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Study of Sustainability of the 'KASAM' model of Value Maximization of Organic Farming Value Chain in Odisha

Abstract

Organic Farming is the future of farming. There is an exponential growth in demand for organic products internationally. Some geographies are identified as organic hubs. Kandhamal in Odisha has been a hub for organic turmeric and ginger. To scale up the activities of production and marketing of organic products, under the aegis of the office of the district collector, Kandhamal Apex Association for Spices and Marketing (KASAM) has been incorporated. The organization is a unique platform which provides organicity improvement, production enhancement, price consistency, procurement consistency and social welfare of farmers. The Sustainable Development Goals (SDG) have been substantiated with environmental protection, protection of plant varieties and bio diversity and financial inclusion and inclusive growth of poor farmers. The unique model of KASAM to achieve the goals enshrined in the SDG is studied in depth in this research paper. Several parameters have been identified and applied to test the sustainability of the KASAM model. It has been reasonably proved that the KASAM model significantly stands the test of sustainability.

Keywords: Organic Farming, Sustainability, KASAM, SDG, Inclusive Growth, Financial Inclusion

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Introduction

Organic Farming

Organic Farming is the future. The present farming practices fueled by green revolution has improved productivity at the cost of health, biodiversity and environment. It is not in line with the principles of inter-generational equity. "Organic farming is a holistic system designed to optimize the productivity and fitness of diverse communities within the agro-ecosystem, including soil organisms, plants, livestock and people. The principal goal of organic production is to develop enterprises that are sustainable and harmonious with the environment."[1] The transition period from non-organic to organic farming is around three years[2].

Status & Prospects of Organic Farming

Chart- 01: Global Status & Prospects of Organic Farming[3]

Indicators	World Figures	Year	Leading Countries
No. of countries with organic activities	172	2014	Kiribati, Puerto Rico
Organic agricultural land	43.7 million hectares 11 million hectares	2014 1999	Australia, Argentina, USA
Share of organic land to total land	0.99%	2014	
No. of organic producers	2.3 million	2013	India, Uganda, Mexico
Organic market size	$80 billion	2014	USA, Germany & France
Per capita consumption	$11 (14 Euros)		Switzerland (221 Euros), Luxemberg
No. of countries with organic farming regulations	87 countries		

The organic food market in India is growing at the rate of 25-30%. In 2014 the size of the organic food market was $0.36 bn which is expected to scale $1.36 bn in 2020.[4]

What is a value chain?

The term value chain is a significantly different concept and approach from supply chain. There are wide range of definitions that define the nature and scope of Value Chain. Some of those are reproduced below.

A value chain is the whole series of activities that create and build value at every step. The total value delivered by the company is the sum total of the value built up all throughout the company[5]. **Michael Porter** propounded this concept in his very popular book 'The Competitive Advantage' in 1980.

The value chain concept separates useful activities from wasteful activities. Focusing on the value-creating activities could give the company many advantages. For example, the ability to charge higher prices; lower cost of manufacture; better brand image, faster response to threats or opportunities[6]. An enhanced focus on the value creating activities ensure optimum allocation and utilization of resources for the principal revenue producing activities. Eliminating wasteful expenditures gives adequate savings in opportunity cost of capital.

The business dictionary defines Value Chain as, interlinked value-adding activities that convert inputs into outputs which, in turn, add to the bottom line and help create competitive advantage. A value chain typically consists of (1) inbound distribution or logistics, (2) manufacturing operations, (3) outbound distribution or logistics, (4) marketing and selling, and (5) after-sales service. These activities are supported by (6) purchasing or procurement, (7) research and development, (8) human resource development, (9) and corporate infrastructure[7]. All the activities follow a chain system and are inter linked to each other for converting inputs into outputs.

International Fund for Agricultural Development teaser on, 'Commodity Value Chain Development Projects' defines a Value Chain as a vertical alliance of enterprises collaborating to varying degrees along the range of activities required to bring a product from the initial input supply stage, through the various phases of production, to its final market destination (Figure 1). The term "value chain" is credited to the business strategist Michael Porter and has been widely adopted in business and development circles. The expression "farm-to-fork" is often used to describe food VCs. This means that a food product moves from upstream in the chain, where farmers grow and harvest it, towards the market – through intermediaries including producer organizations, processors, transporters, wholesalers and retailers – and on to the downstream level of consumers[8].

