

# PROBLEMS AND PROSPECTS OF ORGANIC FARMING IN INDONESIA: LESSON FROM FIVE DISTRICTS IN WEST JAVA PROVINCE<sup>1</sup>

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## Abstrak

Program Revolusi Hijau telah mendorong Indonesia mencapai swasembada beras pada tahun 1984. Akan tetapi, sistem ini berdampak negatif terhadap aspek sosial-ekonomi, kesehatan dan bagi lingkungan, seperti: penurunan kualitas tanah, polusi air dan masalah kesehatan yang disebabkan oleh sisa-sisa bahan kimia. Seiring dengan semakin meningkatnya kesadaran produsen dan konsumen tentang dampak negatif tersebut, berkembanglah sistem pertanian organik. Sistem pertanian tersebut dianggap lebih berkelanjutan dibandingkan dengan cara konvensional (Revolusi Hijau). Sementara itu pemerintah Indonesia merespon dengan memperkenalkan program “Go Organic 2010” pada tahun 2001. Penelitian ini bertujuan untuk menganalisis program pertanian organik kelompok tani di Provinsi Jawa Barat, Indonesia, hubungannya dengan hambatan, masalah dan potensi sistem pertanian organik.

**Kata kunci:** Pertanian organik, Revolusi hijau, Sistem pertanian berkelanjutan

## I. Background

Agricultural sector in Indonesia has its up and down eras in the country's development history. Starting in the beginning of 1970s, the New Order government considered agriculture as the main priority sector to be developed. By adopting Green Revolution, the Government of Indonesia introduced *panca usaha tani* (five efforts for rice farming, which then has been developed into *sapta usaha tani* or seven efforts for rice farming<sup>1</sup>), as the main guide for agricultural practices. With political and financial supports (i.e. input subsidies, largely for fertilizer) from the government (ADB 2006; OECD 2010), the policy has increased Indonesia's rice productivity, from 1-2 tonnes per hectare to 2-4 tonnes per hectare (Subejo 2009; Jahroh 2010).

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<sup>2</sup> *Sapta Usaha Tani* consists of the use of: 1) high yielding varieties; 2) fertilizers; 3) pesticides for plant protection; 4) irrigation; 5) improved cultivation method; 6) proper harvesting, and; 7) post-harvest handling.

The success of agricultural development reached a peak in 1985 when Soeharto (the former President of Indonesia) received an FAO award as Indonesia achieved rice self-sufficiency in 1984.

Indonesia cannot continue its agriculture institution and management system developed previously (ADB 2006; Subejo 2009). Industrial sector was put as the main priority in the country development program, and agriculture was abandoned. In the post-Soeharto era, government officials at regional level usually do not put agriculture as their first priority (Subejo 2009). In addition, the Law no.16/2006 on Extension System for Agriculture, Fisheries and Forestry has driven agricultural sector to the problem of institutional staffing and organizing. As a result, rice import increased significantly. Indonesia becomes the biggest rice-importer country. Statistical data shows that in 2009, the country imported 247,624 tonnes of rice, and increase to 627,386 tonnes in 2010 (Kementerian Pertanian 2012). The situation threatens the country's food security.

Food security is not the only challenge for Indonesian agriculture. Green Revolution implemented in the Soeharto's era has had socio-economic as well as environmental impacts, such as: soil degradation, water pollution and health problems caused by chemical residues (from pesticides) (Shiva 1991; Fox 1991). Farmers have been highly depended on industrial sector for their chemical fertilizers and pesticides causing farmers less autonomous. Overuse of N and P fertilizers in paddy fields, which is very common in Indonesia (Fox 1991; Buresh, Witt and Pasuquin 2007; ), causing several ecological impacts, such as: declining soil fertility, nutrient deficiency, soil and water pollution (due to fertilizers and pesticides), erosion and greenhouse effects (Shiva 1991; Fox 1991; ADB 2006). In addition, chemical residues in agricultural commodities due to the use of pesticides have had negative impacts to human health. These reasons along with the rising of sustainable development concept have increased people's awareness to implement sustainable agriculture.

Organic farming is considered as a method which supports sustainable agriculture. There are several advantages of organic agriculture over the conventional-Green Revolution-based one, such as: protecting human health, improving soil fertility and water quality, preventing soil erosion, generating rural employment and improving farmer's sovereignty (Shiva 1991). Despite the healthier environment and products, higher productivity and other positive impacts of organic farming, such practice has not been widely applied in Indonesia.

This paper aims to explore the prospects and problems in implementing organic farming, based on practices of farmer groups in several districts in West Java. The study is conducted using qualitative method. Both primary and secondary data are used in this study.

