

# Community Empowerment for Sustainable Development Goals

**ICCOSPRO**  **2023**

International Conference  
for Community Service Program





# PROCEEDING

Internasional Conference for Community  
Service Program (ICCoSPro)

*“Community Empowerment for Sustainable  
Development Goals”*

Malang, 14 August 2023



Penerbit Universitas Muhammadiyah Malang

# **PROCEEDING**

## **Internasional Conference for Community Service Program (ICCoSPro)**

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## PREFACE

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*Alhamdulillahirrabbi'alamin*, verry grateful to Allah SWT., because the International Seminar on Community Empowerment Program 2023 can be carried out properly. This seminar was themed "Community Empowerment for Sustainable Development Goals" which was held in the framework of routine activities of the Directorate of Research and Community Service, University of Muhammadiyah Malang.

In this international seminar, the results of service carried out by devotees from various higher education Institutions were presented. The results of the seminar are then documented in these proceedings.

The seminar can be carried out successfully with the help of many parties. Therefore, we would like to thank many parties who have helped organize this seminar.

We realize that there are still many shortcomings in the preparation of the proceedings of this international seminar so that suggestions and constructive criticism are needed. Hopefully this proceedings are useful for readers and those in need.

*Wassalamu'alaikum warahmatullahi wabarakatuh.*

Malang, October 2023



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# INCREASING THE EMPOWERMENT OF BATIK SMEs THROUGH THE IMPLEMENTATION OF GREEN MANAGEMENT

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## Abstract

The partners in this community service activity are batik SMEs: 1) UD. Berkah Mojo is located in Mojotrisno Village, Mojoagung District, and 2) CV Pesona Batik Jombang in Jabon Village, Jombang District Jombang Regency – Indonesia. The two partners produce batik with natural and synthetic dyes. Awareness of partners on efficiency in using raw materials, energy, and water, as well as environmental sustainability, is still deficient. Partners rarely use Personal Protective Equipment (PPE) in production activities. The purpose of implementing this community service is, first, to increase the efficiency of the production process. Second, to develop partners' awareness of environmental sustainability and occupational health and safety. The solution offered is the application of green management in partner business activities. The methods used are: first, green management training and assistance. Second, socialization and monitoring and evaluation of the implementation of green management with the application of monitoring and evaluation information systems for the performance of green management for batik SMEs (siragematik). The results obtained indicate an increase in the knowledge of partners and their employees about implementing green management. With the pragmatic application, there was an increase in the green management implementation score from 25.42 to 47.82 for Partner 1 and 22.50 to 48.94 for Partner 2.

Keywords: green management; batik; siragematik; efficiency; jombang

## INTRODUCTION

One of the Indonesian products widely known by the world community is batik. Batik is one of the cultural heritages and works of art whose existence has reached the international level. For the Indonesian people, batik is not only limited to cultural heritage but also a source of livelihood for some people who have economic value and are multi-functional. The development of the batik industry is gradually accelerating. This is marked by the increasingly varied motifs and colors of batik, and the function of batik is not only limited to clothing. Still, it can also

be in accessories, room decorations, and others. The creativity of the artisans is also increasing (Fitria & Yustisya, 2021). Departing from the market demand for batik, which tends to increase, increases the number of industries and production activities. Batik SMEs strive to fulfill consumer demand by increasing batik production capacity. It is common for most batik SMEs to use synthetic dyes (made from chemicals), hoping the resulting colors will last longer and not fade quickly. The residual waste from the dyeing process containing hazardous chemicals is disposed of directly into the environment, causing environmental pollution and disrupting the surrounding community's health (Hakim, 2018).

