

# CURRENT STATUS OF ORGANIC FARMING IN INDONESIA

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## **Introduction**

Food security has been considered as the most important in agricultural policy in Indonesia. The Green revolution technology contributed to greatly increasing national rice productivity by using chemical inputs such as fertilizers and pesticides as its main component. However, improper management of the use of chemical inputs resulted in the negative impact on human health and the environment. Entering the 21st century, healthy lifestyle with the slogan “back to nature” has become a new trend where the people become more aware of the negative impact of chemical inputs in agriculture. Thus, organic farming system is the best option to the new lifestyle.

Organic farming is a system of agricultural practice that utilizes natural materials, such as compost, bio-fertilizers and natural pesticides as well as in situ suitable plant varieties. Organic farming systems including its product are known safe for human being and environment. The International Federation of Organic Agriculture Movements (IFOAM) defines organic agriculture as “a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity, and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationship and a good quality of life for all involved“(IFOAM, 2008). The concept of organic agriculture by USDA is “an ecological production management system that promotes and enhances biodiversity, biological cycles and soil biological activity. It is based on minimal use of off-farm inputs and on management practices that restore, maintain, and enhance ecological harmony”.

This paper discussed about current status of organic agriculture, government policy, recommendation and organic farming technique. The ANSOFT activities during 2010-2011 and financial statement will be given briefly.

## **Recent condition**

With a population of over 215 million people that is still growing, there is no doubt that organic agricultural products will have a market in the future in Indonesia. Based on the national survey, there are approximately 15 million people in Indonesia consuming organic foods.

The development of organic agriculture in Indonesia began in the early 1980s, especially in Java. It started with initiatives from NGOs that cooperated with small farmers. Organic farming was seen as an alternative to the green revolution, which degraded the environment and required high production costs for the farmer. Organic farming was also carried out to support the farmers and to avoid dependence on external inputs. Currently, about 44 farmers cultivate 102.000 ha certified organic farm for cacao, coffee, cashew nut, honey bee, vegetables, tropical fruit, spices, fisheries, herb, textile natural coloring, aromatic oil, rice and maize.

Ministry of Agriculture established a program, entitled Go Organic 2010. This three-stage program began in 2001. The year 2001 was categorized as the first step, whereby existing information on organic agriculture was consolidated. By 2005 a well-developed infrastructure shall have been established, and by 2010 Indonesia aims to be one of the biggest organic agriculture producers in the world. However, the program was not fully successfully yet.

Organic farming issues attracted many farmers and organic practicing. Since then, farmers and trades easily claimed their product as organic. Some farmers and producers claimed “organic” without sufficient knowledge and understanding about organic farming system. Beside, lack of farmers and practicing knowledge, the instrument to regulate and monitor organic farming system was not established. Therefore, target of the Go Organic program was not achieved yet. By experienced, currently all stake holders of organic farming, NGOs and government develop a linking network to provide all information about organic farming system, market and international trading.

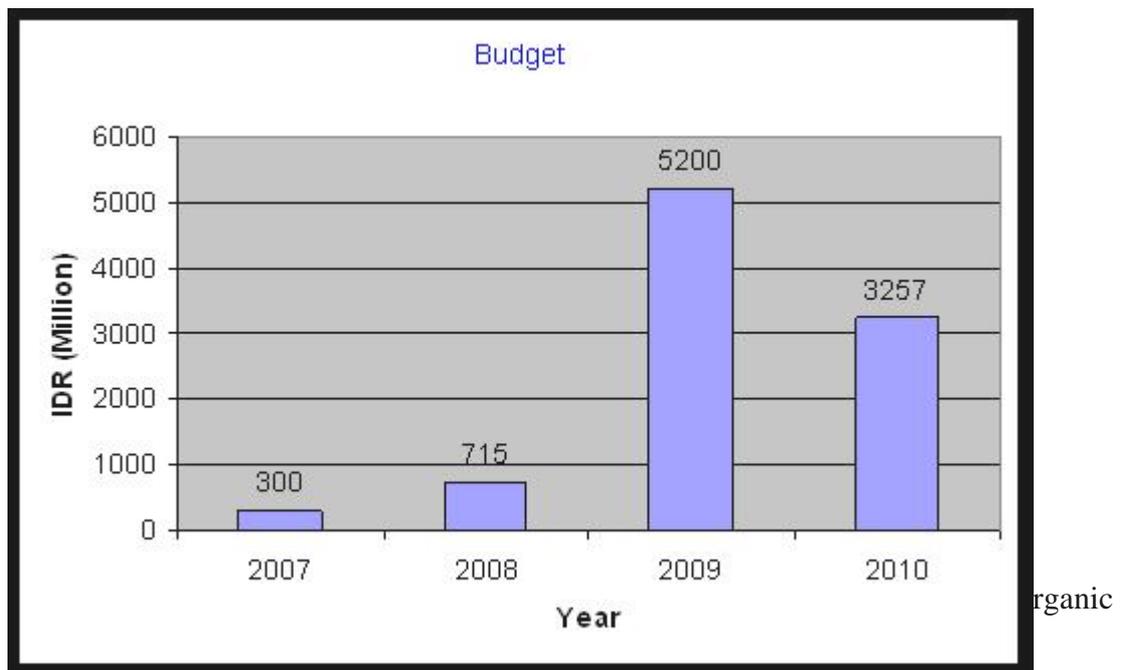
There are several ways to educate farmers, and practicing of organic farming system such as (1) education and dissemination, and (2) commitment of stakeholders to support the development of organic farming in Indonesia.

