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# Overview on Sikkim Organic Agriculture and Strategies for Future Market Potential

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## Abstract:

*The world has been felt the safety and utility values of organic food and it is main cause for the revolution in the field of the organic farming and organically produced & organic processed food. India is agro based country and Sikkim has been declared 100% organic state in 2015-16 by government of India. A study was conducted in May, 2017 to examine the cost acceptability of organic food in Sikkim and to identify and suggest the marketing strategies required for marketing of organic food in the Sikkim based on the detailed survey. The result of study indicates that significant difference exist between the imaginary status and actual status of the market. Sikkim is organic state but still 18 % consumers misunderstand the concept of organic products and even 80.1 % consumers cannot differentiate between organic and inorganic food. About 25 % consumers in the market still prefer inorganic food products which show a vast gap of information within the consumer about organic food. This study also revealed that with respect to income of consumers, they are ready to pay on an average of 12.08 % extra amount for the organic products. The findings of the study also showed that majority of consumers that is about 5.8 % believe on supermarket and governmental owned shops for the purchase of organically produce commodity.*

**Keyword:** Sikkim, Organic Agriculture, Marketing Strategies, Market potential, Consumers.

## INTRODUCTION

Right from the origin of the life on the earth, food is the basic need of the any living organism along with the human. Now-a-days the awareness towards the health by the peoples from all over the world has been felt along with the safety and utility values of nutritious food is main cause for the revolution in the field of the organic farming and organically produced & organic processed food. In India, peoples are more cautious about their health and looking for the organically cultivated food grains and other agricultural products. The standards parameters of organic farming and organic food varies country to country but the definition of the organic farming is almost same throughout the world. Consumers are looking for more safe and more controlled foods, produced in environment friendly condition and in local area. Prior to the green revolution, farming in India was mainly dependent on natural resources available within the farm and all inputs namely manure, seeds, pesticides, irrigation were provided from the internal sources but during and after the green revolution, use of chemical fertilizers and pesticides increased tremendously in addition to the new techniques and advancement in technology for the farm mechanization and irrigation facilities (Patle et al. 2013). Due to that the several health related problems has been raised due to the deterioration in the soil, water and mainly food grain quality. This has forced the human beings to think about the adoption of organic food for the better health. Global agricultural food production system is principally climate driven. Climate change, its impacts and vulnerabilities on agriculture and associated sector is a matter of big concern in the current era (Jamous, 2010; Wani et al., 2013; Patle et al.,2013). Concept of Organic farming known from the long time but due to change in the farming method and use of chemicals, health of fertile land allow only Organic Farming in the coming future. The consequences of wide use of chemicals and other harmful materials to increase the yield reduced the health of soil. Farmers are not only facing challenges in adoption of organic cultivation but other factors also became hurdle in the path of organic farming for the farmers like storage, transportation, marketing of organically produced food and food products. Use of large amount of chemicals and other

synthetic harmful materials has directly or indirectly affected the biosphere and introduce several types of diseases in human and other living organisms. One of major important challenge of present era is high concentration of greenhouse gases that has created several problems (Patle et al., 2014). Agriculture not only provides food and occupation to human but it also helps in balancing the environment and eco-system. India is agro based country and farming is the major source of income for the most of middle class farmers. Major part of country's GDP is contributed by the agricultural sector. Export of agro based product to near countries is also practice in India due to huge production. After green revolution several changes took place in Indian farming system that spotted some hidden negative impacts of inorganic farming.

In Indian context the term organic can be referred as "The way agricultural products are grown and processed organic crop or organic food must be grown without the use of any chemical and synthetic fertilizers, pesticides, herbicides, Genetically Modified Organisms (GMOs), Bio-engineered genes, or any other chemical disease controller agents from the last three years can be termed as the organically produced food or organic food". Organic food is considered as the safest food as compared to the non-organically grown food. Even people get confused among the "Pure Food" and "Organic Food" which is completely different from each other. Pure food means "natural food without any artificial agents for example Pure Ghee, Pure Milk etc. India having very huge and open market for the organic food. India has total market potential of more than Rs. 2300 crores for the organic food. Growing concern regarding the health in the Indian consumers provided the space for the organic food in the market. Area under the organic production in India has increasing every year.