Commodity Value Chain (CVC)

Commodity value chain generally refers to agricultural commodity value chains. Donors and govt. agencies use value chain approaches for development and intervention strategies. The phenomenon has grown exceedingly in the last decade. There is no optimal way to organize a commodity value chain. Several approaches may be adopted to increase the bargaining power and access of small scale producers in the CVC. Macro level factors (government regulation, quality of utilities) and meso level factors (industry standards, business association activities) play major roles in shaping the structure, functions and efficiencies of a VC[9].

Value Chain Analysis for determining Sustainability

Value chain analysis is the most precise way of understanding the distribution of earnings. Other forms of analysis may present aggregates or sector specific results. For example, trade statistics may present gross trade data. But, net earnings by each actor involved in the process of trade are not revealed by the trade statistics. Therefore, what is the share of poor in the gross benefit is always overshadowed. Sector specific statistics such as agricultural statistics do not reveal how much of gains have actually accrued to each actor in the chain. A rosy picture presented by gross data always tends to suppress the trends shown by net data. Value chain analysis, therefore treats each actor as a unit of measurement of value. The data generated out of value chain analysis presents information on what is the contribution of each actor to the gross product and what is the share in benefits or net gains of each actor in the gross gains of the total chain.

Secondly, value chain analysis can show how farmers, firms, association of firms, regions, states and nations are interlinked with each other and integrated with the global economy. This will largely determine the distributional outcomes of global production. Low supplier competency is a key barrier to participation of the poor in the integrated global value chain (ACIAR, 2008).

Value Chain Partnerships

A series of partnerships can be carved in the commodity value chain. Many informal partnerships may exist between the actors in the chain. Distribution based, financial, technological and knowledge based partnerships may exist in the chain without knowledge of the actors. For example, a grower of tomato may have close association with a particular supplier of seed, a particular money lender, a particular agricultural expert for knowledge, a supplier or group of buyers or distributors for supplying the output. These partnerships are invisible but, they provide enough support to all the actors in the chain. These partnerships are without any formal sanction and rights and duties are not defined in them.

Formal partnerships on the other hand can define rights, responsibilities and liabilities. The registration of such partnerships help the small holder in protecting his rights against the mighty corporates who have a tendency to exploit the small holders. The fruits of such partnerships, though not equally, but to a large extent shared by the players. Very pertinent examples of Commodity Value Chains would be the Starbucks Coffee Chain, McCain, Pepsico, KASAM etc.

KASAM

'KASAM' stands for Kandhamal Apex Spices Association for Marketing. Kandhamal is a nature's paradise and home to Kandha tribes. KASAM promotes organic farming which has potential to uplift the standard of living of the poor tribals and backward classes.

"Kandhamal district is situated in the centre of Odisha. The district comes under North-Eastern Ghat agro-climatic zone and it is at an elevation of 300 Mts to 1100 Mts from Mean Sea Level. The district is spread over a geographical area of 8021 sq. kms which is 7.14% of the total geographical area of the State. About 5709 sq. kms area is under forest which is about 71% of the total geographical area of the district. In the district, most of the soils are red soils which are light texture and acidic in nature having pH 5.3 to 6.5. The soil is very porous with low water holding capacities subject to heavy run off and soil erosion during Kharif season. The climate of the district is sub-tropical characterized by hot and dry summer, sub-humid, medium to high rainfall and prolonged cold and dry winter. The normal rainfall of the district is 1427.9 mm. distributed in 74 rainy days."[10]

Rain Fall Data from 2002 To 2012. (Figures In M.M.)[11]

Year	Normal Rain Fall	Normal Rainy Days	2008	2009	2010	2011	2012
Total	1427.9	73.7	1663.7	1603.7	1533.4	1336.7	1506.8

The demographics of the district is as follows.

