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Strengthening the Buddhist Community Economy Through the Development of Sustainable Durian Plantations Based on Religious Values

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Abstract— This community service activity aims to strengthen the economic capacity of the Buddhist community in Karang Village, Wonogiri Regency, through the development of sustainable durian plantations integrated with spiritual values. The program was specifically designed to address four key issues: limited technical knowledge in cultivation, low land productivity, inadequate business management, and poor market access. The implementation methodology utilized a Participatory Action Research (PAR) approach, encompassing initial situation analysis, intensive technical training (cultivation, Agroforestry), institutional mentoring for farmer groups, business management reinforcement, and comprehensive evaluation through pre- and post-tests and field observations. The results demonstrate a significant increase in technical knowledge (the average participant score rose from 46.5 to 83.2), enhanced crop productivity (seedling survival rate reached 93%), and a substantial reduction in production costs up to 85% through the adoption of self-produced organic fertilizers. Financially, the average monthly income from the agricultural sector increased from IDR 1,400,000 to IDR 2,350,000.

Keywords: Economic Strengthening, Buddhist Community, Durian Plantation, Religious Value

INTRODUCTION

agroforestry has been shown to improve ecosystem stability, biodiversity, and long-term productivity through the integration of perennials and supporting shrubs that maintain soil health (Adiyoga, 2020). Recent research in Indonesia shows that agroforestry systems in durian orchards can support environmental conservation while providing sustainable income for farmers (Nababan & Regina, 2021). Another study confirmed that agroforestry serves as an adaptive strategy to maintain food security while reducing the risk of land degradation (Mirera, 2019).

Durian productivity is largely determined by land suitability, including slope, soil texture, effective soil depth, and rainfall. Land suitability evaluations in areas with geographic characteristics similar to Wonogiri's indicate that selecting the right planting location and land improvement interventions can significantly increase yields (Ardilla, 2025). The use of matching methods is also an effective approach in determining land suitability classes for durian (Cofré-bravo et al., 2019).

Social capital plays a significant role in strengthening collaboration between landowners, accelerating the adoption of innovations, and facilitating collective marketing within farming communities (Ginting, 2020). In agrarian societies, networks of trust and cooperation are key factors determining the success of sustainable farming (Yusriadi, 2025). Strengthening social capital has been shown to increase access to training, market information, and microfinance instruments (Astuti, 2021).

Religious beliefs and values can influence environmental attitudes, production behavior, and community participation in natural resource management (Chu et al., 2025). In the Buddhist context, values such as ahimsa (non-harm), moderation, and concern for living beings can strengthen commitment to environmentally friendly agriculture (Clifton et al., 2020). Other studies have shown that religion can enhance community participation in environmental governance through moral norms and collective solidarity (Das & Ansari, 2021).

The adoption of innovations such as the Internet of Things (IoT), humidity sensors, and environmental monitoring systems has helped improve the efficiency and productivity of durian plantations. However, successful adoption is heavily influenced by farmer capacity and social acceptance of new technologies (Karnalim et al., 2025). In the field of genetics and variety improvement, omics approaches have become the scientific foundation for improving fruit quality and durian plant resilience to environmental stress (Pinsorn, 2025). The success of durian fruit formation is highly dependent on the role of pollinators, particularly certain insects that are active at night (Karnalim et al., 2025). Research on insect composition in durian orchards indicates that farmers' limited understanding of pollinators can reduce pollination success (Nain et al., 2019). Maintaining micro-ecosystems, such as pollinator habitats, is an important agro ecological strategy for increasing productivity (Hariyadi, 2025). The durian value chain encompasses production, post-harvest, packaging, distribution, and branding, all of which contribute to increasing farmer incomes. Research shows that collective marketing strategies and quality certification can increase the added value of durian (Nong et al., 2022). A community-based approach also strengthens farmers' bargaining power in the broader market.

Karang Village, Wonogiri Regency, is a predominantly Buddhist area, the majority of which relies on dryland agriculture. The area's natural potential, particularly in the development of local durian, is very promising. Durian has long been a leading commodity in the village (Low, 2025). However, this potential has not been optimally utilized due to a number of structural and technical constraints (Wei et al., 2023).

