

# **ORGANIC AGRICULTURE IN KERALA: AN EVALUATION OF CERTIFIED ORGANIC SPICES PRODUCERS**

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for the award of the Degree of  
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Under the Faculty of Social Sciences*

*by*  
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COCHIN UNIVERSITY OF SCIENCE AND TECHNOLOGY  
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*Organic Agriculture in Kerala: An Evaluation of Certified Organic Spices Producers*

*Ph.D. Thesis under the Faculty of Social Sciences*

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## Certificate

*This is to certify that the thesis entitled “Organic Agriculture in Kerala: An Evaluation of Certified Organic Spices Producers”, is a bona-fide record of research work carried out by Smt. Soumya.K.M, part-time research scholar under my supervision and guidance.*

*The thesis is an original piece of work and has not formed the basis for the award of any degree, diploma, associate ship, or other similar title of any other University or Board and is worth submitting for the award of Doctor of Philosophy under the Faculty of Social Sciences of Cochin University of Science and Technology.*

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*The work is adequate and complete and I recommend for the award of Ph.D Degree to Smt. Soumya.K.M.*

**Prof. (Dr) K.C.Sankaranarayanan**  
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## ***Declaration***

*I hereby declare that the thesis entitled “Organic Agriculture in Kerala: An Evaluation of Certified Organic Spices Producers” is the outcome of original research work done by me under the guidance of Prof. (Dr) K.C.Sankaranarayanan, and that it has not previously formed the basis for the award of any degree, diploma, associate ship, or any other title of recognition from any University/Institution.*

**SOUMYA.K.M**



*Dedicated to inspiring memories of my Grant Parents*  
*Late Sri. K.A Prabhakaran & Late Smt. Rukmini Prabhakaran*  
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## *Abbreviations*

APEDA	:	Agricultural & Processed Food Products Export Development Authority, India
AQIS	:	Australian Quarantine and Inspection Service
CACC	:	Certification, Accreditation and Compliance Committee of the US
EOAM	:	East African Organic Mark
EAOPS	:	East African Organic Product Standard
EPOPA	:	Export Promotion of Organic Products from Africa
EU	:	European Union
FAO	:	Food and Agriculture Organization of the United Nations
FiBL	:	Research Institute of Organic Agriculture, Switzerland
FOM	:	Farmers Open Market
IFAD	:	International Fund for Agricultural Development
IFOAM	:	International Federation of Organic Agriculture Movements
IOAS	:	International Organic Accreditation Service
ICROFS	:	International Center for Research in Organic Food Systems, Denmark
ICS	:	Internal Control System
IFPRI	:	International Food Policy Research Institute
ITC	:	International Trade Centre, Geneva
JAS	:	Japan Agricultural Standard
KADS	:	Kerala Agricultural Development Society
NCOF	:	National Centre of Organic Farming (India)
NGO	:	Non-governmental organization
NOP	:	National Organic Program of the United States
NPOF	:	National Project on Organic Farming
NPOP	:	National Programme for Organic Production
OTA	:	Organic Trade Association, USA
PGS	:	Participatory Guarantee System
USDA	:	United States Department of Agriculture
UNCTAD	:	United Nations Conference on Trade and Development
UNEP	:	United Nations Environment Programme
WTO	:	World Trade Organization
WSSS	:	Wayanad Social Service Society



# Chapter **1**

## INTRODUCTION

You can make a lot of speeches, but the real thing is when you dig a hole, plant a tree, give it water, and make it survive. That's what makes the difference" – Wangari Maathai, Environmental activist, Nobel Prize winner( 2004)

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The notion of Organic farming is gaining gradual impetus in Kerala. The increased awareness about health and environmental issues associated with the rigorous use of chemical inputs has necessitated alternate forms of agriculture in Kerala. Organic agriculture is one of the important sustainable agriculture practice already promoted by advanced nations and world organisations. Kerala has great potential in relation to the traditional agricultural knowledge, availability of land and rural population. In order to analyse the economic viability of organic farming in Kerala, a study about

certified organic farmers are necessary. There are a number of organic farmers in Kerala. But the certified organic farming in Kerala is mainly focused on cash crops such as spices, tea, and coffee. Kerala has two accredited organic certifying agencies namely INDOCERT (Indian Organic Certification Agency) and LACON. The importance of organic farming and awareness level of consumers are increasing with the disclosure of large number of media reports and findings about environmental and health problems arising from conventional chemical intensive farming. There are so many initiatives from the part of Government and various organizations in promoting organic farming in Kerala. A state-wide intensive action program on organic farming in the form of a popular movement: “*Jaiva Keralam*” was started by government. But the area under certified organic farming is still low in Kerala. The awareness level of farmers about the techniques used in organic farming and local market for organic products are extremely evicted. In order to get premium price and better economic value for organic products the certification is vital.

