

A Study on an Analysis of Organic Farming in India: A New Paradigm

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Abstract

The organic farming is gaining the importance now in the global market. This kind of farming can be profitable over the conventional farming. The sustainable development in the field of agriculture is really needed in India and this can be possible with the adoption of organic farming. The farmers should go for the natural manure, use natural resources to improve the soil fertility. The current research paper focuses on the assessing the opinion of farmers about the organic farming, their perception and preference level of selection of type of farming. The researchers used the structured questionnaire and collected the data from farmers. The researchers also asked some informal questions randomly. The farmers in the study were 113 from the selected region of Ambegaon Tehsil of Pune district. ~~The study revealed that the level of education has no role in shaping the opinion of farmers about the organic farming it also.~~ The study further says that selection about farming type based upon the market for the produce.

Keywords: organic farming, conventional farming, sustainable development, soil fertility.

1.Introduction

The Indian agricultural sector is increasing day to day. The agriculture not only provides the food and fabrics but it also produces the wood and paper products. The agriculture is contributing to the development of society and the nation and thus it can be seen as an integral part in the life of living beings. “This practice of agriculture is known as farming.” The technological development has impacted the sector and changed the way of doing things in agriculture. The Indian farmers have adopted the several methods in upbringing the sector to the next level. The Indian farmers cultivate variety of crops in different sectors of the country. The natural resources and environmental factors are considered as a leading factor in deciding and selecting the crop to be cultivated. The agriculture is the basic source of livelihood of almost 58% of population of India. The industry in food sector is increasing day by day due to immense potential and demand in the Indian market. The food and grocery market is the 6th largest in the world and contributed 70% of the sales of retail market and the food industry of India accounts 32% of total food market with the export of agricultural commodities for April 2020 – January 2021 was USD 32.12 billion.

The organic farming is at the hopeful phase in India once again. According to the Union Ministry of Agriculture and Farmers' Welfare, “about 2.78 million hectare of farmland was under the organic cultivation as of March 2020.” The organic farming is a farming developed without the use of chemical fertilizers and chemical pesticides. The farm is developed with the organic fertilizers and the manure made with the help of earthworms. This is in-line with the socially responsible approach. The organic method of farming conserves the generative and renewing capacity of the soil, maintains the plant nutrition and harvests the nutritious food which has resistance to various diseases. The India has a various climatic conditions and this is the benefit for cultivating the organic produce.

The India has the tradition to follow certain customs in agriculture and this can be an added advantage for the farmers. This can be the demanding field to tap the local as well as global market due to the growing demand for the organic produce. According to the statistics by FIBL & IFOAM Year Book, 2020 The India ranked 8th in the global organic farming and 1st in terms of number of producers in the similar field. India produced approximately 3496800.34 MT (2020-21) of organic foods which includes oil seeds, sugar cane, cereals, pulses, aromatic and medicinal plants etc. and the total export (2020-21) was 888179.68 MT and the realization was approximately INR 707849.52 lakhs (USD 1040.95 million). Thus it can be easily concluded that the organic sector is growing in India as well as all over the world.

2. Review of Literature:

Howard (1940) studied on the soil destruction and discussed the various consequences. The researcher has recommended the various approaches to reestablish and maintain the fertility of the soil. The researchers also discussed about the reasons and sources of the erosion of soil and its effects on living.

Bemwad (1999) studied on the organic farming and said that the organic agriculture is the best way as it is regulated by the standards and rules. The researcher concluded that the external inputs that are needed for organic farming is less and this can be the holistic approach to produce the agricultural goods.

Sharma et al (2001) conducted a research on the organic farming and said that it can be the recognized as the alternative farming system over the other agricultural systems. The authors also described about the biological farming and natural farming; however the researcher discussed about the organic farming extensively; though the researcher did not discuss about the issues of implementing the organic farming.

Singh et al (2001) discussed and researched about the organic farming. The researchers conducted an experimental study on rice-pea and the farmers used the organic manure, the results were that the yields are substantially high compared to the control group (non- users of organic manure); and the results were similar for the other produce as well.