North East India is one of the most sensitive part of country and least known by the other parts of world. North East India constitutes eight states namely Arunachal Pradesh, Mizoram, Nagaland, Tripura, Sikkim, Manipur, Assam and Meghalaya.

Sikkim is 22<sup>nd</sup> state of Indian Union is based upon an agrarian economy. Sikkim has been declared 100% organic state in 2015-16 by government of India. In Sikkim more than 64 percent population depends on farming for their livelihood and occupation. Due to overwhelming of horticulture sector to the Sikkim's GDP, main focus should be in this sector required for the development of the rural population. Agricultural land in state is to be estimated about 1, 09, 000 hectares which contribute 15.36 % of total geographical area of state. Farming is very big challenge in Sikkim due to its hilly geographical structure and different climatic zones in different districts. Organic mission started since 2011-12 in state for promoting organic farming, protected cultivation and protection of bio diversity of state.

Marketing of organic food is major challenge in the Sikkim due to low density of population and lack of storage & transportation facilities in state. Organic food cannot be distinguish by visual examination thus, there is need of branding required in state by some well recommended and reputed governmental organization that can help to overcome the hurdle of marketing of organic products in the state and to the other part of the nation as well as to other part of the world. In regard with the organic food, consumers are getting confused due to lack of information and knowledge and the main question arises in their mind is "Why Organic?" and "What is Organic?". The major objectives of the study are:

1. To examine the cost acceptability of organic food in Sikkim
2. To identify and suggest the marketing strategies required for marketing of organic food in the Sikkim
3. To foresight the future growth of organic market in Sikkim

### **WHY ORGANIC FARMING AND ORGANIC FOOD?**

Due to rapid increase in the population of world, natural resource bearing huge pressure. These natural resources rapidly shrinking because of high population concentration, socio-economic pressure, global warming, fall in the groundwater level, contamination of natural resources, due to human activities etc. Organic farming not only avoid use of chemicals and hormones application in the farms or agricultural land while GMOs also eliminated by the Organic farming. Chemicals residue having toxicological properties that leads several carcinogenic, neurological and skin related disease. Now - a- days large portion of population dependent on GMOs food. Organic farming do not include any types of Genetically Modified Organism and Bio-engineered plants / crops. It is claimed that GMOs can be the reason for the cancer. One of the other risks

in Allergic outbreaks. Due to the GMOs food there will be always be unknown long term effects to the Eco-system and Biodiversity. Many GE plants having unidentified consequences on the insects which takes part in the pollination of the flowers such as – Butterflies etc. Most of the negative impact on the environment and eco-system are most probably irreversible. The organic food is not only advantageous to the consumers it is fruitful for the farmers also. Organic farming is cheaper method of farming as compare to the conventional farming and more convenient due to the use of traditional method of the farming. Due to no use of chemical fertilizers and pesticides the initial cost of cultivation is also low. There are several schemes by the government which support the farmers for the organic farming by providing the financial support at the low level interest rates and longer duration of the return period. According to the new research by the group of the scientists, it is found that the organic food is more nutritious as compare to the conventional food (Worthington et al., 2001). There is not much difference in the mineral and vitamin level in the organic and conventional food but the level of some special compounds like antioxidants are quite high in the organic food (Carbonaro et al, 2000). Organic fruits and vegetables contains 20% to 40% higher antioxidant activities. Some studies in Europe in 2016 also showed that Organic milk and meat contains very high level of Omega-3- fatty acid and it is about 50% higher as compare to conventional food. Organic farming reduce the water pollution, air pollution, conserve water, reduce soil erosion, soil fertility and use very less amount of energy. Use of pesticides & other chemical is also harmful for birds and dependent creators of the nature.

