

Researchers identify sustainable farming practices in Indonesia

July 8 2024, by Kathrin Haimerl



The figure illustrates that the shift to organic farming methods is not linear, but that training measures can accelerate the process. Credit: Dr Nathalie Luck, University of Passau

For several years, a team of economists from the University of Passau has been investigating in Indonesia which measures are effective in ensuring that sustainable farming methods are used in the long term. They found that training, soil testing and awareness-raising are inexpensive and effective ways to support the process.

Indonesia is feeling the effects of intensive agriculture: soils have lost their fertility, [pesticide residues](#) are polluting food and groundwater. For several years, politicians and non-governmental organizations have therefore been trying to encourage a shift to sustainable farming methods—with little success so far.

"The measures are not targeted enough and do not appeal to smallholders," says Professor Michael Grimm, holder of the Chair of Development Economics at the University of Passau. Together with his former colleague Dr. Nathalie Luck, he has investigated in various projects over the past few years whether specific training and awareness-raising measures can accelerate this process.

The team examined whether [farmers](#) are more willing to adopt organic farming methods when they know more about them and recognize that this improves soil quality. The researchers have been following more than 1,100 farmers in 60 villages in three different districts of Yogyakarta and Tasikmalaya provinces for six years.

From 2018 to 2023, the economists conducted a total of four waves of data collection and a randomized field experiment with a treatment group that received training measures and a [control group](#) that was not trained.

The findings at a glance:

- The transition to organic farming methods is not linear. There are "[early adopters](#)," "dis-adopters," who start, stop in between and start again later, and "late adopters."
- Practicing the methods in a group setting is important. There has been a slump in some places as a result of the contact bans due to the pandemic, when farmers' organizations no longer come together.

- The likelihood of farmers using sustainable methods increases if they have received training with practical exercises and are sufficiently sensitized to the problems. The use of organic fertilizer without manure is 17 percentage points higher among farmers who have taken part in the training than in the control group. In comparison to the control group they also significantly reduce the use of nitrogen.
- Training programs are even more effective when they are combined with soil tests and the farmers see that the [soil quality](#) improves.

"The data show that over time, a certain level of knowledge and awareness of the problem is built and the adoption of sustainable practices increases," says Professor Grimm. However, the studies suggest that in some cases the effect of the [training](#) wears off after just one year.

"To achieve a lasting effect, we need more measures and support from local extension workers, who should carry out regular soil tests," says Dr. Luck.

More information: Sustainable farming in Indonesia: Two steps forward, one step back: [www.digital.uni-passau.de/en/b ... farming-in-indonesia](http://www.digital.uni-passau.de/en/b...farming-in-indonesia)

Policy Brief: [www.wiwi.uni-passau.de/fileadm ... /Policy_Brief-15.pdf](http://www.wiwi.uni-passau.de/fileadm.../Policy_Brief-15.pdf)

Provided by Universität Passau

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