Rossi et al (2008) did a research on the organic farming and the study was experimental in nature. The researcher did the experiments on cultivation of tomato using organic method and concluded that tomatoes cultivated with the help of organic method have more salicylic acid than other methods. This acid help in the mitigating stress effects and prevents the hardening of arteries and bowel cancer (Butler at al., 2008).

Lairon (2010) reviewed on the organic food and the review was based on the report of French Agency for Food Safety (AFSSA). It was found that these foods contain more minerals and antioxidants like polyphenols and salicylic acid and such food has no pesticides as compared to the other farming methods.

As per the report of Food Marketing Institute (2008), organically cultivated plants have 30% greater antioxidants which fight against cancer. The plants studied were corn, strawberries and marionberries. The report says the organic foods helps in developing and maintaining the antioxidants.

3. Research Design and Methodology:

3.1.1. Objectives of the study:

The study focuses on the organic farming and studies the perception about the organic farming; the objectives of the study are:

1. To study the farmers' opinion about the organic farming in India
2. To study the level of education of farmers and their perception about the organic farming.
3. To analyze the preference of farmers' in selection of type of farming.

3.1.2. Research design, data collection instrument, sampling technique and size and area:

The researchers used the analytical type of design for the study and both the primary and secondary data has been used. The various journals, published articles and reports have been referred and the tool implemented to collect the primary data was questionnaire. The researchers used farmers as respondents and collected the data from the 113 samples. The convenience sampling technique has been used and the samples are the residents under the jurisdiction of Pune district and their agricultural land is situated in the same area.

3.1.3. Hypotheses of the study:

1. H_{alt}: There is a significant difference between the education of the farmers and their perception about the organic farming.

H_{null}: There is no significant difference between the education of the farmers and their perception about the organic farming.

2. H_{alt}: There is an association between type of farming selection (organic and non-organic) and the availability of market for the produce.

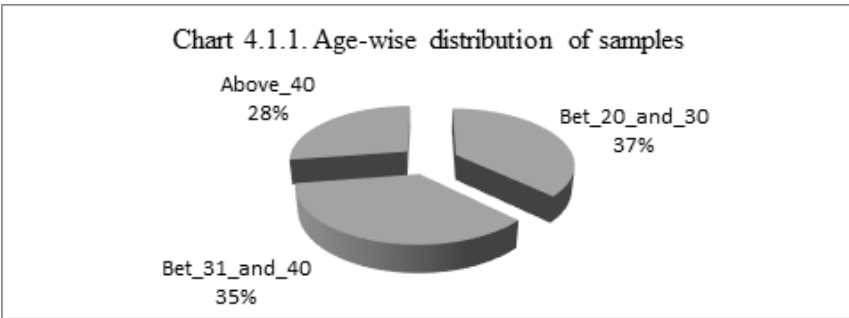
H_{null}: There is no association between type of farming selection (organic and non-organic) and the availability of market for the produce.

3.1.4. Limitations:

The study is restricted to the specific area of Pune district only and the data has been collected from the few samples. The study is for the specific time duration and the data collected during 7 June 2021 to 10 July 2021. The study was not the experimental in nature but supported with some experimental research on the similar field. The farmers sometimes hesitated to respond since they are not interested to disclose the information to the outsiders.

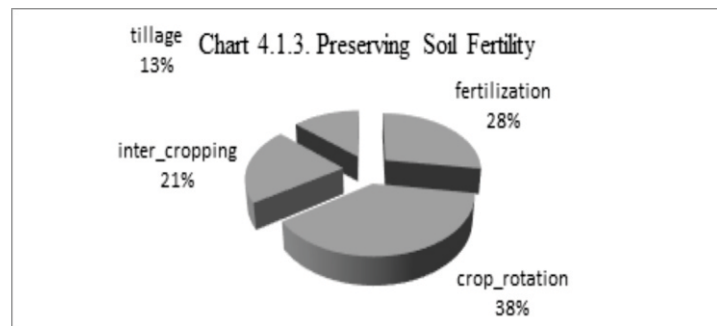
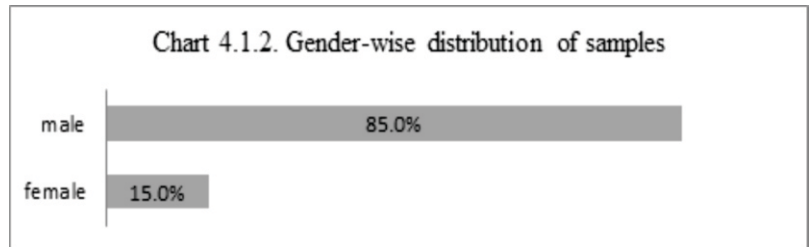
4.Descriptive Statistics and Hypothesis Testing:

