

Green Based Agriculture Products: Attitude and Perception of Farmers in Indian Context

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ABSTRACT

The attitudes and perceptions of agriculture products on the concepts and thoughts of sustainable agriculture and identifying effective factors on their attitude. A farmer might own the farmed land or might work as a laborer on land owned by others, but in most developed economies, a farmer is usually a farm owner, while employees of the farm are known as farm workers or farmhands. The purpose of the study is farmers' attitudes and perceptions towards green-based agriculture products. The main objectives of the study to analyze the attitude and perception towards green-based agriculture products. The sample size is 150. A convenient sampling method was used for the study. The study is descriptive and analytical in nature. The study both primary and secondary data. This study is carried out with the observation and survey questioning methods which are attributes of descriptive research. The data were analyzed and SPSS was used to analyze and interpret the required data. The analysis was used for percentage analysis and weighted average analysis, Chi-Square test. The findings of the study The conclusion of the study of agricultural products is important for the region. It is undergoing a process of transition to a market economy, with substantial changes in the social, legal, structural, productive, and supply set-ups, as is the case with all other sectors of the economy. There is concern that agricultural production in developing countries will cause environmental threats in the future, as production will have to increase to satisfy the growing demand for food.

Keywords: Agriculture Loan, Production, Marginal Farmers, Credit policies, formalities is simple in different schemes.

1. INTRODUCTION

A farmer is a person engaged in agriculture, raising living organisms for food or raw materials. The term usually applies to people who do some combination of raising field crops, orchards, vineyards, poultry, or other livestock. A farmer might own the farmed land or might work as a laborer on land owned by others, but in most developed economies, a farmer is usually a farm owner, while employees of the farm are known as farm workers or farmhands. However, in other older definitions, a farmer was a person who promotes or improves the growth of plants, land, or crops or raises animals (as livestock or fish) by labor and attention. Over half a billion farmers are smallholders, most of whom are in developing countries, and who economically

support almost two billion people.¹Globally, women constitute more than 40% of agricultural employees.

Agriculture is the practice of cultivating plants and livestock. Agriculture was the key development in the rise of sedentary human civilization, whereby farming of domesticated species created food surpluses that enabled people to live in cities. The history of agriculture began thousands of years ago. After gathering wild grains beginning at least 105,000 years ago, nascent farmers began to plant them around 11,500 years ago. Pigs, sheep, and cattle were domesticated over 10,000 years ago. Plants were independently cultivated in at least 11 regions of the world. Industrial agriculture based on large-scale monoculture in the twentieth century came to dominate agricultural output, though about 2 billion people still depended on subsistence agriculture.

Food includes cereals (grains), vegetables, fruits, oils, meat, milk, eggs, and fungi. Over one-third of the world's workers are employed in agriculture, second only to the service sector, although in recent decades, the global trend of a decreasing number of agricultural workers continues, especially in developing countries where smallholding is being overtaken by industrial agriculture and mechanization that brings an enormous crop yield increase.²

Agriculture has been the backbone of the Indian economy and it will continue to remain so for a long time. It has to support almost 17 percent of the world population from 2.3 percent of the world's geographical area and 4.2 percent of the world's water resources. The economic reforms, initiated in the country during the early 1990s, have put the economy on a higher growth trajectory. The annual growth rate in GDP has accelerated from below 6 percent during the initial years of reforms to more than 8 percent in recent years. This happened mainly due to rapid growth in the non-agriculture sector. The present cropping intensity of 137 percent has registered an increase of only 26 percent. The net sown area is 142 Mha. The net irrigated area was 58.87 Mha in 20014-15. Presently, the total net irrigated area covers 45.5 percent of the net sown area; the remaining 54.5 percent is rained. The degradation of land and surface, as well as ground water resources, results in fast deterioration of soil health. The storage, transportation, processing, value addition, and marketing of farm produce need to be improved to enhance household food, nutrition, and livelihood security. Indian agriculture is characterized by agro-ecological diversities in soil, rainfall, temperature, and cropping system. Besides favorable solar energy, the country receives about 3 trillion m³ of rainwater, 14 major, 44 medium and 55 minor

