

A SEMINAR PAPER

ON

Prospects and Challenges of Organic Farming in Bangladesh

Course Title: Seminar

Course Code: ENS 598

SUMMER, 2018

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CHAPTER-I

INTRODUCTION

Organic Farming is an agricultural system that promotes environmentally, socially and economically sound production of food, fibre, timber etc. In this system, preservation of soil fertility is considered as the key to successful production. It escapes the use of chemo-synthetic fertilizers, pesticides and pharmaceuticals. It also includes social considerations” (IFOAM, 2005b). The US Department of Agriculture defines organic farming as “Organic farming is a production system which avoids or largely excludes the use of synthetically compounded fertilizers, pesticides, growth regulators and livestock feed additives” (Lampkin, 1990).

Organic farming (OF) is one such technology that can reduce the detrimental impacts of agro-chemicals, and is considered by many scientists to be the best form of agriculture 1960 s (Hossain, 2001). The people all over the world are expressing great concern over the indiscriminate use of chemicals. Therefore, importance is now focused on the use of organic and other by products of agriculture and industries (Mishra, 2005). Scientific researchers have showed that the reduction or non-use of synthetic chemicals can lessen environmental hazards and possible adverse effects. In contrast to synthetic fertilizers, organic fertilizers could develop the physical, chemical and biological properties of soil, and its use is important in sustaining soil productivity in the long term (Rahman H., 2007). Organic farming may be a good choice as economical method that can trim down rural poverty and curb pollution. It is also the need in the present day perspective of serious threat to our ecology and environment (Patil *et al.*, 2010). The farming method is the best means to make sure air, water and soil uncontaminated leaving the environment safe for the present and future generations (Peter, 2004). For a sound future, organic farming offers a dynamic interaction between soils, plants, humans, ecosystem and environment (IFOAM, 1996). Organic farming is the best approach in terms of maximizing cost-effectiveness and minimizing pollution (Christian *et al.*, 2005).

According to Veeress (2004), organic farming is both a philosophy and a system of agriculture which contains all agricultural systems that promotes the environmentally, socially and economically sound production of food and fiber. Organic production combines best

environmental practices, preservation of natural resources, animal welfare standards while confirming no use of genetic engineering, pesticides, additives, or fertilizers; each stage of the organic food production being controlled and certified (Chrysohoidis and Krystallis, 2005). Before the primer of chemicals, Bangladesh agriculture was fully reliant on on the organic sources of fertilizers (animal manure, crop residues and domestic wastes) to fertile the land.

For climatic adversities and the change from subsistence to commercialization, farmers are now heavily reliant on input oriented agriculture. Many researchers also suggested that organic agriculture is effective in poorer countries and it can provide socio-economic and ecologically sustainable development. It can overcome the harmful impacts of the green revolution (IFOAM, 2008).

However, the outcome of this research, it would be possible to find out what Bangladeshi farmers are practicing, what are their obstacles, how to transform their land into organic. A number of undesirable costs of modern agriculture, in terms of loss of soil fertility, loss of biodiversity, increasing health hazards, environmental pollution and other socioeconomic problems have been identified and described by Rahman (2001). The review study was presented based on following **objectives -**

- To identify the present status of organic farming in Bangladesh.
- To look for the constraints and possibilities of organic farming in Bangladesh.
- To study the standards of organic farming in international perspective.

CHAPTER -II

MATERIALS AND METHODS

This seminar paper is exclusively a review paper. It has been prepared by reviewing the various articles published in different Books, Proceedings, Abstracts, Review papers, Journals, Online Resources, MS thesis and PhD Dissertations etc. available in the library of Bangabandhu Sheikh Mujibur Rahman Agricultural University, Gazipur, Bangladesh. Valuable suggestions from honorable major professor and other resource personnel were taken into account to enrich the paper. After collecting necessary information, it was compiled and arranged chronologically for the fulfillment of the objectives.

CHAPTER-III

RIVIEW OF FINDINGS

3.1 Current world status of organic agriculture

According to the latest FiBL/IFOAM survey (2006) on certified organic agriculture, there are 32.3 million hectares of organic agricultural land (including in-conversion areas) in 160 countries. In terms of area, Oceania (12.1 million hectares) covers the top amount of land, followed by, Europe (7.8 million hectares), and Latin America (6.4 million hectares). Development of the organic industries in Australia, New Zealand and the Pacific Islands has been strongly influenced by quick growing overseas demand. On the other hand, Australia, Argentina, and the United States have the most organic land area. At present, 0.9 percent of the world's agricultural land is organic. Growth is strongest in Europe, where the area increased by almost one million hectares. The countries with the largest increases are Argentina, Turkey, and Spain (Willer and Kilcher, 2011). The land under organic management in the world has been shown in Figure 1.



Figure 1: Land under organic management by region . (Source: FiBL / IFOAM 2006)

Among all producers in the world, forty percent of them live in Asia followed by Africa, and Latin America. The countries with the most producers are India (677,257), Uganda (187,893), and Mexico (128,862). Most of this grouping of land is used for cereals including rice, followed by green fodder from arable land and vegetables. Stable crops make up approximately six percent

(2.4 million hectares) of the organic agricultural land. The most important crops are coffee after that olives, cocoa, nuts and grapes (Willer and Kilcher, 2011).

