

Building Entrepreneurship and Skills of Santri through Integrated Farming Practices at Al Hikmah Islamic Boarding School, Tasikmalaya

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ABSTRACT

Kelurahan Mugarsari, located in Tamansari Subdistrict, Tasikmalaya, has strong potential in both agriculture and Islamic education. The *Santri Tani Mandiri* program at Al Hikmah Islamic Boarding School, Tasikmalaya, integrated agricultural training and entrepreneurship to optimize land use and build self-reliance. Activities included crop cultivation, organic fertilizer, botanical pesticides, and catfish aquaculture, supported by socialization, training, and mentoring. Demonstration plots and ponds enabled experiential learning. Assessments of 20 participants (*santri*) showed improved technical skills, agribusiness knowledge, and entrepreneurial readiness. By involving pesantren leaders and local stakeholders, the program enhanced food security, developed training modules, and positioned pesantren as agro-educational hubs. This community service program was designed and implemented using a systematic approach that integrated science, technology, and participatory methods to improve the welfare and self-reliance of the pesantren community, specifically Al Hikmah Islamic Boarding School, Tasikmalaya.

INTRODUCTION

Kelurahan Mugar Sari, located in Tamansari Subdistrict, Tasikmalaya, has strong potential in both agriculture and Islamic education. *Pondok Pesantren* (Islamic Boarding School) Al Hikmah, founded in 2014, currently educates around 120 santri from various regions. Like many *pesantren* in Indonesia, it plays a dual role as a center for religious learning and a potential hub for community-based empowerment. Yet, despite sufficient land and human resources, the *pesantren* has not fully optimized its agricultural potential due to limited skills, structured programs, and institutional support.

Challenges in *pesantren*-based agribusiness include minimal exposure of *santri* to practical agricultural systems, limited entrepreneurial capacity, and weak integration of past initiatives into the curriculum. Previous efforts, such as freshwater lobster farming, lacked sustainability and long-term impact. The absence of structured entrepreneurship education and weak collaboration with higher education institutions further constrain innovation. Without academic and technological input, *pesantren* often face underutilized land and missed opportunities to become self-reliant socio-economic units. This condition reflects broader findings that *pesantren* entrepreneurship development is hampered by structural gaps in resources, guidance, and innovation (Pratama, 2024; Labunove et al., 2024).

Integrated farming emerges as a strategic response, combining crop cultivation, aquaculture, organic fertilizer, and botanical pesticide production within a circular system that improves efficiency and food security. Pairing this with entrepreneurship training in business planning, marketing, and financial literacy equips santri with skills to become agripreneurs. Universities, in line with the *Tridharma Perguruan Tinggi*, play a crucial role by providing scientific input, mentoring, and evaluation. The *Santri Tani Mandiri* program exemplifies this collaboration, integrating agro-education and entrepreneurship to bridge religious learning with real-world competencies, thereby strengthening *pesantren* as centers of sustainable community development.

IMPLEMENTATION AND METHODS

This community service program was designed and implemented using a systematic approach that integrated science, technology, and participatory methods to improve the welfare and self-reliance of the *pesantren* community, specifically Al Hikmah Islamic Boarding School, Tasikmalaya. The program was implemented in July-August 2025. The methods emphasized active involvement of santri and *pesantren* staff at every stage to ensure relevance, ownership, and sustainability. The implementation method for this program followed these stages:

1. Socialization.

In identifying potentials and challenges, surveys, interviews, and direct observation were conducted to map available land, resources, and the readiness of santri. Literature reviews and consultations with agricultural experts were also carried out to strengthen the technical foundation of the program.

2. Training.
Delivering theoretical and practical training on horticulture, composting, botanical pesticides, catfish aquaculture, agribusiness, and entrepreneurship. In designing solutions, appropriate and sustainable models of integrated farming were formulated by combining crop cultivation, organic fertilizer production, botanical pesticide development, and catfish aquaculture. Training modules were adapted to the needs of santri and pesantren teachers to link agricultural skills with entrepreneurship and agribusiness awareness.
3. Technology Application.
During implementation, a plot demonstration (*demplot*) of integrated farming was established within pesantren land. The plot included vegetable cultivation, the application of compost and botanical pesticides, and a catfish aquaculture system using tarpaulin ponds. The program also provided practical training sessions on organic fertilizer production, catfish pond management, and small-scale agribusiness planning.
4. Mentoring and Evaluation.
For monitoring and evaluation, regular assessments were conducted through pre-test and post-test instruments, field observations, and mentoring sessions. These evaluations allowed the team to measure the improvement of santri knowledge and skills while identifying technical and managerial challenges.
5. Sustainability Development.
For sustainability, selected *santri* cadres (20 people) were prepared as future trainers to continue the dissemination of knowledge within the *pesantren*. In addition, partnerships with local government, universities, and farmer groups were initiated to support long-term program continuity.

