

Pesantren-Based Circular Economy: A Study of the Persis Agropreneur Pesantren Community

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Abstract

This research explores the concept of Pesantren-Based Circular Economy through a case study of Pesantren Persis Agropreneur in the context of achieving the Sustainable Development Goals (SDGs). By integrating religious education and sustainable entrepreneurship practices in agriculture and animal husbandry, this research aims to explain the implementation of circular economy in pesantren. The method used is a qualitative study with data collection through literature study, interviews, and observations. The results show that the implementation of circular economy principles, such as efficient resource management and waste reduction, contributes to increasing the self-reliance of santri as well as providing economic benefits to the community. In addition, this study highlights the role of pesantren in achieving the SDGs, including quality education, poverty alleviation, food security, and economic growth. The results are expected to contribute significantly to the development of pesantren as competitive and sustainable educational institutions.

Keywords: Circular Economy, Pesantren, Persis, Agropreneur

Abstrak

Penelitian ini mengeksplorasi konsep Ekonomi Sirkular Berbasis Pesantren melalui studi kasus Pesantren Persis Agropreneur dalam konteks pencapaian Tujuan Pembangunan Berkelanjutan (SDGs). Dengan mengintegrasikan pendidikan agama dan praktik kewirausahaan berkelanjutan di bidang pertanian dan peternakan, penelitian ini bertujuan untuk menjelaskan penerapan ekonomi sirkular di pesantren. Metode yang digunakan adalah studi kualitatif dengan pengumpulan data melalui studi literatur, wawancara, dan observasi. Hasil penelitian menunjukkan bahwa penerapan prinsip ekonomi sirkular, seperti pengelolaan sumber daya yang efisien dan pengurangan limbah, berkontribusi meningkatkan kemandirian santri serta memberikan manfaat ekonomi bagi masyarakat. Selain itu, penelitian ini menyoroti peran pesantren dalam mencapai SDGs, termasuk pendidikan berkualitas, pengentasan kemiskinan, ketahanan pangan, dan pertumbuhan ekonomi. Hasil penelitian diharapkan memberikan kontribusi signifikan terhadap pengembangan pesantren sebagai lembaga pendidikan berdaya saing dan berkelanjutan.

Kata Kunci: Ekonomi Sirkular, Pesantren, Persis, Agropreneur

Introduction

The circular economy is an economic model that seeks to transform traditional approaches (Kementerian PPN/Bappenas, 2021) to resource management by focusing on waste reduction and material reuse (UN, 2024). Different from the linear model that follows the 'take, make, dispose' pattern, the circular economy emphasises on product design that allows for recycling and repair, thus extending the product's life cycle (World Economic Forum, 2020). Key

principles of the circular economy include waste reduction through efficiency in production processes, the use of renewable resources, as well as the establishment of systems that support material recovery.

The application of circular economy principles in the agricultural sector (Bappenas, 2022), aims to create a more sustainable and efficient food production system. In practice, circular farming prioritises agricultural waste management, by converting crop residues and livestock waste into valuable resources, such as compost or animal feed (UNEP, 2023). Strategies such as crop rotation and diversification are also applied to improve soil fertility and reduce dependence on pesticides.

Pesantren in Indonesia have great potential as centres of education, community empowerment, and economic resilience based on Islamic values (Nurkhin et al., 2024). However, in the context of global challenges such as the environmental crisis and the need for sustainable development, the role of pesantren in the agricultural sector is still not optimal. So far, agricultural practices in pesantren are generally conventional and have not been integrated with the concept of circular economy, even though this concept is able to offer efficient and environmentally friendly solutions through the principles of waste reuse, resource efficiency, and food security (OECD, 2020).

