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Research Article

An Impact Study on Organic Agriculture - SWOC Analysis

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ABSTRACT

Ecological changes, mechanization and industrial developments result in an increasing artificial facilities and the impact of human activities leads to the demolition and loss of natural resources and its habitats. Organic agriculture is the method of food production using the naturally available resources particularly organic and by avoiding any type of artificially made chemicals, fertilizers, pesticides, fungicides, weedicides, etc. Also to sustaining the ecosystem and pollution less agriculture production, there is a need of organic agriculture at present days. Tamil Nadu Agricultural University (TNAU) imparts training at every month on organic agriculture to the interested farmers. This study was conducted with a structured interview schedule with 200 trained farmers with the specific objective to analysis the organic agriculture farmers with the various dimensions via., strength, weakness, oppurtunities and challenges (SWOC). The study revealed that high quality products and use of agricultural wastes effectively were the strength Promoting high life style and contract farming tie-up were the foremost opportunities expressed by organic farmers with mean score of 2.70 and 2.40 respectively.

Keywords: *Organic agriculture, SWOC analysis, Weighted Mean Score (WMS).*

INTRODUCTION

Organic agriculture in India is one of the fastest growing systems of agricultural production. Increasing awareness about health and changing lifestyle are the reasons for increasing the demand of organic products consumption and marketing. In overall, India produces organic food in the world. According to Union Ministry of Agriculture and Farmers Welfare 2.78 million hectare of farmland was under organic cultivation as of March 2020. This is two per cent of the 140.1 million ha net sown area in the country. Even though India has very small organic area under cultivation, it is being ranked first in the world with over 1.9 million numbers of organic farmers as of March 2020.

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As defined by IFOAM, Organic Agriculture is a production system that sustains the health of soils, ecosystems, and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic Agriculture combines tradition, innovation, and science to benefit the shared environment and promote fair relationships and good quality of life for all involved. The principle of health, ecology, fairness and care are the roots from which the organic agriculture grows and develops.

There have been about a threefold increase from 528171 ha in 2007-08 to 1.2 million ha of cultivable land in 2014-15. Associated Chambers of Commerce & Industry in India, study found that the organic food turnover is increasing at about 25 per cent annually and thereby will be expected to reach USD 1.36 billion in 2020 from USD 0.36 billion in 2014 (Willer & Lernoud, 2017).

SWOC is an acronym stands for strengths, weakness, opportunity and challenges. SWOC analysis is a planning tool used to understand the strengths, weakness, opportunities, and challenges involved in a person, project, or in a business. It is defined as a process of generating information that is helpful in matching the farmers capacity to the organic agricultural activities in which it operates. SWOC analysis is a strategic planning method used to research external and internal factors which affect organic agricultural success and growth.

Strengths are positive tangible and intangible attributes, internal to individual, basic assets of the farmer in organic agriculture which provides growth and development. Weakness is the liability of an individual, to involvement of organic agriculture which affects the growth and utilization in agriculture. Opportunity is the ability of an individual to expand the prospect and exploitation towards organic agriculture in varied aspects. Challenges are the external factors, situations that might block organic agricultural activities.

With the above context, the present study was conducted with the specific objective to analyze the Strength, Weakness, Opportunities and Challenges of organic agriculture.

MATERIALS AND METHODS

The study was conducted in three districts of TamilNadu namely Coimbator, Tiruppur and Krishnagiri. Totally 200 respondents were selected. On the basis of reviewed literatures and research studies on organic agriculture in different dimensions followed by the discussion with the academics, a well structured and pre tested interview schedule was used to collect data and assess the SWOC parameters of organic agriculture. The Interview schedule containing a list of 43 items (strengths -14, weakness-11, opportunities 11- and challenges -07). The perceived responses of the respondents under each parameter were listed.

Analysis of SWOC is to identify the most significant factors from all the items listed on it. The modified scoring procedure adopted by Ovidijus Jurevicius (2013) was used.

Prioritization

Strength and weakness are evaluated on the following criteria and scale.

Importance

Importance shows how important in strength or a weakness is for the organic agriculture in its industry as some strength (weakness) might be more important than others. A number from 0.01 (not important) to 1.0 (very important) should be assigned to each strength and weakness.

Rating

A score from 1 to 3 is given to each factor to indicate whether it is a major (3) or minor (1) strength for organic agriculture farmer. The same rating should be assigned to the weakness where ‘1’ would mean a minor weakness and ‘3’ a major weakness.

Score

Score is a result of importance multiplied by rating. It allows prioritizing the strength and weakness.

Opportunities

Opportunities and threats are prioritized slightly differently than strengths and weakness. Their methods of evaluation are as stated below.

