
PERCEPTION OF THE FARMERS ABOUT ORGANIC FARMING: A GROUND LEVEL STUDY

Saswat Satapathy^{1*} and Sheena²

¹Scholar Agribusiness, Vanibihar, Utkal University Odisha.

²Scholar Soil Science, Dr. Yashwant Singh Parmar University of Horticulture & Forestry.

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***Corresponding Author: Saswat Satapathy**

Scholar Agribusiness, Vanibihar, Utkal University Odisha.

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ABSTRACT

Organic farming is the need of the time. The study conducted with 180 farmers in coastal tract of Odisha reveals that farmers do not have adequate knowledge about advantages and limitations of organic farming. Because of experience and higher yield they support inorganic farming although are well aware of its negative impact. The farmers in general are not aware of commercial brands of bio-fertilizers and bio-pesticides. They need training, compensation in case of loss, subsidy, training, technical support and extension advice along with assured market for organic produce.

INTRODUCTION

Organic farming is essential to regenerate degraded soils, protect public health from toxic pesticide residues, and combat climate change. By eliminating synthetic chemicals, it prevents water pollution, restores local biodiversity, and supports sustainable, long-term food security for future generations.

Organic farming is crucial for sustainable agriculture. It replaces synthetic chemicals with natural processes, protecting the environment, restoring soil health, and ensuring safer, more nutritious food

Organic farming aims for human welfare without harming the environment and follows the principles of health, ecology, fairness and care for all including soil. The modern concept of organic farming combines the tradition, innovation and science. Although, history states that the movement for organic way of life recognized in 1905, it could gain ground after realizing the ill effects of modern agriculture in the late 1990's. In 1905, the British botanist Sir Albert Howard, often referred to as the father of modern organic agriculture, documented traditional

Indian farming practices, and came to regard them as superior to conventional agriculture science. During 1940, In Japan, Masanobu Fukuoka, a microbiologist working in soil science and plant pathology, quit job as a research scientist, returned to his family's farm, and devoted the next 30 years to develop a radical no-till organic method for growing grain, now known as “Fukuoka farming”. Many other practices such as Rishi krishi, Natueco farming, homa farming, panchagavya krishi and bio dynamic farming are associated with organic agriculture. The reports indicates organic farming can minimize energy consumption by 30.7 % per unit of land by eliminating the energy required to manufacture synthetic fertilizers and pesticides and by using internal farm inputs, thus reducing fuel used for transportation. India can emerge as global leader due to the presence of large number of organic producers (almost 7 lakh producers) and they needs to be supported with technical knowledge and inputs besides marketing infrastructure. The research results available for little over a decade confirms the yield advantage in many crops such as basmati rice, maize, cotton, chickpea, soybean, groundnut etc. However, the major impediment for growth of organic farming in India is yield reduction in the initial years due to swift switch over from inorganic to organic, wide gap between availability of organic source of nutrients and requirement and lack of pest and disease management options. Most of the organic growers have expressed that lack of support price for organically grown crops and marketing infrastructure as the major constraint in promotion of organic agriculture. Although, much progress on research in organic farming has been done, the new emerging areas of human health benefits, understanding the economics with environmental markets, climate friendly farms and carbon farming with organic farming system models needs to be addressed in future. The certification systems of grower group, participatory guarantee system, know your farm and know your food should be promoted in large scale.

Status of Organic Farming: Demand for organic products, especially in developed countries, has been increasing. Globally, organic agriculture is practiced in 162 countries and 37 m ha of land are managed organically by 1.8 million farm households. The global sale of organic food and drink reached 62.9 billion US dollors in 2011.

At present (year 2022-23) the Cultivated Area (Organic) in India is 1764677.15 H and Cultivated Area (In conversion)3627115.82 Ha’ where as Wild Harvest Collection Area4780130.56 Ha

The Farm Production (Organic) 2664679.54 MT, FarmProduction (In conversion) 288146.75 MTand Wild Harvest Production19468.21 MT

Total export quantity: 312800.51 MT with total Export value (INR) Rs.5525.18 Crore. As far as producers concerned, the Individual farm producer are 5615, the Grower Groups 6476 farmers- in group 2364979.