### **1.1 Meaning and Definition of Organic Agriculture:**

**Organic agriculture** is a safe, sustainable farming system, producing healthy crops without damage to the environment. It avoids the use of artificial chemical fertilizers and pesticides on the land, relying on developing a healthy, fertile soil and growing a mixture of crops. In this way, the farm remains biologically balanced, with a wide variety of beneficial insects. Organic farming is a system with the broad principle of ‘live and let live’, came up which was recognized nationally and internationally. Organic agriculture considerably reduces external inputs by controlling pests and diseases naturally, with both traditional and modern methods, agricultural yields and disease resistance improved.



**Definitions:**

As per the definition of the USDA (United States Department of Agriculture) study team on organic farming “organic farming is a system which avoids or largely excludes the use of synthetic inputs (such as fertilizers, pesticides, hormones, feed additives etc) and to the maximum extent feasible rely upon crop rotations, crop residues, animal manures, off-farm organic waste, mineral grade rock additives and biological system of nutrient mobilization and plant protection”.

A widely quoted comprehensive definition of organic farming is of *Codex Alimentarius* Commission, a joint body of FAO/WHO. This definition reads as “Organic agriculture as holistic food production management systems, which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles and soil biological activity. It emphasizes the use of management practices in preference to the use of off-farm inputs, taking into account that regional conditions require locally adapted systems. This is accomplished by using, where possible, agronomic, biological and mechanical methods, as opposed to using synthetic materials, to fulfill any specific function within the system”.

**1.2 History of Organic Farming**

The vast popularity and scientific acceptance of organic farming is first taken place in western world, especially in USA and Germany. The first initiative was in Germany, by Rudolf Steiner and his book ‘Spiritual Foundations for the Renewal of Agriculture’, published in 1924. It led to the popularization of sole farming concept called Biodynamic Agriculture. The labeling of the produce from biodynamic farms as 'Demeter' certified came into use. The British botanist, Sir Albert Howard studied traditional farming

practices in Bengal, India and considered such practices as superior to modern agricultural practices which is described in the book ‘An Agricultural Testament’ published in 1940 emerged as the origin of modern organic farming.

In 1972, the International Federation of Organic Agriculture Movements (IFOAM) was founded in Versailles, France. IFOAM was dedicated to the world wide transmission of information on the principles and practices of organic agriculture. During 1980s, regulation of organic production certification standards began. The FiBL, organic agriculture research institute in Switzerland, international federations like the IFOAM with HQ in Germany are doing exclusive research in organic farming and support organic farmers. In US, the governmental agencies have extensive programs and policies for the promotion of organic farming and innumerable NGOs are engaged in popularising it.

The Indian agrarian system was traditionally organic as the Indian farmers were used environmental friendly organic techniques, where the fertilizers, pesticides, etc were obtained from plant and animal products. But in between 1950s and 1960s to overcome food scarcity, the government adopted Green Revolution program. The widespread reliance on chemical fertilizers and pesticides has led to deterioration of soil fertility, loss of biodiversity, contamination of water etc. The continuous application on chemicals on soil demanded application of larger quantities of fertilizers to get sustained output. Pests are becoming immune requiring the farmers to use stronger and costlier pesticides. This led to increased cost of cultivation which pulled the Indian farmers in debt trap and there by increased farmer suicide. This created a positive shift towards organic farming in India.

In June 2001, the Government of India announced the National Program for Organic Production (NPOP), which aims to promote sustainable production, environmental conservation, reduction in the use and import of agrochemicals. Under this program, the National Organic Standards has been evolved. It has also developed Criteria for Accreditation of Certification Agencies, Accreditation, and Procedure Inspection and Certification Procedures.

Kerala with rich endowments for cultivation of wide variety of agricultural and horticultural crops specifically spices, plantation crops, medicinal plants etc is an ideal destination for promotion of organic farming due to the changing preferences worldwide towards organic and eco-friendly products. There are a number of ongoing initiatives in Kerala, primarily driven by progressive farmers. An initiative to make the state of Kerala fully organic has begun with the formulation of a draft policy in 2003. Currently there are a number of certified organic farmers in the state, those cultivating cash crops such as spices, tea, and coffee, mainly targeting export market and also non-certified organic farmers who focus on food crops and biodiversity.

### **1.3 Principles of Organic Agriculture**

The International Federation for Organic Agriculture Movement's (IFOAM) definition of Organic agriculture is based on four principles of Organic Agriculture. The following principles of organic agriculture provide a vision to advance all agriculture in a global context and inspire the organic movement.

- ✓ The principle of health
- ✓ The principle of ecology

- ✓ The principle of fairness and
- ✓ The principle of care

### **1.3.1. Principle of Health**

Health is the wholeness and integrity of living systems. It is not simply the absence of illness, but the maintenance of physical, mental, social and ecological well-being. Immunity, resilience and regeneration are key characteristics of health. This principle points out that the health of individuals and communities cannot be separated from the health of ecosystems - healthy soils produce healthy crops that foster the health of animals and people. Organic Agriculture should sustain and enhance the health of soil, plant, animal, human and planet as one and indivisible.