Importance

It shows to what extent the external factor might impact the organic agriculture. Again the numbers from 0.01 (no impact) to 1.0 (every high impact) should be assigned to each item.

Probability

Probability of occurrence is showing how likely the opportunity or threat will have any impact on organic agriculture. It should be rated from 1 (low probability) to 3 (high probability).

Score

Importance multiplied by probability will give a score by which you will be able to prioritize opportunities and threats. Pay attention to the factors having the highest mean score and ignore the factors that will not likely affect the organic agriculture.

Further, the respondents were asked to rank the strengths, weakness, opportunities and challenges as perceived by them.

RESULTS AND DISCUSSION

As strength is the basic asset which provides growth and success to continuing the organic agriculture cultivation practices effectively. This part of the study deals with the strength as perceived by the respondents. The item ranked the organic farmers on priority based on its comparative advantage over conventional method in organic agriculture is given in Table 1.

Table 1: Strength of organic agriculture as perceived by the respondents

Sl. No.	Strength of organic agriculture	Importance	Rating	Mean score	Rank
1.	Improve soil health	0.80	3	2.40	III
2.	High quality products	0.90	3	2.70	I
3.	Chemical and Disease free products	0.95	2	1.90	V
4.	Fetching high price of the produce	0.25	1	0.25	XIII
5.	Use indigenous knowledge	0.55	1	0.55	X
6.	Save the life of beneficial microbes	0.80	2	1.60	VII
7.	Employment opportunities	0.75	1	0.75	VIII
8.	Sustainable use of local resources	0.80	3	2.40	III
9.	Developing local organic input dealers	0.40	1	0.40	XII
10.	Conserving the local varieties of crops	0.35	2	0.70	IX
11.	Quick and easy sale to contractors	0.60	3	1.80	VI
12.	Good shelf life of the produce	0.45	1	0.45	XI
13.	Use of agricultural wastes effectively	0.89	3	2.67	II
14.	Self Satisfaction in providing healthy and good food to the nation	0.70	3	2.10	IV

High quality products was ranked as I strength in their organic agriculture with mean weightage score of 2.70. This might be due to the fact that use of the natural resources and inputs in organic agriculture without using the chemicals, pesticides, fertilizers, weedicides and other chemical substances which leads to production of quality and taste produce.

Use of agricultural wastes effectively ranked II. This might be due to the fact that organic farmers utilized all the agricultural wastes for compost making with the use of NOCF waste decomposer manufactured from NOCF, Ghaziabad, which in turn use the reduced chemical component for cultivation.

Improve soil health and sustainable uses of local resources were ranked III with mean score 2-40. Plant nutrition depends on biologically derived nutrients instead of using readily soluble forms of nutrients Further,

Organic inputs were also prepared by using the available sources within the farm and neighbor lands in the locality itself .Bulky organic materials play a key role in suppressing weeds, pest and diseases which was experienced by majority of the respondents. Hence the improvement of soil health as one of the strength expressed by the respondents.

It could be observed from table that Self satisfaction in providing healthy and good food to the nation was ranked IVth. Majority of the organic farmer themselves utilized their produce and feedback of consumer also stated that organic produce assured the good health to citizen. These were the reason for this strength.

The other strength as perceived by the respondents were Chemical and disease free products followed by Quick and easy sale to contractors ranked as Vth and VIth with mean score of 1.90 and 1.80 respectively. Organic growers normally sold their produce through contract which is easier than the other available markets where they difficult to get the organic produce buyers or consumers.

Save the life of beneficial microbes ranked VII with mean score of 1.60 followed by Employment opportunities (VIII rank) with the mean score of 0.75. The probable reason might be due to the fact that reduction in use of chemicals would safe guard the beneficial microbes in the soil Conserving the local varieties of crops ranked ninth with mean score of 0.70. As a tradition, they used to cultivate the local verities like seeraga samba, kavuni, kala namak etc., over a long period of time and fetch good price in the market which has the medicinal and threrapetic value.

Use of indigenous knowledge as Xth ranked strength identified by the respondents .Crop rotation, mixed cropping, poly culture and gypsum application etc, were the indigenous practices with very limited input cost which were practiced by the respondents from earlier periods in crops cultivation which are the key activities in the organic agriculture.

The XIth ranked strength was Good shelf life of the produce. This might be due to the reason that the shelf life of the organic products were normally more and especially the perishable nature items like tomato, bhendi, brinjal etc., had almost double the shelf life period in normal temperature without any refrigerated storage compared with the conventionally produced.

Developing local organic input dealers and Fetching high price of the produce were ranked XII and XIII rank respectively.

