



CHALLENGES AND INNOVATIONS IN MILLENNIAL FARMER REGENERATION TO ACHIEVE FOOD SECURITY

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Abstract

Indonesia's food self-sufficiency depends on the success of farmer regeneration, which is currently facing a crisis due to the declining number of young workers in the agricultural sector. This paper evaluates government policies in encouraging youth involvement and highlights the realities and innovations occurring in the field. Programs such as YESS, Agricultural KUR, and the development of Polbangtan are key initiatives to strengthen the capacity and competitiveness of young farmers. However, limited access to land, technology, and financing remains the main challenge that must be addressed immediately. Commission IV of the DPR RI can play a role in encouraging regular evaluations of youth farmer empowerment programs and ensuring that policies focus not only on increasing agricultural production but also on improving farmer welfare and ensuring sustainable regeneration. Through collaboration between the government, educational institutions, and the private sector, it is expected that farmer regeneration can accelerate, creating a generation of resilient, innovative, and highly competitive millennial farmers in the future.

Introduction

Farmer regeneration is one of the key targets in achieving food self-sufficiency and food security in Indonesia. However, the declining interest of younger generations in agriculture has become a major challenge that must be immediately addressed. According to the 2023 Agricultural Census, more than 70 percent of farmers in Indonesia are over 40 years old, while young farmers under 30 make up only about 2.14 percent (BPS, 2023). This trend reflects an aging agricultural workforce, posing a serious threat to the sustainability of national food production in the future.

The government has initiated various policies to encourage youth engagement in agriculture, including the Youth Entrepreneurship and Employment Support Services (YESS) Program and the implementation of Presidential Instruction No. 3 of 2025 on the Empowerment of Agricultural Extension Workers. These programs aim to foster young agricultural entrepreneurs and strengthen the capacity of extension workers as the driving force of regeneration. However, their

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implementation still faces challenges, such as limited land access, insufficient financing, and weak inter-institutional integration in policy execution (Arifai et al., 2025).

This paper analyzes government policies to promote millennial farmer regeneration, as well as the challenges and innovations in the field that could provide sustainable solutions for strengthening national food security.

Government Policies to Encourage Millennial Farmer Regeneration

The government recognizes that declining youth interest in agriculture threatens the sustainability of national food production. Therefore, it is committed to formulating policies that attract young people to actively engage in agriculture, aiming to develop innovative, independent, and competitive agricultural human resources (Soni, 2025).

One of the strategic measures is embedding farmer regeneration into the national agenda. This has been realized through Presidential Instruction No. 3 of 2025 on the Empowerment of Agricultural Extension Workers for Accelerating Food Self-Sufficiency, which mandates ministries and local governments to strengthen training, mentoring, and entrepreneurship programs for young people in agriculture. Additionally, the Ministry of Agriculture, through the YESS Program in collaboration with the International Fund for Agricultural Development (IFAD), provides agribusiness training, access to finance, and business incubation for young farmers aged 17–39. The program has reached thousands of participants in several provinces, including East Java, South Sulawesi, and West Java (Arifai et al., 2025).

Beyond YESS, the government has strengthened support for young farmers through various policy instruments such as Agricultural People's Business Credit (KUR), the development of Agricultural Development Polytechnics (Polbangtan) and Agricultural Vocational Schools (SMK), and the promotion of a positive farmer image through the "Cool Farmers" campaign initiated by the Ministry of Agriculture in collaboration with FAO and the Ministry of Youth and Sports. This initiative emphasizes the use of digital technologies in agriculture, including e-commerce for farm products, precision farming, and weather information systems. Through this approach, the government seeks to create a modern, adaptive, and attractive agricultural ecosystem for the younger generation (Jafar, 2025; Polbangtanmedan, 2025).

So far, the implementation of the YESS Program has shown positive outcomes. As of October 2025, the program had reached 198,556 rural youth, with 79,838 successfully developing agriculture-based businesses, and 59,628 reporting significant income increases. IFAD has commended these achievements as evidence that inter-agency collaboration can create tangible impacts in regenerating young farmers in Indonesia (Kadir, 2025).

Challenges and Innovations in Farmer Regeneration

Farmer regeneration in Indonesia faces increasingly urgent challenges driven by two interrelated structural factors. First, young people are reluctant to pursue farming due to its unappealing image, perceived limited economic prospects, and insufficient incentives to attract youth into the profession. Statistics show that most farmers are aged 45 and above, reflecting minimal generational transfer within the sector. Although the Farmer's Terms of Trade Index (NTP) has improved, from 123.57 in August 2025 to 124.36 in September 2025 (BPS, 2025), the challenge remains to ensure that farmer incomes are sufficient to attract young people to agriculture.

Second, rising urbanization and agricultural land conversion further exacerbate the shortage of young agricultural workers. Academic studies indicate that rural youth tend to prefer non-agricultural jobs in cities, where the social and economic value of employment is perceived as higher than that of farming (Pamungkas et al., 2024). Structural barriers such as limited access to land, technology, and markets worsen this condition. Land ownership for young farmers is constrained by land conversion, rising land prices, and uncertain market access, all of which deter youth from entering farming. Moreover, inadequate infrastructure, such as irrigation, storage, logistics, and low levels of technological literacy, further widens the gap between agriculture and other sectors (Rachmawati, 2025).

Various innovations and programs have started to yield results. The YESS Program, supported by IFAD and the Ministry of Agriculture, has successfully increased youth participation through training, mentoring, and access to capital and markets. In West Java alone, by mid-2025, the program had reached over 67,000 youth, generating cluster turnover of approximately IDR 32 billion annually (Utama, 2025). Meanwhile, in Pacitan Regency, the program benefited 14,598 participants as of October 2025 (Arifai et al., 2025).

The private sector has also strengthened regeneration through initiatives such as Bayer Juwiring Agriculture Research and Academy (JUARA) in Klaten, Central Java, which focuses on producing young farmers equipped with modern technology and scientific knowledge. The program involves collaboration with universities such as UGM, IPB, ITB, and Unpad, providing research facilities and practical field experience for students and young farmers. With weather monitoring devices, humidity sensors, and drone technology, the academy helps farmers make data-driven decisions, boosting productivity by up to 20 percent (Sukarelawati, 2025).

Going forward, accelerating agrarian reform, providing incentives for young farmers, and enhancing digital literacy and market access are crucial to building a fair, modern, and competitive agricultural system. At the same time, national campaigns to rebrand farming as a prestigious profession must be intensified to attract young people to the sector. These integrated efforts are expected to strengthen farmer regeneration while safeguarding Indonesia's food security and sovereignty in the future.

Conclusion

Farmer regeneration is a fundamental pillar for the sustainability of agriculture and national food security. However, on-the-ground challenges, such as limited land access, low youth interest, and inadequate technological and financial support, remain major obstacles. To accelerate regeneration, comprehensive and sustainable strategies are needed through capacity building for young farmers, technological innovation, and strengthening rural agribusiness ecosystems.

In this context, Commission IV of the DPR RI can play a key role by promoting regular evaluations of youth farmer empowerment programs and ensuring that policies focus not only on boosting agricultural production but also on improving welfare and sustaining farmer regeneration. Through collaboration between the government, educational institutions, and the private sector, farmer regeneration can progress more rapidly, creating a generation of resilient, innovative, and competitive millennial farmers in the future.

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