Population details : (2011 Census)[12]

Population			Category			
Total	Male	Female	SC	ST	OBC	GEN
648201	322,799	325,402	109,506	336,809	N.A	N.A

Worker Details : (2011 Census)

Main worker		Marginal worker		Non worker	
Male	Female	Male	Female	Male	Female
132,541	43,587	36,355	93,726	153,903	188,089

The effect of green revolution and chemical farming is yet to penetrate in Kandhamal district. The district is inhabited mostly by tribal (51.5%) and scheduled caste (18.2%) population. They generally use traditional farming means of agriculture. Therefore, Kandhamal is the most suitable place for growing organic products.

Kandhamal Apex Spices Association for Marketing (KASAM)

KASAM is a well-known Manufacturer, Processor, Supplier and Exporter of a variety of Organic Products. KASAM was born on 01.09.1998 by the members of 61 Spices Development Societies. KASAM is registered under the Society's Registration Act, 1860 with a Bye-laws. Presently it has got 11, 237 farmers (belonging to ST-78%, SC-15% & other-7%) as its primary members. Need was felt for this organization when the potential of the locally produced turmeric was realized. The local variety grown from time immemorial possesses 2-3% curcumin, 12.15% of oleoresin and 5.3% of volatile oil.[15] There was a need to boost the product to meet international standards. The association was formed with these objectives.

The district collector is its president. There is a governing body with a General Manager (Marketing) to look after its business and a Secretary as head of its management.[13]

The association annually procures products produced in about 16,000 hectares of land by about 60,000 farmers with an annual production of about 40,000 Mt.[14] It is a special project under Innovative Jawahar Rojagar Yojana (IJRY). It was implemented in the district with 80% funding by Govt. of India and 20% funding by Panchayati Raj Department, Govt. of Odisha.[15] KASAM is equipped with infrastructure having a capacity to store 5000 mt. of organic food products.[16] As certification is the major trust booster for organic products, KASAM has an agreement with CUC (Control Union Certification) of Holland (an organic certifying agency) and obtaining "ORGANIC CERTIFICATE" from the year 2000.[17]

Priority Crops[18]

Name of Crop	Harvesting Month(s)	Available Quantity	Ordering Month(s)	Despatch Month(s)
Turmeric Local Finger 2-3% curcumin	Jan - Mar	1,142 Tons	Anytime	All Year round
Turmeric Local Powder	-		Anytime	Anytime
Ginger (FRESH)	Nov - Dec	1,000 Tons	Sep - Oct	Feb - May
Dry Ginger (whole/slice/powder)	Nov - Dec	1 000 Tons	Sep & Oct	Feb - May
Mustard	Jan - Feb	100 Tons	Dec	Feb - Mar
Tamarind Concentrate	Apr	200 Tons	All year round	All year Round
Arrowroot Powder	Dec - Jan	30 Tons	Jan	Feb - Mar
Honey (forest)	Year Round	10 Tons	Dec	Feb

Value Chain Activities for Organic Products

Selection of Village

Mostly tribal dominated districts are selected for inclusion in KASAM. The tribal population is still untouched with the recent developments in chemical interventions in agriculture. Therefore, there is no concern of maintaining organicity.

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Selection of Farmer

Farmers are selected based on the land holding in Kandhamal district. Their amount of land holding doesn't matter.

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Soil Testing

There is a testing done by KASAM for assessing the organic quality of the soil. The date of last application of chemical fertilizer is assessed. It is determined from when the soil has turned organic.

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Sample Collection by Field Officer

At the level of KASAM, field officers are appointed to collect samples of soil and crops. If crops don't adhere to the organic requirements, it is not procured by KASAM for marketing.

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Quality Testing of Produces

The crops go through very rigid quality tests to qualify for the organic market. Any shortfall in the acceptable standards make it unmarketable.

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Price Negotiation

Price is negotiated at the level of KASAM. KASAM being a farmer welfare organization, fully aware of the price they are going to receive at the time of procurement.

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Placing Purchase Order

Then KASAM places purchase order with the farmers. The quality specifications and price details are communicated to the farmers. Any discrepancy w.r.t. price and quality is resolved at the level of KASAM.