With respect to the state of Odisha, the organic farming system is gaining wider acceptability. Odisha currently has over 2,500,000 hectares of land dedicated to organic farming. Driven by the state's SAMRUDHI Agriculture Policy and centrally sponsored programs, the sector is scaling up through cluster-based farming and nutritional security initiatives. Keeping growing interest in organic farming the present study was designed with major objectives of knowing the perception of farmers about organic farming. The objective of the study is to investigate the knowledge and realization of the farmers of different land based classification in general and specific objectives in particular as stated below.

Specific Objectives:

1. To study socio-economic condition of the sample respondents in order to gain insight about the conditions under which the farmers reside and work.
2. To ascertain knowledge level of the sample respondents about advantages and limitations organic farming for which so much emphasis is given at the present.
3. To find out the knowledge level of the sample respondents about positive and negative aspects of inorganic farming with which they have been doing farming for a very long period.
4. To measure extent of awareness of the sample about commercial brands of bio-fertilizers available in the market and their experience in using these products in different crops.
5. To ascertain the reasons of non-adoption of bio-fertilizers in the area under survey
6. To suggest means and ways to increase area under organic farming and rate of adoption of bio-fertilizers among the farmers in the area of study.

Review of Literature

1. According to Mendon et al, (2020) the farming of organic products is a unique practice which balances the environmental sustainability and also controls the detrimental effect both on customer's safety by creating a positive notion in the minds of the customers.
2. Varkey, (2020) contends that countries, developing as well as developed are emphasising environment sustainability of agricultural production, methods and practices. The traditional wisdom of farmers on indigenous agrarian practices increasingly being called into question owing to a host of factors.

3. The work of Magnaye, (2018) examines the relationship between smallholder organic farming and entrepreneurship taking into account the environmental conservation approach of organic farming and the economic enhancement features of entrepreneurship. Furthermore, it intends to determine, through qualitative analysis using case studies, how smallholder organic farming can be planned, and the competencies needed by an organic farmer when venturing into an organic farm enterprise.

4. On the other hand Giovannucci, (2007) assert that generally speaking, find that there is significant evidence that organic methods could be favourable for small farmers. In fact, most of the cases clearly noted a number of direct benefits and related externalities from which it is reasonable to conclude that the promotion of organic agriculture methods among small and resource-poor farmers can be well warranted.

5. Yadav, et al, (2013) add that in the post-independence period, the most important challenge in India has been to produce enough food for the growing population. Hence, high-yielding varieties are being used with infusion of irrigation water, fertilizers.

Research Methodology

The study adopted ex-post facto approach with survey research design. The sampling method followed was purposive for the reasons of cooperativeness and willing to spend time on interaction to satisfy the requirements of the survey. To have overall view on different types of farmers, a sample of 180 respondents equally representation of big, small and marginal @ 60 each were selected for the purpose of interview and interaction. The study was conducted in coastal tract of the state covering three blocks namely, Nimapara, Kaktpur and Pipili to have comprehensive ideas about organic farming as understood by the farmers. The data were collected through an interview schedule designed on the basis of the objectives of the study.

Result of the Study.

At the beginning it may be clarified that all farmers of coastal tract use cow dung in their field depending on of their collection from own cows and bullocks that they maintained. With mechanization of farming practices particularly use of tractors farmers do not keep bullock as a result of which the quantity of cow dung per family has reduced to a great extent. Even at present some farmers do not apply cow dung which they practised generation to generation for this reasons. Some are unable to afford for cow dung because of increase in price.

1. Socio-economic condition of the sample respondents.

As per need of the study as much as seven pertinent socio-economic variables were examined which yielded the result as reflected in table below.

