

Empowering Eco-Friendly MSMEs through Tax Management Education and Product Innovation in Palembang City

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ABSTRAK

Kegiatan Pengabdian Kepada Masyarakat ini bertujuan untuk memberdayakan pelaku Usaha Mikro, Kecil, dan Menengah (UMKM) ramah lingkungan di Kota Palembang melalui pelatihan pengembangan produk berkelanjutan berbasis eceng gondok dan edukasi literasi pajak. Kegiatan dilaksanakan dengan metode partisipatif seperti survei lapangan, lokakarya, pendampingan, dan diskusi kelompok terarah (FGD). Peserta dilatih untuk mengolah eceng gondok menjadi produk ramah lingkungan yang bernilai ekonomi serta mengelola keuangan dan pajak usaha secara lebih efektif. Hasil kegiatan menunjukkan peningkatan signifikan dalam pemahaman peserta terhadap kewirausahaan berkelanjutan dan kepatuhan pajak, yang berkontribusi pada pelestarian lingkungan serta pertumbuhan ekonomi lokal. Program ini membuktikan bahwa pengintegrasian pelatihan pengelolaan pajak dengan inovasi hijau dapat memperkuat kapasitas UMKM menuju keberlanjutan dan tanggung jawab fiskal.

ABSTRACT

This Community Service Program aims to empower environmentally friendly Micro, Small, and Medium Enterprises (MSMEs) in Palembang City through training on developing sustainable water hyacinth-based products and tax literacy education. The program was implemented using participatory methods such as field surveys, workshops, mentoring, and focus group discussions (FGDs). Participants were trained to process water hyacinth into environmentally friendly products with economic value and to

manage their business finances and taxes more effectively. The results of the program showed a significant increase in participants' understanding of sustainable entrepreneurship and tax compliance, which contributes to environmental conservation and local economic growth. This program demonstrates that integrating tax management training with green innovation can strengthen the capacity of MSMEs towards sustainability and fiscal responsibility.

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1. INTRODUCTION

Eichhornia crassipes, commonly known as water hyacinth, is an aquatic plant widely found in Indonesia's freshwater ecosystems, including in South Sumatra Province (Iriani et al., 2019; Astuti, 2018), particularly along the Musi River and its surrounding wetlands. Its abundant presence in the Musi River basin demonstrates a duality between environmental challenges and economic potential. The rapid growth of water hyacinth often covers the water surface, disrupts aquatic activities, reduces oxygen levels, and accelerates river sedimentation (Sulistyo et al., 2014; Yuniarti et al., 2016; Villamagna & Murphy, 2009). For communities living along riverbanks, water hyacinth is often seen as an invasive weed that hinders boat transportation and contributes to the deterioration of aquatic ecosystems.

On the other hand, water hyacinth holds considerable economic potential if utilized properly. The transformation of this plant into various craft products has shown promising prospects in supporting sustainable economic development and community empowerment (Hapsari et al., 2019; Rachmawati, 2017; Ndimele et al., 2011). Beyond handicrafts, water hyacinth can also be processed into biomass fuel and organic fertilizer due to its high cellulose content (Putra & Mulyani, 2018). Recent innovations have also revealed that its fibers can be used as eco-friendly raw materials for natural aromatherapy products (Wulandari et al., 2023). These initiatives open opportunities for the creation of local-based creative industries that not only generate economic value but also contribute to environmental preservation.

Theoretically, the concept of green entrepreneurship serves as a crucial foundation for the sustainable utilization of natural resources. Green entrepreneurship emphasizes the principle of a circular economy, in which waste materials are converted into valuable resources while simultaneously improving community welfare (Arifianto, 2022; Sharma & Thomas, 2020). The development of micro, small, and medium enterprises (MSMEs) based on water hyacinth recycling represents a concrete implementation of the green economy framework, integrating economic, social, and environmental dimensions. With appropriate training, riverbank communities can be actively involved in the entire value chain — from collecting raw materials, drying, and processing, to final product creation — thereby strengthening local economic resilience.

Despite this potential, most MSME actors engaged in water hyacinth processing still lack adequate managerial skills and tax literacy. Limited understanding of taxation has resulted in many businesses not being officially registered as taxpayers, restricting their access to financing and government support (Directorate General of Taxes, 2023). Research by Putri and Rahmawati (2022) found that tax literacy has a significant effect on MSME tax compliance. This indicates that tax education needs to be integrated into capacity-building efforts for green MSMEs to ensure that businesses are not only productive but also institutionally and fiscally sustainable.