The role of organic agriculture, whether in farming, processing, distribution, or consumption, is to sustain and enhance the health of ecosystems and organisms from the smallest in the soil to human beings. In particular, organic agriculture is intended to produce high quality, nutritious food that contributes to preventive health care and well-being. In view of this it should avoid the use of fertilizers, pesticides, animal drugs and food additives that may have adverse health effects.

### **1.3.2. Principle of Ecology**

Organic Agriculture should be based on living ecological systems and cycles, work with them, follow them and help to sustain them. This principle states that production is to be based on ecological processes, and recycling. And organic agriculture should be based on ecological systems. The sustenance and well-being are achieved through the ecology of the specific production environment. For example, in the case of crops this is the living

soil; for animals it is the farm ecosystem; for fish and marine organisms, the aquatic environment. Organic farming should fit the cycles and ecological balances in nature. These cycles are universal but their operation is site-specific. Organic management must be adapted to local conditions, ecology, culture and scale. Inputs should be reduced by reuse, recycling and efficient management of materials and energy in order to maintain and improve environmental quality and conserve resources.

Organic agriculture should attain ecological balance through the design of farming systems, establishment of habitats and maintenance of genetic and agricultural diversity. Those who produce, process, trade, or consume organic products should protect and benefit the common environment including landscapes, climate, habitats, biodiversity, air and water.

### **1.3.3. Principle of Fairness**

Fairness is characterized by equity, respect, justice and stewardship of the shared world, both among people and in their relations to other living beings. Organic Agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities.

This principle emphasizes that those involved in organic agriculture should conduct human relationships in a manner that ensures fairness at all levels and to all parties - farmers, workers, processors, distributors, traders and consumers. Organic agriculture should provide everyone involved with a good quality of life, and contribute to food sovereignty and reduction of poverty. It aims to produce a sufficient supply of good quality food and other products. This principle insists that animals should be provided with the conditions and opportunities of life that accord with their physiology, natural behavior and well-being.

Natural and environmental resources that are used for production and consumption should be managed in a way that is socially and ecologically just and should be held in trust for future generations. Fairness requires systems of production, distribution and trade that are open and equitable and account for real environmental and social costs.

### **1.34. Principle of Care**

This principle states that precaution and responsibility are the key concerns in management, development and technology choices in organic agriculture. Science is necessary to ensure that organic agriculture is healthy, safe and ecologically sound. However, scientific knowledge alone is not sufficient. Practical experience, accumulated wisdom and traditional and indigenous knowledge offer valid solutions, tested by time. Organic agriculture should prevent significant risks by adopting appropriate technologies and rejecting unpredictable ones, such as genetic engineering. Decisions should reflect the values and needs of all who might be affected, through transparent and participatory processes.

Organic Agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment. Organic agriculture is a living and dynamic system that responds to internal and external demands and conditions. Practitioners of organic agriculture can enhance efficiency and increase productivity, but this should not be at the risk of endangering health and well-being. Therefore, new technologies need to be assessed and existing methods reviewed. Given the incomplete understanding of ecosystems and agriculture, care must be taken.

## **1.4 Benefits of Organic Agriculture:**

The farmers who practice conventional farming methods uses synthetic chemicals to control pests and weeds and also applies large amount of chemical fertilizers to improve the productivity. These practices created so many ill effects on environment and health of human beings. The contamination of water sources, declining fertility of soil, loss of natural biological features of plants are major environmental problems. More than these environmental problems, immense health problems are arising from the consumption of chemical contaminated food items. A number of recent research studies have found that the consumption of chemical fertiliser and pesticides applied vegetables and fruits increase the incidence of certain diseases, including some types of cancer. The promotion of organic farming is the main solution to avoid all these kinds of problems arising from synthetic chemicals based farming. The organic farming offers following benefits:

### **1.4.1. Environmental Benefits of Organic Agriculture**

The conventional agricultural practices have contributed to climate change through heavy use of fossil fuels--both directly on the farm and in the manufacturing of pesticides and fertilizers--and through degradation of the soil, which releases carbon. The depletion of Soil Organic Carbon (SOC) through conventional farming has not only released carbon into the atmosphere, it has also limited the fertility and water holding capacity of soils worldwide.

- The adoption of organic farming mitigate agriculture's contributions to climate change by reducing fossil fuel use and provide carbon

sequestration in the soil through increased Soil Organic Carbon (SOC). Higher SOC levels then increase fertility and the soil's ability to endure extreme weather years. Organic agriculture relies on non-chemical ways of maintaining fertility, managing pests and controlling weeds, thus eliminating the need for synthetic fertilizers and toxic pesticides.