Weakness of Organic agriculture

Weakness is the liability of the organic agriculture and it is an internal factor. The importance and rating of weakness assigned by the respondents is depicted in Table 2.

Table 2: Weakness of the organic agriculture as perceived by the respondents

Sl. No.	Weakness of the organic agriculture	Importance	Rating	Mean score	Rank
1.	Less availability and high inputs cost	0.90	3	2.70	I
2.	Insufficient premium price for organic produce	0.80	3	2.40	II
3.	High risk and uncertainty of return	0.70	1	0.70	VIII
4.	Marketing problem of produce	0.6	3	1.80	III
5.	Bulky nature of organic inputs	0.5	3	1.50	V
6.	Poor credit facilities	0.7	2	1.40	VI
7.	Lesser yield during initial years	0.85	2	1.70	IV
8.	High cost and non-availability of labor	0.45	2	0.90	VII
9.	Inadequate support from government agencies	0.50	1	0.50	IX
10.	Non development of separate organic market	0.42	1	0.42	X
11.	Less awareness and tedious process of certification	0.90	3	2.70	I

It could be found that less availability and high inputs cost ranked Ist with a mean score of 2.70. (Table 2) This result might be due to non availability of organic inputs such as bulk of FYM, bio fertilizers and other bio-inputs for pest and diseases management in the study area. This finding is inconformity with the finding of Pankaj Kumar et al. (2018).

Insufficient premium price for organic produce was identified as II ranked weakness with a mean score of 2.40. Even though the crops grown organically, there were no special marketing system and price fixing procedures for organic produce were the probable reasons for this weakness in organic agriculture.

Marketing problem of produce ranked III among the weakness of the organic agriculture with a mean score 1.8. The respondents felt that the lack of awareness of the consumers and buyers about the value of organic produce and made them to understand the specialty of organic produce were the main hurdles in selling organic products. Normally the organic produce is fetching the same price as the conventional produce in common marketing place or in the local market.

The weakness which ranked IV with a mean score of 1.70 was lesser yield during initial years. It is important that the income and profit are very essential for the farming community as most of them are small and marginal farmers. Comparably less income only received by the farmers due to lesser yield lead them to express this factor was a important weakness of organic agriculture. This finding is in conformity with the research result of Kalyani et al. (2018).

In the weakness of organic agriculture the factor ranked V with a mean score of 1.50 was Bulky nature of organic inputs. Organic inputs like farmyard manure, compost, vermicompost, green manures and leaf manures were required in bulky for organic agriculture hence; the farmers expressed that he bulky nature of organic input as weakness.

The VI ranked weakness with a mean score of 1.4 was Poor credit facilities. The respondents felt that the financial support for promoting organic agriculture through providing credit facilities are lacking from the government side.

High cost and non-availability of labor with mean score of 0.90 was ranked as the VIIth weakness. Increasing wage of the labour and migration of the more people from rural areas to urban places were the reason to this weakness.

With mean score 0.70, high risk and uncertainty of return was the VIIIth ranked weakness. The probable reasons might be organic agriculture recorded lower yield in the initial stage irrespective of the crops where the chemicals not used for pest and disease management.

As expressed by the respondents, Inadequate support from government agencies, non development of separate organic market and less awareness and tedious process of certification were found as the least ranked weaknesses of organic agriculture.

Opportunities of organic agriculture as perceived by the respondents

Table 3: Opportunities organic agriculture as perceived by the respondents

Sl. No.	Opportunities of Organic agriculture	Importance	Probability	Mean Score	Rank
1.	Contract farming tie-up	0.80	3	2.40	II
2.	New set up for organic by- products	0.20	1	2.00	III
3.	Higher price for organic produce	0.50	2	1.00	VI
4.	Promoting healthy life style	0.90	3	2.70	I
5.	Huge regional & global export market	0.30	1	0.30	IX
6.	Consistent yield	0.70	1	0.70	VIII
7.	Increasing interest in Organic agriculture	0.90	2	1.80	IV
8.	More chance of IFS	0.30	3	0.90	VII
9.	Higher demand from urban and educated population	0.40	3	1.20	V
10	Supporting policy by Government	0.10	2	0.20	X
11.	Location specific ecological zones	0.30	1	0.30	IX

It could be observed from table 3 that Promoting healthy life style statement was ranked first with mean score of 2.70 followed by contract farming tie-up with the mean score of 2.40. This promoting healthy life style opportunities might be due to the reason that high nutritive value of organic products which will help to improve the health of the people or consumers. This is in conformity with the findings of Alexandra muscanescu (2013).