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Purchase of Products

KASAM has a dedicated team of agriculture and procurement officers who facilitate the purchase process. The officers visit the organic farm, assess quality, organicity and then procure the produces directly from such farms.

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Residual Testing

After final procurement is done, the residual crop and land is tested for organicity.

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Physical Test

Some of the crop samples are chosen for physical testing. Wide random samples are chosen from the already available procured quantity for physical testing. Any mismatch between the accepted quality specifications and observed quality results are noted.

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Chemical Test and Microbiological Test

The soil is subject to conventional chemical tests and nitrogen microbial enhancements. The process of organic farming further enhances the microbial abundance in the soil. Here are some of the potential benefits of utilizing chemical soil tests. Gathering baseline data on nutrient levels in new fields can help in making decisions on the use fertilizers, amendments, and cover crops to improve soil quality. Some of the basic soil chemical tests such as pH and organic matter, in combination with soil texture analysis, can indicate which crops will grow best on that soil. If concerns arise about nutrient deficiency symptoms or low yields while crops are growing, chemical soil tests can add pieces to the puzzle of trying to improve soil quality so crops will thrive. Organic systems often have a heavy reliance on compost or manure. Understanding nutrient cycling within these systems is important to avoid nutrient overloads and potential pollution. Chemical soil tests become a monitoring tool to avoid excessive additions of nutrients to your farm system. KASAM is required by the Organic Certification process to conduct soil tests in order to apply micronutrients or other fertilizers.[19]

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Raw Material sent to Cold Storage

After, raw material is procured it is sent to cold staorage to protect it from wastage during the lead time till processing. There is good availability of cold stores nearby Phulbani in Kandhamal.

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Issue of Raw Material

The stored material is issued to processing stage.

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Processing

Processing is an elaborate process in which a lot of advancement has taken place. KASAM has its own plant and machinery for process of organic products. If such an organization wouldn't exist, it would have been very difficult for the small and marginal farmers in the tribal dominated districts of Kandhamal to access the profitable market for such products.

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Cleaning

The procured produces are then cleaned properly. There is employment of lots of unskilled workers in the process of cleaning, grading etc., especially old tribal women. This also enhances employment and living standards of these men and women.

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Grading

In the process of grading and sorting, some physical attributes and dimensions are seen for the procured produces. Mainly, organic ginger and turmeric of certain acceptable dimensions are chosen, the remaining which doesn't adhere to quality specifications are sold off in the open market. Just after primary cleaning, some produces are sold in the local markets owing to seasonal demand.

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Grinding

Organic turmeric is grinded for producing turmeric powder. This product has good demand in the domestic and in the export market as well.

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Crushing

Turmeric is crushed to extract new products such as curcumin.

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New products- curcumin, mustard oil, etc.

Organic turmeric produces a very valuable component called curcumin which is very rich from health and medicinal point of view. One gram of curcumin costs around Rs.1,000. This product is useful from many medicinal uses. The local variety grown in Kandhamal has 2-3% curcumin content, 12.15% of Oleoresin ans 5.3% of volatile oil.[20]

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Cold storage of Processed Products

The processed products are then sent to the cold stores.

↓

Dispatch Order

From the cold stores orders are dispatched to the customers, both domestic and industrial.

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Quality Check before Dispatch

There is organicity and quality check before the order is finally dispatched to the customers. Any non-complying produces are rejected then and there.

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Retail

KASAM does branding of the products. A lot of retail outlets are available all over Odisha for retail sales. There is a very wide retail market for the organic produces in Odisha. Bhubaneswar houses a lot of retail outlets of KASAM.