- As the organic agriculture does not permit the use of chemical fertilizers and relies instead on nutrient sources that tend to be more stable in the soil and avoids a significant source of toxic chemical contamination of environment.
- Good organic practices work to build the soil and maintain an ecological balance and ensure the long-term sustainability of food production.
- Another significant benefit to be found in organic farming is reduction of soil erosion. One of the major problems associated with conventional agricultural techniques is soil erosion. The organic farming reduces soil erosion.
- Organic agriculture considers the medium and long-term effect of agricultural interventions on the agro-ecosystem. It aims to produce food while establishing an ecological balance to prevent soil fertility or pest problems. Organic agriculture ensures long term sustainability.
- The quality of natural resources should be maintained and the vitality of the entire agro ecosystem- humans, animals and crops to micro organisms should be enhanced in a sustainable agricultural system.



### 1.4.2. Social and Economic Benefits of Organic Agriculture:

The experiences from ‘Green Revolution’ showed increased input usage and diminishing return. The increasing World population necessitates increasing agricultural production in sustainable manner. At the same time, the quality of agricultural produce is also an important criterion. In every part of the world, especially in EU countries, the people are more conscious of environment and prefer safer, healthy and environment friendly food. To achieve this, organic farming has been developed as an alternative production system whose all production stages from production to consumption are under control and registered, and which aims for the protection of soil and water resources. In general, organic food consumers, manufactures and farmers strongly believe in organic food having following benefits over non organic food:

- **Better health:** Since organic food is not prepared using chemical fertilizers and pesticides, it does not contain any traces of these strong chemicals and might not affect the human body. One of the most significant health benefits associated eating organic food rests in the fact that these products are free from any potentially harmful chemicals. Organically grown food items are pure and completely wholesome.
- **Better taste:** People strongly believe that organic food tastes better than non organic food. The prominent reason for this belief is that it is produced using organic means of production. Further organic food is often sold locally resulting in availability of fresh produce in the market.

- **Environment safety:** As harmful chemicals are not used in organic farming, there is minimal soil, air and water pollution; thus ensuring a safe world for future generations to live in.
- A number of recent research studies found that organically grown fruits and vegetables have significantly higher levels of antioxidants than traditionally cultivated food products. Because organically grown fruits and vegetables are higher in antioxidants, these items have been demonstrated to work to reduce the risk of certain types of cancers. Antioxidants also have a restorative process when it comes to skin and muscle deterioration. Foods that are high in antioxidants help to slow and inhibit the deterioration of muscles and skin associated with aging process.
- Organic farming makes agriculture more rewarding, sustainable and respectable. Protects and enhances traditional knowledge in farming, processing and seed improvement leading to its protection for the future generations.
- Organic farming includes animals as an essential part of organic system which helps maintaining soil fertility. Ensures pollution – free air, water, soil, food and natural ecosystems while improving agro-biodiversity.
- The premium price received for organic products enhances income of farming community.
- The continuous adoption of organic farming reduces application of more quantity of inputs, there by cost of production can be reduced through locally suitable methods and inputs.

- Produces adequate quantity of nutritious, wholesome and best quality food and develops a healthy food culture

### **1.5 Research Problem and Significance of the Study**

Agriculture is an inevitable part of any economy – whether industrialised or not. In order to feed the growing population, agriculture and farmers should be retained in every society. But many economies forget about this very essential part in the epoch of industrialization process. Priority and growth of agriculture were mislaid during the last two decades. But now a day the obligatory part of farms and farmers has been started to realise especially in advanced nations. As a result of this recognition, large number of farmer movements and organisations were arises across the world. India basically an agrarian economy with more than half of population still depends on agriculture for their livelihood. Favorable environmental resources, rural labour force and rich agrarian traditional values offers great opportunity to regain the priority of agriculture in India. Kerala has also a great agrarian tradition and opportunity to progress with national and international movements to promote organic farming.

#### **Research problem:**

The negative effects of modern chemical based farming system were first experienced by those countries, which introduced it initially. The theme of consumer welfare has become central in the economic activities of developed countries. The consumers are increasingly concerned about the quality of the products they consume and food safety has become a crucial requirement.

The advent of chemical intensive farming and its prevalence in Kerala for the past 50 years have resulted in the near stagnant levels of productivity of

many of the economically important crops such as coconut, cashew, pepper, coffee, tea and cardamom. In recent years there is an increasing awareness regarding the harmful effects of chemical fertilizers such as health hazards, contamination of water sources, depletion of soil, ill effects on lives stocks and devastation of natural eco system. Besides these, many regions in Kerala, like Wayanad started facing acute water scarcity and environmental degradation arising from the intensive use of chemical fertilizers and pesticides.

Growing awareness about organic farming is leading good number of farmers in Kerala to adopt organic farming. For the first three to four years, conversion to organic farming means a drop in yields, putting farmers to hardship. It is for this that the authority will have funds both from the Union and state governments to support the farmers. Financial support from international agencies can also be looked. The public is not sufficiently aware about organic products and the market remains underdeveloped, making the marketing of organic goods difficult.