Table 1: Continent wise area, no. of producers and leading countries of organic farming (Source: Willer and Kilcher, 2011)

Continent	Area in million hectares (organic agricultural land)	No. of producers	Leading countries
Europe	7.8 million hectares	250,000 producers	Spain, Italy, Germany, Sweden, and Switzerland
Asia	2.9 million hectares	731,315 producers	China and India
Latin America	6.4 million hectares	280,000 producers	Argentina, Brazil, and Uruguay
North America	2.2 million hectares	–	USA and Canada
Oceania	12.1 million hectares	8466 producers	Australia followed by Newzealand

3.2 Present status of organic farming in Bangladesh:

“The idea of organic farming is critical in Bangladesh because when we raise the issue, the word ‘certification’ always comes to the next. Ecological farming varies place to place. Ecology includes surroundings, crops, animals, biosphere etc. Eco has very easy meaning. If I use fewer amount of fertilizer, less pesticide, compost and these are eco-friendly farming – that means to help the ecology and I am assisting the ecology, it is eco-friendly. So, eco farming differs from man to man. But, truly organic farming maintains strict rules and regulations” (Source: Hoque, 2012).

In Panchagarh, the North-western tip of Bangladesh, nearly 80 percent of the population is considered poor. Kazi Shahid Foundation (KSF) developed as an independent Socio-economic scheme promoting a dairy cow rearing model that linked with commercial organic tea farming and livelihood improvement of the poor women and their family. The farmers of Pairabandha of Mithapukur upazila in Rangpur use compost, crop residue, water hyacinths and other perishable

items instead of synthetic fertilizers and pesticide in their field. Some farmers of Kaunia are producing vermi-compost (contains high quantities of nitrogen, phosphorous and potassium) by cultivating earthworm at their home (Nazrul Islam, The Daily Star, 16th May, 2008). In a recent research showed that Integrated Pest Management (IPM) rice farming is more commercial than conventional mechanized rice farming. Farmers of Bangladesh use huge chemical inputs for getting the more production. Therefore, government and 14 NGOs have been inspiring and training farmers to introduce organic farming. About 440,000 farmers were given season long and practical training in IPM during that period. With the joint effort of government and NGOs, Bangladesh became the 2nd country in Asia under organic management (177,700 hectares – 2% of total area) (IFOAM, 2006). In Bangladesh, NGOs are helping more than govt. to adopt organic farming in Bangladesh. Proshika and Nayakrishi farmers adapted their land into organic from 12 to 15 years while BARI contact farmers from 7 years, Kazi tea – 5 years. DAE farmers are using less quantity of chemicals from 4 to 7 years (Dasgupta *et al.*, 2008).

Recently, Sahbazpur Tea Company was joined the organic club. Organic shrimp now a days is the leading and growing part in Bangladesh and WAB Trading Int. (Asia) exporting organic shrimp to global market especially Europe. The progress of organic agriculture in Bangladesh is very slow. Yet we have been able to converted only 1,162 ha of area so far, which is a mere 0.01 percent of the cultivated area (Paul and Henning, 2011).

Though government policy is always to promote “grow more food”, several eco-friendly projects have been executed through the Department of Agricultural Extension (DAE) with support from different aid agencies since 1980’s. But still there is no standard assessment and certification system exists in the country. Organic growers, organizers and sellers are working scattered. Due to lack of standards, organic products cannot compete or enter into the world market and also failed to get confidence of internal consumers. However, in Bangladesh, eco-friendly agriculture is adept from three different levels: NGO, private and government showed in fig. 2 (Source: Hoque, 2012).