Primary data and information is collected by interviewing farmers practicing organic farming, experts (including NGOs involving in organic farming activities), and government officials. Statistical data, news, articles and findings from other researches are the sources for secondary data.

## **II. Organic Farming Progress in Indonesia**

Organic agriculture is defined as a production system that sustains the health of soils, ecosystems and people; relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects (IFOAM 2002). By using this definition, organic agriculture or organic farming, in its simplest form, could be considered as the cultivation method practiced by farmers in the world, including Indonesia, for centuries, before they were introduced to chemical-based inputs.

In 1984, when Green Revolution was the mainstream agriculture practice in Indonesia, Agatho Elsener introduced organic farming (Jahroh 2010). By establishing *Bina Sarana Bakti*, Elsener provide trainings for organizations and individuals that are interested in practicing organic agriculture. Following Elsener, organic farming in Indonesia was mostly supported by organizations such as: educational institutions, religion bodies, farmers' groups and other NGOs (see for example Sulaeman 2006; Jahroh 2010). Farmers practicing organic farming formed groups under the assistance of the organizations. In 1998 the first Indonesian Organic Agriculture Network (*Jaringan Kerja Pertanian Organik*) was established (Jahroh, 2010). Another network was set up in 2002, the Indonesia Organic Alliance (*Aliansi Organik Indonesia*) ([www.organicindonesia.org/08tentang.php](http://www.organicindonesia.org/08tentang.php)), with 71 members (as per May 2013). Those associations provide technical supports for their members, farmer groups, business entities or other organizations related to organic practice.

The government's support for organic farming emerged in 2001 when the Ministry of Agriculture launched "Go Organic 2010". The program targeted Indonesia to become one of the biggest exporters of organic commodities in the world ([www.pphp.deptan.go.id](http://www.pphp.deptan.go.id)). Despite the availability of the government's master plan for the program (Sulaeman 2006), several researchers considered the program has been failed due to the lack of government supports (ADB 2006; Jahroh 2010). At the moment, organic agriculture movements are mostly leaded by NGOs, educational institutions and self-organizing farmer groups.

### III. Problems and Prospects of Organic Farming: field findings

Answering the main question on problems and prospects of organic farming, data and information for analysis was collected by interviewing farmers adopting organic farming, agricultural experts and government officials. The farmers were interviewed on their experiences and perceptions about practice, benefits and problems related this eco-farming. A Focus Group Discussion (FGD) was also held in Bandung on 18-19 May 2013, as a meeting forum for the farmers. There were 26 farmers attended the forum, representing seven farmer groups from five different districts in West Java. The districts were: *Bandung*, *Bandung Barat*, *Sumedang*, *Indramayu* and *Ciamis*. Three farmer groups were from Bandung district, other districts were represented by one farmer group each.

Respondents were asked to answer the main research question: what factors causing the limited practice of organic farming in Indonesia and is there any prospect for organic agriculture in Indonesia? Questions to farmers were designed to reveal the situation when the farmers firstly were introduced to organic farming; how they then adopted the method; what problems the farmers faced after they adopted the method; how they cope with the problems; and, why they are still practicing the method (see Table 1). An open-ended questionnaire was used to collect data.

Table 1. Questions to respondents related to their practice of organic farming

Before adopting organic farming	After adopting organic farming
<ul style="list-style-type: none"> <li>-When did you know and then firstly adopt the method?</li> <li>-How were you introduced to the method?</li> <li>-What did the challenges before and during the initial step of adopting the method?</li> </ul>	<ul style="list-style-type: none"> <li>-Why were you convinced that organic farming is suitable for you?</li> <li>-What are the benefits from practicing organic farming?</li> <li>-What problems do you deal with organic farming practice?</li> <li>-How do you cope with the problems?</li> <li>-What do you suggest to solve the problems?</li> </ul>

Preliminary findings from the field is shown in Table 2. Under the questions related to problems, we categorize the respondents' answers into: input, process and output. The field data reveals several problems. First, there is lack of technical capacity of the farmers (particularly those who are recently introduced to the method).

Second, the lack of government supports have made most organic farmers organize themselves to form a group and these groups usually work with and get assistance from NGOs. Third, although the working mechanism (i.e. collaboration among the farmers and between the farmers' group and the NGOs) has reduced the farmers' problems, other problems remained, such as: continued increase of land conversion and chemical contamination from conventional agriculture fields. The latter hindered the farmers to proceed their product certification. Fourth, there is an indication in which the member(s) of the group have failed to maintain its collective objective threatening the accountability of the group.