### **Importance of the study:**

The organic agriculture movement in India received inspiration and assistance from IFOAM which has about 600 organizational members from 120 countries. All India Federation of Organic Farming (AIFO) is a member of IFOAM and consists of a number of NGOs, farmers' organizations, promotional bodies and institutions. Kerala with rich endowments for cultivation of a wide variety of agricultural and horticultural crops specifically spices, plantation crops, medicinal plants etc with potential international markets is an ideal destination for promotion of organic farming due to the changing preferences world-wide towards organic and eco-friendly products. There is rich potential for promoting organic farming in Kerala in the light that

intensity of inorganic agriculture here is not that severe compared to that in other States in the country. These points to the positive side of agriculture in Kerala in terms of the already low levels of consumption of hazardous chemicals and therefore, chances of redeeming farmers to organic agriculture are quite high. The demand for organic food is steadily increasing both in developed and developing countries, with annual average growth rate of 20-25%. In this context there is wide scope for Organic Farming in Kerala.

### **1.6. Objectives of the Study**

The major objectives of this study are:

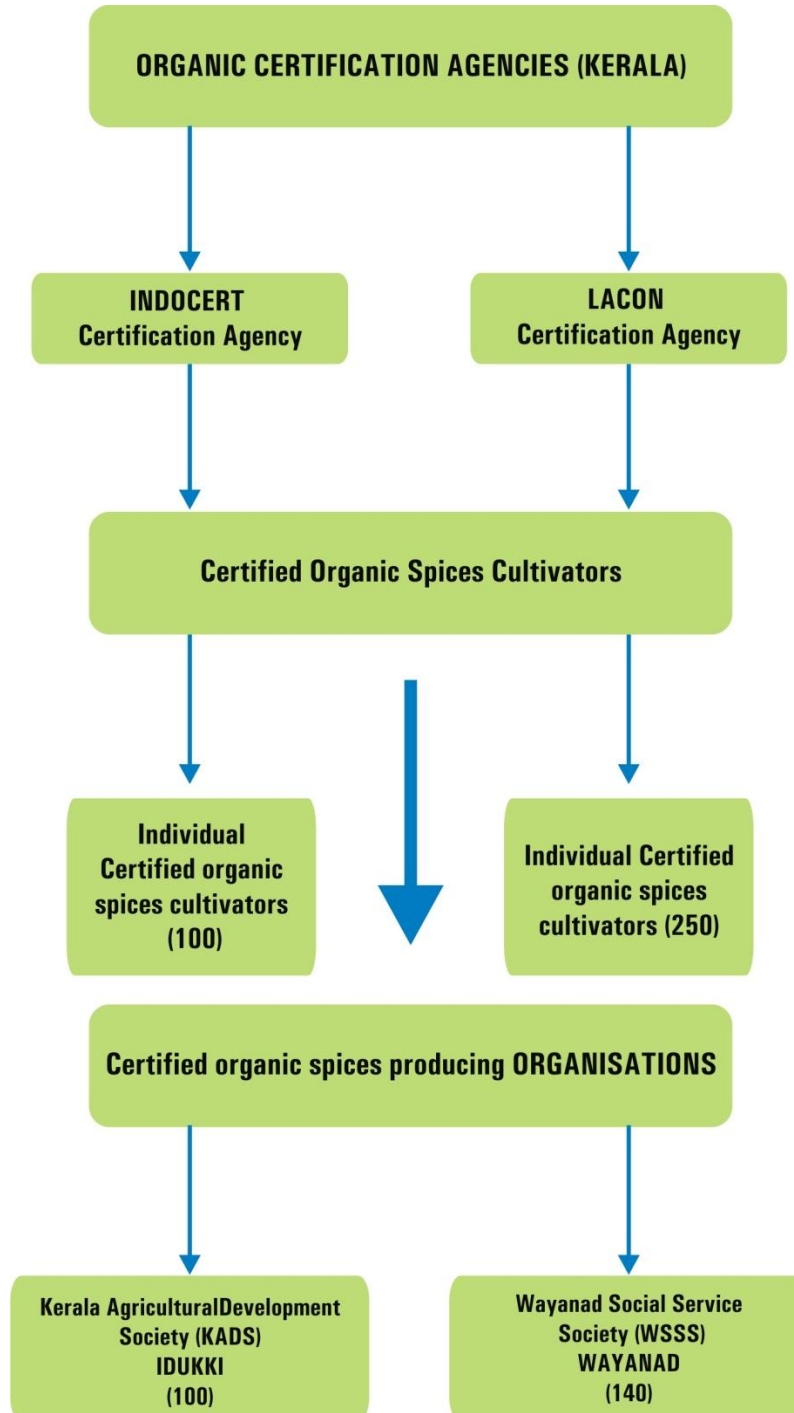
- i. To identify the factors which determine revenue from certified organic farming of spices.*
- ii. To analyse the role of institutional support in promoting certified Organic production of spices.*
- iii. To identify the scope of group certification in promoting certified organic farming of spices.*

### **1.7 Methodology**

The study is based on data from both primary and secondary sources. The Primary data was collected through discussions with informed individuals, experts, Accreditation and Certification Agencies, NGOs, Farmers and institutions. The study was conducted on the basis of certified organic farmers registered under two certification agencies in Kerala namely, LACON Quality Certification (India) Pvt. Ltd and INDOCERT (Indian Organic Certification Agency). Out of the 31,913 organic farmers certified by these two certification agencies in Kerala, 24,104 certified organic spices farmers

were identified and purposively selected a sample of 100 certified organic spices farmers from INDOCERT and 250 certified organic spices farmers from LACON and they were interviewed to collect data.