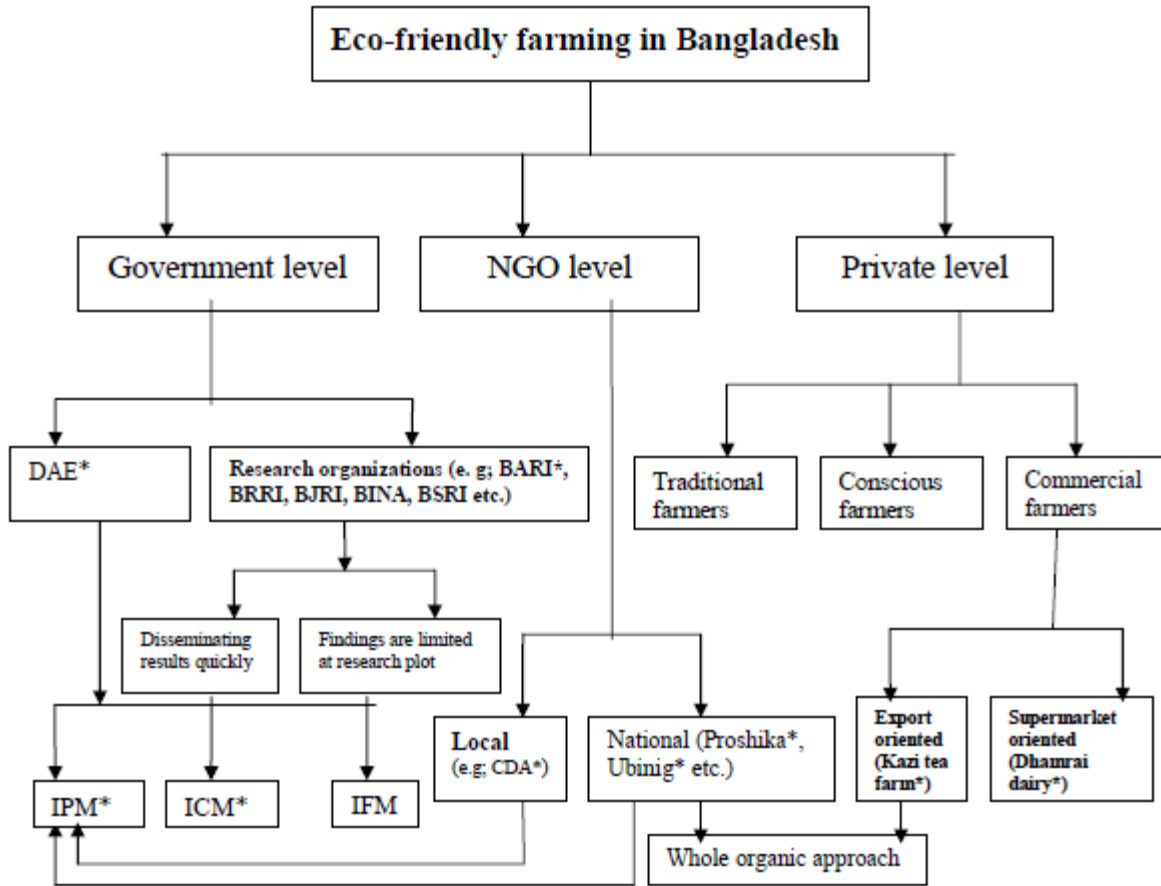


Figure 2: Organizational structure of eco-friendly farming in Bangladesh. (Source: Hoque., 2012)

3.3 Effort of GO, NGOs and private sectors towards organic farming

Many of government, non-government and private organizations are working to introduce organic farming from different level. For this, in 2006, Bangladesh was ranked second in Asia in terms of total hectares of land under organic management. The total land under organic cultivation was estimated to be about 177,700 hectares, almost 2% of the total agricultural area. In 2002, 100 organic farms were operating in Bangladesh (IFOAM and FiBL, 2006).

3.3.1 PROSHIKA: They were started in 1975 with uniting some farmer’s association. Farmers were organized for the awareness regime, leadership development; and social, economic, political - overall development. In the beginning, farmers told that they were using more and more fertilizers day by day, insects’ attacks and persisted though insecticide was used, as a result production cost increased but amount of production decreased (PROSHIKA, 2005).

3.3.2 UBINIG’s principles and Nayakrishi farmers’ practice:

After severe flood in 1988, farmers of Tangail District started a new agricultural drive with the help of UBINIG. Through this agricultural practice, farmers do not rely on modern inputs, they use organic and bio-inputs for their cultivation (Mondal *et al.*, 2010).

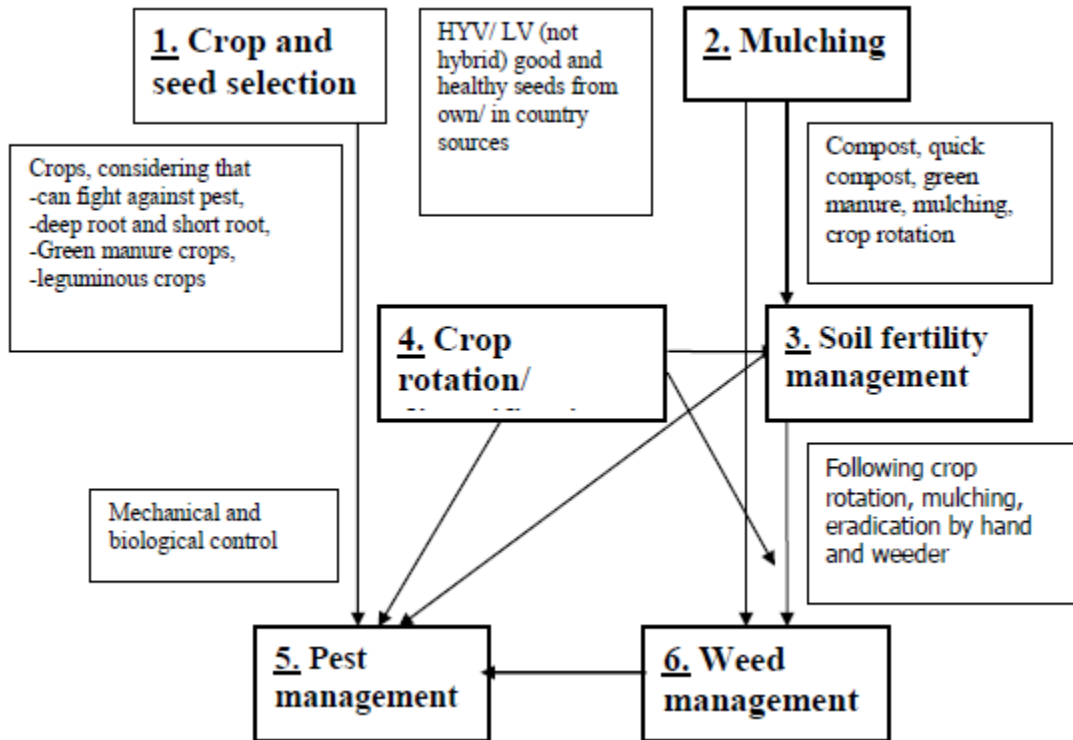


Figure 3: Main crop production practices of PROSHIKA and UBINIG (Source: Mondal *et al.*, 2010).