#### MARKETING STATUS OF ORGANIC FOOD:

India has very big market for the organic food crop and provides number of opportunities to the organic grower for high market value of their organic produce. India having more than 300 million of middle class population which is potential consumers for the organic food market. In the recent few years the area under the organic cultivation has increased rapidly. According the recent data in 2013 – 2014 area under the organic cultivation has increased by 0.2 million hectare in India. Major organic crops exported from the India to the different countries and their percent share is shown in Table 1.

Table 1: Export of different organic commodity

S. No.	Name of crops	Export (%)
1.	Oil seed	50%
2.	Processed food products	25%
3.	Cereals & Millets	17%
4	Tea	2%
5.	Pulses	2%
6.	Spices	1%
7.	Dry fruits	1%
8.	Others	2%

Source: FiBL & IFOAM

Indian Agriculture having significant potential to meet the requirement of organic food to the domestic and international market. India having more than 720000 hectares of land under the organic agriculture which is only 0.4% of total land under the organic cultivation worldwide by 2014. The total organic agriculture area in Asia was 3.6 Million hectares in 2014. This constitutes 8% of the world's organic agricultural land. There were more than 0.9 million organic producers in India and total land area under organic cultivation is about 0.7 Million hectare. Major livelihood function in India is agriculture in which more than 6,50,000 farmers are involved in organic activities by 2014. India produced about 1.35 million MT (2015-16) of certified organic products ( Kulkarni et al. 2016). The major countries where these products get exported are US, Canada, New Zealand, South East Asian Countries, European Union, Australia, Switzerland etc (Kulkarni et al. 2016). It includes not only food but organic cotton fibers, functional food products also. The major food crops in India

which are organically produce are sugarcane, oil seed, cereals & millets, cotton , pulses, medicinal plants, tea, fruits, spices, dry fruits, vegetables, coffee etc.

### MARKETING OF ORGANIC FOOD IN SIKKIM:

Sikkim was declared as completely organic state in year 2015-16 but major problem in organic farming faced by the farmers in the marketing of commodity in Sikkim due to lack of proper marketing channel, proper marketing strategies for the Organic food and organic farming and lack of information about the market and consumer's choice and their requirement of commodity. This study conducted to fill the gap of information about the consumers and their preference and priority of choice. The purchase capacity and choice of product varies from time to time and location to location.

The demand of consumers depends on several factors like: price of commodity, utility of commodity, income level of consumers.

### CONSUMER'S POINT OF VIEW ON ORGANIC FOOD & FARMING:

There are three sections of consumer behavior that need to be addressed carefully: psychological influences, socio-cultural influences and situational influences (John et al.2014). In Sikkim state there are two types of consumers exist namely price sensitive and quality sensitive. Basically, organic farming required more manpower and time. That adds up the cost on the final price of the commodity. According to several studies is also found that the productivity is also low in organic farming as compare to inorganic farming due to requirement of more space by the plant for nutrition of the plant.

### RESULT AND DISCUSSION:

Main purpose for survey is to determine the current marketing scenario of state for organic food and internal and external factor that influence the purchasing capacity and decision of consumer. The survey was conducted in the month of May, 2017 in the capital of Sikkim, Gangtok and nearby places of Gangtok like Ranipool, Jalipool, Assam Linzey and Ranka. The questionnaire were given to 156 consumer selected randomly from the above mentioned area. The questionnaire had two parts, first part contains the about demographic characteristics: Name, Age, Income, Occupation etc. The second section consist the questions related to organic food and organic farming in order to know the choice of consumers. Understanding the behavior of consumer is key of success of any marketing strategies. The major question in the mind of consumer about organic commodities was why, when, where and what to purchase?

Form the Figure 1 it can be seen that about 28 % person selected from the age group of 21-30 years old, 34 % in range of 31-40 years, 19 % in the range of 41-50 years and 19 % from 51-60 years. Different age group helped in understanding the current situation of market and the mentality of different generation that foresight the scenario of organic market in Sikkim state.