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Export

A very wide export market exists for the organic products marketed by KASAM. In the year 2016, around 1,100 tonnes of processed turmeric and around 40 tonnes of ginger slices were exported to different countries leading to profits of INR 50 lakh. The main buyers were the UK, the US, Australia, the Netherlands, Germany and several other countries. In the first four months of the current year, around 500 tonnes of these products were exported to the European countries.[21]

Review of Literature

A lot of scholarly work is available in the area of sustainability of organic farming. (Heather et al 2018)[22] have studied the current state and future directions of organic no-till farming with cover crops in Canada, with case study support. Minimum interventions in land and no tilling practices are to be encouraged to ensure sustainability. (Santoshkumar et al 2017)[23] have reviewed the sustainability of agriculture through organic farming. They have highlighted that high market price and lack of marketing channels act as a major impediment for growth of organic farming. (Minakshi et al 2016)[24] have studied the sustainable agricultural marketing strategies and practices. They have highlighted the KASAM initiative of forming 61 spices development societies for organizing the tribal farmers into a formal system and giving them market access to developed markets like UK, Germany, Netherlands etc. (Naresh. B et al 2015) have studied the traditional farming system of tribal turmeric farmers of Kandhamal district. "It has been observed that technological interventions like rhizome treatment, soil application of Trichoderma (bio-control agent) in well rotten cow dung, wood ash, crop rotation, mulching, plant protection measures increased rhizomes yield by tune of 20- 30% at farmers field."[25] This chemical intervention does not reduce the organicity of the soil. (Abraham A 2008)[26] has advocated for shift to organic mode of agriculture deeply analysing the governmental and non-governmental mechanisms including the KASAM model for scaling up organic farming.

These studies have addressed the scientific, environmental and commercial sustainability aspects of the KASAM model. In this paper the focus is on a value chain approach to study the value addition potential of each actor in the chain, pro poor outcomes of the KASAM model, gender equality aspects, equality between equality in treatment between marginal, small and medium farmers, will of farmers to carry on sustainable farming.

Research Methodology

The research paper is an outcome of a structured methodology adopted for collecting responses from different stakeholders. The first stage was collection of relevant data for the year 2016. KASAM readily facilitated provision of farmer wise and crop wise data sets for the year 2016. Then, a need was felt to extract data from some farmer respondents randomly.

Objective of the Study

Tribal welfare, financial inclusion and inclusive growth is possible through a structured formal partnership between farmers and a commercial organization. KASAM is a model of contract farming with poor tribal farmers. As it operates like a co-operative and promotes eco farming and organic farming, the prospects of saving the environment and ensuring inclusive economic growth is highly visible. Therefore, a sustainability study is contemplated to test the success of the model from the conceptual view point of sustainable development. The objective of this study has largely been to develop quality parameters upon which the level of sustainability of KASAM can be determined.

Hypothesis

The study was based on test of the following hypotheses.

1. The KASAM model of Organic farming is a sustainable model of scaling up the organic farming efforts of the farmers.
2. The farming under the KASAM model adds sufficient value to the efforts of the organic farmers.
3. The poor tribal farmers are bankable.

Profile of the Study Area

The Kandhamal district is divided into 12 blocks. But stratified random samples were drawn from 5 blocks named Daringbadi, G. Udayagiri, Phiringia, Phulbani, and Raikia. Mostly these are hilly blocks with dispersed tribal population.

Sampling

20 farmers were randomly selected under the **snowball method** from each district. In total 100 farmers were approached with a structured interview schedule. There was one set of interview schedule prepared and interview was conducted at KASAM headquarters for getting the information on interaction between KASAM and farmers.

Analysis

The analysis is based on secondary data collected from other sources such as Government and development agencies and primary data sets provided by KASAM and primary data collected for this research. Various test parameters have been developed (discussed below). Based on the gathered responses, primary data sets and secondary data, these parameters have been tested. Most of these parameters are qualitative. Hence, percentage analysis was resorted to in this paper for analysis.

Relevance of the Study

The study will be particularly relevant for scaling up the activities of KASAM. It presents insights on emulation of such a model of farming on other crops in the organic or non-organic nature. The government and policy makers may take inputs from this sustainability study to apply on other contract farming models of agriculture.