3.3.3 Kazi and Kazi tea farm, only certified organic farm in Bangladesh

The farm was started in 1986 in such unfertile and sandy land that tea board was doubting whether it would be possible to produce tea here or not?. At the very beginning, emphasis was given on soil improvement by relay cropping and covers cropping. Relay crops were mainly leguminous crops those were nurtured for Nitrogen fixation. Cover crops (i.e. dhaincha, pulses, and bean) were cultivated to keep soil fertility. The soil was also enclosed by mulching materials besides growing cover crops. Good quality straw was used as fodder for cow and bad quality was used for mulching. Till then, the farm is performing the same practices. The farm has dairy unit in each production area. Totally 1200 cows are reared to produce compost for organic tea farm. Herbal drugs, fresh

water, organically grown and purchased foods are given to livestock to produce biogas and compost. As the farm has got certificate from SGS and USDA, form their agreement, compost house is must in organic farm (Hossain, 2007)

3.3.4 Initiatives from government level

Where NGOs and private farms are involved entire organic or eco-friendly approach, govt. has given emphasis on pest management. Some researchers of different government research organization are trying to implement other production practices, for instance, BARI researchers. They are working separately from their own motivation. There are some researchers who are motivating the nearby farmers to accept organic practices and farmers have also implemented. Being a national research organization, Bangladesh agriculture research institute (BARI) has started research and development activities since 2006 following the IFOAM rules (Nazim Uddin *et al.*, 2007).

Table 2: Comparison of different local standards of organic practices (Source: Hoque, 2012)

Categories	PROSHIKA	UBINIG	Kazi and Kazi tea
Organic products	Vegetable and cereals crops, aquaculture, apiculture	Vegetable, fruits, oil crops, cereals.	Tea and medicinal plants
Conversion period their land into organic	12-15	12-15	5
Fertilizer management	Apply compost; follow crop rotation, green manuring, mulching.	Apply compost; follow crop rotation, green manuring, mulching	Kitchen residuals, cow dung, tree leaf.
Pest, disease, growth, weed management	Farmers select appropriate species and varieties.	Farmers don't use any type of pesticide (organic or inorganic)	plantation of medicinal plants.

3.4 Organic farming through different farming practices in Bangladesh:

The farming method is the main component of organic farming, but the major trusty sector is crop which comprising crop rotation, maintenance and enhancement of soil fertility through biological nitrogen fixation, addition of organic manure and use of soil microorganisms, crop residues, bio-pesticide, biogas slurry, waste etc. The numerous components of organic farming have been discussed in details below. (Musa *et al.*,2015)

3.4.1 Insect Management through resistant variety: Brinjal shoot and fruit borer is a public insect in Bangladesh but now BSFB resistan variety is available. In case of shoot infestation, the varieties/lines Katabegun WS, and Marich begun were found to be tolerant while the varieties/lines Amjuri, Borka, Dharola, Kajla, and Uttara were found to be moderately tolerant.

Table 3: Shoot and Fruit borer resistance brinjal varieties in Bangladesh (Source: Ahmad *et al.*, 2008).

Types of infection	Level of resistance	Varieties
Shoot infestation	Moderately tolerant	Amjuri, Borka, Dharola, Kajla, Uttara
	Tolerant	Katabagun, Marich Bagun
Fruit infestation	Moderately tolerant	Amjuri , ISD 006
	Tolerant	Thamba, Katabegun WS

In case of fruit infestation, the varieties/lines Thamba and Katabegun WS were found to be tolerant while the varieties/lines Amjuri and ISD 006 were found to be moderately tolerant.

3.4.2 Mechanical control: In this method, no insecticides are used during the life cycle of the crops. Leaf eating caterpillars in Cabbage is the major pests in Bangladesh. Two pests like Diamond back moth and armyworm are involved for damaging the Cabbage. Farmers

indiscriminately use insecticides without knowing the nature of damage. However, only 4-5 handpicking during head formation stage can reduce the infestation (Figure 3). Results shown that through handpicking it was possible to keep the infestation 5.6 % whereas using frequent insecticide application the infestation percentage raised up to 20.4%. Handpicking make sure high yield (67.5 t/ha) of cabbage compared to control with 25 % increased income.

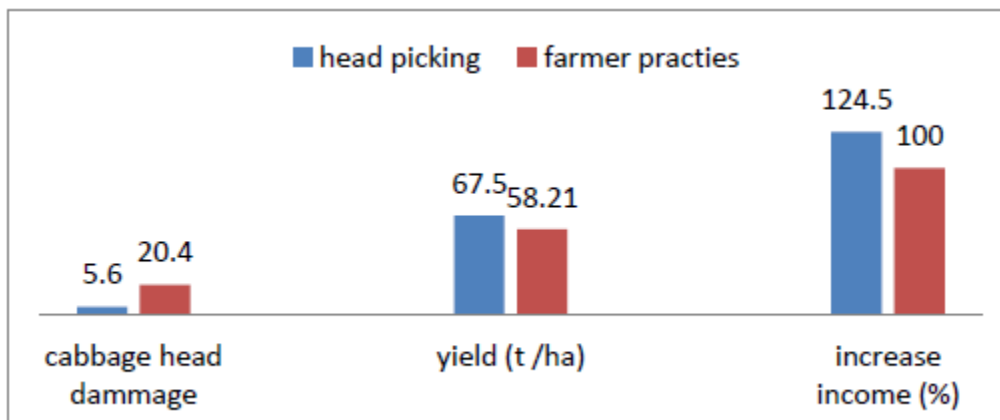


Figure 4: Combined results of hand picking and Farmers practice to control leaf-eating caterpillar during 2011-2012. (Source: Uddin *et al.*, 2013)