RESULTS AND DISCUSSION

Partner Profile and Initial Challenges

Al Hikmah Islamic Boarding School, located in Mugarsari, Tasikmalaya, serves as both an Islamic education institution and a potential hub for agricultural development. With approximately 120 active santri, the pesantren possesses land resources suitable for integrated farming. However, before the intervention, several key challenges were identified: (1) *santri* had limited exposure to practical agricultural skills, (2) entrepreneurial knowledge was minimal, leading to dependence on external support, and (3) the pesantren's agricultural potential was underutilized due to lack of systematic guidance and innovation. These conditions reflect findings in previous studies that highlight structural gaps in pesantren-based entrepreneurship development (Pratama, 2024; Labunove et al., 2024).

Knowledge Transfer and Skill Development

The training sessions successfully introduced *santri* to integrated farming concepts, including crop cultivation, livestock, and aquaculture within a circular resource system, as can be seen in Figure 1 (a-c). The core material emphasized how integration increases efficiency, reduces waste, and creates diverse income streams. For example, organic waste from livestock was processed into fertilizer for vegetables, while crop residues were utilized as animal feed. This approach not only demonstrated technical linkages but also taught *santri* the principle of resource optimization.

Complementary workshops strengthened these foundations. The session on organic fertilizer production (solid and liquid forms) enabled participants to learn step-by-step techniques of composting, microbial inoculant application, and nutrient balancing. Likewise, the session on botanical pesticides introduced eco-friendly alternatives to chemical control, using easily available local plants such as neem, papaya, and chili (Figure 1 d-f). Both practices align with global sustainable agriculture trends that promote low-cost and environmentally safe technologies (Meidawati, 2021).

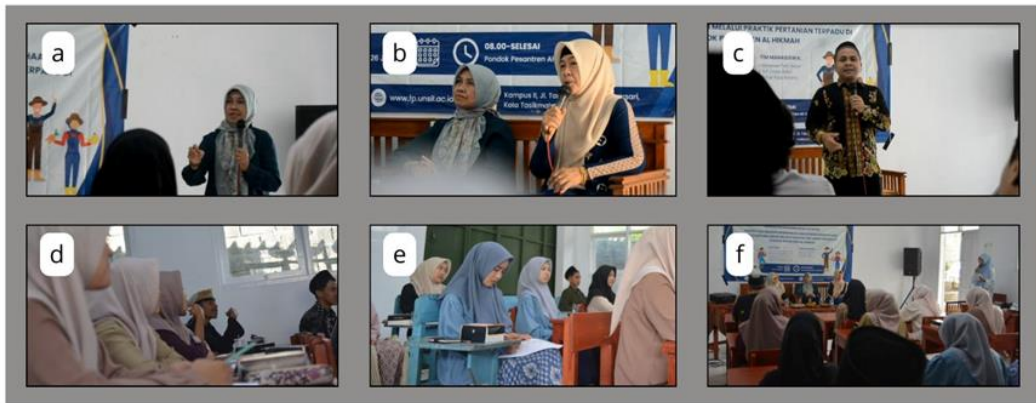


Figure 1. Transfer of Knowledge and Skill Development by Agricultural Academics to Students at the Al Hikmah Islamic Boarding School

Direct practice proved to be the most engaging aspect of the program. *Santri* actively participated in hands-on preparation of compost and pest control solutions, and later applied them in the pesantren's demonstration plot. This experiential learning fostered confidence and enhanced retention of knowledge compared to lecture-based delivery alone.

Establishment of Plot Demonstration (*Demplot*) and Fishponds

One of the most tangible outcomes was the establishment of a plot demonstration (*demplot*) as a living laboratory for integrated farming. The demplot included vegetable beds, organic fertilizer application, and pest management practices tested in real conditions (Figure 2 a-c). Initial observations indicated improved soil texture and crop vigor after the application of organic inputs. Moreover, the demplot served as a site for continuous learning and monitoring, ensuring that the knowledge imparted during training could be observed, evaluated, and refined in practice.