The third ranked opportunities as perceived by the respondents were new set ups for organic by - products with mean score of 2.00. Increasing interest in organic agriculture was ranked IVth as per the scoring result followed by "higher demand from urban and educated population" as Vth ranked with the mean score of 1.80 and 1.20 respectively. These might be due to awareness created among the farmers by both government and non government extension agency Higher price for organic produce with the mean score of 1.00 ranked as the VIth opportunity. The respondents felt that increasing awareness about the benefits of the chemical free agricultural products will create more demand of the organic products automatically price will increase when more demand.

As perceived by the organic farmers, the VIIth ranked opportunity was more chances for integrated farming system with the mean score of 0.90. This might be due to the fact that livestocks are the main sources for organic input preparation and effective use of the wastes of livestocks may lead to inclusion of cattle in their farm and recycle the waste (IFS).

The opportunity statement, Consistent yield was the VIIIth ranked opportunity with mean score of 0.70. Based on the real experience, the organic farmers had a perception that though a little bit less yield during the initial years but after that a consistent yield will be obtained surely due to the nature of healthy soil developed in organic agriculture.

The opportunities viz., huge regional and global export market, location specific ecological zones and supporting policy by the government were the least ranked opportunities by the organic farmers.

Challenges the organic agriculture as perceived by the farmers

Table 4: Challenges the organic agriculture as perceived by the farmers

Sl. No.	Challenges	Importance	Probability	Mean Score	Rank
1.	Yield reduction	0.2	1	0.20	VII
2.	Control of pest and disease incidence	0.9	3	2.70	I
3.	Chance of misusing the marketing of products	0.4	2	0.80	V
4.	Climate change	0.5	3	1.50	IV
5	High procedure for authorization	0.5	1	0.50	VI
6.	High competition for organic inputs	0.7	3	2.10	II
7.	Risk & uncertainty of marketing	0.8	2	1.60	III

Control of pest and disease incidence was the main challenge ranked first by the organic farmers with the mean score of 2.70. This might be felt by the respondents due to lack of unavailability of bio – pesticides and fungicides for all the different type of pest attacks and diseases happened due to the changing climate and whether conditions.

It could be seen from the table 4 that high competition for organic inputs was ranked IInd with mean score of 2.10. Normally, bulk quantity of FYM and bio inputs required for organic agriculture. In this situation the extent of organic agriculture in more areas will lead to the huge demand and competition for the organic inputs which leads to competition among the input producers.

With mean score 1.60, the challenge statement risky and uncertainty of marketing as ranked IIIrd by the organic agriculture

farmers. Though, the organic farmers sold their products in different marketing channel, they had a thought of risky and uncertainty of marketing due to the non availability of individual or separate market setup for organic produce.

Climate change was the challenge ranked in IVth place by the respondents with mean score of 1.50. since, organic inputs preparation, storage and application of organic inputs etc., are more time consuming activities, the change of climate will collapse the nature of organic inputs and uses of the organic inputs.

Chance of misusing the marketing of organic products was ranked Vth with mean score of 0.80. The respondents felt this as a challenge due to the non awareness about the truthfulness of organic products by the public or consumers.

The VIth and VIIth ranked challenges by the respondents were high procedure for authorization and yield reduction. Hence it is suggested that organic certification procedure may be simplified and easily approachable to obtain certification.

CONCLUSION

It could be concluded that High quality products was ranked as first strength followed by Use of agricultural wastes effectively. Challenges expressed by the respondents were high procedure for authorization and yield reduction. Hence It is suggested that organic certification procedure may be simplified and easily approachable to obtain certification. Further, Government should take concrete steps to establish more number of organic markets and remunerative price also to be fixed for organic produce.

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REFERENCES

Muskiness, A. (2013). Organic versus Conventional: Advantages and Disadvantages of Organic Farming, Scientific Papers Series Management , *Economic Engineering in Agriculture and Rural Development 13*(1).

IFOAM & FIBL, (2006). The world of organic agriculture. Statistics and emerging trends 2006. IFOAM, FiBL, Frick. http://orgprints.org/5161/01/youssefi-2006.overview pdf.

Kumar, P. (2018). Impact of Training Programme on Adoption of organic farming Practices.

Kalyani, (2018). Organic Farming in Tamilnadu: Status, Issues and Prospectus. *AIJRHASS 21*(1), PP 82-86, 2017-2018.

Jurevicius, O. (2013). https://strategicmanagementinsight.com/tools/swot-analysis-how-to-do-it.html.

Organic Agriculture Training Booklet, (2018). Tamil version, Dept. of Sustainable Organic Agriculture, TNAU, Coimbatore.