Provide information of human health, healthy food and the quality of food for farmers and organic practicing, it would change consumer preference of food from quantity oriented to be quality oriented. Government, academia, and various institutions engaged in agricultural sector need to disseminate information to the public and farmers to increase the awareness of farmers about land conservation and environmental protection outcomes that result from reduced the use of synthetic chemicals. Agricultural productivity that relies on the use of seeds, chemicals fertilizers and pesticides is not environmentally friendly and contributes to the impoverishment of farmers because they are no longer

independent and are reluctant to produce their own seeds. This campaign should be accompanied by a promotional campaign which highlights the long-term material advantages that can result from organic farming. In addition, farmers would also get health benefits from a shift to organic farming, because the additional pollution due to excessive use of chemical fertilizers and pesticides over long periods endangers the health of farmers, the environment health, and the public.

### Government Policy on Organic Farming

The Government of Republic of Indonesia is very concern in developing organic farming. One indicator for this matter can be observed by looking at the allocation budget provided by the government to facilitate organic farming operator in processing certification. As presented in Figure 1 that the financial assistance for organic farming operator to process certification has increased every year. It is a part of the national budget for organic farming certification to support OKPO (Authority of Organic Farming Competency) mandate in Direktorat Jenderal Pengolahan dan Pemasaran Hasil Pertanian (Directorate General for Processing and Marketing of Agricultural Products).



The Government has also made organic farming zoning map based on land resources suitability in 2010. Based on this map, for example the rice organic farming can be developed in some districts, such as Padang Panjang, Solok Selatan, Lima Puluh Kota, Tanah Datar in West Sumatera Province; Klaten and Sragen in Central Java Province; Bantul in Yogyakarta Province; Bantaeng and Maros in South Sulawesi Province; Poso in Central Sulawesi Province; Indramayu and Cianjur in West Java Province; Nganjuk in East

Java Province; Banjar, Hulu Sungai Tengah, and Hulu Sungai Selatan in South Kalimantan Province; and Gianyar in Bali Province.

Directorate General for Processing and Marketing of Agricultural Products provides database of organic farming operators. Up to 2010 there were 45 organic farming operators who have received certification, either individually or farmers' group. Most of them have been assisted by government in financial matter to process certification. Based on commodity the organic farming operators are consisted of 6 operators on food crops, 31 operators on horticultural crops (vegetable and fruit), 3 operators on estate crops, and 5 operators on animal husbandry. The constraint faced by farmers to process organic farming certification is financial matter. Farmer needs to spend at least US\$ 900 to get organic farming certification for 3 years life time and about more than US\$ 200 for inspection every year. That is why the Government provides financial assistance to organic farming operators.

Beside financial assistance to organic farming operator, the government through the Directorate General for Processing and Marketing of Agricultural Products has published many books related to several aspects to support organic farming development in national level, as follows:

1. Organic Food Directory
2. Guidance on Certification of Organic Food Product
3. Guidance on Inspection of Organic Food Product
4. Guidance on Training of Inspector of Organic Farming
5. Guidance on Application of standardization on crop based organic farming
6. Guidance on Application of standardization on bee organic farming
7. Guidance on Application of standardization on cattle organic farming
8. Guidance on Application of standardization on organic food processing
9. Guidance on Training of Facilitator of organic farming
10. Guidance on Training of organic farming operator
11. Guidance on Organic food labeling
12. Guidance on Registration of Certification Body of organic farming
13. Guidance on Integrity recommendation of imported organic food

This office also provides training and education for organic food inspector, facilitator, sample officer, and standardization compilation for certification body (CB). Since 2007 this office has trained 88 inspectors and 73 sample officers. In relation with harmonization and equivalency standard of organic food, this office has established cooperation with Japan (Japan Accreditation System) and The Philippines. This office organized initial meeting with the Philippines representative on July 28-29, 2011 in Bogor, West Java, Indonesia. The meeting was dealing with sharing information about accreditation and certification on organic food in both countries. The meeting was guided by IFOAM

representative and planned to be continued to make MOU on such matter. The representative of both countries may have an informal meeting to discuss MOU<sup>s</sup> draft during GOMA season meeting in Korea on September 28-29, 2011.

