

Planting 500 Tree Seedlings as an Effort for Reforestation, Environmental Conservation, and Community Economic Empowerment

Indhana Faizatul Nikmah, Bustomi Ahmad, Ulfatun Nikmah
Universitas Islam Negeri Walisongo Semarang, Indonesia
2208086081@student.walisongo.ac.id

Abstract

This community service activity aims to improve environmental quality while strengthening the economic independence of the community through a program planting 500 tree seedlings in Puguh Village, Boja District, Kendal Regency. The activity was conducted on November 22, 2025, involving students from UIN Walisongo Semarang alongside the local community. The implementation method consisted of land preparation, seedling planting, and the formation of a plant maintenance group. The seedlings planted included fruit trees, spices, medicinal plants, and shade trees with both ecological and economic value. The results showed high community participation throughout all implementation stages. The program not only provided benefits in increasing vegetation cover and environmental quality, but also opened opportunities to increase community income through the utilization of productive crop harvests in the future. In addition, this activity successfully increased public awareness regarding the importance of environmental conservation as part of sustainable village development. The tree planting program is a form of community service implementation supporting the achievement of the Sustainable Development Goals (SDGs), particularly in aspects of climate action, terrestrial ecosystems, and community economic development.

Keywords: reforestation, community service, tree planting, environmental conservation, economic empowerment

Introduction

Environmental damage resulting from reduced vegetation cover, land-use changes, and increased human activities has become one of the main challenges in sustainable development. The resulting impacts include rising surface temperatures, declining soil quality, reduced water catchment areas, and an increased risk of floods and landslides (IPCC, 2023). An effective effort to mitigate these impacts is through greening/reforestation activities by planting trees capable of enhancing the ecological functions of the area while improving the quality of the living environment (FAO, 2022).

Tree planting offers wide-ranging benefits, functioning not only as a carbon sink but also to improve air quality, maintain hydrological balance, reduce soil erosion, and provide habitats for various organisms (Ministry of Environment and Forestry [KLHK], 2021). Beyond ecological benefits, selecting productive plant species such as fruits, spices, and medicinal plants can also yield economic benefits for the community through the utilization of market-valued harvests (Suharto, 2017).

The concept of community empowerment in reforestation activities plays an important role in sustainable village development. The success of an environmental conservation program is strongly influenced by the level of community participation from the planning and execution stages to plant maintenance (Chambers, 1994). A participatory approach enhances the community's sense of ownership over the program, ensuring the sustainability of the activity (Pretty, 1995). Higher education institutions hold a strategic role in realizing sustainable development through the execution of the Tri Dharma of Higher Education, particularly in the aspect of community service. Student involvement in environmental conservation activities not only benefits the community but also builds an environmentally conscious character and increases students' ability to apply knowledge directly in the field (Law Number 12 of 2012).

Based on these conditions, students from UIN Walisongo Semarang carried out a community service activity consisting of planting 500 tree seedlings in Puguh Village, Boja District, Kendal Regency. This program aims to improve environmental quality through reforestation while supporting community economic empowerment by planting various productive species that are expected to deliver sustainable economic benefits.

Methods

This study adopted the Participatory Action Research (PAR) method, which actively involved the Pakis Village community at every stage of the community service activities. This method was chosen to ensure that the implemented solutions were relevant to local needs and potentials. The implementation process began with identifying local challenges and opportunities through field observations and interviews with community members to determine the primary needs in education, the economy, and social aspects. Additionally, document analysis was conducted to obtain a

comprehensive understanding of local characteristics.

The stages of the activity consisted of:

- **Preparation:**

The preparation phase began with coordination with the village government and community leaders to determine planting locations and select plant species suited to the land conditions. Land clearing and digging of planting holes were then carried out through mutual cooperation (*gotong royong*). This phase aimed to build technical readiness while establishing community commitment toward the program (Chambers, 1994).

- **Planting Execution:**

A total of 500 tree seedlings were planted, consisting of fruit trees, medicinal plants, spices, and shade trees. The selection of plant species considered both environmental conservation aspects and economic value so that the program's benefits could be realized in the long term (KLHK, 2021).

