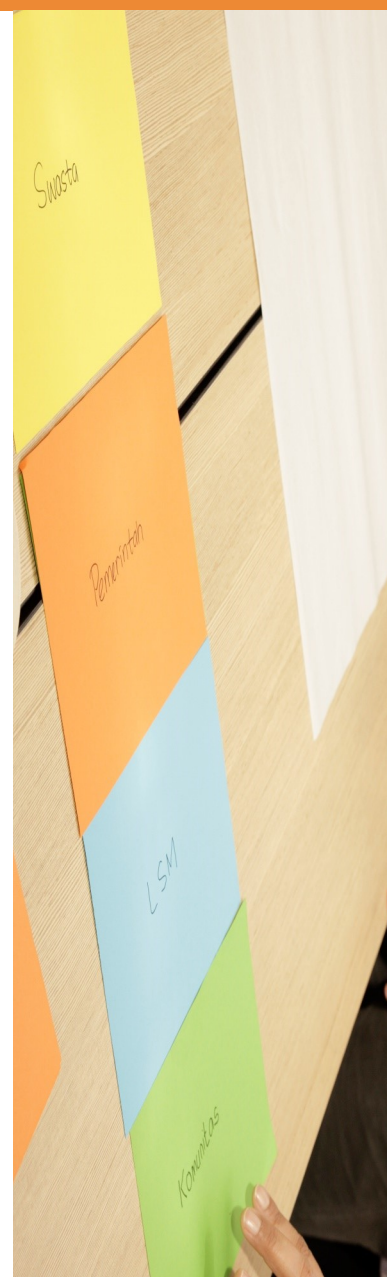


Local agricultural knowledge in organic farming

SNI 6729: 2016 recognizes organic farming as, “a set of management practices that are based on cultural, biological, and mechanical methods and aim to improve nutrient recycling from the waste of plants and animals on the farm, thus reducing the application of non-renewable resources.” According to this standard organic farming should depend on renewable and locally managed resources while also taking into account the adaptation to local conditions. Furthermore, it provides detailed information on biological and mechanical methods, such as buffer zone specifications or permitted substances for making compost, organic pesticides and pest control. However, there is less specification with respect to cultural methods, local management practices and aspects of local conditions that farmers should adapt to.

Based on our field research in Yogyakarta, there is a diversity of organic farming practices, which are informed by both scientific understanding on organic farming, and Javanese farming practices. For example, for the past few years there has been growing interest among organic farmers in Yogyakarta to experiment with Natural Farming. This farming method is able to accommodate local conditions, such as biophysical characteristics of a particular area, as well as cultural and social characteristics of farmers, and their beliefs. Given the diverse local environmental and agricultural knowledge among different ethnic groups in Indonesia and the potential of this type of knowledge in achieving a more sustainable world, we have the following policy recommendation.



TOPIC

- Context-based organic farming guidelines
- Natural Farming
- Implementation example

Natural Farming

Net-Map In Central Java, Natural Farming is influenced by the teaching of 'do nothing farming' by Masanobu Fukuoka from Japan and the Nutritive Cycle Theory introduced by Dr. Cho Han-Kyu from South Korea. The adaptability of Natural Farming contributes to its expansion in Central Java despite the different climatic conditions compared to the origin countries of Natural Farming.

In India, Natural Farming is associated with ZBNF which stands for zero-budget natural farming or zero-budget spiritual farming. Since 2016, this has been adopted as a state program in the state of Andhra Pradesh as an initiative to reduce farmers' debt and cost of agricultural production.

Recommendation

Taking into account the diversity of agricultural knowledge and local conditions in which organic farming is practiced, we propose a framework for designing context-based organic farming guidelines which :

- Is designed at the national level by the Ministry of Agriculture jointly with representatives from scientific communities, organic farming practitioners, and other relevant bodies.
- Aims to outline the specific aspects of local agricultural knowledge and terms, biophysical conditions, belief systems, and social organizations which are relevant for the implementation of organic farming policies.
- Is used to formulate context-based guidelines for the implementation of organic farming, for example at the district level, so that the guidelines are mainly used by extension workers, farmers, and scientists.

Framework for designing context-based organic farming guidelines

On the one hand, there is a clear recognition regarding the importance of local knowledge and conditions in the implementation of organic farming methods. On the other hand, there is limited information on what the terms 'local knowledge' and 'local condition' actually mean. The resulting variety of interpretations by policy makers and practitioners can hinder the effectiveness of policy implementation. Therefore, we encourage the MoA together with other stakeholders to outline aspects of local knowledge and conditions that are considered important and which can directly influence farmers' understanding and decision making in practicing organic farming.

Rationale

The framework that we propose offers guidance for the departments of agriculture at the district level and for extension offices to design the guidelines for the implementation of organic farming in their respective areas. This approach takes into account the way culture leads to variations in farmers' knowledge on farming and their environment. Important aspects are local farming practices, the significance of various plants and animals to farmers, the hierarchy of their importance, and the values attached. In addition, the guidelines can facilitate horizontal learning among farmers and vertical learning between farmers and departments of agriculture.

Based on our field research in Yogyakarta, we identified widely known Natural Farming practitioners whose farming approach emphasizes on the availability of local resources (such as diverse plants and animals), farmer-to-farmer learning, and framing agricultural knowledge according to local terms and belief systems, in this case Javanese farming practices. In addition, the focus in Natural Farming training is more on experimentation and learning by doing and less on mastering the scientific terms and explanations in doing agriculture. The pragmatic and adaptable aspects of Natural Farming encourage farmers to experiment using their pre-existing knowledge and cultural understanding and to learn from one another. Therefore, Natural Farming is an example of collaborative learning in farming that recognizes the cultural and environmental variations under which farming is practiced.



Implementation example

Similar to Natural Farming, an approach that takes into account **farmers' observation, decision making, learning capacity, and local conditions** has been implemented to a certain extent in integrated pest management (IPM) farmer field schools and more recently in the agrometeorology science field shop model.

The objectives of IPM farmer field schools are to equip farmers with necessary skills to identify the problems they face and to control pest populations by observing the natural cycle of pests' natural predators. The objective of science field shops on agrometeorology is to support farmers' empirical observation on environmental phenomena, particularly on weather events, that influence their farming practices through collaboration between agrometeorologists, anthropologists, and farmers.

These two models could potentially provide foundations for developing institutions of organic farming which are context specific and adaptable to local conditions.

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