The Indonesian government through the Directorate General for Processing and Marketing of Agricultural Products also establishes cooperation with National Accreditation Committee (KAN) in developing and maintaining national certification body (CB) on organic farming. There are 7 accredited CB which operate to certify organic farming operator in Indonesia, as presented in Table 4.

Table 1. List of organic farming certification body which accredited by National Standardization Body (2011)

No	Name of CB and OKPO Reg. number	Address	Commodity scope of certification
1	Sucofindo (OKPO-LS-001)	Graha Sucofindo Lt 6 Jl. Raya Pasar minggu Kav. 34 Jakarta 12780. Telp (021) 7986875	Fresh product (food and secondary crops, horticulture and estate crops, livestock and its product)
2	MAL (OKPO-LS-002)	Jl. Raya Bogor No 19 Km 33,5 Cimanggis- Depok. Telp. (021) 874020	Fresh product (food and secondary crops, horticulture and estate crops, livestock and its product, including honey).
3	INOFICE (OKPO-LS-003)	Jl. Tentara Pelajar No 1 Bogor. Telp (0251) 8382641	Fresh product (food and livestock product).
4	Sumatera Barat (OKPO-LS-004)	Jl. Raden Saleh No 4 A. Padang. Telp (0751) 26017	Fresh product : food and horticulture
5	LeSOS (OKPO-LS-005)	PO BOX 03 Tawas, Mojokerto 61375. Telp. (0321) 618754	Fresh product : food and horticulture
6	BIOCERT (OKPO-LS-006)	Komplek Budi Agung Jl. Kamper Blok M No 1. Sukadamai Bogor. Telp (0251) 8316294. Email: <a href="mailto:biocert@biocert.or.id">biocert@biocert.or.id</a>	Fresh product (food and secondary crops, horticulture and estate crops, including mace, livestock and its product, including honey, and fish)
7	PERSADA (OKPO-LS-007)	Jl. Ngorojo No. 20 Komplek Polri, Gowok, Depok, Sleman Yogyakarta. Telp (0274) 488420	Fresh product (food and secondary crops, horticulture and estate crops, livestock and its product)

Based on the Accreditation and Certification Guidance established by Directorate General for Processing and Marketing of Agricultural Products and KAN, organic farming

certification process must comply with five documents, i.e. (1) KAN 901 about organic farming accreditation or ISO 65 modification, (2) SNI 6729:2010; CAC/GL 32-2007; (3) KAN 902-2006 about organic farming inspection or CAC/GL 20-1995, (4) KAN about Inspector Criteria (2006), and (5) Guidance on labeling and packaging of organic food or CODEX STAN 1-1985 (Rev. 1-1991).

Meanwhile the general steps of organic farming certification process are as follows:

1. Fill the Application form guided by CB personnel (to fulfill the SNI 6729:2010; CAC/GL 32-2007)
2. Document audit/review by team (SNI 6729:2010; CAC/GL 32-2007)
3. Contract agreement (the operator should pay the cost of certification)
4. Inspection process and report to certification commission
5. Certification commission meeting (3 or 5 members)
6. Decision on Certification (Pass with condition, Fail, Conversion)

Inspection process is as follows:

1. The inspector makes the inspection plan, based on the document audit.
2. Agree on the inspection plan (time schedule)
3. Inspection process: Opening (verification of the organization structure and personnel)
4. Inspection on the document/records and continue on the field inspection.
5. Verification on the method of production (land preparation, seeds, seedling, planting, fertilizer application, materials and techniques, pest and diseases management, harvesting, packaging, transportation, storage, labeling, selling.
6. Recording of all steps of production.
7. Recording of non compliant.
8. Closing the inspection activities (discussion on the noncompliant)
9. Inspector submits reports to certification commission.
10. Certification commission meeting (presentation of the inspection activities).
11. Conclusion meeting.
12. The operator receive the certificate, get explanation of using the formal Organic Logo, discussion on the term of condition, and fill the feedback form by operator.

### **Recommendation for organic farming**

1. Utilizing organic fertilizer should consider type and rate of fertilizer application. It was recommended to develop organic fertilizer from animal manure and plant residue and apply it for about 10-15 t/ha. This rate of fertilizer could improve productivity, environmentally safe and maintain sustainability of soil fertility. The study of economic feasibility in large scale is required.