a. Descriptive Statistics: The below chart shows the descriptive analysis.

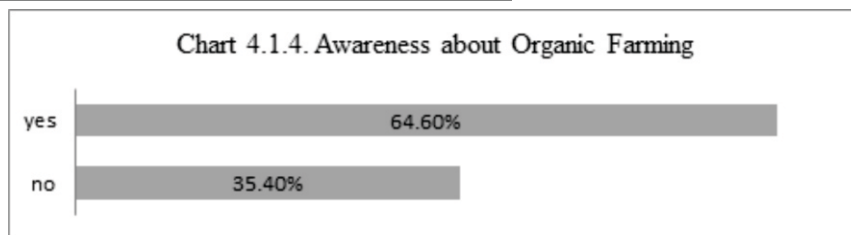


The chart (Chart 4.1.1.) is the age-wise distribution of samples and the 28% of the samples are above the age of 40 years, 37% are between 20 and 30 years and remaining 35% are between 31 and 40. The below chart (Chart 4.1.2) is the gender-wise sample distribution, in the samples there are only 15% are females and remaining 85% are male.

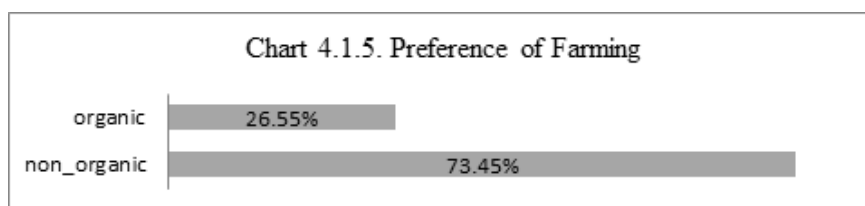
The following chart (Chart 4.1.4.) depicts the ways the farmers adopted in order to preserves the soil fertility of their farm. 28% uses chemical fertilizers, 38% believe in crop rotation, 21% choose inter cropping and 13% adopt the tillage for maintaining the fertility of the land.



The chart (Chart 4.1.4.) depicts the awareness about the organic farming in the selected region. The majority of the samples (64.60%) are aware about the organic type of farming while 35.40% did not know about the same.



The following chart (Chart 4.1.5.) is showing the preference among the farmers about adopting the kind of farming (organic or non-organic).



b. Hypotheses Testing:

Hypothesis No. 1: The primary data has been collected and analyzed for testing the hypothesis. The first hypothesis tests the significance in means between the variables. The following chart shows the reliability statistics for the instruments used to collect the data. The table (Table 4.1.1.) is the cross processing summary and all the samples have been included to test the reliability statistics.

Table 4.1.1.

Case Processing Summary		N	%
Cases	Valid	113	100.0
	Excluded ^a	0	.0
	Total	113	100.0

a. Listwise deletion based on all variables in the procedure.

The table (Table 4.1.2.) has the Cronbach's alpha for reliability. Since the value is higher as per the statistical significance, the instrument used is reliable and thus the further test is applied as below.

Table 4.1.2.

Reliability Statistics	
Cronbach's Alpha	N of Items
.897	14

The test variable in the study is of scale type and thus the researchers used t-test to check the significance between the mean values assuming the normality of the data set. Since the variances are equal and thus considering the t-test of equal variances as follows. The two categories have been considered for education variable. It was above high school level and below high school level. In the table (Table 4.1.3.), it is to test whether the education has significance effect on the perception about the organic farming among farmers or not.