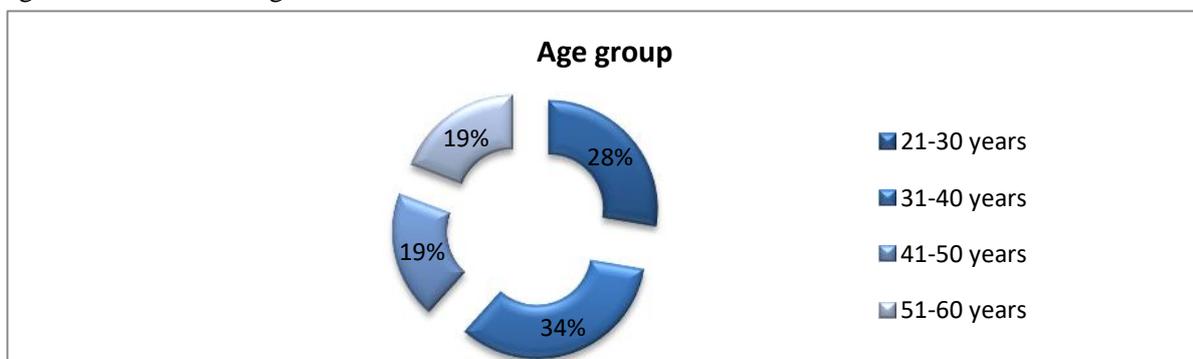


Figure 1: Description of consumer's age group participated in survey

During the survey 59.6 % male member and 0.4 % female member was participated. This shows that the male domination is more in the marketing structure of Sikkim. Organic is not a new concept in Sikkim but still people don't know about the organic food completely. Survey reveals that there is still gap of information exists within the consumers.

Table2: Basic marketing information for organic food

S. No.	Question	Responses	
1.	Do you Know "What is Organic"?	<b>Yes</b> 82 %	<b>No</b> 18 %
2.	Which product you Prefer?	<b>Organic</b> 75 %	<b>Inorganic</b> 25 %
3.	Can you differentiate between "Organic and Inorganic food"?	<b>Yes</b> 19.9 %	<b>No</b> 80.1 %

From Table 2, it is concluded that only 82 % consumers were aware about the organic food and still 18 % consumer do not know about the organic food, their benefits. This shows the large in the society about the knowledge of organic commodities. About 25 % consumers in the market preferred inorganic food products which show a vast gap within the society. They gave several factors for their choice of inorganic products like: taste of Inorganic food, cost, availability of different varieties of same food products in market and some other also. It is difficult for farmer to sustain their life with organic farming because they are not getting proper value for their commodity. Even 80.1 % consumers cannot differentiate between the Organic and Inorganic food.

Farmers are producing different types of food products but they are no getting proper market value of their commodity due to lack of information about the demand of different commodity. There are very few organization which working for the promotion of organic agriculture and providing information on organic commodities and availability of organic market. The market demand and consumer preference of different organic food products is presented in Figure 2.