Study of Sustainability of KASAM model of Organic Farming

The parameters that define sustainability are;

1. There is involvement of large machinery of regulators and stakeholders to protect land and financial interests of the poor farmers.
2. There is a large and growing market for organic products.
3. Large scale of farming under organic mode can bring in efficiencies and certainties regarding price for small and marginal farmers in comparison to contemporary farming practices.
4. The farming adds sufficient value to the efforts and investments of the farmers and other actors in the value chain.
5. The farmers get value added services like certification and testing from organized set ups like KASAM.
6. There are a large number of participants from the category of small and marginal farmers.
7. There are a large proportion of land of small and marginal farmers under organic cultivation.
8. There is large participation of backward classes in the organic farming activity.
9. There is adequate participation of both male and female farmers in the organic farming.
10. There is no discrimination in the contracted quantity and price paid to small and marginal farmers vis a vis large farmers.
11. There is no significant divergence in average productivity of small and marginal farmers measured by production per acre vis a vis large farmers.
12. There is no significant difference in productivity of female farmers measured by production per acre vis a vis male farmers.
13. There are enough opportunities for sowing alternative crops as per the choice of the farmer.
14. There are alternative markets available for the products produced by the small farmers in the event if the products are not procured by KASAM.
15. The crop is insured against perils of nature.
16. There is no significant distress sale of crops owing to uncertainties.
17. The non-procurement of produces against contracted quantity is fact and reason based.
18. The tests of organicity are reliable and genuine.
19. Government subsidies are apportioned equitably between farmers.
20. There is equitable distribution of profits or reinvestment of surplus in welfare activities of the farmers.
21. The farmers are aware of the end market opportunities.
22. There is strong sense and culture of transparency and equity in the organization.
23. There is strong will in farmers to carry on environmentally sustainable farming inter-generationally.

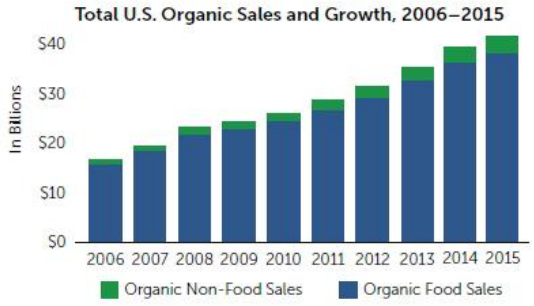
Structured data analysis and interpretation is resorted to explore the parameters of sustainability. The above parameters can be quantitatively or qualitatively tested in the context of KASAM. Where ever quantitative data is available, quantitative and statistical tests are applied, and qualitative tests are applied in case of qualitative data. Secondary sources will be referred to in cases where the existing dataset is in sufficient. The data is analysed parameter wise.

There is involvement of large machinery of regulators and stakeholders to protect land and financial interests of the poor farmers

The very fact that, KASAM is promoted and presided over by the District Collector of Kandhamal and it is incorporated under the society's legislation, evidences its regulatory robustness and supervisory controls and safeguards. The govt. from time to time through a lot of social welfare schemes promotes the activities of KASAM which are aimed at tribal welfare.

There is a large and growing market for organic products

The market for organic products is growing at a faster rate. The secondary data is evidence to that. *"According to a recently published TechSci Research report, "Global Organic Food Market Forecast & Opportunities, 2020", global organic food market is projected to register a CAGR of over 16% during 2015 - 2020."*[27]



Source: Organic Trade Association, USA

"The Soil Association, the main organic certifying body, said that sales of organic products rose last year by 4.9 per cent to £1.95bn in the UK. Sales of non-organic food dropped by 0.9 per cent. The organic market in the US grew by 11.4 per cent last year, in France 10 per cent and in Italy 6 per cent. China has overtaken the UK as the world's fourth-biggest organic market with retail sales of £3bn."[28]

The markets in India also offer good prospects to farmers and processors of the organic products. The current union government has set an ambitious target of developing the north eastern region of India into an organic farming hub.