Table 1. Socio-Economic Condition of the sample. (N=180)

Socio-Economic Variables	Frequency	Percentage
1. Age (years)		
(i). Below 30	36	20.00
(ii).31-40	52	28.89
(iii) 41-50	29	16.11
(iv) 51-60	31	17.22
(v). Above 60	32	17.78
Total	180	100.00
2. Education		
(i).Below Matriculation	95	52.78
(ii).Intermediate	61	33.89
(iii). Graduate	21	11.67
(iv) Above graduation	3	1.66
Total	180	100.00
3. Caste Composition		
(i).SC	36	20.00
(ii).ST	26	14.45
(iii).OBC	55	30.55
(iv).General	63	35.00
Total	180	100.00
4.Family Composition		
(i). Three Members	34	18.89
(ii) Four Members	44	24.44
(iii). Five Members	55	30.55
(iv). More than five embers	47	26.12
Total	180	100.00
5.Type of Family		
(i). Nuclear Family	152	84.44
(ii). Extended family	28	15.56
Total	180	100.00
6.Occupational Structure(Major)		
(i).Farming	100	55.55
(ii).Wage earning	14	7.78
(iii).Service	29	16.11
(iv) Business	23	12.78
(v). Independent job	14	7.78
Total	180	100.00
7.Annual Family Income (Lakh)		
(i). Below 1.0	55	30.56
(ii).1.1 – 1.50	52	28.89
(iii).1.51-2.0	28	15.55
(iv). More than 2.0	45	25.00
Total	180	100.00

The sample consisted of 180 respondents with equal number from big, small and marginal farm families classified on the basis of land possession as prescribed by State Government. On age group classification, majority were in between 31 to 40 years of age being educated in formal education below the matriculation, In caste composition majority belonged to OBC and General caste with an average of four to five members per family and live in nuclear family system rather than extended one. Farming is observed to be major occupation of the sampled households in addition to service and small business at village level. Majority of households live with annual family income below 1.5 lakhs per year. Socio-economically the sample represent scenario of farming community in coastal tract of Odisha.

2. Knowledge level of the sample respondents about advantages and limitations organic farming.

The knowledge level of respondents with regard to advantages and limitation of organic farming was measured on 3-point scale of, very much, much and little or no with assigned score of 3, 2 and 1 respectively.

The knowledge level on advantages and limitations as analysed is reflected in table.

(i). Advantages of Organic Farming

Table 2. Knowledge about Advantages of Organic Farming.

Sl.No	Statement	Average Score	24.00Gap (%)
1.	Improves Soil Health	2.28	24.00
2.	Protects ground water contamination	1.86	38.00
3.	Promoted biodiversity	1.65	45.00
4.	Reduces effects of climate change	1.25	58.33
5.	Provides higher nutritional value	1.01	66.33
6.	Better animal health	1.56	48.00
7.	Reduce dependency on costly inputs	2.24	25.33
8.	Long term economic benefits	1.65	45.00
9.	Preserves vital medicinal sources	1.74	42.00
10.	Minimizes human health hazards	2.01	33.00
	Average	1.87	37.67

The knowledge level of the respondents was measured over ten important parameters qualifying organic farming as collected from literatures. The highest knowledge score was obtained in respect of improving soil health (2.28), followed reduction of dependency on costly inputs (2.24) and minimization of human health hazards (2.01). The lowest score was obtained in case of higher nutritional value that the organic products provide.

In case of gap analysis the overall gap is calculated to be 37.67 % whereas highest was in case of nutritional value and lowest improving soil health.

On the whole, positive aspect about organic farming need to be more emphasized for wider acceptance organic farming.

(ii). Opinion about Limitation of Organic farming. It is beyond doubt the success of organic farming is linked with some important limitations. The limitations as perceived by the sample were measured as in case of advantages. The results are given in table.

Table 3. Knowledge about Limitations of Organic Farming.

Sl.No.	Statement	Average Score	Gap (%)
1.	Low crop yield	1.83	39.00
2.	Reduced volume of production	1.87	37.67
3.	High Labour cost	1.69	43.67
4.	Difficulty in certification	1.99	33.67
5.	Absence of market	1.95	35.00
6.	Lack of subsidies	1.37	54.33
7.	Financial risk	1.58	47.33
8.	Absence of local market for sale of bio-inputs	2.11	29.67
9.	Problems of preservation without chemicals	1.97	34.33
	Average	1.81	39.67

As far as limitation of the organic farming is concerned, absence of local market for both bio-fertilizers and to sell organic produce. It is a major problem which constraints farmers to opt for organic farming. The other constraints are being difficulty in certification, problem of vegetable preservation, insufficient market for organic produce and reduction in volume of production. The overall gap with respect to knowledge about limitations is found to be 39.67 %. Lack of subsidy, high labour cost and low crop yield are the negative side of organic farming.