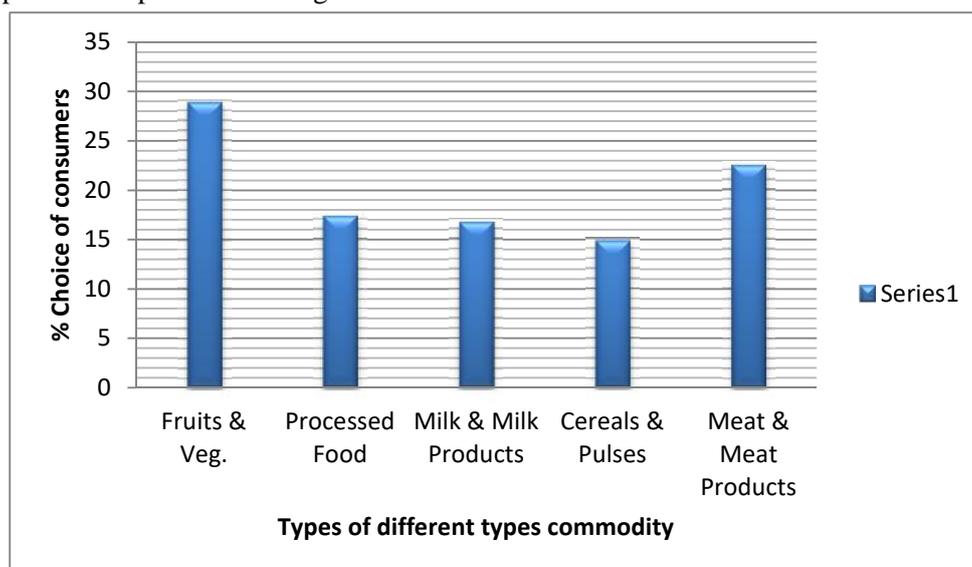


Figure 2: Acceptability of different types of organic products in Sikkim

From figure 2 it can be observed that about 28.8 % people preferred fruits & vegetable as organic food, 17.3 % consumer preferred processed food as organic food, 16.6 % consumers preferred organic milk and milk

products, whereas, 14.7 % peoples preferred cereal and pulses as organic food and 22.4 % peoples preferred organic meat and meat products in their diet. Thus, from given information it can be concluded that farmer should focus on production of fruits and vegetable for appropriate market value for their products in Sikkim state.

Organic farming having lower productivity and high labour cost as well as yield per unit area also reduced these all factors together increase the cost of organically produced commodity as compare to inorganically produced commodity. But consumers purchasing behavior always move toward the cheaper products. In our society different groups of people live and their demand and purchasing behavior fluctuate according to their income and necessity. But with the changing time consumers are becoming more conscious regarding their health and now they are ready to pay more amount for healthy products. The figure 3 show the change in mind set of consumers for the cost acceptability of organic commodity( Kumar et al., 2013).