² <https://en.wikipedia.org/wiki/Agriculture>

rivers share about 83 percent of the drainage basin. About 210 billion m³ of water is estimated to be available as groundwater. Irrigation water is becoming a scarce commodity. Thus proper harvesting and efficient utilization of water are of great importance. Intensive cultivation as a result of the introduction of high-yielding varieties in the mid-1960s required higher energy inputs and better management practices. Land preparation, harvesting, threshing, and irrigation are the operations, which utilize most of the energy used in agriculture. For desired cropping intensity with timeliness in field operations, animate energy sources alone were no longer adequate. Farmers opted for mechanical power sources to supplement animate power. Small and marginal farmers have limited resources especially in rain-fed regions where only animate power is used resulting in low productivity. Though agricultural production is high, the per hectare productivity is much lower than the world average. There is an urgent need to increase productivity.

Green marketing emerged from societal marketing(**Kotler, 1999**). "Green Marketing" refers to a holistic marketing concept wherein the production, marketing, consumption, and disposal of products and services happen in a manner that is less detrimental to the environment with growing awareness about the implications of global warming, non-biodegradable solid waste, the harmful impact of pollutants, etc. Both marketers and consumers are becoming increasingly sensitive to the need for a switch to green products and services. (**Mudhassir, 2010**). The produced goods and services are, ultimately, used by the consumer for satisfying their needs and wants. The green marketing concept is incomplete until and unless consumers get a higher degree of satisfaction and benefits from the sacrificing resource in acquiring the green products. It is the behavior and perception of a consumer toward a green product through which the success or failure can be evaluated. **According to Nayan R. Sinha**, A green consumer is very concerned about the environment and, therefore, only purchases products that are environmentally friendly or eco-friendly. Products with little or no packaging, products made from natural ingredients, and products that are made without causing pollution are all examples of eco-friendly products. The green consumer would be the type to drive a hybrid vehicle, buy products made with hemp or those made from recycled materials.

2. REVIEW OF LITERATURE

Dodds, John (2006) in his article consumer's power gives a positive effect in changing the environment. The "green consumer" movement in the US and other countries helps them to reach the critical mass and all this directly affects the shoppers' minds effectively. This study helps us in knowing how consumers transform into green consumers. **Hans, Jim (2007)** observed that green marketers have taken the advantage of confusion prevailing in the marketplace among the consumers' minds. They purposely make false or exaggerate „green claims“. Following the same logic, it becomes possible to argue that green marketing leads to fantasy in the world where consumers need an eco-friendly environment. **D'Souza et al. (2007)** stated that demographics tend to play an important role in regards both the interest of the green product and green certification. **Green Trade & Development (2008)** discussed that consumers are said to be changing their attitude and perception and profess a strong willingness in favor of an eco-friendly environment. This concept helps us in realizing a fact that how much a consumer is conscious about their environment. The past two years have underscored the importance of one problem in Governmental routine: namely, that the execution of policies already legislated must depend upon an understanding of how people are likely to react to specific measures. Rationing and other restrictions currently placed upon the typical American consumer teach us that some timely research into his probable response might have improved public relations for the authorities involved. **(Hans E. Skott 2003)**. Reuse of treated wastewater could provide a key solution to address sustainable water resources management in agriculture. However, the success of this practice depends on public acceptance and involvement, which require careful assessment and evaluation **(Saliba, R., Callieris 2018)**.

3. OBJECTIVES OF THE STUDY

1. To study the attitude and perception of agriculture products.
2. To analyze farmers' attitudes and perception of agriculture products.

4. HYPOTHESIS

- There is no association between the age group of respondents and the subsidies offered.
- There is no association between the gender of respondents and the subsidies offered.

5. METHODOLOGY

The study is descriptive and analytical. The study both primary and secondary data. This study is carried out with the observation and survey questioning methods which are attributes of descriptive research. The data for the study was collected through structured questions.