"The current market (pulses and food grain the bulk) at $500 million (about Rs 3,350 crore). It was $360 million (Rs 2,400 crore) in 2014. The government, meanwhile, has set a target to bring 500,000 acres under organic farming in three years, with allocation support of Rs. 412 crore."[29]

Large scale of farming under organic mode can bring in efficiencies and certainties regarding price for small and marginal farmers in comparison to contemporary farming practices

FAO in its FAQs on organic farming has articulated the reasons why certified organic food is more expensive than conventional food. [30]

The principal reasons are;

1. "Organic food supply is limited as compared to demand;
2. Production costs for organic foods are typically higher because of greater labour inputs per unit of output and because greater diversity of enterprises means economies of scale cannot be achieved;
3. Post-harvest handling of relatively small quantities of organic foods results in higher costs because of the mandatory segregation of organic and conventional produce, especially for processing and transportation;
4. Marketing and the distribution chain for organic products is relatively inefficient and costs are higher because of relatively small volumes.
5. Apart from these factors, there are other range of factors which contribute to the sustainability of organic farming
6. Environmental enhancement and protection (and avoidance of future expenses to mitigate pollution). For example, higher prices of organic cash crops compensate for low financial returns of rotational periods which are necessary to build soil fertility;
7. Higher standards for animal welfare;
8. Avoidance of health risks to farmers due to inappropriate handling of pesticides (and avoidance of future medical expenses);
9. Rural development by generating additional farm employment and assuring a fair and sufficient income to producers."

The farming adds sufficient value to the efforts and investments of the farmers and other actors in the value chain

The study of the cost of production and revenue earned by the farmers suggests the following cost and profitability structure for different crops.

Crop	Organic Turmeric	Organic Ginger
Average Costs per acre	INR 38,000	INR 45,000
Average Production per acre	7 quintals	1 tonne
Average Selling Price per acre received from KASAM	INR 70,000	INR 75,000
Average Profitability	INR 32,000	INR 30,000
Profit Percentage	84%	67%

Source: Primary Survey

The cost and profit structure of the KASAM model suggests that around 84% and 67% value addition happens to the efforts of the farmer. This gives sufficient motivation to the farmers to engage in the process of organic farming. The organization KASAM enjoys a value added of around 45%.

The farmers get value added services like certification and testing from organized set ups like KASAM

Organizations such as Control Union Certification (CUC) and KASAM together issue organic certificates to farmers. This certification is highly valuable in the organic markets.

There are a large number of participants from the category of small and marginal farmers

Currently KASAM has 11,237 members among which there are 78% Scheduled Tribe members, 15% Scheduled caste members and 7% member are from other castes. Out of the total farmers around 85% farmers belong to the small and marginal category.

There are a large proportion of land of small and marginal farmers under organic cultivation

Mostly all the tribal population of farmers have fully migrated to organic farming. In very few cases small patches of land are left for doing rice cultivation which is a staple food in the region.

There is large participation of backward classes in the organic farming activity

As mentioned earlier, there are around 93% of members belonging to the SC and ST community. The organization has brought about significant improvements in the standard of lives of the local

tribals. The region is respected for the enterprising nature of these tribal organic farmers.

There is adequate participation of both male and female farmers in the organic farming

From the data obtained from KASAM**,** it is clearly evident that around 27% of the farmers are female. Due to the patriarchal land holding structures in this region most of the farmers registered with KASAM are male farmers.

There is no discrimination in the contracted quantity and price paid to small and marginal farmers vis a vis large farmers

As the entire produce is procured by KASAM, there is no scope for discrimination in terms of contracted quantity and price discrimination. All the farmers are paid equal price per kilogram of their produce. The large farmers who own land of more than 5 acres have a significant advantage w.r.t. improved productivity and economical cost of production.

There is no significant divergence in average productivity of small and marginal farmers measured by production per acre vis a vis large farmers

Large farmers are generally able to employ economic means of production. The gap in productivity and cost reduction is less than 5% as evidenced through the study of primary data obtained from the survey.

There is no significant difference in productivity of female farmers measured by production per acre vis a vis male farmers

When it comes to male versus female farmers, there is no significant divergences with regard to productivity per acre of production. The average production of organic turmeric remains closer to 700 kilograms and in case of organic ginger it remains closer to 1 tonne for both the male and female farmers.