According to LACON (Certification Agency) data 2014, out of the total 13,514 organic spices farmers in Kerala certified by LACON, 10,800 certified organic spices farmers are belongs to Idukki and Wayanad. Similarly according to INDOCERT (Certification Agency) data 2014, out of the total 10590 organic spices farmers certified by INDOCERT, 6268 belongs to these two districts. As Idukki and Wayanad districts were significant in spices production, institutions from Idukki and Wayanad were selected to study the role of institutions in promoting certified organic farming of spices. One is Wayanadu Social Service Society (WSSS) functioning at Wayanadu and the other is Kerala Agricultural Development Society (KADS) functioning at Idukki. Data were collected from two institutions using separate interview schedules. To carry out micro level study of individual certified organic farmers organised under these two institutions, 140 certified organic farmers from WSSS and 100 certified organic farmers from KADS were selected randomly and primary data were collected through structured interview schedules. Information regarding historical evolution of organic farming and its progress in India and abroad was collected from the secondary sources like published books, periodicals, news paper reports and the websites. To understand organic farming of spices and export of organic spices the data were collected from published data of Spices Board, Kochi and Agricultural & Processed Food Products Export Development Authority (APEDA).

**Sampling frame:**

## **Data Analysis**

The multiple log linear regression is used to explain the factors determining certified organic spices cultivation in Kerala. The study also employed t-test, ANOVA and Chi-Square tests.

### **1.8. Hypotheses**

The hypotheses formed for the present study are as follows:

#### ***Hypothesis 1***

H<sub>0</sub> There is no significant relationship between years of organic farming and annual revenue from certified organic spices cultivation.

#### ***Hypothesis 2***

H<sub>0</sub> There is no significant difference between cost of individual certification and cost of group certification.

### **1.9 Theoretical Framework**

Production of goods and services involves transforming resources such as labour power, raw materials and the services provided by facilities and machines into finished products. The production function tells us the maximum output a firm could get from a given combination of labour and capital. The efficient management could increase output from what is technologically possible. In economics, a production function represents the relationship between the output and the combination of factors, or inputs, used to obtain it. Production functions have a vital role in agriculture since it helps us to assess the present status as well as to explore opportunities to improve the cropping pattern for better outputs. James Andrew Richardson (1980) applied production economics theory to determine whether a relationship



between output and production inputs could be estimated in the commercial fishing firms in Oregon. Two functional forms for regression were used; log-linear and linear. The log-linear form of the model would provide the best estimate based on its convenient mathematical characteristics and wide use in empirical research applications. The product-product model of agricultural production is a firm level version of the production possibilities curve. The production possibilities curve at the firm level is called a product transformation curve. The resource base for the farm is a bundle of inputs that could be used to produce outputs. The farmer must choose to allocate the available bundle of inputs to produce maximum outputs.

## **1.10 Review of Literature**

The literature review is organized in three sections on the basis of Global, Indian and Kerala based literatures of organic farming

### **1.10.1 Global level Studies on Organic Farming:**

Cacek Terry, Langner L. Linda (1986) [1] summarizes and analyses economic data on organic farming which is relevant to decision makers at the farm (microeconomic) level and the national (macroeconomic) level. Organic farming benefits society substantially by reducing pollution and flooding; conserving energy, soil, nutrients, fish, and wildlife; reducing federal costs for grain price supports; and insuring the supply of food for future generations. Organic farming is an attractive alternative for both farmers and policy makers. With the development and delivery of better information, both will be able to make the best use of this alternative.

Pony and Constance (1990)[2] in their study on the characteristics of grocery stores in New Mexico who sell or intend to sell organic foods provides information from grocery stores to understand problems and benefits

associated with adopting organic foods. The study has been undertaken by conducting survey among all New Mexico groceries, health food stores, and specialty food stores. The stores who do sell organic foods decided to adopt organic foods mainly from customer request. The main problems these stores face with organic products are higher prices, insufficient variety, variable supply, shorter shelf life and difficulty in separating organic from conventional foods. Problems of higher prices, insufficient variety, and variable supply could be solved by increased production of organic foods. In addition, increased production would mean greater supplies on the market which would bring down prices. The majority of the respondents indicated that they buy locally when possible may mean opportunities exist for local growers.