Sample: The sample size is 150. A convenient sampling method was used for the study. The secondary data were also collected from various journals, textbooks, and the internet, which constituted supportive literature to make analysis and suggestions.

Statistical tools: The data were analyzed and SPSS was used to analyze and interpret the required data. The analysis was used for percentage analysis and weighted average analysis, Chi-Square test.

Statistical packages: MS Excel and SPSS 20.0 were used for analyzing the data and application of the above statistical tools.

6. FINDINGS AND DISCUSSION

The personal attributes of the organic farmer's attitude, perception. Hence, it has become necessary to examine their distribution of personal factors such as Place of residence; Gender, Age, Educational Qualification discussed below.

Table.1

Demographical Profile of the Respondents

Personal Factors	Classification	No. of Respondents	Percentage
Place of residence	Rural	73	48.7 %
	Semi-urban	54	36 %
	Urban	23	15.3 %
	Total	150	100
Gender	Female	93	62%
	Male	57	38%
	Total	150	100
Age	21 – 25	67	44.7 %
	26 – 30	35	23.3 %
	31 – 35	31	20.7 %
	Above 35	17	11.3 %
	Total	150	100
Educational Qualification	Illiterate	61	40.6
	School – Level	38	25.4
	Diploma / ITI	30	20
	Under Graduate	21	14
	Total	150	100

Source: Computed from Primary data

Table.1 shows that out of 150 respondents, 62 percent of the respondents are Male and the remaining 38 percent of the respondents are Female. Place of residence out of 150 respondents 48.7% of the respondents are rural. Majority 44.7% of the age group of the respondent are 21-25 groups. Educational qualification majority of the respondents are illiterate 40.6 % of the respondents.

WEIGHTED AVERAGE ANALYSIS**Table.2****Farmers Attitude Green Based Agriculture Products**

S. No	Source	Weight									Total	Weighted Average Rank	Rank
		9	8	7	6	5	4	3	2	1			
		Weighted Score											
1	Increase soil fertility.	180	160	175	90	90	48	42	32	10	827	5.51	3
2	Increase the efficiency	162	128	140	186	115	68	30	16	7	852	5.76	1
3	Improve water conservation	144	152	161	78	90	60	60	20	16	781	5.20	4
4	Low soil fertility	135	144	84	84	80	40	69	40	22	698	4.65	9
5	Good standard of living.	180	184	217	102	50	52	54	16	10	865	5.68	2
6	Protect the environment	171	144	105	120	50	64	45	34	20	753	5.02	6
7	Sustainable agriculture is not economically profitable.	126	128	70	102	75	88	84	30	13	716	4.77	8
8	Agricultural practices	144	120	140	66	115	72	51	20	20	748	4.98	7
9	Farm pests and weed	153	152	84	78	90	112	36	36	13	754	5.03	5

Weighted score = Weight x No. of Respondents. Weighted average rank: Total/sum of weight
(Source: Primary Data)

From table.2 it can be observed that 'Increase the efficiency' is ranked as the first preference and Low soil fertility as the last attitude of important green-based agriculture products. The 'Good standard of living is ranked as the second attitude, 'Increase soil fertility is ranked as the third attitude, 'Improve water conservation the variable is ranked as the fourth, 'Farm pests and weed' is ranked as the fifth attitude, 'Protect the environment is ranked as the sixth, 'agricultural practices' is ranked as the seventh attitude, 'sustainable agriculture is not economically is ranked as the eighth attitude and 'Low soil fertility is ranked as the least preference.