3. Knowledge about positive and negative aspects of inorganic farming

All the farmers are quite acquainted with use of chemical fertilizers in crops. Only the magnitude varies. The study attempted to analyze positive and negative views of the farmers about use of chemical fertilizers.

(i). Positive attributes of chemical fertilizers

Table4, Knowledge about advantages of Chemical Fertilizers.

Sl.No	Statement	Average Score	Rank
1.	Immediate availability of nutrients to crop	2.64	III
2.	Quick availability of micronutrients to crops	2.72	I

3.	Cost effective	2.23	IV
4.	Higher yield	2.69	II
5.	Soil adjustment	2.09	V
	Average	2.47	

Farmers favour chemical fertilizers because of attraction of five attributes. They are readily available at locality, ensures higher yield, immediate response of plant growth, costeffectiveness and soil adjustment (micronutrients). These attributes keep farmers interested in use of chemicals in farming.

(ii). Perception about negative effects of chemical fertilizers

Following same procedure, the reaction of the sample respondents about the negative effects of chemical fertilizers was measured which yielded the following results.

Table 5. Awareness about negative effects of Chemical Fertilizers.

Sl.No	Statements	Average Score	Rank
1.	Soil acidification	2.38	I
2.	Microbial imbalance	1.85	VII
3.	Ground water contamination	2.08	III
4.	Divesting aquatic life	2.19	II
5.	Salt burns	1.97	V
6.	Dependency and decrease resilience	1.92	VI
7.	Higher Cost	2.03	IV
	Average	2.06	-

Analysis reveals the awareness as well as experience of farmers about negative impacts of chemical fertilizers. Farmers know the soil acidification is owing to effect of chemical fertilizers followed by divesting effects on aquatic life, contamination of ground water and high cost of fertilizers in order are the ill effects of chemicals on farming system. Other negative effects as mentioned are saltburn, decrease of resilience and imbalance of microbial activities in the soil.

Even though farmers are aware of ill effects of chemicals still they use them because of constant advocacy of extension system and absence of alternatives.

Summarized Table

The gap in knowledge about advantages and limitation of organic farming and chemical fertilizers as examined are presented in summary form.

Table 7. Gap analysis.

Sl.No	Statements	Average Score	Gap(%).
1.	Knowledge about advantages of organic farming	1.87	37.567
2.	Knowledge about limitations of organic farming	1.81	39.67
3.	Knowledge about positive effects of chemicals in farming	2.47	19.33
4.	Knowledge about ill effects of chemical fertilizers in farming	2.06	31.33

AS contained in table the gap percentages in case of advantages and limitations of organic farming is almost same.. There is much less gap in case of advantage of chemical fertilizers against 31.33 % negative effects. On the whole, the farmers have more positive view regarding chemical fertilizers than that of organic farming. On other words, farmers even being aware of ill effects of chemical fertilizers are still using them owing to absence of profitable and affordable alternatives.

5. Awareness of about commercial brands of bio-fertilizers available in the market

The survey examined awareness of sample farmers about different bio-fertilizers and bio-pesticides available in commercial brand in the market which yielded the following results.

Table 8Awareness about marketed Bio-fertilizers.

Sl.No	Bio-fertilizers	Frequency	Percentage
1.	Arnapurna	3	1.66
2.	Cockpit bricks	18	10.00
3.	Cow dung powder	10	5.55
4.	Mustard cake powder	9	5.00
5.	Neem oil	54	30.00
6.	Neem Powder	50	27.77
7.	Organic Potash	0	0.00
8.	Organic potting soil	0	0.00
9.	Plant growth promoter	4	2.22
10.	Seaweed/ alga extract	0	0.00
11.	Steamed bone meal	8	4.44
12.	Tulasi	0	0.00
13.	Suprita	0	0.00
14.	Vermi compost	60	33.33
15.	Zeogreen	0	0.00

Analysis reveals that sample farmers are aware of few bio-fertilizers and bio-pesticides available in the market. In order, the awareness about vermin- compost tops the list followed by neem oil, neem powder, cockpits bricks, steam bone meal and mustard cake powder.