On the other hand, circular economy has become a new paradigm adopted by many countries to answer the challenges of dependence on natural resources and environmental degradation (United Nation Economist Network, 2023). In the Indonesian context, especially in the agricultural sector, the circular economy approach has been widely discussed (Kementerian PPN/Bappenas, 2025). However, there has not been a single research or real implementation that examines or develops a pesantren-based circular economy. This is both a gap and an opportunity to pioneer a pilot project that integrates circular economy principles in pesantren agricultural activities.

This research is present to answer this gap by making the Pesantren Persis Agropreneur community the object of study. This community was chosen because it has developed pesantren farming and animal husbandry practices that are oriented towards the economic independence of santri. Although not all circular economy principles can be fully realised, especially those related to the integration of artificial intelligence, this initial step is important to build a basic framework for implementing circular economy in the pesantren environment.

Thus, this research does not only try to apply the concept of circular economy in a contextual and limited way (Mukhlisin, 2024), but also develop an implementative foundation that can be replicated by other pesantren in the future. Overall, this framework places pesantren as important actors in sustainable development through green economy pathways and environmentally sound education.

Based on the results of this study, the Pesantren Persis Agropreneur program needs to be positioned as a national pilot project for the development of a circular agricultural model based on Islamic boarding schools in Indonesia. Other Islamic boarding schools that have potential agricultural land can adopt these practices to strengthen the economic resilience of institutions, empower the surrounding community, and contribute to the sustainable development agenda. Thus, Islamic boarding schools not only function as centers of religious education, but also as driving forces for the green economy at the community level.

Method

Persis Agropreneur community. Data in this study was collected through three main techniques, namely literature study, interviews, and observation. Literature study was conducted to obtain the theoretical basis related to the concept of circular economy, sustainable agriculture, and the role of pesantren in sustainable development. Semi-structured interviews were conducted with key actors in the Pesantren Persis Agropreneur community, such as pesantren leaders, managers of farming business units, and students who are actively involved in agropreneur activities. Meanwhile, direct observation was conducted in two pesantren with the largest agropreneur base, namely PPI Al-Ma'ruf Ciwidey (Bandung Regency) and PPI Cikajang (Garut Regency), to observe the agricultural process, waste management, and entrepreneurial activities of students.

The data obtained were analysed qualitatively with a thematic approach, i.e. identifying the main themes from the interviews and field observations, and linking them with relevant circular economy principles. The analysis was conducted inductively to develop a narrative that represents circular economy practices in the context of pesantren. To ensure the validity of the data, source triangulation (comparing data from interviews, observations, and literature), member checks with resource persons, and discussions with peers were conducted (C. R, 2004). With this method, the research is expected to provide a complete and contextualised picture of the potential and challenges of circular economy implementation in the pesantren environment, as well as an initial foundation for the development of a pesantren-based circular agriculture model in Indonesia.

RESULT AND DISCUSSION

The Persis Agropreneur Pesantren Community

The Persis Agropreneur Pesantren Community was declared on February 10, 2025, in Bandung, specifically at Persis Islamic Boarding School 259 Firdaus-Pangalengan, Bandung Regency, West Java. The community comprises six initiating Islamic boarding schools (pesantren), including Persis Islamic Boarding School 110 Manbaul Huda (Bandung City), represented by Dr. Rosihan Fahmi, M.Hum.; Persis Islamic Boarding School 259 Firdaus, represented by Dr. Latif Awwaludin, SH.I, MA., ME; Persis Islamic Boarding School 97 Cikajang, represented by Gungun Sukma Gunadi, S.Ag; Persis Islamic Boarding School 16 Cipada (West Bandung), represented by Iwan Budiana, S.Pd.I; and Persis Islamic Boarding School 176 Al Ma'ruf.

The collaboration aims to establish specialized curricula in agropreneurship, with distinct goals: creating a "Potato Producer Islamic Boarding School" (producing potato experts), a "Chili Producer Islamic Boarding School" (producing chili experts), and an "Agrotourism Islamic Boarding School" (producing agricultural tourism educators). This initiative aligns with the vision of "Think Locally, Act Globally," positioning pesantren as centers of excellence that integrate local resources into global value chains (Organizational Document, see Appendix).