In the table (Table 4.1.3), mean for education above high school and below high school are 3.09 and 3.03 respectively. The t Stat value in the table is less than the t Critical two tail value and thus the researchers fail to reject the null hypothesis and also p-value in the table is greater than the level of significance alpha (0.05) thus the researchers cannot reject the null. Thus it can be said that the education has no effect on the perception about the organic farming. Thus it can be concluded that the education has no role to play in the perception about the organic farming.

Table 4.1.3.

t-Test: Two -Sample Assuming Equal Variances		
	<i>Above Highschool</i>	<i>Below Highschool</i>
Mean	3.092664093	3.032894737
Variance	0.37552859	0.339651808
Observations	37	76
Pooled Variance	0.351287521	
Hypothesized Mean Difference	0	
df	111	
t Stat	0.503055209	
P(T<=t) one-tail	0.307961099	
t Critical one-tail	1.658697265	
P(T<=t) two-tail	0.615922197	
t Critical two-tail	1.981566757	

Hypothesis No.2: In order to test the hypothesis, the variables are categorical and thus applying the chi-square test of independence as below. The table (Table 4.1.4.) shows the chi-square test of independence and from the table the value of $\chi^2 <$ critical value and also the p-value is 0.00 which is less than α , and thus the researchers reject the null and accept the alternate hypothesis; and thus the selection of farming type can be depend upon the availability in the market for the produce.

Table 4.1.4.

Sr. No.	Alternate Hypothesis	Questions/ Construct	Calculated χ^2	Level of Sig. (α)	Degree of freedom	Critical Value	p-value
1	There is an association between type of farming selection (organic and non - organic) and the availability of market for the produce.	Q. No. 6 and Q. No. 7	13.44	0.05	1	3.84	0.00

5.Recommendations

The people are aware about the organic farming and also the farmers know the various facets of such farming. The government shall encourage to the farmers those are coming up with the organic farming. The farmers must consult about the strategies or plan before implementing the farming. Before going for organic farming, the farmers shall know the timing of plantation and environmental aspects as well. The farmers can form a group in order to develop the organic segment and work together for the betterment. The farmers need to analyze the market for the similar produce of agriculture and decide the crop to be planted. This will help them to assess the risks associated with the competition or availability in the market.

6. Conclusion

The market potential is very huge for the organic produce not in India but abroad also. The farmers can export the produce with some grading and will get good return. The study discovered that the perception can be the same and is not affected by the level of education; also the farmer selects the type of farming based upon the market availability. It can be said that the farmers knows well about the organic farming; however the practice of such farming is at minimal level and this might be affected by the market situation. The farming can be the sustainable if the farmers follow certain norms while plantation and it can be practiced rigorously. From the informal discussion with the farmers during the research the environmental situation also affects the decision to be taken on adopting the organic farming practices.

References

- Howard, Sir Albert (1940) 'An Agricultural Testament', Research Foundation for Science, Technology and Ecology, New Delhi.
- Bemwad, Geier (1999) 'International Federation of Organic Agriculture Movements, in Sustainable Agriculture Solutions: The Action report of the Sustainable Agriculture Initiative', Novello Press, London.
- Sharma, Arun, K(2001) 'A Handbook of Organic Farming', Agrobios (India), Jodhpur.
- Singh, GR, 2001, 'Organic Farming for Sustainable Agriculture', Indian Farming
- Rossi, F., Godani, F., Bertuzzi, T., Trevisan, M., Ferrari, F., Gatti, S. (2008). 'Health promoting substances and heavy metal content in tomatoes grown with different farming techniques', European Journal of Nutrition, 47: 266–272.
- Butler, G. et al. (2008), 'Fatty acid and fat-soluble antioxidant concentrations in milk from high- and low-input conventional and organic systems: seasonal variation', Journal Science of Food and Agriculture, 88: 1431–1441.
- Lairon, D. (2010), 'Nutritional quality and safety of organic food. A review', Agronomy for Sustainable Development, 30: 33–41.
- Food Marketing Institute (FMI). (2008), ' Natural and organic foods', http://www.fmi.org/docs/media-backgrounder/natural_organicfoods.pdf?sfvrsn=2.