Harris and Burrell (2000)[3] in their report on Demands for local and organic produce provided the characteristics and preferences of consumers demand for Environmentally Identified Products (EIPs) in the US. Environmentally Identified Products (EIPs) refers to food products that are described as organic or sustainable, or were grown using Integrated Pest Management (IPM), or in other respects are viewed as having a relatively less negative impact on the environment than directly competing products. Environmental concern is a strong motivating factor for consumers who purchase organic produce. Results from the study indicate that the Certification of produce as pesticide-residue-free or organic seems to raise willingness to pay for organically grown produce.

Rene Vossenaar and Els Wynen (2004)[4] in the report of project on ‘Strengthening Research and Policy-Making Capacity on Trade and Environment in developing countries’ provides a synthesis of the studies and discussions on promoting Trade in Environmentally Preferable Products (EPPs), in Particular Organic Products. Farmers associations,

nongovernmental organizations (NGOs) and bilateral and multilateral donors can also play an important role in developing countries. A participatory approach to the development of smallholder agriculture, with the transformation of mono-cropping into diversified and integrated organic farm systems (DIOFS) that depend largely on renewable and local resources were supported by the report. Considering the knowledge-intensive nature of DIOFS, learning is an important element. The report reveals that the organic agriculture movement in India is led by local IFOAM members and associates, NGOs, farmer organizations, commodity-specific boards (such as the Spices Board, the Tea Board and the Coffee Board) and other stakeholders. Larger conversion to certified organic production also requires that certification be affordable and market outlets be available. At the same time the extent that producers in developing countries use traditional production methods (applying little or no chemical fertilizers and pesticides), have certain advantages over producers in developed countries in producing organic food products. The report indicate that comprehensive policies at both national and international levels are required, including in the area of trade policy, to allow developing countries to derive larger economic, social and environmental benefits from the increased interest in organic agriculture worldwide. The study summarises that the economics of organic agriculture worldwide generally experienced lower yields, lower variable costs, similar fixed costs and lower gross profit margins as compared to conventional farmers. Therefore, price premiums for organic products would be needed to ensure similar net returns to those obtained from conventional farm products. However, there were wide variations. Yields showed lower or no decreases in less intensively farmed areas such as those in the United States, Canada and Australia. Case study on India has noted that while organic production is seen

to bring a number of private benefits to the farmer, there are also a number of public goods benefits that support the case for public intervention in this sector. These include pollution reduction, food safety, less soil erosion, conservation of biodiversity, animal welfare, and the maintenance of rural communities and Employment. However, policies towards organic farming are still in the making and information is scarce. Farmers and NGOs are almost the only source of information on the current nature and extent of organic farming in India, with very limited information being available from Government agencies or certification bodies.

Zizvelova and Jansky (2006)[5] analyses the organic food market's development in the Czech Republic . The study reveals that consumers' decision-making is negatively influenced by the higher prices of organic products compared to conventional products. The consumers do not always realise this as the consequence of higher quality of Organic products. This contributes to insufficient consumer awareness evoking the need of the intensification of the advertisement and promotion of organic products. The problem is often also the credibility of the origin of organic products and the distrust of consumers in the control and certification system. The study concludes that the consolidation of consumers trust and ensuring the valid information about the quality of organic products is necessary to interpret to the consumers the basic differences between organic and conventional food and the justification of the price differences. In this respect, it is necessary to evolve further research that would objectify the differences and support the information by the scientific studies.

Rasmussen, 2007 [6]in the study on Organic Food Market and Transformation in Denmark finds that the evolution of the market for organic food is a result of a social process of structural change. The key-words in the

process of selection of elements are politics, market, transformative capacity, and empirical indicators. The primary agricultural sector is not a static and the number of organic farms and organic area was about non-existent. After a slow beginning, however, both farm numbers and organic agricultural area have grown significantly.

Sandor Kis (2007) [7] presents the results of a questionnaire survey covering 110 organic farms in Hungary which shows the production structure, the parameters governing the conversion from conventional production to organic farming and the factors motivating the conversion. In Hungary and all over the world the amount of area devoted to organic farming and the number of farms producing organic products are continually increasing. The study finds that the majority of the respondents initiated organic farming out of personal conviction and out of concern for safe production and environmental protection. The rate for economic motivation factors behind conversion was lower. Also the opportunity for higher sales prices and higher subsidies were found as another reason. Of the farms studied 64 had official certification from the Hungarian supervisory organization. The study concludes that late nineties boom in organic farming. Among the factors behind the conversion, most respondents emphasized personal conviction, health, and environmental protection. Economic factors also weighed heavily in their decision, including top prices and access to subsidies, targeted advertising campaigns, and by stressing the need for a healthy lifestyle.