Figure 2. Demonstration of Plots and Catfish Cultivation in Tarpaulin Ponds by Students of the Al Hikmah Islamic Boarding School

In addition to the demplot, the program also introduced aquaculture through the construction of tarpaulin-based catfish ponds (*kolam terpal*) and the distribution of catfish seedlings (*bibit ikan lele*). This component broadened the integrated farming model by incorporating fish production as both a source of protein and a potential income stream. The tarpaulin pond system was chosen due to its low cost, portability, and suitability for pesantren environments with limited water resources.

Santri were trained in pond preparation, water quality management, feeding techniques, and disease prevention (Figure 2 d-f). The provision of fish seedlings allowed participants to immediately apply their new knowledge, reinforcing learning through practice. Early feedback showed strong enthusiasm from santri, as aquaculture was perceived as a practical and profitable venture that could complement crop production. Moreover, integration between ponds and agriculture was introduced such as using nutrient-rich pond water for irrigating vegetables enhancing the circularity of the farming system.

Evidence from Pre-Test and Post-Test Assessment

To quantitatively assess the program's effectiveness, pre- and post-test evaluations were conducted on 20 santri participants. Figure 3 presents the distribution of scores across five domains: integrated farming, organic fertilizer production, botanical pesticide production, catfish aquaculture, and entrepreneurship/agribusiness awareness.

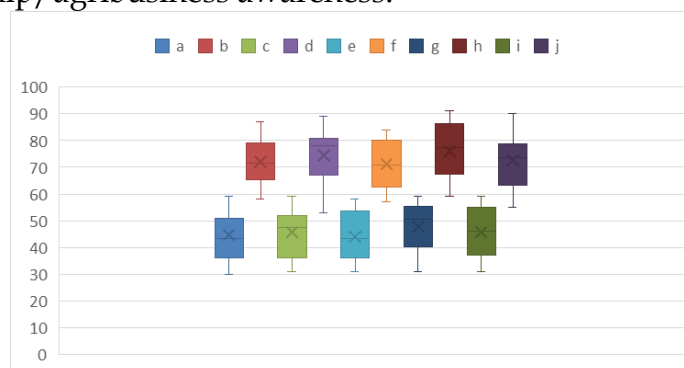


Figure 3. Boxplot of Pre-Test and Post-Test Scores on Integrated Farming and Agribusiness Training

Note: The post-test results consistently show higher medians and narrower interquartile ranges compared to pre-test values, indicating improved and more uniform knowledge after the training. Notes: a = Pre-Understanding of Integrated Farming; b = Post-Understanding of Integrated Farming; c = Pre-Knowledge of Organic Fertilizer Production; d = Post-Knowledge of Organic Fertilizer Production; e = Pre-Knowledge of Botanical Pesticide Production; f = Post-Knowledge of Botanical Pesticide Production; g = Pre-Knowledge of Catfish Aquaculture; h = Post-Knowledge of Catfish Aquaculture; i = Pre-Entrepreneurship and Agribusiness Awareness; j = Post-Entrepreneurship and Agribusiness Awareness.

Median scores increased substantially across all areas: integrated farming (45 → 75), organic fertilizer production (46 → 78), botanical pesticide production (44 → 72), catfish aquaculture (48 → 80), and entrepreneurship/agribusiness awareness (42 → 74). These results confirm that the program successfully enhanced technical skills, environmental awareness, and entrepreneurial readiness of participants.

Entrepreneurship and Agribusiness Readiness

Beyond technical agriculture and aquaculture, the program introduced entrepreneurship modules covering basic agribusiness management, marketing strategies, and financial literacy. Santri were encouraged to view agricultural and aquaculture production not only as subsistence activities but as viable business opportunities. For example, discussions focused on identifying marketable vegetables and fish, calculating simple cost-benefit analyses, and packaging products for local markets.

This training addressed a critical gap: without entrepreneurial orientation, agricultural knowledge often fails to translate into sustainable livelihoods. The santri reported increased awareness of agribusiness opportunities, and several expressed intents to replicate small-scale vegetable and catfish farming models in their home villages. These findings align with Cahyani et al. (2022) and Labobar & Malatuny (2023), who emphasizes that soft skills such as entrepreneurial mindset are essential complements to religious education.