3.4.3 Pheromone trap: Afield study was conducted at Sher-e-Bangla Agriculture University farm to find out result of different traps on the incidence and management of cucurbit fruit fly, *Bactrocera cucurbitae* during November 2012 to April 2013. The treatments of the experiment were Pheromone trap (Plastic pot), Sticky trap, Bait trap, Funnel Pheromone trap, Light trap, Bait trap + Pheromone trap (Plastic pot) and Untreated control. The highest number of healthy fruits/plot (6.33) was documented from Bait trap + Pheromone trap (plastic pot) treated plot followed by 5.67 in Funnel Pheromone trap with no significant difference between them. The transitional number of healthy fruits/plot (4.33 - 4.67) was recorded from Pheromone trap (Plastic pot), Bait trap having no significant difference among them. Sticky trap, Light trap and Untreated control plot which was significantly lower than other treatments. Similarly, in case of percent increase of number of fruits over control, Bait trap + Pheromone trap (plastic pot) provided the best result (111.1%) having no significant variation from that of Funnel Pheromone trap (88.89%) (Table 3) but significantly differed from others. On the other hand, no increase occurred in Sticky trap and Light trap. The lowest number of infested fruits/plot (1.00) was noted from Funnel

Pheromone trap which was statistically identical to that of Bait trap + Pheromone trap (plastic pot), Bait trap and Pheromone trap. The highest number of infested fruit/plot (3.33) was recorded from untreated control plot (Source: Islam *et al.*, 2013).

Table 4: Effect of different traps on the production of healthy and infested fruit caused by cucurbit fruit fly during total cropping season

Treatments	Number of healthy fruit/plot	% increase of healthy fruit by number	Number of infested fruit /plot	% decrease of Infested fruit By number
Pheromone trap (Plastic pot)	4.67	55.55	1.33	61.11
Sticky trap	3.00	0.00	2.67	16.67
Bait trap	4.67	55.50	1.33	61.11
Funnel Pheromone trap	5.67	88.89	1.00	69.44
Light trap	3.00	0.00	2.67	19.44
Bait trap+ Pheromone trap	6.33	111.10	1.33	61.80
Only water in plastic pot	3.00	–	3.33	–

(Source: Islam *et al.*, 2013)

3.4.4 Biological control

Brinjal fruit and shoot borer, *Leucinodes orbonalis Guenee* (Lepidoptera: Pyralidae) is a vicious and first ranked insect pest constraint of eggplant production in almost eggplant growing areas of the world (Mainali *et al.*, 2013). In table 3, showed that *Trichogramma* had 11 species, *Bracon*

had 3 species and others had 2 species. Bollworm is controlled by *Trichogramma*, *Bracon*, *Chelonus*, and *Chrysoperla*. Pod borer can be controlled by *Trichogramma*, *Bracon*, *Chelonus* and *Chrysoperla*.

Table 5: Some Species and number of bio-control agent (Source: Asre *et al.*, 2014).

Bio-Control Agents	No of species	Pest
<i>Trichogramma</i>	11	Bollworms and Borers
<i>Bracon</i>	3	Bollworm and Pod borer
<i>Chelonus</i>	2	Bollworm and fruit borer
<i>Chrysoperla</i>	2	Sucking pest ,bollworm
<i>Neochetina</i>	2	Weed
<i>Encarsia</i>	2	White Fly, Scale insect

3.4.5 BARI developed organic fertilizer (BAOFER)

Olericulture Division of Horticulture Research Center, BARI, Gazipur has established an organic fertilizer namely, biologically active organic fertilizer (BAOFER) is constituted of rice bran, mustard oil cake, fish debris, poultry refuge, ash, water, agricultural soil and half composted cow dung (Source: Musa *et al.*, 2015).

3.5 Organic farming and food security

Food secured means the quantity and quality of food available globally, nationally and locally, access to food for people at all time, and prepared the food safely. It was found that organic farming has the biggest potential to rise yields in marginal lands or lands under traditional agriculture (IFAD, 2003; IFAD 2005b). A nation is considered food secure based on four measurements that includes food availability, food access, food stability and food utilization. A household is assumed as food secured when it can produce or able to buy sufficient food to meet all of its members' nutrition needs (Scialabba, 2007). Not only the producers, but the poor consumers can also attain

food security. If farmers don't use chemicals, their costs of production will decrease. They can sell their products at lower prices and clients also would pay lower price. With involved organic management, it would be possible to keep the price of rice within Tk. 20 whereas consumers are now paying Tk. 40-50 (Source: Hoque, 2012).