2. To support organic fertilizer production for farmers, the government should develop a livestock program for farmers. Livestock such as cattle dung can be a source of good organic fertilizer. Farmers also need facilitation to improve their skills in terms of waste management in order to make organic fertilizer.
3. To control plant pests and diseases in organic system only bio pesticide is allowed. There is much advantage by using bio pesticide such as abundance of source, low cost and contained varied active enzyme or substrate with low level of resistance and safe for human and environment. However, due to slow effect of bio pesticide to get impact, it is recommended to use bio pesticide as preventive agent. In recent, research on bio pesticide mainly focuses on the pest controlling.
4. Farmers should adopt the integration of organic farming and cattle in a close system. The development should be directed to the development of 1) corporation to support large scale organic farming system; 2) improving human resource; 3) developing collaboration between farmers and practicing; 4) selective in choosing credible micro financial company and 5) developing organic market network

## **Organic Farming Technique**

Organic farming is an integrated system of agriculture among several component namely food crops, horticulture, plantation, nutrient management, livestock, soil and water conservation and also biological integrated pest management, that applied eco-friendly technology in order to achieve sustainable agriculture and to increase soil fertility for the future (Hartatik *et.al.*2008). Therefore, cultivation in organic farming it means doing everything in harmony with nature, through ecology and biology process in related with food linkage, nutrient cycle, managing soil fertility, integrated pest control and enriched biodiversity (Widyarti, 2009).

### Vegetable based organic farming

#### *Soil and water*

It is known that many vegetable varieties are grown in one organic farming area. The area of organic vegetable farming varies from 1 to 20 ha. It can be belong to one farmer or a group of farmers or private business which has legal aspect.

Generally, organic vegetables farming are conducted on the area having good soil fertility and close to water resources derived from natural spring water. For irrigation, they use spring water directly, but some operators/farmers are filtering irrigation water by using *Eichornia crassipes* (local name: Eceng gondok) in order to clean the water from contaminant.

Cultivating organic vegetables farming in high land, some operators/farmers applied soil and water conservation method. It requires permanent bed with size 1 m x 10 m, and surrounding this bed was covered by grass. The grass has a function to decrease soil and water erosion and the residue of the grass can be used as compost. The size of bed (1mx10m) is an ideal size because it can be easier for farmers doing their activity such as land preparation, pest control (hand picking), and also harvesting. The bed can also be cemented, specially in terrace area. For plant that susceptible to rainfall, the bed is completed with roof.

### *Cropping system*

One bed usually is planted with two or three types of plant from different family. There are several aspects that we should consider for choosing types of plant in one bed. The aspects are 1) intercropping in one bed with different age, 2) characteristic of the plants selected in order to minimize harvesting failure, 3) choose plant with different family, 3) plant pest repellent, one plant become pest repellent for the others plants, and 4) nutrient requirement.

There is an organic farming technic called *inviro valo* technic. This technic use a half of bed for vegetables and another half bed only for planting legume. The purpose of this technic is to increase soil nutrients availability. Another technic is the use a bed for planting only non productive legume for two months after 3 year cultivation. Both technics have already applied by operators/farmers.

Kind of vegetables cultivated by operators/operators are leafy vegetables (green spinach, red spinach, cabbage, leaf onion etc), fruit vegetables (chilli, eggplant, tomato, cucumber, etc), and parsnip vegetables (potato, cassava, carrot, radish, etc).

### *Seed*

Farmers usually use their own seed such as baby corn, spinach, carrot etc. However, seed that can not be produced by their own such as brocolli, cabbage, eggplant etc, farmers buy at agricultural store.

### *Organic Fertilizer*

Manure and plant residues are used as sources of organic fertilizer for plant nutrients. The farmers also produce green compost by utilizing plant residues or legume from their own field and planting crops such as *Tithonia diversitolia*.

Organic fertilizer can be produced by combining manure and plant residue. For example, farmers can combine cow manure with rice husk and then composting it for 3 months. After that, the compost is ready to applied at beds. Organic fertilizer also can be made in the bed or known as progressive compost, where about 1m<sup>2</sup> within the bed is used as the place for composting plant residues that derived from the bed itself. Organic fertilizer were applied at land preparation (takes 1 week incubation) and 1 week after

planting. Farmers can also utilize urine livestock (goat or rabbit) as a source of liquid fertilizer or it can be made of fermented manure with water (25 kg manure mix with 50 litre water then fermented for 4 days). Usually, liquid fertilizer is applied when the plant growth is not satisfied.

#### *Pest and disease*

The farmers use biopesticide for pest and disease. Plant pest repellents usually are also used as biopesticide. To make biopesticide farmers utilize *Alpimia galanga*, *Andropogon nardus*, mix and boil in about 10 litre water. After 12 hours boiling, 1 litre extract is diluted with about 10 litre water and ready to use.