East Java is one of the regions/provinces that have good economic growth with proportional distribution and equity compared to other regions, so the development of Batik MSMEs should be an important agenda in efforts to increase the economic base and creative economy, which can be developed in massive tourist areas as previously reported and already seen in several areas in East Java. One of them is the Jombang Regency. This community service activity involves two partners. Partner-1 is UD Berkah Mojo and partners-2 CV Pesona Batik Jombang. Both partners are domiciled in Jombang Regency. UD Berkah Mojo, as partner-1, is located at Dusun Sanan Timur, RT. 005RW. 004 Mojotrisno Village, Mojoagung District, Jombang Regency. Mitra-2 CV Pesona Batik Jombang is located at Dusun Jambu, RT. 004 RW.001 Jabon Village, Jombang District, Jombang Regency. Mitra-1 produces more batik with natural dyes by 70% and the remaining 30% with synthetic dyes. In contrast, Mitra-2 produces more batik with synthetic dyes, namely 60%, and the remaining 40% natural dyes. Mitra-1 and Mitra-2 produce batik cloth with Jombangan motifs, namely the relief motifs of Dewi Arimbi and Ringin Contong and Jombang Leaves. Based on the observations of the community service implementing team, several problems were found with partners. The two partners need to be made aware to document proof of purchase of raw materials. Storage of evidence of the purchase of raw materials correctly archived. Partners consider proof of purchase of raw materials not necessary. Awareness of using natural materials, energy, and water efficiency must be improved. So far, control of the production process only identifies defective products or does not control whether the product is appropriate. Partners have not maintained the production process based on the stages of the batik production process and have not been adequately systemized so that defective products are more than 2%.



Figure 1. Defective Products due to imperfect Dyeing Process

In the context of environmental awareness, both partners still need to improve. The remaining waste from the batik coloring production process is disposed of directly into the environment, soil, and waterways without prior waste treatment. This is very dangerous to the health of the surrounding community. Meanwhile, the international market requires environmentally friendly batik products, so there is a high potential for export markets if partners treat batik production wastewater properly and increase batik products with natural dyes.



Figure 2. Wastewater Discharged Directly into the Environment

Partners ignore employee health and safety (K3). Employees do not wear personal protective equipment (APD) during production activities. Employees carrying out



the color-locking process with synthetic dyes do not wear gloves, which can cause skin irritation and harm their health.



Figure 3. Workers mixing synthetic dyes without gloves

Based on the problems partners face, the implementing team can provide solutions to partners. The answer is in the form of applying the concept of green management to the management of batik SMEs. The application of green management in batik SMEs is holistic, starting with activities to determine inputs (green input), processing raw materials (green process), processing inputs into outputs (green output), distributing and selling goods and services (green marketing), as well as implementing government regulations and public awareness to improve the performance of batik SMEs. Green management is expected to help companies increase profits, promote social responsibility to the community, and maintain environmental sustainability (Wibowo et al., 2022). This is in line with the stakeholder maximization concept that the existence of a company must provide benefits and prosperity for all stakeholders involved in the business, from owners, managers, employees, consumers, and the government to the community and the environment (Raharjo, 2019).

The purpose of implementing this community service is, first, to increase the efficiency of the production process. Second, to develop partners' awareness of environmental sustainability and occupational health and safety. Third, growing partners' understanding of the social problems of the surrounding community. With the achievement of these three goals, it is hoped that it will provide long-term benefits to partners. Partner consistency in production efficiency, development of environmentally friendly batik products, and concern for social issues will sustainably increase the number of customers, turnover, and profits.

## **MATERIALS AND METHODS OF IMPLEMENTATION**

This community service activity is carried out from mid-June to early August 2023. The method used in carrying out this community service is training on the application of green management and socialization of indicators for evaluating the application of green management to batik MSMEs. The application of green manage-

ment in batik SMEs is measured by an information system monitoring and assessing the application of green management in batik SMEs, abbreviated as Siragematik. Siragematik applications are computer applications resulting from research (Wibowo et al., 2022). To strengthen the partners' knowledge and understanding of green management, the implementation team assists in implementing green management once a week for Partner 1 (UD Berkah Mojo) and Partner 2 (CV Pesona Batik Jombang). The following method used by the implementing team is monitoring and evaluating the implementation of green management. Monitoring and evaluation of the performance of green management were carried out on August 5, 2023, using the siragematik application. Monitoring and evaluating the implementation of green management aims to see how far the level of green management implementation has changed before and after this community service activity.