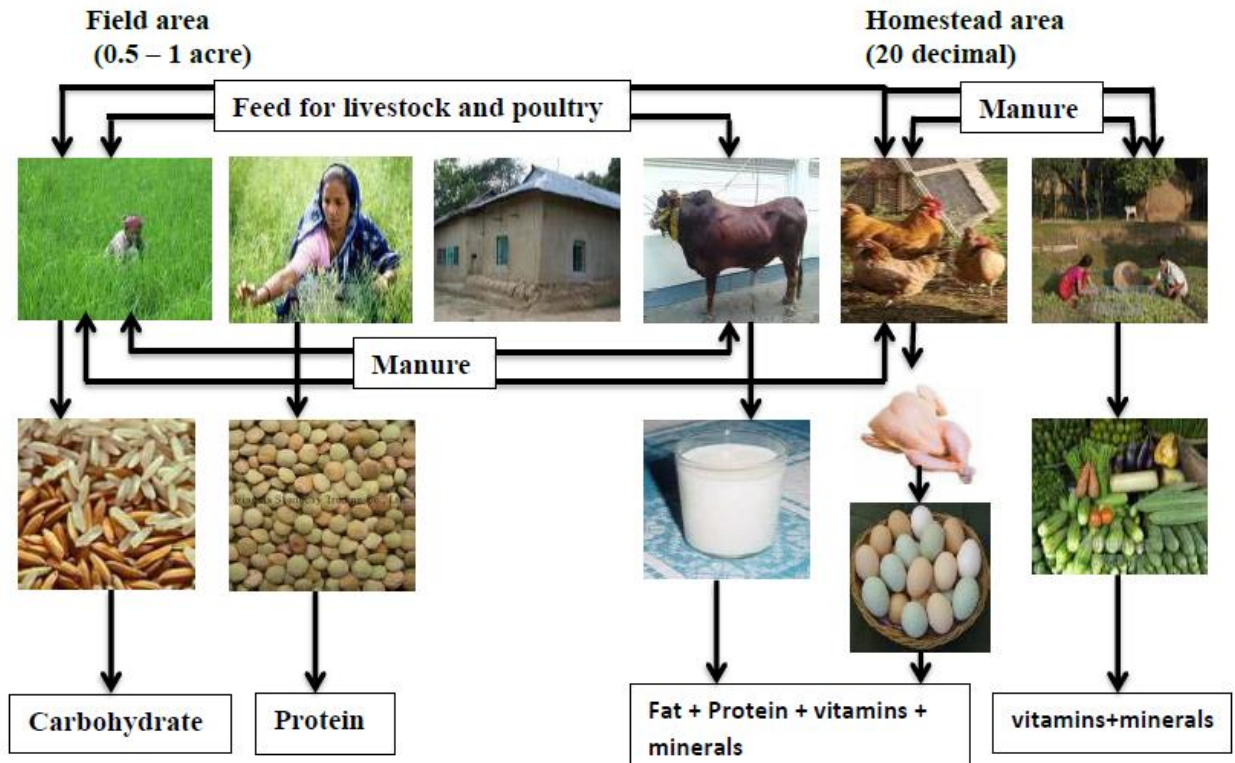


Figure 5: A way to food security through organic farming (Farm family will get all necessary items whole of the year). (Source: Hoque, 2012)

3.6 Cost-return- profit-benefit-yield issues

Organic farming has been proved as environmentally sustainable, but can it also be economically sustainable?. Many studies around the world have revealed that organic farming can be a financially viable substitute to conventional farming practices. But most of cases it is appropriate for developed countries. So, what about developing or least developed countries like Bangladesh, where funding is distributed to conventional agriculture (Nieberg and Offermann, 2003).

Table 6: An example of two brothers (one of them is practicing Nayakrishi/Organic farming and another practicing conventional farming)

Nayakrishi farmer/Organic Farmer	Topics	Conventional farmer
I want to keep my land for future generation	Future perspective	There is no future in farming
The health of my family members will be better as most of the foods we are producing without chemicals	Motivation	I have to do hard work, always engage with farming and fertilizer and pesticides are available
Rice, jute, pulses, different leguminous crops and vegetables	Produced crops	rice, wheat – cereal crops
I am getting profit than before, from investing Tk 100, I receive 150.	Return	I get marginal profit, if I invest Tk 100, I get Tk 103
I use seed from my reserve, prepare compost and other fertilizers, very rarely I need to think for pesticide	Dependency on purchased inputs	I have to buy seed with high price, and all the year I need to buy fertilizers and pesticides

(Source: Hoque, 2012)

3.7 Repondence level of consumers of buying organic foods: While acknowledging the low sample size, it appears that poor people are much less likely to buy organic foods than are middle and higher class people. In addition to total factors, this may also be related to their lower concern for health and environment. Based on annual income in thousands of taka (taka is the Bangladeshi currency; 1000 BDT= US\$14.61), most of the consumers who usually buy organic foods (92%)

belong to either middle or rich class, whereas 8% were poor in table 7 (Source: Sarkar and Itohara, 2008).

Table 7: Social status of the respondent consumers of organic food in Dhaka City in 2006 (Source: Sarkar and Itohara, 2008).

Categories	Purches ability of organic foods at percentage
Poor	8
Middle-class	42
Rich	50

3.8 Problems associated with the expansion of organic farming in Bangladesh

The main question of this chapter is: why farmers cannot endorse organic farming in Bangladesh. What are the difficulties that farmers are facing? Though we have very little number of true organic farms, there are some non-certified organic or eco-friendly farms. The basic information has been collected from the key informants, who are trying to promote eco-friendly or organic practices.

