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“Towards multi-functional agro-ecosystems
promoting climate resilient futures”

Beyond technology transfer: Co-creating climate-resilient agriculture with Indonesian youth

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Abstract

Transitioning towards net-zero farming and securing the next generation of farmers are critical challenges for climate-resilient agroecosystems in the Global South. While conventional top-down extension models often fail to address these complex socio-ecological issues, participatory approaches offer a promising alternative.

This study evaluates two interlinked participatory extension methods—the Climate Business Field School (CBFS) and the Young Cool Farmer Challenge (YCFC)—implemented among rural youth in two agro-ecological zones in Indonesia. The evaluation utilises a holistic framework that includes profitability, motivation, and the ecological impact of farming, assessing greenhouse gas (GHG) reductions through climate-resilient agriculture.

Employing a mixed methods design, qualitative data from focus groups are analysed using MAXQDA, capturing the motivations of more than 20 CBFS participants. A purposive sample drawn from a broader pool of 137 YCFC applicants, representing 19 groups and including 73 women, was analysed to examine the socio-economic conditions, the motivations and prospects of net-zero farming.

The analysis reveals a strong synergy between the extension methods. The CBFS, a participatory training programme that equips youth with knowledge on climate change and agribusiness management, acts as a base for further development. Participants emphasised that they particularly benefited from drafting realistic business plans and mobilising village peers to apply for the YCFC. The challenge attracted various climate-resilient innovations, including permaculture and renewable energy technologies. The skills enabled not only the winners but also the other candidate groups to independently structure their farm enterprises.

Modern innovative technologies are one important motivational factor to engage youth in farming. The consequence approach of CBFS and YCFC proves an effective approach to engage youth farmers in exploring innovative net-zero farming technologies. For more sustainable impact, institutional governance is required to position young farmers as self-sustaining agents in climate change mitigation.

Keywords: Climate-smart agriculture, mixed-methods evaluation, net-zero farming, participatory extension, youth in agriculture