## RESULTS AND DISCUSSION

This community service implementation activity began with training activities on the application of green management and socialization of information systems for monitoring and evaluating the implementation of green management for MSMEs batik (siragematik) on June 24, 2023. 13 partners-1 and Partners -2 and their employees attended the training and socialization. Before the training and outreach (on June 20, 2023), an initial assessment of the level of green management implementation was carried out by partner-1 and partner-2, which aims to see the partners' initial conditions related to the performance of green management.

Green management training materials and siragematik socialization are packaged in interrelated materials. Achmad Chusunun Ni'am, S.Si., MT, PhD, an implementation team member, delivered the substance of the green management training. Dr. Nugroho Mardi Wibowo, S.E., M.Si, head of the community service implementation team, provided the siragematik of socialization. Resource persons presented many green management concepts.

The resource person said that green management had become an exciting topic recently. Environmental damage, air pollution, flooding, clean water, unhealthy food, and many others have made people aware of the importance of living a healthy life, namely the need for environmentally friendly products and services. Green management is defined as a company's managerial activities that are carried out systematically to overcome environmental problems through environmental protection and minimize the negative impact of products throughout the life cycle of a product (Shu et al., 2016). In other words, green management is a business activity that turns inputs (raw and supporting materials) into outputs (goods and services) by prioritizing balance and synergy between economic, social, and environmental benefits.

There are three critical elements in implementing green management: collaboration with supply chain partners and cooperation with supply chain partners (Cherrafi et al., 2018), environmentally friendly production processes (Liu et al., 2017), management and internal support (company efficiency) (Ma et al., 2018). Meanwhile, applying green management in SMEs is not enough to be environmentally friendly activities; it is hoped that SMEs will find alternative ways to innovate ecologically. SMEs must implement environmental policies about banning single-use plastic bags (Xanthos & Walker, 2017) and converting waste into energy (Shimbar & Ebrahimi, 2017).

In developing the management of Batik SMEs, it is necessary to study the green management model starting from determining input (green input), processing raw materials (green process), processing inputs into output (green output), distributing and selling products (green output), and marketing, as well as application of government regulations and public awareness to improve SMEs performance. Green management is expected to be able to help batik MSMEs not only by increasing profits but also by being directly involved in social responsibility to the community and preserving the environment. Stakeholders consisting of owners, managers, employees, consumers, the government, and the community have a significant role in successfully implementing batik SMEs green management. Likewise, the knowledge of Batik SME owners has contributed to the success of implementing green management in Batik SMEs (Raharjo, 2019).

The innovation factor by SMEs has a significant role in the success of SMEs' green management. SMEs that implement green management well will benefit from increased performance in new product development (Zhou et al., 2019).

Siragematik socialization materials to partners include assessment of production aspects (raw materials, energy, water, process technology, and human resources), waste treatment, and work safety (waste and work environment), as well as SME management (certification, CSR, and awards). The weight of the assessment of the production aspect is 70%, waste management and work safety is 20%, and the management of batik SMEs is 10%. The monitoring and evaluation results of green management implementation are classified in Table 1.

Table 1. Classification of Monitoring and Evaluation Results of Green Management Implementation

<b>Value Intervals</b>	<b>Criteria</b>
90.1 - 100.0	Have implemented green management very well and on an ongoing basis
80.1 – 90.0	Very well-implemented green management
70.1 – 80.0	Have implemented green management properly
60.1 – 70.0	Have implemented green management quite well
50.1 – 60.0	Some have implemented green management
40.1 – 50.0	Less implementation of green management
30.1 – 40.0	Very little implementation of green management
≤ 30	Have not implemented green management