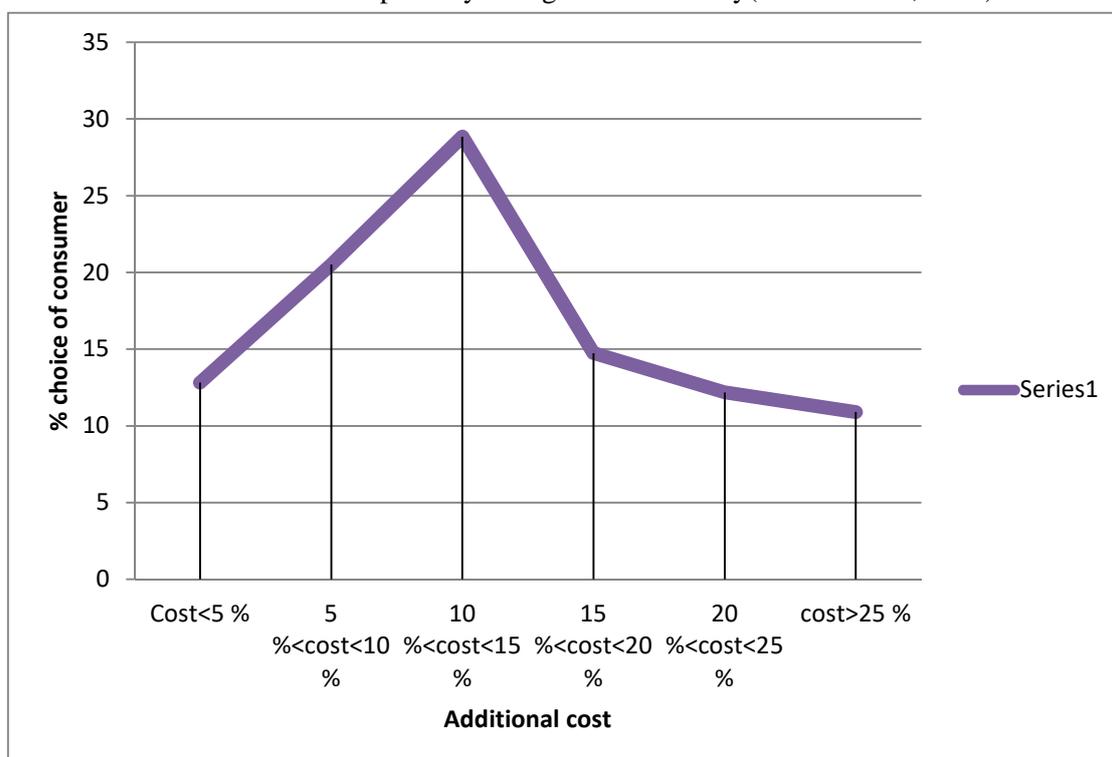


Figure 3: Cost acceptability of organically produced commodity in Sikkim

From the result of survey, it can be concluded that consumer can pay average of 12.08 % extra for organic commodity but the actual cost of production is quite higher than the average cost acceptability of the commodity from the expectation of consumers in market. About 12.8 % consumers can't bear more than 5 % extra price for the organic commodity, 20.5 % consumers can pay extra between 5 % to 10 %, while 28.8 % consumers can pay extra of 10 % to 15 %, this is range of highest acceptability of cost rise and most of consumers incline toward this range of increased price of organic commodity. It is also found that, 14.74 % consumers were agree to pay between the range of 15 % to 20% for organic commodity, about 12.18 % consumers can pay extra of 20 % to 25 % for the organic products. While, 10.89 % consumers can pay extra of more than 25 % for the organic products up to 40 % that opens the wide scope for the farmers and that also financially support the organic farming. In present time consumption of organic food also became the tag of luxury life and high social status. Generally, the consumers that fall in the high income level are able to pay extra for the organic food. It can be seen from the result that highest increased cost acceptability fall in the range of 10 % to 15 %.

Before cost acceptability, the other major factor that decide the purchasing decision of consumer is self satisfaction of consumer and faith of consumer on products and commodity available in the market. In current

changing market environment, several consumers inclining toward the e-mall, e-shopping and supermarkets. In this era of globalization time having more value than money. The survey was conducted for different mode of marketing location and their choice of marketing location.