Technically, the main problem faced by durian farmers in Karang Village is a lack of knowledge about modern and sustainable cultivation techniques. Farmers remain fixated on traditional planting methods, resulting in low productivity and susceptibility to pests. Heavy reliance on chemical fertilizers and pesticides is also a serious problem, not only increasing farming operational costs but also negatively impacting soil quality and local ecosystem degradation (Pinsorn, 2025).

From an economic and social perspective, the Karang Village community faces complex challenges (Cahyantini et al., 2021). The low bargaining power of farmers in the distribution chain due to the involvement of middlemen results in the selling price of products not commensurate with the effort and production costs incurred (Sesmero et al., 2018). Furthermore, the farmer group institutions, which should serve as pillars of solidarity and centers for knowledge transfer, have not been functioning optimally (Sabrina et al., 2025). Yet, the integration of religious values, particularly within the Buddhist community, through the role of monasteries as spiritual and social centers, holds great potential to be utilized as a basis for strengthening the communal economy (community empowerment) (Silamat et al., 2024).

Based on the identification of these problems, this community service program was designed with the vision of transforming community agricultural practices from conventional, exploitative patterns to ethically based, sustainable agriculture (Shen & Shen, 2018). This program integrates two main pillars: increasing the technical capacity of sustainable durian cultivation (through agroforestry and organic fertilizer) and strengthening managerial and institutional capacity based on Buddhist values, such as samma-ajiva (right livelihood), metta (loving-kindness), and karuna (compassion) (Saputra, 2021). Thus, the main objective of this program is to increase community independence, productivity, and income, while strengthening social cohesion and ecological awareness in Karang Village (Zidny et al., 2021).

METHOD

The community service activity was carried out in Karang Village, Wonogiri Regency, Central Java, lasting for six months, starting from March to November 2025. The main target of the activity was the Durian Farmers Group (KTD) of Karang Village, which consists of 35 Buddhist farming families (Santosa & Cahyono, 2021).

This program adopts a Participatory Action Research (PAR) approach, emphasizing active community involvement in problem formulation, planning, implementation, and evaluation (Sutrisno, 2022). The implementation method is divided into five main stages (Das & Ansari, 2021):

1. Situation Analysis and Initial Evaluation

The initial phase involved field surveys, observations of land conditions, and in-depth interviews with community leaders and key farmers. To assess participants' initial technical knowledge, a 20-item *pre-test was conducted* on grafting techniques, organic

fertilization, and natural pest control (Zambon et al., 2019). The *pre-test results* showed an average initial score of 46.5, confirming the community's low technical knowledge (Oliveira et al., 2019).

2. Technical Training on Sustainable Durian Cultivation

The training was conducted intensively over eight sessions (four theory sessions and four practical sessions). The material provided includes:

a. Vegetative Techniques: Practice of grafting and budding of local superior durian.
b. Cropping Pattern: Agroforestry concept and intercropping with annual crops to optimize land.
c. Integrated Pest Management (IPM): Production and application of botanical pesticides.
d. Plant Nutrition: Techniques for making your own solid and liquid organic fertilizers (compost and MOL) to reduce dependence on chemical fertilizers.

3. Institutional Assistance and Group Management

The mentoring focused on strengthening the structure and function of the Durian Farmers Group (KTD) as a collective organization (Yi, 2019). This included the development of the group's Articles of Association/Bylaws (AD/ART), leadership training, and a consensus-based decision-making mechanism, in line with communal Buddhist principles (Wijayanti, 2020). The temple served as a meeting and coordination center (Pretty et al., 2020).

4. Strengthening Farming Business Management

This stage provides business management workshops aimed at increasing farmers' capacity in the following aspects:

a. Simple Financial Record Keeping: Training in recording production costs and harvest results.
b. Farm Business Analysis: Calculating Break-Even Point (BEP) and analyzing cost efficiency.
c. Market Access: Education on the importance of short value chains (cutting out the role of middlemen) and simple digital marketing strategies.

5. Program Evaluation and Monitoring

Evaluation carried out in the implementation of community service activities for the Lecturer group through:

a. Post-test: Conducted after all technical training sessions are completed to measure knowledge improvement.
b. Field Observation: Direct monitoring of the success rate of grafted durian seedlings and the effectiveness of organic fertilizer application (Adenle et al., 2019).