There are enough opportunities for sowing alternative crops as per the choice of the farmer

The land in the area is organically fit. It remains suitable for cultivation of any kind of crops the farmers are willing to sow.

There are alternative markets available for the products produced by the small farmers in the event if the products are not procured by KASAM

Organic ginger and organic turmeric have a ready market in domestic and export markets. Even the farmers have access to the local APMCs. They can offload their produces in the APMCs to local gatherers. However, the branding under KASAM helps farmers get a fairly profitable price.

The crop is insured against perils of nature

Unfortunately, crop insurance coverages are not arranged under the schemes of KASAM. The farmers have to bear the risk of crop failure that arises due to uneven moisture, drastic climate change, flooding, pest attacks etc.

There is no significant distress sale of crops owing to uncertainties

There is no evidence of distress sale as these crops can be preserved for future sale when prices pick up. Therefore, there are limited possibilities of distress sale.

The non-procurement of produces against contracted quantity is fact and reason based

In some instances, KASAM rejects procurement of produces owing to issues of improper organicity, low dimensions and higher moisture content. The post procurement checks suggest the levels of curcumin in such products. Less than 2 per cent curcumin content turmeric is generally sold off without further processing

The tests of organicity are reliable and genuine

The CUC certification provides reliability and genuinity to the locally grown turmeric and ginger in the European and other export markets. Therefore, we can reasonably assume that the CUC KASAM model of testing the products for organicity are highly genuine and reliable.

Government subsidies are apportioned equitably between farmers

In order to bring tangible change in the region, the Govt. of India and Govt. of Odisha in 80% and 20% mode. Irrigation, fencing and other subsidies are received from the government and are apportioned between the farmers equitably.

There is equitable distribution of profits or reinvestment of surplus in welfare activities of the farmers

KASAM is a profit making organization and it reinvests some of its surpluses in technological advancements of its processing plants and packaging facilities. Some amount is spent in branding of the organic products. Remaining surplus is distributed among the members equitabley.

The farmers are aware of the end market opportunities

The tribal farmers are not generally aware of the end market opportunities. But being a welfare organization, KASAM ensures that the fruits of the end market opportunities sufficiently accrue to the poor farmers.

There is strong sense and culture of transparency and equity in the organization

There is a very strong integrity structure and ethical culture present in KASAM. The District Collector at the helm of affairs ensures that there is high degree of transparency and accountability in the internal management of the organization.

There is strong will in farmers to carry on environmentally sustainable farming inter-generationally

The study has shown that the farmers are satisfied with their efforts in organic farming. They have preserved and protected a lot of plant varieties. They are not willing to adopt any chemical intervention to agriculture. The only issue they faced was branding. Now as that issue is well addressed though a structured branding policy of KASAM, the farmers are willing to scale up their organic farming efforts.

Conclusion and Suggestions

The study of sustainability of the KASAM model of organic commodity value chain has

presented enough insights to argue that such a model can not only be environmentally sustainable, but also be financially inclusive. As the farmers are organized under an organization system, they derive identity from the organization. As this research also highlights the value addition potential of the poor tribal farmers, the financial institutions can come forward to lend in reasonable terms. The creditworthiness of the tribal farmers is fully established through this research. The age old notion that poor farmers are not bankable has been challenged through this research. With 84% and 67% value addition potential the farmers are even more bankable than the corporates with thinner profit margins. Apart from financing, the KASAM model is an ideal model for recognizing the potential of the poor farmers in bringing about significant possibilities of wealth creation and enhancement of the national image. It paves way for inclusive growth. With the prosperity of the farmers, the regional social issues such as malnutrition, low literacy and education levels and other social problems are also addressed to a large extent. With the existing large market, health benefits, environmental benefits, bio diversity protection, financial inclusion, inclusive growth potential and ever growing demand for the organic produces internationally the KASAM model of organic commodity value chain is uniquely poised to achieve greater sustainability. There is no commercial exploitation and it is equivalent to a cooperative structure such as AMUL. The model is not only recommended for organic produces at other places but also highly recommended for other non-organic commodities. The sustainable development goals can be achieved if such models are scaled up across the globe.

Footnotes

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