The novelty of this community service program lies in its integrative approach that simultaneously combines environmental empowerment through water hyacinth-based product innovation with fiscal capacity building through tax management education. Unlike previous community empowerment activities that generally focused only on creative product training or environmental utilization, this program introduces a dual-capacity development model—linking green entrepreneurship with tax literacy. This unique integration provides a comprehensive empowerment framework that not only fosters sustainable production but also strengthens MSME formalization and compliance with national tax regulations.

In response to these issues, this Community Service Program was designed to provide education and capacity building on green entrepreneurship using water hyacinth for MSME actors in Palembang City. The program includes training in business management, tax literacy education, and simple financial management. This approach is expected to raise MSME awareness of tax obligations, promote business legality, and enhance the competitiveness of environmentally friendly products in broader markets.

2. METHOD

This community service activity was carried out using a participatory and educational approach based on the concept of community empowerment proposed by Mardikanto (2013), which states that there is no single effective method for community empowerment. Instead, a combination of several complementary and mutually supportive methods is required. Therefore, this program employed several empowerment methods, namely Rapid Rural Appraisal (RRA), Participatory Rural Appraisal (PRA), Focus Group Discussion (FGD), and Participatory Learning and Action (PLA).

The RRA method was applied in the initial stage to obtain a quick overview of the conditions, potentials, and problems faced by environmentally friendly MSME (Micro, Small, and Medium Enterprises) in Palembang, particularly those utilizing *Eichhornia crassipes* as a raw material for value-added products. Data were collected through field observations, short surveys, and interviews with MSME actors.

The PRA method was used to encourage the active participation of MSME participants in identifying their needs, challenges, and opportunities for developing environmentally friendly business models and improving tax management. This approach allowed the community to be directly involved in the planning and decision-making process of the program.

The FGD method involved approximately 15–20 MSME participants in structured group discussions guided by a moderator. These discussions focused on enhancing participants' understanding of tax obligations, simple financial bookkeeping, and the benefits of business legality for long-term sustainability.

The PLA method was implemented during the training stage, emphasizing the learning by doing principle. Participants received hands-on training on financial management, preparation of simple financial reports, strategies for managing eco-friendly products made from water hyacinth, and education on tax management and reporting for UMKM. The tax training included basic knowledge about MSME tax types, Tax identification Number (TIN) registration procedures, the use of the e-Filing system, and simulation of calculating the final income tax (PPh Final UMKM 0.5%) in accordance with applicable tax regulations. The training sessions were complemented by question-and-answer discussions and individual mentoring to ensure participants could independently apply tax compliance in their business practices.

Data were collected through observation, pre-test and post-test questionnaires, brief interviews, and documentation during the activities. The data were analysed using a qualitative descriptive approach, focusing on changes in participants' knowledge, skills, and attitudes toward tax management and the application of green economy principles in their businesses.

3. RESULT AND DISCUSSION

RESULT

The community service program was conducted in Palembang and involved 20 local MSME participants engaged in eco-friendly production using eceng gondok (water hyacinth). The program consisted of several structured stages designed to combine environmental empowerment and financial literacy, especially in tax education. The implementation included five main stages.

The first stage was a preliminary survey using the Rapid Rural Appraisal (RRA) method. During this stage, the implementation team conducted field observations to identify and map the potential of MSMEs operating around the Musi River who process or could potentially process water hyacinth into value-added products. The survey results provided an overview of the business scale, production capacity, and main challenges faced by the entrepreneurs, particularly regarding financial management and limited understanding of tax obligations.

The second stage involved participatory planning using the Participatory Rural Appraisal (PRA) approach. In this phase, the facilitators and MSME participants collaboratively identified training needs and determined the focus of the activities, including eco-product innovation and tax education. This participatory approach ensured that the design of the program was relevant, context-sensitive, and aligned with the real conditions of the target community, increasing the sustainability of the empowerment process.



Picture 1. Participatory Rural Appraisal (PRA) approach

The third stage consisted of eco-friendly product innovation training. Participants received practical guidance on processing water hyacinth into marketable craft products such as woven bags, baskets, tissue boxes, and decorative home accessories. The training emphasized environmentally friendly production methods, product quality improvement, and creative design and packaging to enhance market competitiveness.

The fourth stage was tax literacy training for MSMEs, which aimed to strengthen participants' understanding of financial and tax management. The materials covered the procedure for registering a taxpayer identification number (NPWP), the importance of business legality, and an introduction to MSME tax regulations, including the 0.5% final income tax (PPH Final UMKM). Participants were also guided through practical simulations of tax calculation, payment, and online submission using the DJP Online system. They learned to create user accounts, input data, and complete tax reports independently. The session also discussed the advantages of being a compliant taxpayer, including better access to government financial assistance programs. This activity was facilitated by lecturers and tax practitioners from the Faculty of Economics.