Nama UMKM	:	UD Berkah Mojo
Jenis Badan Usaha	:	Perusahaan Perseorangan
Berdiri Tahun	:	2010
Alamat	:	Dusun Sanan Timur RT. 005 RW. 004 Desa Mojotrisno Kecamatan Mojoagung
Kabupaten/Kota	:	Jombang
Jumlah Karyawan	:	6 orang
Kapasitas Produksi	:	1800

  

Hasil Monitoring dan Evaluasi				
Aspek Penilaian	Bobot (%)	Jumlah Perolehan Skor	Jumlah Skor Maksimal	Nilai Setiap Aspek
Proses Produksi (A)	70	13	52	17,50
Pengelolaan Lingkungan dan Keselamatan Kerja (B)	20	3	16	3,75
Manajemen UMKM (C)	10	5	12	4,17
<b>Total perolehan nilai</b>	<b>25,42</b>			
<b>Kesimpulan Hasil Monitoring dan Evaluasi</b>	<b>Belum menerapkan green management</b>			

Figure 4. The initial value of Partner-1 Green Management Implementation

Nama UMKM	:	CV PESONA BATIK JOMBANG
Jenis Badan Usaha	:	Perusahaan Perseorangan
Berdiri Tahun	:	2013
Alamat	:	Dusun Jambu RT. 004 RW.001 Desa Jabon Kecamatan Jombang
Kabupaten/Kota	:	Jombang
Jumlah Karyawan	:	6 orang
Kapasitas Produksi	:	1626

  

Hasil Monitoring dan Evaluasi				
Aspek Penilaian	Bobot (%)	Jumlah Perolehan Skor	Jumlah Skor Maksimal	Nilai Setiap Aspek
Proses Produksi (A)	70	13	52	17,50
Pengelolaan Lingkungan dan Keselamatan Kerja (B)	20	0	16	0,00
Manajemen UMKM (C)	10	6	12	5,00
<b>Total perolehan nilai</b>	<b>22,50</b>			
<b>Kesimpulan Hasil Monitoring dan Evaluasi</b>	<b>Belum menerapkan green management</b>			

Figure 5. The initial value of Partner-2 Green Management Implementation

Figures 4 and 5 show that partner-1 and partner-2 still need to implement green management. Regarding the production process, the two partners have not considered archiving proof of raw purchases, input efficiency, environmental sustainability,

occupational safety, and health. In this condition, of course, there needs to be intervention from the community service implementation team to provide enlightenment through socialization, training, mentoring, and monitoring and evaluation of the implementation of green management. Partners must change the business model that originally produced environmentally friendly batik products to make green products by increasing the number of batik products with natural dyes and paying attention to the efficiency of raw materials, energy, and water.



Figure 6. Siragematik Outreach Activities to partners and employees



Figure 7. Green Management Application Training Activities

Green management implementation training activities and siragematik socialization were followed up with green management implementation assistance to partner-1 and partner-2. Mentoring activities aim to strengthen partners' understanding and knowledge to apply green management to partners' operational activities. The implementation team diligently provides direction and checks on green management aspects. Implementation assistance is done once a week from 1 to July 22, 2023.



Figure 8. Green Management Implementation Assistance to partner-1



Figure 9. Green Management Implementation Assistance to partner-2

The results of training and mentoring on implementing green management for partners show changes in the governance of the batik business. Partners have started filing activities for proof of purchase of primary and auxiliary raw materials, even though they could be better. The use of raw materials to produce per product unit has also increased. This shows that partners have taken efficiency measures. The remaining cloth from the batik production process will be used to make other derivative products. For example, it is used to create batik blangkon and tablecloths and can also be used to practice producing batik for school students. Partners have also efficiently used LPG for canting, firewood for the meteoroid process, and water for melody and washing cloth.



Figure 10. Partner employees are already wearing gloves

In the process technology aspect, the partner has planned to manufacture a natural color mixing machine, which has been using the manual method so far. This means partners have considered time and energy efficiency and product quality improvement. Partners have developed a culture of occupational safety and health. The conditions partners and employees who did not use personal protective equipment (APD) are now starting to use APD, such as gloves when working on color locking (fixation).