- **Formation of Maintenance Groups:**

To ensure program sustainability, a community group was established to handle watering, fertilizing, replacing dead seedlings, and monitoring plant growth. Maintenance is a crucial factor determining the success of a reforestation program (FAO, 2022).

- **Evaluation:**

Evaluation was conducted by observing the number of successfully planted seedlings, the level of community participation, and the commitment of the maintenance group to caring for the plants. Discussions were also held with the community as a form of reflection on the activity's execution (Kemmis & McTaggart, 2014).

Results

Community Participation in the Reforestation Program

The execution of the activity demonstrated high participation from the Puguh Village community in every stage. Residents worked together with students in land preparation, seedling planting, and establishing the maintenance group. This participation level serves as an indicator of the success of the participatory approach applied in the service activity. According to Pretty (1995), active community involvement enhances program sustainability because community members feel a sense of ownership over the outcomes.

Ecological Benefits

Planting 500 tree seedlings has the potential to increase vegetation cover, which functions to improve air quality, enhance water infiltration, reduce soil erosion, and absorb carbon dioxide from the atmosphere (IPCC, 2023). In the long term, increased vegetation supports

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environmental resilience against climate change impacts while maintaining ecosystem balance (FAO, 2022).

Furthermore, the planted trees can serve as habitats for various organisms, supporting biodiversity enhancement in the village area. This condition aligns with the Sustainable Development Goals (SDGs), specifically Goal 13 (Climate Action) and Goal 15 (Life on Land) (United Nations, 2015).

Economic Impact

The selection of productive plants such as fruits, spices, and medicinal plants provides opportunities to boost the community's economy. Harvests can be utilized as a family food source or marketed to serve as an additional income stream. According to Suharto (2017), empowering communities through local resource utilization can improve economic welfare while strengthening village self-reliance.

If managed sustainably, harvests can be developed into processed products such as herbal drinks, dried spices, or fresh fruit with higher economic value. Thus, greening activities generate not only environmental benefits but also socio-economic impacts for the community.

Environmental Education

The service activity also served as an educational medium for the community regarding the importance of environmental protection. Students acted as facilitators in conveying information about the benefits of trees, planting techniques, and the importance of plant care. According to UNESCO (2020), environmental education through action-based learning effectively enhances community behavior toward environmental preservation.

Program Sustainability

The success of a reforestation program is measured not only by the number of seedlings planted but also by the survival rate of plants growing to maturity. Therefore, forming a maintenance group is a strategic step in ensuring program continuity. Collaboration among the community, village government, and universities serves as essential social capital in achieving sustainable village development (Chambers, 1994).

1. Facilitates access to customer information: Social media makes it easier for sellers to gather details about their customers, such as language preferences, age, and gender. This data helps target marketing efforts more effectively.
2. Expands market reach and target consumers: Social media features like location tags and hashtags (#) enable sellers to locate and connect with potential consumers.
3. Simplifies feedback collection: Social media platforms, such as Facebook fan pages, allow customers to provide feedback, suggestions, and inquiries in the comments or message sections. This feedback helps sellers innovate and improve.
4. Enables competitor analysis: Social media allows sellers to monitor competitor strategies and adopt superior approaches.
5. Accelerates information dissemination: Sharing information is faster through social media's "share" features.

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6. Enhances consumer accessibility: The increasing use of gadgets and advanced technology makes social media a more efficient tool for reaching consumers.
7. Boosts branding and promotion at minimal cost: Social media helps businesses enhance their brand image with minimal expenses.

To address these opportunities, the 83rd Regular KKN Student Team of Walisongo State Islamic University conducted a digital marketing socialization program in Pakis Village with the theme "Optimizing Digital Marketing to Increase Effective and Affordable MSME Competitiveness". The initiative aimed to educate MSME actors on the importance of utilizing digital technology to expand market reach.

Conclusion

The program not only provided benefits in increasing vegetation cover and environmental quality, but also opened opportunities to increase community income through the utilization of productive crop harvests in the future. In addition, this activity successfully increased public awareness regarding the importance of environmental conservation as part of sustainable village development. The tree planting program is a form of community service implementation supporting the achievement of the Sustainable Development Goals (SDGs), particularly in aspects of climate action, terrestrial ecosystems, and community economic development.

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