The community's Memorandum of Understanding (MoU) emphasizes "Building Collaborative Agropreneurship-Based Islamic Boarding Schools Focused on Empowerment in Agriculture, Animal Husbandry, and Entrepreneurship with Integrated Curriculum Education." Key points include:

1. Upholding the vision and mission of Persatuan Islam (Islamic Union) in developing human resources (SDI) rooted in religious scholarship (tafaqquh fiddin) and progressive scientific knowledge.

2. Teaching and practicing Islamic values that cherish and revitalize agricultural and economic civilization.
3. Prioritizing partnerships and advancing human resources in agropreneurship.
4. Establishing agricultural pesantren grounded in local wisdom and communal values (kejamiyyahan).
5. Cultivating students (santri) with a farmer and entrepreneurial mindset (Organizational Document, see Appendix).

Grand Idea of the Persis Agropreneur Pesantren Community

Based on geographical mapping, the pesantren are categorized into three typologies: urban, agricultural, and maritime. Economic self-sufficiency emerged as a critical solution to address financial management challenges. Rosihan Fahmi, the community's founding figure, highlights case studies from Pesantren Pangatikan (urban), Cikajang (agricultural), and Cikelet (maritime), demonstrating how regionally prioritized sectors can form the basis of autonomous economic models, as advocated by Aini (2018) in community-based economic empowerment. For instance, urban pesantren like Persis Manbaul Huda developed entrepreneurial units (e.g., coffee production and marketing using coffee plantations in Majalaya via West Java's "One Pesantren One Product" (OPOP) program). Despite lacking land, Manbaul Huda increased coffee production from 1 kg in the first year to 1 quintal by the third year, leveraging urban market access. Meanwhile, Pesantren Cikajang integrated organic farming and agricultural processing to stabilize income, while Pesantren Cikelet optimized maritime potential through sustainable aquaculture and coastal ecotourism.

Implementation requires strategic managerial planning and collaboration with local stakeholders (e.g., regional governments and NGOs) to ensure sustainability, aligning with Barney's (1991) resource-based view theory, which emphasizes institutional uniqueness as a competitive advantage. This economic autonomy transforms pesantren from donor-dependent institutions into community-based economic hubs, as articulated by Hasan (2015) in the context of Islamic social enterprise.

Redefining Pesantren: Theoretical Perspectives

The redefinition of pesantren encompasses multidimensional roles as educational, social, and dialectical institutions (Kamilah & ZH, 2023; Zh, 2021). By addressing local challenges and leveraging sectoral strengths, pesantren can evolve into community-driven economic and ethical pillars, aligning with Steenbrink's (2009) vision of pesantren as transformative agents in Indonesia's socio-religious landscape.

1. Beyond Educational Institutions:

Karl Steenbrink (2009) redefines pesantren as holistic institutions fostering religious, moral, and socio-cultural education. In agricultural contexts, pesantren address ecosystem challenges (e.g., declining farmer populations, unethical middlemen) by producing "righteous farmers" (petani *shaleh*) and reshaping local agricultural systems. Steenbrink (2010) underscores pesantren's adaptability and dominance over madrasahs or schools due to their rooted traditions and role as "miniature Islamic civilizations."

2. Social Role:

Zamakhsyari Dhofier (1994) positions pesantren as socio-cultural hubs bridging tradition and modernity, preserving Islamic heritage while adapting to contemporary demands.

3. Dialectical Spaces:

Both scholars agree that pesantren serve as dialectical arenas where traditional and contemporary ideas converge, fostering critical thinking and ethical leadership.

4. Character Development:

Pesantren cultivate discipline, resilience, and entrepreneurial spirit, producing intellectually and morally grounded individuals.