In order to see progress and evaluate the impact of training and mentoring on the implementation of green management on the level of partner empowerment, the community service implementation team conducted monitoring and evaluation on July 29 and August 5, 2023. Green management implementation was monitored and evaluated using the Siragematik application.

Nama UMKM	:	UD Berkah Mojo
Jenis Badan Usaha	:	Perusahaan Perseorangan
Berdiri Tahun	:	2010
Alamat	:	Dusun Sanan Timur RT. 005 RW. 004 Desa Mojotrisno Kecamatan Mojoagung
Kabupaten/Kota	:	Jombang
Jumlah Karyawan	:	6 orang
Kapasitas Produksi	:	1800

  

Hasil Monitoring dan Evaluasi				
Aspek Penilaian	Bobot (%)	Jumlah Perolehan Skor	Jumlah Skor Maksimal	Nilai Setiap Aspek
Proses Produksi (A)	70	25	52	33,65
Pengelolaan Lingkungan dan Keselamatan Kerja (B)	20	8	16	10,00
Manajemen UMKM (C)	10	5	12	4,17
<b>Total perolehan nilai</b>	<b>47,82</b>			
<b>Kesimpulan Hasil Monitoring dan Evaluasi</b>	<b>Kurang penerapan green management-nya</b>			

Figure 11. Value of Green Management Implementation (after intervention) partner-1

Nama UMKM	:	CV PESONA BATIK JOMBANG
Jenis Badan Usaha	:	Perusahaan Perseorangan
Berdiri Tahun	:	2013
Alamat	:	Dusun Jambu RT. 004 RW.001 Desa Jabon Kecamatan Jombang
Kabupaten/Kota	:	Jombang
Jumlah Karyawan	:	6 orang
Kapasitas Produksi	:	1626

  

Hasil Monitoring dan Evaluasi				
Aspek Penilaian	Bobot (%)	Jumlah Perolehan Skor	Jumlah Skor Maksimal	Nilai Setiap Aspek
Proses Produksi (A)	70	28	52	37,69
Pengelolaan Lingkungan dan Keselamatan Kerja (B)	20	5	16	6,25
Manajemen UMKM (C)	10	6	12	5,00
<b>Total perolehan nilai</b>	<b>48,94</b>			
<b>Kesimpulan Hasil Monitoring dan Evaluasi</b>	<b>Kurang penerapan green management-nya</b>			

Figure 12. Value of Green Management Implementation (after intervention) partner-1

Figures 12 and 13 show that partner-1 and partner-2 have implemented green management in their business activities, although still on a small scale, which they had not previously implemented. There is an increase in the value of applying green management to partners before and after the implementation of community service. Initially, the value of partner-1 green management implementation was 25.42, increasing to 47.82 or an increase of 88%. As for partner 2, initially, it was worth 22.50, increasing to 48.94 or experiencing an increase of 117.5%.

## CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

The conclusions can be formulated based on the results, discussion, and partner problem. The implementation team's intervention through training, mentoring, monitoring, and evaluation of the implementation of green management and Siragematik socialization has an impact on increasing the knowledge of partners and their employees about the performance of green management. This can be seen in the increase in the value of implementing green management from 25.42 to 47.82 for Partner 1 and 22.50 to 48.94 for Partner 2.

### Recommendations

Partners are expected to continue to increase their knowledge about applying green management in their business processes. Documentation or storage management of proof of purchase of raw materials has begun to be adequately regulated. Controlling using raw materials, energy, firewood, and water is correctly handled. Partners must have started to develop batik products with natural dyes. Partners always create a culture of occupational safety and health. SOP for the production process must exist and be applied consistently. Wastewater treatment has started to be considered; at least, a disposal mechanism exists for a particular place—a collaboration with the local Environmental Agency to conduct periodic wastewater testing.



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