#### *Harvesting and marketing*

At harvesting time/season, vegetables are harvested continuously, because in one bed there are several vegetable types with different age. After harvesting, farmers directly sell the yield to buyers. Some of the operators/farmers who already have networking sell their product to organic restaurant, ritel or direct consumer.

#### Rice based organic farming

Organic farming technology for rice consists of selecting the seeds, seedling, soil tillage, planting, row plant arrangement, integrated pest control and harvesting. The advantages of organic farming are 1) increasing plant growth and number of rice seedling specially after 3 years applied organic farming, 2) increasing plant strengthen on facing pest and disease attack, 3) increasing soil fertility, and 4) increasing the taste of organic rice is more delicious than conventional rice.

#### *Seed*

Recently, farmers have difficulties to find organic rice seeds. Rice seed for organic farming have to be pure organic. Farmers usually grow local variety rice such as Red rice, and Pandan wangi rice. Mostly, farmers get the seeds from their own field but some farmers buy seeds from agricultural store.

#### *Soil and water*

Soil tillage for organic farming commonly is similar to conventional farming done two times by ploughing using tractor until land is ready to use. Generally, rice based organic farming are carried out in area having very good soil fertility and closed to water resources derived from natural spring water.

One of the most difficult parts in developing the organic rice field is to find uncontaminated irrigation water sources, especially in flat area. Ideally in organic farming, irrigation water source come from natural spring water. That's way, many rice organic farming located on hilly areas, and the fields are characterized with rice terrace.

Rice organic farming still can be conducted in flat area by making artesis well for irrigation water source. The water from the artesis well can be flow to the rice field by using pipe. Second method, by using river for irrigation, the water has to be filtered before flow it into the rice field. The filtering method is used by growing *Eichornia crssipes* in a square size of 1 m x 1m as an inlet for water. The *Eichornia crssipes* act as biological filter because this plant can adsorb contaminant such as heavy metals and pesticides. The third method is a precipitation method to remove toxic element before water entering the field. Firstly, water is collected in several ponds, and then the water flows from one pond to another until the toxic elements were precipitated. This pond contain of microbes that have capability to binding the toxic elements. Meanwhile, bounded of rice field are made more wide so that the contaminants can be trapping on it.

#### *Pest and disease*

In order to control pest and disease attack, farmers do mechanical method by “hand picking” or using bio-pesticide if it is necessary. Bio-pesticide can be prepared by farmers themselves. It can be made of tobacco leaves, *Ageratum conyzoides* leaves, *Vicia faba* L, *Hibiscus tiliaceus* leaves, *Eupatorium inulifolium* Kunthleaves, *Curcuma xanthorrhiza* ROXB, *Andropogon nardus*, banana weevil, etc. Each farmer have their own formulation, but basically farmers mix all materials having smell and taste which pest do not like it. For example, to make 20 litres bio-pesticide they need some materials namely : 3 kg *Alpina galangal*, 3 kg ginger, 2 kg garlic, 5 kg *Ageratum conyzoides* leaves, 2 kg *Sechium edule* (*Chayote*), 2 kg *turmeric* and 2 kg *tobacco*. All materials are chopped and mixed with water, then it is fermented for one night. By next day, this bio-pesticide is ready to be applied.

Another formulation of bio-pesticide consist of 1 kg *Curcuma xanthorrhiza* ROXB, 3 kg *Thitonia diversifolia*, 300 gram *Toona sureni*. All materials are extracted with 50 litre of water. After 1 week of fermentation, it can be applied to the plant. Beside using bio-pesticide, farmers also grow plant pest repellent such as *Andropogon nardus*, tobacco, *Cosmos caudatus* Kunth, *Ocimum americanum*, *Azadirachta indicaa*, and others. These plants can be used to control pest and disease attack.

#### *Organic Fertilizer*

Organic fertilizer is a fertilizer that derived from organic matters such as manure, plant residue, and also organic waste that have already been composted. This fertilizer is to fulfil the nutrients requirement for plants and to increase soil fertility. The fertilization in organic farming is to recycle plant nutrients derived from in-situ or ex-situ organic matters, in order to improve soil fertility. Organic fertilizer has capability to improve soil structure and soil aeration and to increase water holding capacity (Simanungkalit *et.al.*, 2006). Organic fertilizer provides complete nutrients although in a small quantity. Organic fertilizer increases P availability in soil and decreases toxic metals such as Al, Fe and Mn.

The other advantages of organic matter are to increase quantity and activity of soil microorganisms, ammonification, nitrification and nitrogen fixation so that soil fertility will be improved.

Beside organic fertilizer, farmers can prepare local/in-situ microorganisms as a source of bio-fertilizers. The local microorganisms were derived from 10 kg banana weevils (chopped it first), 5 kg bamboo sprouts, 10 litre coconut water, 10 litre rice washed water, and 0.25 kg brown sugar. Mix all materials and put it into a big vat and stirred evenly. After 10 – 15 days of fermentation, the local microorganism is ready to be used.