Field Findings at PPI Al-Ma'ruf and PPI Cikajang

Field observations conducted at PPI Al-Ma'ruf Ciwidey and PPI Cikajang Garut further strengthen this conclusion. At PPI Al-Ma'ruf Ciwidey which is the largest agropreneur base for Islamic boarding schools in West Java 2 hectares of waqf land has been optimized (with 1 hectare already actively used) for various types of agriculture, such as eggplant, mustard greens, tomatoes, chilies, and Arabica coffee. In addition, this Islamic boarding school develops catfish cultivation by utilizing agricultural waste as feed, thereby reducing environmental damage. PPI Al-Ma'ruf has also built partnerships with private/personal waqf donors and Bank Indonesia in developing circular agricultural greenhouses, although the integration of the digital and agricultural sectors is still in the planning stage (blueprint).

Meanwhile, PPI Cikajang develops agricultural practices based on natural learning, such as cultivating potatoes and fresh vegetables, as well as producing potato culinary products. Agricultural waste, especially from potatoes, is used as organic fertilizer. The fully managed land is the result of productive waqf, which is 100 percent used to empower Islamic boarding schools. This activity is the basis for strengthening the economy of Islamic boarding schools while forming the entrepreneurial character of students.

Contribution of Circular Economy Principle Implementation

The results of the study show that the implementation of circular economy principles in the Persis Agropreneur Islamic Boarding School community has been running from upstream to downstream in the Islamic boarding school's agricultural and fishery production chain. At the upstream stage, activities begin with the management of productive waqf land, such as at PPI Al-Ma'ruf Ciwidey which manages 2 hectares of land (1 hectare has been optimized) for the cultivation of various agricultural commodities, including nasubi eggplant, kalia mustard greens, white mustard greens, tomatoes, cayenne pepper, purple eggplant, cabbage, and curly chilies, as well as Arabica coffee cultivation. Meanwhile, at PPI Cikajang, the land is used to cultivate potatoes and fresh vegetables in an active learning-based agricultural system in nature.

Furthermore, in the production process, the Islamic boarding school implements sustainable practices with resource efficiency (Nazhifah & Rimatho, 2024). These plants are managed using minimal waste techniques and are oriented towards the use of natural inputs (Inawati et al., 2025). The production results, both in the form of fresh agricultural products and processed products (such as potato chips at PPI Cikajang), are processed directly by students as part of agribusiness-based entrepreneurship education.

At the waste management stage, the implementation of a circular economy is reflected in the innovation of utilizing agricultural waste (Chung et al., 2024). Plant and vegetable waste that does not meet quality standards is used as feed for catfish cultivation at PPI Al-Ma'ruf, while at PPI Cikajang, potato waste is processed into organic fertilizer to support soil fertility. This shows sustainable material cycle management, reducing environmental pollution while increasing production cost efficiency.

In the downstream stage, the production results are marketed to meet the internal needs of the Islamic boarding school and sold to the local market. At PPI Cikajang, students are actively involved in marketing agricultural and culinary products at the Garut city market, thus strengthening the entrepreneurial spirit of students from an early age. In addition, the economic benefits are not only felt by the Islamic boarding school, but also have an impact on the empowerment of the surrounding community involved in land management and distribution of agricultural products.

This program also shows a strategic partnership between Islamic boarding schools, individual/private endowments, and financial institutions such as Bank Indonesia, especially in the construction of facilities such as greenhouses based on circular agriculture at PPI Al-Ma'ruf. Although full integration with digital technology and artificial intelligence is still in the development stage, the blueprint has been prepared in preparation for strengthening the technology-based agricultural ecosystem in the future. Overall, the implementation of the circular economy in the Pesantren Persis Agropreneur community proves that the pesantren is able to build a sustainable agricultural chain from upstream to downstream, increase the independence of students, strengthen the economic resilience of the pesantren, and provide a real impact on the surrounding community within the framework of sustainable development.

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