucalyptus, Jamaica cherry (kersen) leaves, teak leaves, Cosmos (kenikir), and longan. In addition, the use of leaf veins craft in ecoprinting, which is a new innovation developed by the community service team, was also introduced. The leaf veins craft used come from rubber leaves and bodi leaves which will also be applied in independent activities.

Implementation

The training was held on May 15, 2025, at the house of the Chairperson of Dasawisma Tulip RT 13. The speaker for this activity was the community service team. The implementation time started from 09.00-15.30 WIB with the schedule starting from the Opening, remarks from the head of the community service, remarks from the head of the community service Tulip, the provision of material from the speaker, a demonstration conducted by the community service team and then the practice of making ecoprint using the steam technique. The speaker speaks about the tools, materials used and the stages in making ecoprint batik. Participants listened to the speaker's explanation and read the instructions distributed. The presentation of the material was intended so that when practicing making ecoprints, participants could do it well according to what the speaker conveyed (Figure 6). During the presentation session, several participants appeared to ask questions starting from the first step of preparing tools and materials, the scoring process, mordanting, and the ecoprint making method. Participants paid close attention to the presentation, because according to them, the stem technique presented by the speaker was very different from the previous technique they were currently using.

Figure 6. Presentation about ecoprint by community service team

The community service team also demonstrated how to make ecoprints using the steam technique. The demonstration began with scoring, mordanting, and then arranging the leaves, steaming, and drying (Figure 7).

Figure 7. Demontration of making ecoprint

After the community service team conducted a demonstration, the training participants directly practiced making ecoprints, starting from the mordanting, post-mordanting, arranging the leaves on the fabric, covering with cloth, steaming for 2-3 hours, and the drying process (Figures 8-10).

Figure 8. Mordanting and Arranging the leaf on the fabric

Figure 9. Rolling the fabric and steaming

Figure 10. Unrolling the fabric and ecoprint result

Response and feedback of participants

After the training, participants were asked to complete a participant feedback form regarding the event. Participants' responses and feedback are shown in table 1.

Table 5. Response and feedback of participants

Num.	Questions	Persentages (%)
1	Ecoprint training using stem techniques increases the insight and knowledge of the Dasawisma Tulip RT 13 group	100
2	The introduction and utilization of plants around the Dasawisma Tulip settlement increased participants' knowledge of the types of plants that can be used as natural dyes and as a basis for ecoprint motifs	100
3	Ecoprint dyes derived from plant leaves greatly support efforts to reduce the use of chemicals	100
4	Ecoprint stem technique produces unique and attractive leaf patterns	100
5	Ecoprint makes the idea of making souvenirs	90
6	Ecoprint will be one of the leading environmentally friendly local products	90

Overall, almost all participants provided positive feedback and gained additional knowledge and understanding of the steam ecoprinting technique. Participants hope this activity will continue and will try it again in their own shawl and pashmina.

Independent Participant Activities

Participants in the Ecoprint training at Dasawisma Tulip, RT 13, Sukorejo Village, conducted independent activities by practicing ecoprint on pashmina fabric. Participants completed the initial steps, including scoring, mordanting, washing, arranging the leaves on the pashmina, steaming, and fixing process (Figures 11-14).

Figure 11. Scouring and mordanting process of pashmina

Figure 12. arrangement of leaves on pashmina

Figure 13. Rolling and steaming process

Figure 14. The result of independent participant activities in making an ecoprint on pashmina

The results of the independent activity showed that the participants were able to practice the ecoprint making, starting from the fabric processing, scoring, and mordanting. In the initial processing, they encountered no obstacles, and then carried out the leaf arrangement. In addition to using fresh leaves, they also tried using leaf vein craft that had been prepared by the community service. The ecoprint results looked quite good (Figure 14), but some participants' ecoprint results did not have a clear leaf vein craft motif. After observation, it turned out that during the washing process after scoring, mordanting and drying, the mixing of the washing materials was less homogeneous. However, in general, almost all participants' ecoprint pashmina results were quite good. Dasawisma members then named the new business for the creative economy start-up "Eco Techno", and are currently preparing to apply for a NIB (Business Identification Number).

CONCLUSION

The community service activities have had a positive impact on the Dasawisma Tulip (PKK) Group of RT 13 RW 05 Sukorejo Village. These activities have increased knowledge and skills, provided participants with opportunities to develop creativity in ecoprint innovations, and created opportunities for creative economic ventures. Community service activities should be sustainable, and ecoprinted fabrics should be developed into more affordable products. Examples include pouches, pencil cases, and tote bags.

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