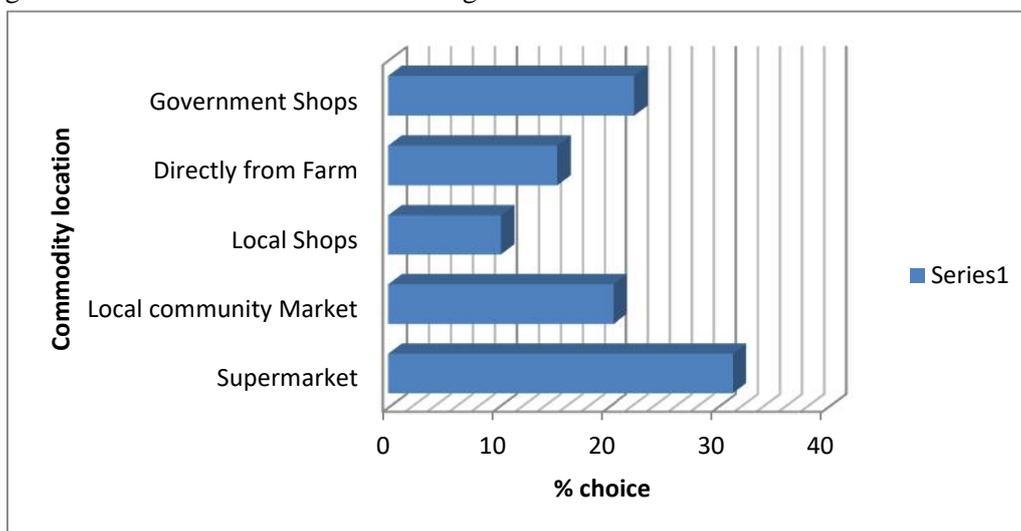


Figure 4: location acceptability for organic produce in Sikkim

In current marketing environment option of different dimension of market available for the consumers and sellers both. It can be seen from the result of survey shown in figure 4, majority of consumers prefer supermarket for the purchasing location of organic food. About 31.41 % consumers believe that supermarket is better option for the marketing and branding of organic food, 22.44 % consumers believes on governmental owned shops, 20.51 % consumers prefers local community market as a better platform for organic marketing, 15.38 % consumers prefer purchase of organic commodity directly from the farm because according to them this mode of marketing eliminate the middle man and helps the farmers in getting the appropriate value for their commodity and only 10.26 % consumers believe on local shops. From the obtain results, we can see that more than 50 % consumers believe on supermarket and governmental shops for purchasing the organic products. But the main obstacle for the farmers that they cannot sale their products in the supermarket and governmental shops without branding and certification.

## CONCLUSION:

Significant difference exists in the social acceptance and income of the acceptor for organic commodity in practical marketing environment. The choice and difference of consumers based in their mind set and necessity of commodity. As per the result of survey we can conclude that for marketing of organic products and for welfare of farmers, the gap of information in the farmers as well as consumers should be bridged by promotion and advertisement. Still 18 % consumers misunderstand the concept of organic products. The above results indicate that significant difference exist between the imaginary status and actual status of the market. Sikkim is organic state but still the 80.1 % consumers do not know about the difference and actual advantages and disadvantages of organic food. Lack of information of available market among the farmers leads them to produce the product that having less value in the market. For organic food more than 50 % population prefer fruit & vegetable and Meat & Meat products. Sikkim is the place where the people from the different culture and place live together. Culture is the complex of values, ideas, attitudes and other meaningful symbols that allows humans to communicate, interpret and evaluate as members. Thus, the choice of consumers highly influenced by cultural values and traditional perceptions. This study also revealed that with respect to income of consumers, they are ready to pay on an average of 12.08 % extra amount for the organic products. Location of availability of commodity at right place is also important for the success of organic marketing. The findings of the study showed that about 31.41 % consumers believe on supermarket for the purchase of organically produce commodity. We can predict that with the above information the

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farmer may get help in finding the proper marketing environment where they can get appropriate value for their products and that will help in boosting the organic market throughout the states. It may also help to increase the organic growth rate of country.

**REFERENCE:**

1. Kulkarni S. D. (2016).Organic food concept, opportunities and challenges. *Journal of Processed food Industry*, 20(1):22-25
2. Patle G. T., Badyopadhyay K. K. and Kumar M. (2014). An overview of organic agriculture: A potential strategy for climate change mitigation. *Journal of Applied and Natural Science*, 6 (2): 872 - 879
3. Patle G. T., Badyopadhyay K. K. and Singh D. K. (2013). Impact of conservation agriculture and resource conservation technologies on carbon sequestration—a review. *Indian Journal of Agricultural Sciences*, 83 (1): 3–13
4. Kumar A. H. H., John S. F. and Senith S. (2013). A Study on factors influencing consumer buying behavior in cosmetic Products. *International Journal of Scientific and Research Publications*,4(9):1-6
5. Zanolli R. and Naspetti S. (2002).Consumer motivations in the purchase of organic food: A means-end approach. *British food journal*, 104(8):643-653
6. Robinson L., Segal J. and Segal R. (2017). Organic Foods: What you need to know the benefits and basics of organic food and how to keep it affordable. Help guide.Org Trusted guide to mental, emotional & social health.
7. Markus Arbenz, David Gould and Christopher Stopes. *The World of Organic Agriculture. (Statistics & emerging Trends 2016)*.Research Institute of organic Agricultural FiBL and IFOAM- Organic International.2016. Goesan country