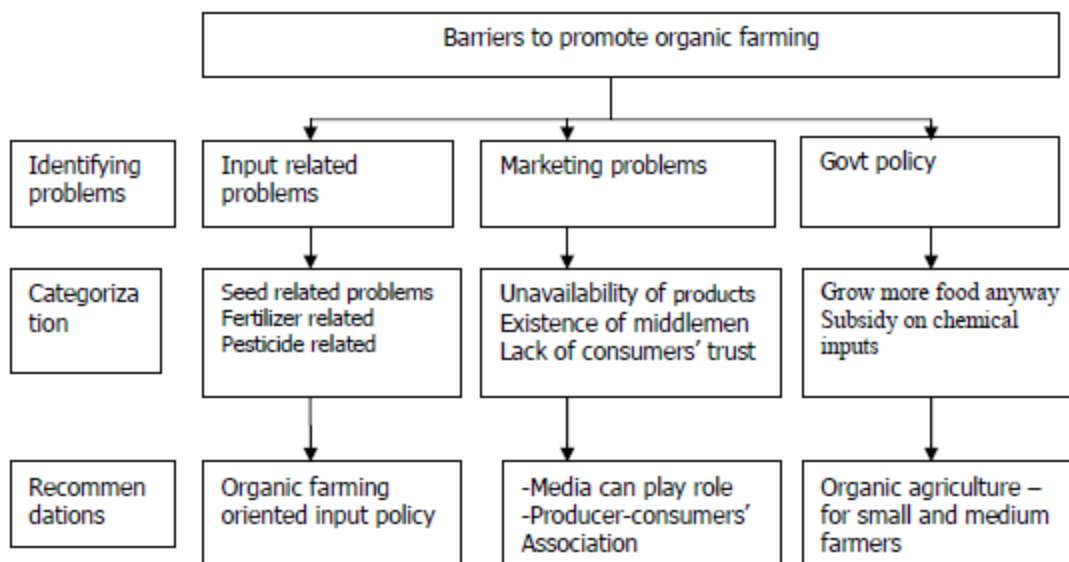


Figure 6: Major barriers of organic farming. (Source: Islam *et al.*, 2013).

After evaluating those information, the problems will be identified that will guide us to advancing recommendations. However, the major barriers have been presented in Figure 6 (Source: Islam *et al.*, 2013).

3.8.1 Barriers from policy level

✓ Government think: organic farming has negative impact of on food security

Political decisions highly adjust the agricultural sector in Bangladesh. In 1965, the Government launched a 'Grow More Food' campaign, introduced HYV rice (i.e. IR5 & IR8) and provided fertilizers and low lift pump (LLP) at a highly subsidized rate with pesticide at free of cost to popularize these inputs among the farmers and meet the country's food shortage. Since 1980 s, Bangladesh has received more than doubled the production of cereal grains, despite a continuous decline in arable land. Our policy level think that without this notable growth in the production of cereals, poverty and food insecurity would have been much worse than it is today. The political government often declares 'we are now self-sufficient' or 'our food security has been achieved' and they make it a weapon to win the elections. In policy level, importance is given on fulfil of stomach, not considering disease and health hazard. Nutrition and health development are not given importance for policy makers (Baten, 2010).

3.8.2 Input related problems:

In Farmers of Bangladesh mainly use three types of seeds: imported hybrid, high yielding variety (HYV) and indigenous local varieties. The local varieties, farmers can produce without using chemicals by following crop rotation and maintaining proper management. Farmers can conserve the seeds for the next season. As farmers own the seed, they can produce how many crops as they want. But, there is problem with imported HYV and cross breeds that adaptability power is very less. In Bangladesh, hybrid seeds are imported from the countries where the weather is not similar as Bangladesh. So, it is very difficult to adapt in local environment. HYV seeds are produced in laboratory and cross breeds are in commercial farms. Both of them are produced in artificial environment with using high chemical inputs. Their characters change due to applying high dose of chemicals and become highly dependent on hybrid seed package which include chemical fertilizers, pesticides and irrigation water. As a result, organic/ bio fertilizer doesn't work at the time of production (Informants U1 and P2). Now the question arises, why the farmers don't use

local variety, and why again and again, they are being compelled to go for cultivation dependent on fertilizer-pesticide-irrigation?. The answer could be the govt policy to promote hybrid seed backed by multinational companies with the help of some NGOs and international research institutions. UBINIG feels that government is patronizing HYV and hybrid seed and taking the opportunity in the name of natural disasters and to feed the nation (UBINIG, 2008).

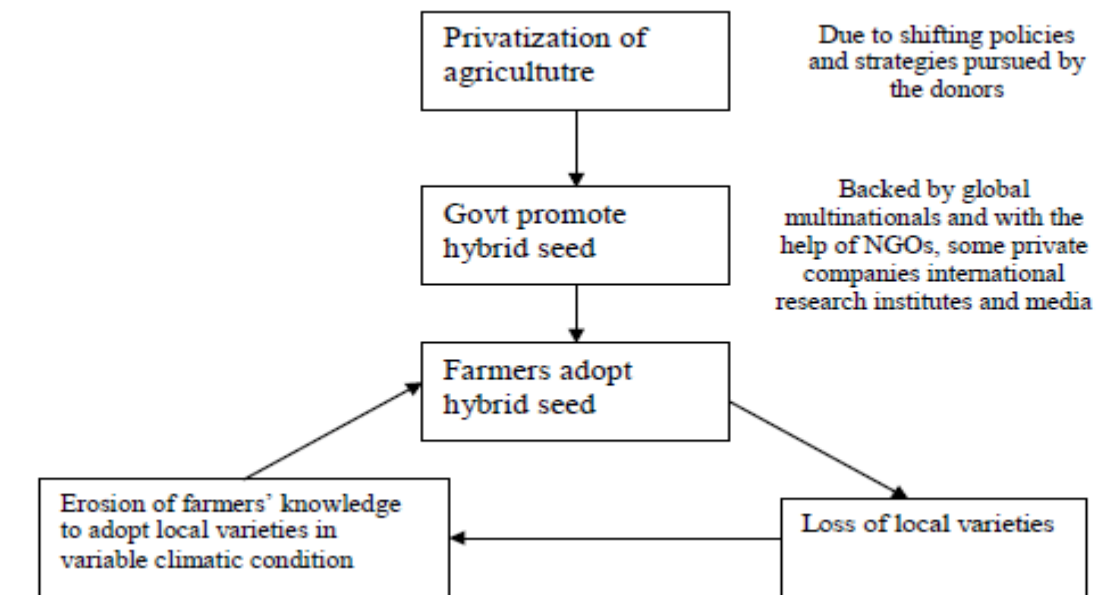


Figure 7: Influence of govt. policy on farmers' decision to use hybrid seed. (Source: Hoque, 2012).