There are two type of organic fertilizer, namely solid and liquid organic fertilizer. Solid organic fertilizer usually using cow manure, rice husks, rice straw, plant residue, lime and local microorganism. Composition of organic fertilizer depends on the availability of materials and also depends on the farmer wishes. For illustration, the farmers make organic fertilizer consists of 60% rice straw, 30% cow manure, 7% plant residue from sugar palm and other plant residues, 3% lime and rice washed water and local microorganism through composting process using heap method. Farmers make square for composting place at above ground size 2 m x 2 m, at four side of this square were fenced with bamboo 1,5 m height. First material applied on the square is rice straw with 15 cm height, than follow with cow manure about 10 – 15 cm height, then add plant residue from sugar palm and others plant residues, and spread some lime, and followed with spraying rice washed water and local microorganism. Reply all the steps until achieve 1,5 m heights. After that, it is covered to reduce the evaporation. Meanwhile, the compile of composting is reversed two times at 6 and 12 days of composting period. Compost as organic fertilizer that ready to be used have some characteristics such as odourless, crumb, having black colour, containing available nutrients for plant and having high water holding capacity (Simanungkalit *et.al.*, 2006)

Liquid fertilizer are made of rabbit/goat manure and urine, *tumeric*, *Toona sureni*, rice washed water and local microorganism. About 30 – 35 kg all materials are put in big vat, mixed it every 3 days and fermented for two weeks. After two weeks fermented, this fertilizer is ready to be used. Organic waste and weeding residues can also be processed into fertilizer by composting itself in the soil. Besides, farmers also grow *Anabaena azolla* in the rice field wich is able to symbiose with N-symbiotic bacteria. When the azolla die, it can be used as source of organic fertilizer.

### *Cropping system*

Cropping system in organic farming is rice-rice-crops and rice-rice-fallow, so that farmers only grow organic rice two times in one year. The System of Rice Intensification (SRI) can be utilized in organic rice farming. This system applies young seed (5 -12 old

day) and grow one seed in one hole plant. Plant spacing is 25 cm x 25 cm or 30 cm x 30 cm. System of Rice Intensification (SRI) is very water saving, because this system applies intermittent irrigation. But there are some farmers who do not want to apply this system because it is too risky for snail attacks. Compost of cow manure (6-12 ton/ha/season) as organic fertilizer is applied on top soil (about 20 cm depth). Farmers spread the compost over the soil and mix it when the second soil tillage is carried out. The liquid fertilizer (about 5 litre/ha/season) is applied to the soil and plant. Generally, the rice organic yield will be low at first three seasons, and it will increase along with soil fertility recovery. The yield of organic rice can be achieved up to 8 ton/ha (Cahyana, 2009).

#### *Marketing organic rice*

There is still problem in marketing organic farming product, mostly for the operators/farmers of organic farming who do not have organic certificate. Some farmers have packaged the product by themselves and selling it door to door or they can sell into organic store. There is farmer group who only sell 50% of their product and the rest for self-consumption. Payment system varies in marketing organic farming product. Mostly, it use term payment system that can affect business of organic farming. All the organic farming operators/farmers need participation from government such as guarantee or market for selling their product.

#### Fruit based organic farming

Generally, the farmers does not apply agrochemicals in the farm such as chemical fertilizer and pesticides. The farmers who cultivate fruits does not have specific technique for organic farming The farming technique itself is not something new to farmers. The old ancestors had practiced the organic technique. However, the organic farming technique for fruits is originally from the training center for organic farming in Indonesia. As described above the certification process is still in progress.

In relation with the seed or seedling procurement, most farmers buy the seeds from local agricultural shop. Some farmers get the seeds from other farmers. The farmers apply manures or cattle dung for the fruit farm. The farmers also develop local micro organisms to accelerate decomposition of organic fertilizer. All farmers also produce bio-pesticides by themselves. Farmers usually use in-situ raw materials to produce bio-pesticides, such as leaves of Fava bean, Kecubung (scrubs) or Limpaga (tree).