Picture 2. Tax literacy training for MSMEs

The final stage was evaluation and follow-up mentoring. After the training sessions, participants completed evaluation questionnaires to measure knowledge improvement and skill acquisition. The evaluation results indicated a significant increase in tax literacy and practical skills among participants. Most MSME owners, who previously had minimal knowledge of taxation, were able to calculate, record, and report their taxes independently by the end of the program. A one-month mentoring period followed, during which facilitators provided technical assistance to participants needing help with NPWP registration and online reporting.



Picture 3. Post Test after training

The results showed significant improvement in participants' understanding of tax management. Before the training, most participants lacked knowledge about formal taxation systems, registration procedures, and reporting mechanisms. After attending the workshops, participants demonstrated substantial progress in identifying applicable UMKM tax types, calculating PPh Final 0.5%, and independently submitting reports through DJP System.

Table 1. Comparison of Participants' Tax Knowledge Before and After Training

Indicator of Tax Knowledge	Before Training (%)	After Training (%)
Understanding of NPWP and business registration	30	95
Knowledge of applicable UMKM tax rate (PPh Final 0.5%)	25	90
Ability to calculate and record taxable income	20	85
Knowledge of tax reporting via DJP Online system	10	80
Awareness of benefits of tax compliance	35	100

Source: Processed from primary data, 2025

Through these integrated stages, the community service program not only improved participants' understanding of taxation and business management but also strengthened the implementation of green entrepreneurship practices. The program successfully demonstrated that environmental empowerment could be synergized with fiscal awareness, enabling MSMEs to operate sustainably, contribute to environmental preservation, and support national tax compliance goals.

In addition, participants successfully developed eco-friendly products with improved design, durability, and packaging. The activities not only enhanced entrepreneurial capacity but also reduced *Eichhornia crassipes* waste around the Musi River. Thus, the program simultaneously addressed environmental challenges and economic empowerment.

DISCUSSION

The results indicate that combining tax literacy education and green entrepreneurship training effectively supports the empowerment of UMKM. The significant increase in participants' tax understanding confirms that participatory learning methods—as suggested by Mardikanto (2013)—enable community members to learn actively and apply knowledge directly to their businesses. The use of Participatory Learning and Action (PLA) and Forum Group Discussion (FGD) during the sessions created an interactive learning environment where participants shared challenges and collaboratively found solutions.

The improvement in tax awareness also aligns with the findings of Putri & Rahmawati (2022), who reported that higher tax literacy positively correlates with MSME tax compliance. This program demonstrates that hands-on training and contextual simulation are more effective than lecture-based methods in changing behavior and building financial discipline among small entrepreneurs.

From an economic and environmental standpoint, this program illustrates the concept of a circular green economy (UNEP, 2021), where waste is repurposed into value-added products. Empowering MSMEs to utilize *Eichhornia crassipes* not only mitigates ecological damage but also provides alternative livelihoods, in line with the principles of sustainable local development.

Moreover, introducing tax education alongside environmental entrepreneurship promotes a holistic approach to sustainability—economic empowerment balanced with fiscal responsibility. Participants begin to view tax compliance as part of ethical and sustainable business conduct rather than a mere obligation.

In conclusion, this PKM activity successfully enhanced the knowledge and capacity of MSMEs in Palembang to manage their businesses more sustainably and transparently. It demonstrates that integrating environmental innovation with financial literacy—particularly tax management—can create resilient, compliant, and eco-conscious entrepreneurs contributing to local economic growth.

4. CONCLUSION

The community service initiative demonstrates the strategic importance of integrating environmental innovation with fiscal education to strengthen MSME sustainability. By combining green entrepreneurship with tax literacy, the program fosters a more holistic form of community empowerment that aligns economic productivity with ecological responsibility.

Strategically, this approach highlights that sustainable business transformation among MSMEs requires not only skill development but also institutional and regulatory awareness. Building fiscal responsibility through tax management education encourages formalization, access to financing, and long-term business resilience. Furthermore, fostering environmental innovation through the use of water hyacinth creates opportunities for inclusive, locally driven green economies that can reduce ecological degradation while enhancing local income.

From a policy perspective, local governments can replicate this model by integrating environmental-based MSME empowerment with fiscal literacy programs in their regional development plans. Collaborative frameworks between tax authorities, universities, and environmental agencies can institutionalize this approach through continuous mentoring, tax incentives, and the creation of green business clusters. Such policies would not only strengthen MSME competitiveness but also accelerate the transition toward a circular and sustainable local economy.

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