Table 2. Respondents' answer

Questions	Respondents' answers
When did you know and then firstly adopt the method?	Introduced to organic farming; ranging from 1998 - 2013; most of the respondents tried to apply the method right after the first contact with the method.
How were you introduced to the method?	Most respondents were introduced to the method by NGO activists; few who knew the method from other farmers (usually their relatives, including parents)
What did the challenges before and during the initial step of adopting the method?	<ul style="list-style-type: none"> <li>- Low productivity</li> <li>- Social pressure from the societies</li> </ul>
Why were you convinced that organic farming is suitable for you?	Higher production and productivity; do not depend their inputs from outsider (lower production cost).
What are the benefits from organic farming practicing?	Lower production costs, thus higher income; higher autonomy
What problems do you deal in practicing organic farming?	<b>Input:</b> <ul style="list-style-type: none"> <li>- insufficient number of workers available in rural areas; low interest of the youth to work in agriculture;</li> <li>- lack of physical capitals</li> <li>- insufficient organic inputs (i.e. compost)</li> <li>- shrinking agricultural area due to land conversion</li> </ul>

	<p><b>Process:</b></p> <ul style="list-style-type: none"> <li>-chemical contamination from neighborhoods applying conventional method (i.e. water, soil and air pollution).</li> <li>-lack of technical capacity (e.g. pest control)</li> <li>-land preparation &amp; cultivation process for organic farming require more efforts &amp; time than those of conventional one</li> </ul> <p><b>Output :</b></p> <ul style="list-style-type: none"> <li>-the role of middle-men causing low(er) price of organic commodities at farmer level</li> <li>-chemical contamination has prevented the farmers to get their outputs to be certified as organic products;</li> <li>- integrity &amp; accountability of farmer groups' member(s) are challenged when demand for organic commodities is higher than their supply.</li> </ul>
How do you cope with the problems?	<ul style="list-style-type: none"> <li>-some problems remain, e.g. land size decreasing, lack of workers, chemical contamination.</li> <li>-continual assistance from the NGOs has helped the farmers to improve their technical capacity and persistently to practice the method (i.e. by bringing new-comers to the experienced ones, NGOs maintained the spirit of the first group).</li> </ul>
What do you suggest to solve the problems?	<ul style="list-style-type: none"> <li>-land conversion control</li> <li>-promote integrated organic agriculture practice (i.e animal husbandry &amp; planting)</li> <li>-more intensive organic farming promotion to reduce chemical contamination from neighborhoods;</li> <li>-encourage organic inputs availability and at the same time reduce support for chemical-based inputs)</li> <li>-establish organic farming network among the farmers groups to facilitate information dissemination e.g. technical aspects.</li> <li>-establish financial institution operated by farmers group (i.e. co-op or credit union) to support: physical capitals availability, buffer-stock agency to stabilize the price of input and output.</li> </ul>

Notwithstanding, there is a prospect of organic agriculture in Indonesia to be widely applied. This lies on the facts that the method: reduces the cost of production, increases the productivity and improves the income of the farmers. It is confirmed by the farmers' opinions collected from the field. None of the respondents plan to change their method back to conventional chemical-based agriculture. Continual supports from the NGOs would increase the farmers' capability, expand this green-farming practice, and strengthen not only the farmers' organizations but also their bargaining position. In addition to that, political and other government supports will help to remedy the problems which could only be resolved by regulation, such as: controlling land conversion.

#### **IV. Government Response**

The failure of "Go Organic 2010" made the government realized that changing the method is a big issue. Chemical-based farming during the Green Revolution has caused the high dependence of the farmers on the use of chemical fertilizers. Changing the method does not only mean changing the inputs from chemical-based inputs to compost and natural-based pesticides. It requires the alteration of the farmers' way of thinking, which then develops the motivation of the farmers to implement the method. This social change is beyond the farming method change which might not take a couple of years. Considering this challenge, the West Java provincial government began to introduce organic farming slowly through the implementation of System of Rice Intensification (SRI), Integrated Pest Management Field School/*Sekolah Lapangan Pengendalian Hama Terpadu (SLPHT)*, Integrated Crop Management Field School/*Sekolah Lapangan Pengelolaan Tanaman Terpadu (SLPTT)*. The main purpose of these programs is to develop the farmers' habits in applying organic farming.

Another challenge to change the farming method is related to the average age and educational level of the farmers. Most farmers are above 50 years old with relatively low educational background. People at that age usually are not open minded. Introducing something new is much more effective to the people at aged 30 years with a higher level of education.

