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"Global food security and food safety:
The role of universities"

Farmer Researcher Networks as Instrument to Develop Smallholders' Adaptive Capacity

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Abstract

Densely populated countries with long coast lines in the tropical zone are highly vulnerable to climate change. Indonesia with more than 50,000 km coastline is such a hotspot and prone to multiple hazards - drought, floods, precipitation-triggered landslides and sea-level rise. Since 1990 the temperature has increased by 0.3°C per decade reaching critical heat stress levels for rice production. Rice is an important crop in Indonesia with 90 % of the rice being produced by the 37 million small-scale farmers. These smallholders are often neglected by national policies for climate change adaptation. Therefore scholars and practitioners developed a climate field school approach that has been officially recognised by the government and presented as best practice in international platforms, e.g. at the COP23 in 2017. Climate field schools and agrometeorological learning have been proven to increase the adaptive capacity of farmers.

In the climate field school approach two different kind of knowledge schools are brought together: practical knowledge of farmers and academic knowledge of university staff. Farmers are enabled to monitor, document and assess the results of on-farm trials in the field (=farmer researcher). Scholars understand how to translate and make use of academic knowledge in a solution-oriented manner, including the development of training handbooks and hands-on assessment methods. The implementing organisations act as knowledge brokers between academic and practice at local, and upscale knowledge to regional and national levels.

Tested and new climate resilient agricultural practices of rice farming are trialed on farmer's fields. It comprises the system of rice intensification, stress-tolerant rice varieties, floating paddy fields to integrated rice-azolla-duck-fish-farming. The costs and benefit analysis of selected practices from 8 villages located in West Java and South Sulawesi indicate the challenges of introducing new farming techniques. Moreover, a multi-stakeholder research process that brings farmer researchers, academic researchers and farmer organisations together requires a long-term platform to unlock its potential. Putting farmers' aspirations and needs in the centre and a multi-level solution space are the keys to success for building adaptive capacities for climate resilient agriculture.

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