3.8.3 Imbalanced fertilizer use

Fertilizer becomes a very sensitive and political issue in Bangladesh agriculture. Sometimes, the ruling political party loose popularity, if it failed to meet the demand of fertilizer timely. From the green revolution period, govt. promoted fertilizers and now farmers have adopted in a way that they think, 'We are farmers and fertilizer is our life. Which party can ensure us to make fertilizers available in the market, we will cast vote in favor of that and help them to come to the power'. Therefore, ministry of agriculture tirelessly work to meet the demand of fertilizer. But it is not possible to get supply of all kinds of fertilizers.

We know that there are 46 micro and macro nutrients. Farmers of Bangladesh are familiar with mainly three fertilizers, urea, triple super phosphate and murate of potash. Farmers try to use these three but their use depends on the price and the availability of fertilizers in the market. As the price

of Nitrogen fertilizer is lower than other fertilizers and availability is also more, therefore mostly they use urea, not balanced fertilizer. Due to excessive and unbalanced use of fertilizers, soil becomes unfertile. As a result, production decreases; and next year, farmers apply more fertilizers. One statistics show that fertilizer consumption has increase from 313 thousand tones in 1970-75 to 3,223 thousand tones in 2000-04 (Shah, *et al.*, 2008).

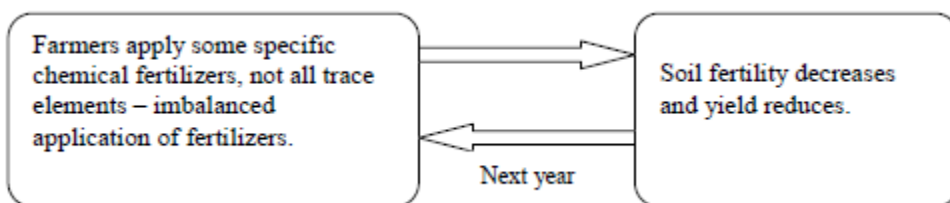


Figure 8: Vicious circle of imbalanced fertilizer application and decrease in production (Shah, *et al.*, 2008).

3.8.4 Lack of organic pesticide

Farmers spray the crops with harmful chemicals as they cannot get organic pesticides and the components of biological pest control. It was found that farmers in some areas of Jessore district were producing vegetables at lesser costs while protecting the environment. It could be noted that Jessore is an intensive vegetable growing area and one fifth of the total amount of aubergine in Bangladesh is produced in Jessore. The frequency of spraying insecticides in brinjal was 84 times in 1994, at least twice in a week. But in 2001 and 2004, the frequency increased to 140 and 160 times respectively, they had to spray at least once every day.

It means the pests were becoming drug-resistant, but the scene was started to change in 2008. Though farmers produce organically, but our consumers always look for good looking, glossy and big products. Organic products are not always good looking. If we bring these to Dhaka city, we cannot sell without consumers' awareness. If consumers are not aware, we cannot expand the market. Consumers don't know, what is organic and those who know, they don't believe the products as organic, since these are not looking very fresh than chemical used products. Even some people are studying on organic farming, they don't want to buy organic products; they don't think about its future impact on their child. We have to develop consumer's awareness. Consumers should know the harmful effect of chemicals (Source: Hoque, 2012).

3.8.5 Problems of marketing of organic products

Marketing of agricultural commodities is a crucial in Bangladesh. In case of eco-friendly or organic product marketing, the problems can be analyzed under three different circumstances, like, consumers' awareness, lack of consumers trust on organic products and irregular availability of products in the market. Though farmers produce organically, but our consumers always look for good looking, glassy and big products. Organic products are not always good looking. If consumers are not aware, we cannot expand the market. Consumers don't know, what is organic and those who know, they don't believe the products as organic, since these are not looking very fresh than chemical used products. Even some people are studying on organic farming, they don't want to buy organic products; they don't think about its future impact on their child. We have to develop consumer's awareness. Consumers should know the harmful effect of chemicals. The issues should be broadcasted from media

There are many constraints to the use of organic fertilizers at farm level. The major problems could be identified as: use of biomass, crop residues, animal dung, etc. as fuel or fodder; unavailability of green manuring seeds due to mono cropping. Lack of farmers' knowledge, how on soil organic matter management; lack of proper extension service; necessity of more labour and hard work to produce organic fertilizer etc. (Source: Hoque, 2012).

CHAPTER-IV

CONCLUSION

- Organic concept in Bangladesh is introduced and carried out by NGOs. In terms of production practices, Proshika gives emphasis on crop rotation and compost. Nayakrishi farmers are very near to the standard of EU, USA and Japan. Kazi farm is already exporting 100% of their products in the USA and EU countries.

- Organic farming has the potential to expand in Bangladesh by identifying the suitable niches in different locations. Research and development activities need to be strengthened along with government should take effective initiative through institutional approach to introduce organic farming in Bangladesh.

- Organic farming in Bangladesh has four core problems: poor farmers, poor farmer knowledge of organic farming and its benefits, insufficiency of organic inputs, and poor marketing of organic foods.

- Asian countries like as India, China, Korea and Sri Lanka, are active producers and exporters of organic foods compare to other developing countries like Bangladesh. But Bangladesh has the capacity to realize a significant share of the global organic market. This offers an opportunity to increase farmers' incomes, thereby making a significant contribution towards reducing poverty for among poor farmers.