Financial support is also an important matter in motivating farmers to implement organic method. New Zealand's farmers turned to organic method after they were convinced that the government would provide financial support (Fairweather, 1999). This program was even more attractive since the financial support can be used to meet the organic farmers need. The local government of West Java has provided funding to assist organizations supplying organic fertilizers and natural pesticides. The government also assisted the organizations by providing livestock to produce natural fertilizers and offered training in making compost.

Under the policy, the government expects that the farmers can take the advantages of the livestock sector integrating to organic farming system. Financial support from the government can also be used to subsidize the farmers in getting organic products certification. The international product certification is approximately 50 million rupiah (applicable for 2 years). Funding support from the government can be used to finance part of the cost.

Market is another challenge in developing organic products in Indonesia. Apart from the fact that organic products from Indonesia are very potential in international market, there is limited market within the country. Organic rice has been exported from *Tasikmalaya* to USA, Germany, and several Middle East countries. But in domestic market, demand for organic products is still very low. This is due to the higher price of organic product compared to that of chemical-based products. The government encourages private companies to support the marketing of organic products. The government argues that private sector has a wider marketing network and is able to do more attractive packaging of organic products. So that, organic farming product from Indonesia would be more competitive in the world market.

## **V. Summary**

In order to increase agricultural production and productivity, Indonesia adopted Green Revolution. Political and financial supports from the government to the policy have made Indonesia to achieve rice self-sufficient in 1984. However, the agricultural system has socio-economic, health and ecological impacts. Organic farming is considered as an alternative agricultural method which is more sustainable than that of conventional-Green Revolution-based. Despite the positive impacts of organic farming, the practice has not been widely adopted.

There are problems related to the implementation of organic agriculture, among others are: lack of technical farmers' capability (in particular for those who are new to the method), constraints in marketing organic products due to uncertified products and fragile collective-action among the member(s) of the farmer groups, and the underlying factor is the lack of the government support. Indeed, collaboration between farmers and NGOs have helped to resolve some problems, and several organic farming alliances have been established (see section II) to build networks. However, the cooperation should be improved, in particular to promote collaboration among organic farming organizations and alliances. This will generate more benefits for both farmers and consumers. Organic farming united will not only reduce transaction costs of information distribution but also strengthen the bargaining position of organic producers. On the other hand, the united could promote clearer and more reliable information to the consumers related to organic products.



Certainly, political and other government supports would develop Indonesia's organic farming, increasing the farmers' welfare as well as preserving the environment.

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### References:

- Aliansi Organik Indonesia (AOI) (URL: <http://www.organicindonesia.org>) (retrieved 10 May 2013).
- Buresh, R.J., Witt, C and Pasuquin, J.M.C, 2007. Fertilizer best management practices in Southeast Asia, paper presented at the International Fertilizer Industry Association (IFA) International Workshop on Fertilizer Best Management Practices, 7 - 9 March 2007, in Brussels, Belgium.
- Fox, J.J., 1991. Managing the ecology of rice production in Indonesia, in *Indonesia: resources, ecology and environment*, Hardjono, J. (ed.), Singapore: Oxford University Press.
- Fairweather, J. R. (1999). Understanding how farmer choose between organic and conventional production: results from new zealand and policy implications. *Agriculture and Human Values*, 16, 51-63.
- Jahroh, S. 2010. Organic farming development in Indonesia: lessons learnt from organic farming in West Java and North Sumatra, paper presented at the Innovation and Sustainable Development in Agriculture and Food (ISDA) Symposium, held in Montpellier, France, on 28 June - 1 July 2010.
- Kementerian Pertanian, 2012. *Statistik Makro Sektor Pertanian*, Pusat Data dan Sistem Informasi Pertanian.
- Shiva, V., 1991. *The Violence of the Green Revolution: third world agriculture, ecology and politics*, Penang: Third World Network.
- Subejo, 2009. Forty years after the 'Green Revolution', opinion in *the Jakarta Post*, 30 June 2009, <http://www.thejakartapost.com/news/2009/06/30/forty-years-after-green-revolution039.html> (retrieved 10 May 2013).
- Sulaeman, D., 2006. Perkembangan Pertanian Organik di Indonesia, paper presented at the Musyawarah Nasional Asosiasi Produsen Organik Indonesia (APOI), 29 September 2006, in Jakarta, [http://pphp.deptan.go.id/disp\\_informasi/1/3/44/14/perkembangan\\_pertanian\\_organik\\_di\\_indonesia.html](http://pphp.deptan.go.id/disp_informasi/1/3/44/14/perkembangan_pertanian_organik_di_indonesia.html) (retrieved 20 may 2013).