Empowerment, Participation, and Sustainability

The participatory design of the program ensured active engagement of santri, pesantren leaders, and even local community members. Feedback sessions revealed that participants valued the relevance of agriculture and aquaculture to pesantren's vision of self-reliance. The pesantren leadership recognized the initiative as consistent with their long-term goal of establishing pesantren as independent socio-economic units.

Importantly, sustainability was addressed through the formation of santri cadres tasked with continuing integrated farming practices—including crop cultivation, organic fertilizer production, and catfish aquaculture—and mentoring their peers. The partnership between Universitas Siliwangi and *Pondok Pesantren Al Hikmah* also established a framework for ongoing mentoring and evaluation. This model aligns with the Sustainable Development Goals

(SDGs), particularly SDG 2 (Zero Hunger) and SDG 8 (Decent Work and Economic Growth), by integrating local wisdom with scientific knowledge.

Comparative Perspective and Broader Implications

Compared with similar programs in other pesantren (IPB University, 2022; Qorib, 2024), the Santri Tani Mandiri initiative demonstrates a unique integration of religious values, technical agriculture, aquaculture, and entrepreneurial training. While other pesantren initiatives have often focused narrowly on one commodity (e.g., freshwater lobster farming at Al Hikmah in 2023), this program adopted a holistic integrated farming approach. Such comprehensiveness increases resilience by diversifying income sources and reducing dependency on external inputs.

Furthermore, the experience gained by university students who facilitated the program indicates a reciprocal benefit: while santri learned practical farming and entrepreneurship, students gained pedagogical and community engagement skills. This dual impact illustrates the transformative potential of university-community collaboration under the Tridharma framework.

CONCLUSIONS AND RECOMMENDATIONS

The *Santri Tani Mandiri* program at *Pondok Pesantren Al Hikmah* addressed key issues of skill development and resource optimization. Through integrated farming training, technology application, and business education, santri were empowered to become more self-reliant and innovative. The initiative also established pesantren as a model of agro-educational community empowerment. Future programs should expand collaboration with other pesantren and stakeholders to replicate and scale this model, ensuring broader impact on local food security and socio-economic development.

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REFERENCES

- Cahyani, U. E., Masruri, S., & Hanafi, S. M. (2022). Does entrepreneurship education matter for islamic higher education students' entrepreneurial readiness?. *Jurnal Ekonomi Bisnis Dan Kewirausahaan*, 11(2), 258. <https://doi.org/10.26418/jebik.v11i2.55092>.
- Firgiyanto, R., Riskiawan, H. Y., Setyohadi, D. P. S., & Rohman, H. F. (2023). Empowerment of Pondok Pesantren Al-Ifadah Sumberjo through the implementation of integrated agribusiness systems and the development of santri entrepreneurial spirit through e-commerce-based marketing. *Dharma Raflesia: Jurnal Ilmiah Pengembangan dan Penerapan IPTEKS*, 21(2).

- IPB University. (2022). Pesantren economic independence based on agriculture. *Agro-Maritim*, 3(2022).
- Labobar, J. and Malatuny, Y. G. (2023). Soft skill development of stakpn sentani christian religious education graduates in the workplace. *Advances in Social Science, Education and Humanities Research*, 226-236. https://doi.org/10.2991/978-2-38476-060-2_23.
- Labunove Ismi, M. J. L., Nuryati, R., & Widi, R. H. (2024). Sustainability of pesantren-based agriculture in Tasikmalaya City. *Jurnal Agribisnis Indonesia*, 12(1), 45-58.
- Meidawati, M. (2021). Pesantren economic development through integrated farming (Case study at Pondok Pesantren Al-Masthuriyah Cisaat Sukabumi) (Undergraduate thesis). UIN Syarif Hidayatullah Jakarta.
- NU Jabar. (2025, May 15). Pesantren Al Hikmah in Tasikmalaya City now has 300 pairs of freshwater lobsters, waiting for harvest.
- Pratama, L. H. B. (2024). Pesantren economic development through integrated farming at Pondok Pesantren Salafiyah Modern Thohir Yasin (Undergraduate thesis). Universitas Islam Negeri Mataram.
- Qorib, F. (2024). Challenges and opportunities of collaboration between universities and communities in service programs in Indonesia. *Journal of Indonesian Society Empowerment (JISE)*, 2(2), 46-57.
- Wijiharta, W., Hadi, S. N., Murtiyani, S., & Muhajirin. (2021). Review of university collaboration to strengthen strategic partner roles. *JalinMas: Jurnal Kolaborasi dan Pengabdian Masyarakat*, 1(2), 1-5.