The organic farming technique utilized has impact to increase soil fertility, fruit taste, and decrease the cost. The price of fruits is usually higher than fruits price produced by conventional farming. Farming technique applied by Winasari farm is followed

1. Name of Organic farming : Kebun Winasari (Winasari Garden)
- \* Address : Tamansari village, Tamansari sub-district, Bogor Regency, West Java  
[kebun.winasari@yahoo.com](mailto:kebun.winasari@yahoo.com)
- \* Operator : Z.Syaiful Sulun ( owner ), Bambang ( manager)
- \* Land : 11 hectares
- \* Certification : INOFICE CB ( May 2010 )
- \* Commodity : Mixed fruits ( banana, pine apple, and papaya)
2. Farming technique
- \* Land preparation # bench construction based on land condition, the bench size varies  
# fertilizer application prior planting date  
# some land are purposively baring to take rest from planting  
# land clearing prior planting date
- \* Seed/seedling # provide seedling by developing nursery
- \* Planting # intercropping planting system  
# crop space of pine apple : 60 cm x 60 cm  
# crop space of papaya = 250 cm x 200 cm  
# banana is planted on the land-plot boundary
3. Organic fertilizer technique
1. Solid/bulky organic fertilizer
- \* Materials # cattle dung (± 500 kg)  
# soil (±100-150 kg)  
# bamboo leaves which has been decomposed (±25-30 kg)  
# shell of rice bran (± 2- 4 kg)
- \* Method :Fermentation all materials using Bokashi within 4 days
2. Liquid fertilizer :Fermentation of 25-30 kg of cattle dung + 50 litre of water within 4 - 6 days
4. Bio-pesticide technique
- \* Materials # Laja (Alpimia galanga), sereh wangi (Andopogon nardus), and Chinaberry  
(the amount of those material indicated by its ratio= 1:1:1)
- \* Method # all materials are blended and boxed  
# mixed materials are soak with water (ratio 1:10 litre)  
# mixed and refine materials are braised or boiled within 12 hours  
# boiled materials are ready to use after thinning by water (10 times)
5. Irrigation water : Spring water, fresh and not polluted water (mountain's water)
6. Product marketing : Direct selling to customers based on an order

## ANSOFT activities in Indonesia (2010-2011)

Ansoft activities in Indonesia during 2010-2011 are (1) join annual meeting in on 29-30 November 2010 in Suwon, South Korea; (2) conducting focus group discussion on 22-23 February 2011 in Bogor, Indonesia; (3) desk work study to synthesize state of the art of organic farming in Indonesia; and (4) field survey of organic farming in West Java province.

### *Ansoft annual Meeting*

The Workshop on “ANSOFT” for AFACI PAN-ASIAN PROJECT, as the first Annual Meeting, was held in November 29-30, 2010 in Suwon-South Korea. This workshop was attended by 11 principal investigators coming from Korea, Bangladesh, Cambodia, Indonesia, Lao PDR, Mongolia, Nepal, Philippines, Sri Lanka, Thailand, and Vietnam. The principal investigator from Indonesia attending this workshop was Dr. Sri Rochayati from the Indonesian Soil Research Institute, the Agency for Agricultural Research and Development. The meeting emphasized on the introduction of country report on Organic Agriculture and the discussion of the future plans of ANSOFT. In the workshop, the attendance shared information on the environment of partner institutes. The topic of the Indonesian country report was “ Overview of Organic Farming in Indonesia”. This country report discussed about (1) the development of organic farming in Indonesia, (2) regulation and policy for organic farming development, (3) regulatory authority and certification body, (4) market development, (5) stake holder roles in organic farming, (6) national organization of organic farming, (7) challenges for the development of organic farming in Indonesia, (8) constraint of organic farming development in Indonesia, (9) organic farming technology, (10) research for organic farming, (11) organic agriculture activities in Indonesia regarding on ANSOFT, and (12) ANSOFT Activities in Indonesia. All participants also visit the Extension Office and Organic Farms in Namyangju city.

### *Focus Group Discussion*

The Focus Group Discussion has been conducted on 22-23 February, 2011 in Indonesian Soil Research Institute (ISRI), Bogor, West Java. The theme of FGD is “Development of Organic Farming in Indonesia”. The main target of workshop is to get updated information related to the development of organic farming in Indonesia. The workshop was attended by 30 participants from different institutions and private sectors including Directorate General of Processing and Marketing of Agricultural Products (Ditjen P2HP) Ministry of Agriculture, Local Agricultural Service, Universities, Indonesian Medicinal and Aromatics Crops Research Institute, Indonesian Soil Research Institute, Organic Certifying Body (CB), Organic Farmers, Organic Traders, etc. The summary of FGD is described below.

### *Desk Work Study*

Besides carrying out focus group discussion, the desk work was done to synthesize the progress of organic farming in Indonesia as state of the art condition. The development of organic farming in Indonesia began in early 1986 when founding Bina Sarana Bakti (BSB) as an organic garden and the first training center in Indonesia, after it developed rapidly with several NGO activists in the Java region that is characterized by the establishment of the Network of Farmers and Fishermen (SPTN-HPS) in 1990 in Jogjakarta, Indonesia Organic Agriculture Network (Jaker PO), Organic Cooperative Sahani (1999), MAPORINA (2000).