CHI-SQUARE

The Chi-square test is a statistic test fundamentally based on two tests i.e. the goodness of fit test and the test of independence, in both cases chi-square statistic is the same. For both of these tests, all the categories into which the data have been divided are used. The data obtained from the sample are referred to as the observed numbers of cases. These are the frequencies of occurrence for each category into which the data have been Chi-Square Tests χ^2 Distribution. In the chi-square tests, the null hypothesis makes a statement concerning how many cases are to be expected in each category if this hypothesis is correct. The chi-square test is based on the difference between the observed and the expected values for each category. The chi-square statistic is defined

$$\chi^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

RELATIONSHIP BETWEEN PERSONAL FACTORS OF RESPONDENTS AND PERCEPTION OF GREEN-BASED AGRICULTURE PRODUCTS

Table.3

Gender and Source of Agriculture Loan

S.No	Gender	Source of Agriculture Loan			Total
		High	Medium	Low	
		(No. of Respondents)			
1	Male	61	36	21	118
2	Female	25	2	5	32
	Total	86	38	26	150

Source: Primary Data

Table.3 reveals that out of 118 male respondents, 61 are under the high source of agriculture loans. Out of 32 female respondents, 25 are under the high level of source of agriculture loan. It is assumed that the gender of farmers will influence the source of agriculture loans. It is tested in this research study whether there is an association between gender and source of agriculture loans. The Chi-square test is used to test the following null hypothesis.

Table.4

Observed frequency	Expected frequency	$(O - E)^2$	$(O - E)^2 / E$
61	68	49	2.72
25	18	49	0.72
36	30	36	4.5
5	8	36	1.2
21	20	1	0.16
5	6	1	0.05
Total			9.35

Chi-square calculated value is 9.35. Table value at 5% significance level for 2 degrees of freedom is 5.991. The calculated value is greater than the table value. The null hypothesis is rejected. It is concluded that there is an association between gender and the source of agriculture loans.

Table.5**Age and awareness of the subsidies offered**

S.No	Age	Aware of the subsidies offered			Total
		High	Medium	Low	
		(No. of Respondents)			
1	21 – 25	63	30	20	113
2	26 – 30	12	4	5	21
3	31 – 35	4	4	3	11
4	Above 35	2	2	1	5
	Total	81	40	29	150

Source: Primary Data

Table 4.13 reveals that out of 113 respondents 21 -25 age group, 63 are under the high level of awareness of the subsidies offered. Out of 21 respondents (26 - 30) age group, 12 are under the high level of awareness of the subsidies offered. Out of 11 respondents (31 - 35) age group, 4 are under the high level of awareness of the subsidies offered. Out of 5 respondents (above 35) age group, 2 are under high level aware of the subsidies offered.

Table.6

Observed frequency	Expected frequency	$(O - E)^2$	$(O - E)^2 / E$
63	61	4	0.06
12	11	1	0.09
4	6	4	0.06
2	3	1	0.33
30	30	0	0
4	6	4	0.66
4	3	1	0.33
2	1	1	1
20	22	4	0.18
5	4	1	0.25
3	2	1	0.5
1	1	0	0
Total			3.46

Chi-square calculated value is 3.46. Table value at 5% significance level for 6 degrees of freedom is 12.592. The calculated value is less than the table value. The null hypothesis is accepted. It is concluded that there is no association between the age group of respondents and the subsidies offered.

7. CONCLUSION

The conclusion of the study of agricultural products is important for the region. It is undergoing a process of transition to a market economy, with substantial changes in the social, legal, structural, productive, and supply set-ups, as is the case with all other sectors of the economy. There is concern that agricultural production in developing countries will cause environmental threats in the future, as production will have to increase to satisfy the growing demand for food. Intensification leads to high inputs of nutrients in the form of mineral fertilizers and animal feed. Important parts of these inputs leak from the system in the form of nutrient leaching to groundwater and gaseous losses to the atmosphere. Pressure on the existing agricultural land may increase by growing demand for productive land and degradation of the existing agricultural land base. Expansion of agriculture generally leads to massive deforestation.

The study concentrated on the interactions between livestock production, crop production, and land use. The link between livestock and crop production is through the demand for animal feedstuffs. This report presents long-term scenarios describing these interactions and the possible consequences for crop production and animal waste production. As the world

population is expected to stabilize in the second half of the twenty-first century, the scenarios must cover 50-100 years to include the impacts of human population numbers.

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