Many of commercial brands of bio-fertilizers and bio-pesticides are not known to the sample farmers under survey

6. Reasons for non-adoption of bio-fertilizer sand bio-pesticides

Table 9. Reasons for non-adoption of bio-fertilizers. (N=180)

Sl.No	Reasons	Frequency	Percentage
1.	Not aware of relative advantage	130	72.22
2.	Unaware of dose and time of application	160	88.89
3.	Not available in local market	86	47.78
4.	More costly	70	38.89
5.	Not advised by extension agencies	180	100.00
6.	No literature available	78	43.33
7.	Not trained in organic farming	180	100.00
8.	No subsidy by Government	180	100.00
9.	Never seen demonstration	180	100.00
10.	Not effective compared to chemical fertilizers	120	66.67
11.	Not suitable for fast growth of plants	115	63.89
12.	Poor performance	90	50.00
13.	Not suitable for saline soil	135	75.00
14.	Absence of visible effect in yield	155	86.11
15.	Poor knowledge about practices of Organic farming	152	84.44

The reasons are many and diversified for non use of bio-fertilizers and bio-pesticides. On the whole, lack of knowledge, training, extension support and absence of visible effects of organic farming account much for non-adoption of bio-fertilizers. None of the sample farmers received advises, subsidy and visual results of organic farming demonstration, On the whole the approaches to boost organic farming appears to quite inadequate.

5. Suggestions for increasing adoption of bio-fertilizers and bio-pesticides.

Table10. Suggestions for increasing of adoption of bio-fertilizers.

Sl.No	Suggestions	Frequency	Percentage	Rank
1.	Training on Organic farming	135	75.00	IV
2.	Subsidy/Free supply of bio-fertilizers	170	94.44	III
3.	Result demonstration	110	61.11	VI
4.	Compensation in case of loss	180	100.00	I
5.	Assured Marketing of organic produce	125	69.44	V
6.	Opening of sale centres of bio-fertilizers	176	97.78	II
7.	Extension support	85	47.22	VIII
8.	Exhibition of Organic products	78	43.33	IX
9.	Special drive to popularize organic farming	95	52.78	VII

The suggestions to increase area and adoption of organic farming includes steps like provision of compensation in case of yield reduction, opening of sale centres for bio-

fertilizers and bio-pesticides, subsidy/free supply of bio-fertilizers, training for capacity building, assured market for organic produce and conduction of result demonstration for visual benefits of organic farmers. The other suggests are special drive for organic farming, extension/technical support and exhibitions of organic farming.

CONCLUSION

The study “Perception of the farmers about Organic Farming: A Ground Level Study” was conducted in the coastal tract of Odisha with a sample of 180 farmers representing equally from the farmers category of big, small and marginal group lead to arrive at the following conclusions.

1. The socio-economic profile of sample farmers was studied on seven important parameters. Majority of them are in age of up to 40 years, read up to matriculation, belong to OBC and General caste composition, live in nuclear family system with an average of 4-5 members per family. Their major occupation is farming with annual family income of within 1.5 lakhs.
2. There is considerable gap in knowledge level of the sample respondents about advantages and limitations of organic farming. They carry positive views about inorganic farming although are aware of its negative impact.
3. The farmers under study are not well aware of brand commercial bio-fertilizers available in the market. Except vermi compost and neem product.
4. Reasons of non-adoption of organic farming include lack of training for capacity building, absence of subsidy, non-existence of demonstration, not equipped with technical knowhow and non-visit of visible result.
5. The suggestion for practicing of organic farming include compensation in case of reduced crop yield, opening of bio-fertilizer sale centres, subsidy/free supply of organic inputs, and training among other suggestions.

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