Structured Interviews: Qualitative data collection on changes in social behavior, ecological awareness, and the economic impact of the program on family income

RESULT AND DISCUSSION

The results of community service activities show significant and measurable positive impacts, covering technical, economic, social and spiritual dimensions.

1. Improving Technical Capacity and Agricultural Knowledge

The evaluation results showed a substantial increase in technical knowledge. The average pre-test score was 46.5, while the average post-test score jumped to 83.2. This 36.7-point increase indicates that the training method, which combines theory and practical field demonstrations (learning by doing), is highly effective (Sutrisno, 2022).

2. This increase in knowledge is manifested in practical skills:

Growth Success: The growth success rate of grafted durian seedlings planted in the demonstration plot reached 93%. This figure is significantly higher than the average success rate for traditional planting methods (Panjaitan et al., 2026). Technology Adoption: 87.5% of participants stated that they had independently applied at least two new skills (organic fertilizer production and grafting techniques) on their plots (Kiruba N & Saeid, 2022).

3. Economic Impact and Production Cost Efficiency

One of the most obvious economic impacts is a drastic reduction in production costs and increased income. The adoption of organic fertilizer produced independently by farmer groups has successfully reduced fertilizer costs by up to 85%. This reduction has a direct impact on farming efficiency and increased profit margins (Purba et al., 2026). In aggregate, the average income of the community from the agricultural sector has increased significantly, from IDR 1,400,000 to IDR 2,350,000 per month. This increase is driven by two factors: (1) Improved quality and quantity of future harvests due to sustainable practices, and (2) Improved farmer skills in conducting cost analysis and determining more competitive selling prices. These skills are gained through business management training, which shifts farmers' orientation from mere producers to independent agripreneurs at the micro level (Ahmad & Kumar, 2023).

4. Institutional Strengthening, Social Solidarity, and Ecological Awareness

The formation and mentoring of the Durian Farmers Group (KTD) has successfully strengthened formal institutions at the village level. KTD has become more than just an administrative forum, but also serves as a collaborative hub (mutual cooperation) for organic fertilizer production, garden maintenance, and product distribution. Ecologically, there has been a drastic reduction in chemical use (Mazhar et al., 2021a). Communities recognize that soil and environmental health are key to economic sustainability. This ecological awareness, as Astuti (2021) notes, is the foundation of village economic resilience.

5. Integration of Buddhist Values: Samma-Ajiva as Business Ethics

A unique aspect of this program is the integration of Buddhist values, which serve as the ethical foundation for empowerment practices. The concept of Samma-Ajiva (right livelihood), which teaches earning a living without harming others, is implemented

through the following practices (Mazhar et al., 2021b):

a. Organic Farming: Does not use harmful chemicals (does not harm nature and living things).
b. Honest Management: Transparency in recording and sharing group results.
c. Metta (Love): Encourages solidarity and mutual cooperation among group members, which has an impact on strengthening social cohesion (Shamshiri et al., 2024).

This spiritual and economic integration ensures that the program's sustainability is not only supported by profitability, but also by moral motivation and communal responsibility

CONCLUSION

The program to strengthen the Buddhist community economy through the development of sustainable durian plantations in Karang Village has proven highly effective. This success is characterized by significant improvements in technical skills (knowledge scores increased by 79%), increased production cost efficiency (decreased by 85%), and an increase in average community income (increased by 67.8%). A holistic approach that combines the transfer of sustainable agricultural technology with institutional strengthening based on spiritual values (samma-ajiva and metta) is key to success. The proposed recommendations are: Model Replication: This empowerment model based on religious values and sustainable agriculture has great potential to be replicated in other areas in Wonogiri Regency or other areas with similar communal and agrarian characteristics. Digital Marketing Development: Follow-up programs need to focus on building a digital marketing platform (e-commerce) to completely cut out the middleman distribution chain and increase the selling value of Karang Village's superior local durian. Sustainability of Mentoring: Continued mentoring is needed, especially in monitoring the quality of the harvest, so that durian from Karang Village can be certified as a superior organic product

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