After the Ministry of Agriculture launched a program "Go Organic 2010" in 2001, the development of organic agriculture in Indonesia began to appear rapidly with the emerge of several agencies such as Organic Alliance Indonesia (AOI, 2002), organic certification agencies BIOCert (2003), Organic Producers Association of Indonesia (APOI , 2003). Vigorously socialization and the introduction of organic farming programe as it has raises prospective small-medium scale producers in major cities such as Jakarta, Yogyakarta, Surabaya, where consumers of organic products is concentrated. With the establishment of a Competent Authority of Organic Agriculture (OKPO) in 2003 by the Ministry of Agriculture, the development of organic farming has already led according to program Go Organic 2010.

In addition to organic producers, others organic actors are also evolve such as training institutes, manufacturers supporting facilities such as fertilizers and organic pesticides, national or international certification institute, traders and exporters. All of these sectors interaction each other and must support each other so that the development of organic agriculture in Indonesia took place rapidly as expected.

The resulting organic products is very diverse, can be fresh food products such as coffee, cocoa, forest honey, nuts, fresh vegetables, fruits, palm sugar, sugar cane cave, rice, spices, shrimp, fish and processed products, bio products, cosmetics and fibers as chlothing raw materials . These products are segmented its market into the flagship product in the international market for cocoa and coffee, while in the domestic market are rice, fruits and vegetables. Based on the Statistik Pertanian Organik Indonesia/Indonesian Statistic for Organic Agriculture (2009), there were 6.680 organic producers who produce fresh products (6.568), process food products (4), and process fishery and livestock products (4).

### *Field Survey of Organic Farming*

Field survey of organic farming was carried out on June 2011 on several areas of organic farming in West Java Province, dealing with vegetables based organic farming, rice based organic farming and fruit based organic farming.

Respondents of field survey were chosen by purposive sampling based on published

information in the book of organic farming statistic and document of the District Agricultural Office. Data collection was conducted by using interviewing method and direct field observation. The survey team interviewed organic farming operator and used structural questionnaire to capture data and information needed. During field observation the team made visual documentation, such as pictures of field landscape, application technology, and current condition of crops. Besides, the team also bought a VCD of vegetable organic farming made by the famous operator of organic farming in Cisarua Sub District, Bogor Regency, West Java Province.

Total respondent interviewed were 14 operators for vegetable, 4 operators for rice and 5 operators for fruit based organic farming, respectively. Based on legal aspect of organic farming not all of the respondents having organic certification, but some of them are towards organic farming in the sense of farming practice.

#### Financial Statement

The ANSOFT project in Indonesia received through bank transfer amount of money US \$ 10,000 in 2010 and US \$ 10,000 in 2011, respectively. Based on the currency rate at upon the transfer received the amount of money was equal to IDR 89,159,705 (2010) and IDR 89,990,000 (2011). The expenditure of the budget in 2010 was IDR 89,159,705. It consisted of traveling and lump sum (41.0%), honorarium (31.3%), and overhead (27.7%). Meanwhile, the expenditure of the budget in 2011 was IDR 89,990,000 and it consisted of traveling and lump sum (74.3%), honorarium (3.3%), and overhead (22.3%). The financial statement is presented in Table 1.

Table 1. Financial expenditure of the first year (2010-2011) for ANSOFT activity in Indonesia

Description	Year 2010-2011	
	US \$	IDR
Total Received	10,000	89,159,705
100. Formation of organic working group		25,900,000
200. Travel		33,803,821 <sup>1)</sup>
300. Publication of report		6,940,000
400. Supplies and equipment		19,440,000
500. Others		13,740,955
Total Expenditure		89,874,776
Balance		732,471

Note:

<sup>1)</sup> Including traveling cost for Dr. Sri Rochayati to Korea on September 2011

## Conclusion

The development of organic food and farming in Indonesia is quite rapid, recently. In 2009 there were 6.680 organic producers who produce fresh product (6.568), process food product (4), and process fishery and livestock products (4). In 2010 the scope of organic food covered food products, horticultural products, species and medicinal products, livestock products, and plantation products. Besides, the organic farming regulation has also moved towards.

Field survey has been conducted and 23 organic farming operators were interviewed. Mostly of the respondent are vegetable based organic farming (61%), then fruit based organic farming (22%), and the rest is rice based organic farming. Based on legal aspect of organic farming not all of the respondents having organic certification, but all of them are towards organic farming in the sense of farming practice. The specific organic farming techniques are identified, especially in relation to organic fertilizer, bio-pesticide, and seed/seedlings.

Financial aspect is the main problem faced by organic farming operator in processing legal aspect of organic certification. Especially for individual farmers of food crops certification cost is too much. That is why up to 2010 only 45 organic food operators have been certified. The Government of Indonesia has supported to increase certified organic farming by providing budget and guidance to do so.

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