Zakowska-Biemans (2009)[8] analyses Organic food market in Poland which is in the early stage of development with representative samples of Polish consumers. The study finds that the most important factors driving purchases of organic food are health, safety and taste. Organic foods have positive implication in the opinion of Polish consumers. Besides the positive

points of organic food, various negative comments related to its availability, information on organic food as well as the higher price was found. The analysis of available data revealed that Polish consumers are motivated to buy organic food by hedonic aspects such as healthiness, safety and taste but they are dissatisfied with its availability, variety and price level. Limited availability and high prices could be considered a barrier related to the immature character of organic markets in Poland. The attributes of health associated with organic food reflect Polish consumers' search for food that has a positive health impact in a sense of providing more nutrients but also minimizing the risks associated with conventional food products. Organic food has positive connotation but there is more effort needed to communicate various aspects of organic food production referring to organic standards and common principles covering environmental, social and ethical benefits of organic food consumption.

Friederike Gronefeld (2010)[9] analyses the relationships between relevant variables such as the market share of organic products and the importance of general food shops for organic sales in EU Food market. The study finds that during the last four decades the European organic food market developed from a niche market to an important market segment in most EU countries. In the 1990s, policy makers started to support farms converting to organic production both by subsidies and by introducing a common European standard for certification and control: the EC regulation 2092/91 (now replaced by EC regulation 834/2007). At the time, government support for organic production focused mainly on the supply of organic raw products. The study finds that increasing market transparency, by means of providing reliable organic market data on a regular basis, would contribute decisively to the economic development of the organic sector. Aggregated data of organic

production, consumption and foreign trade on a national level, are especially important for market actors who are in the process of deciding whether they should focus their business on organic production/processing/trade or not.

Leila Hamzaoui-Essoussi and Mehdi Zahaf (2011)[10] in their Canadian Study on organic market is which moving from a niche market to a mainstream market within the agricultural industry, and was originated in the nineties (Agrifood Canada, 2011) explaining the decision making process of organic food consumers by characterizing the differences between market clusters. Certification and labeling systems serve as tools to enhance distribution and market development, create trust, and foster confidence. It is a commitment from producers/farmers to work with certain standards of production. In 2009, the Canadian government implemented the Organic Products Regulation to regulate organic certification. In a nutshell, the new regulation requires mandatory certification for all agricultural products represented as organic in import, export and inter-provincial trade, or that has the federal organic agricultural product logo. This new certification logo has been recently created at the national level as a first step to standardize all certification processes across the country. The study concludes that Consumers' interest in organic food has exhibited continued growth for the past two decades, which has attracted entrepreneurs and corporations seeing a big potential for this industry.

Mosa Azami and Feizollah Monavvari Fard (2013)[11] attempts to find effective factors on not accepting organic agriculture finds that, the most important reasons for not accepting organic agriculture include: making no distinction between organic products and other products, inability in producing ideal production if the fertilizers aren't used, inability in controlling weeds and pests when pesticides are not used and the lack of farmers level of education.

The study recommended alternative methods for increasing production and controlling the pests and weeds, which are in accordance with standards of organic cultivation, are taught to farmers practically in educational workshop. Another factor in non-accepting organic agriculture is lack of skilled experts. According to the findings, one of other important barriers of organic agriculture is the expensive prices of organic products. It is recommended that, using experiences of countries like Australia, the USA and France, at first the products are supplied with 5% to 10% price increase in order to people be encouraged to use organic products.

William Edwardson and Pilar Santacoloma [12] (Food and Agriculture Organization, United Nations, 2013) focuses on case studies on organic rice in India and Thailand, horticulture products in Brazil and Hungary, coffee and fruit in African countries. The study summarizes findings on the marketing, financing, post-harvest and value-added components of these organic ventures and provides conclusions and recommendations for policy-makers, the private sector and support organizations for the future development of organic supply chains in developing countries. In the cases studied, supply chains ranged from the very short where farmers market directly to local consumers, to the more elaborate chains where a number of different actors are involved in moving the organic products along from farmer to final consumer. Farmers are responsible for cultivating crops according to organic procedures certified by the appropriate authority. Farmer organizations facilitate groups of farmers to produce jointly the required volume of organic products to be supplied to buyers. They also facilitate implementation of Internal Control Systems (ICS) to ensure quality management and reduction of certification costs through group certification. The case studies show that the burden of responsibility for post-harvest operations falls on producers and their organizations. More



support in post-harvest training is required at the farmer level, as the value-added associated with organic certification is lost if the quality of the final product is not acceptable to the consumer. The study concludes with number of recommendations which are made for strengthening organic supply chains for the benefit of smallholders in developing countries. The major recommendations are:

1. Governments should provide an enabling environment so that organic supply chains can develop for both the export and domestic market.
2. Partner companies should identify feasible markets abroad as a preliminary step prior to participating in or developing export-oriented organic supply chains.
3. Private companies should take special responsibility in ensuring adequate investment and availability of funds for the effective operation of the whole supply chain.
4. Financing institutions are encouraged to develop appropriate financing mechanisms that take the idiosyncrasies of organic production into account, such as the conversion period and product segregation along the supply chain. They should facilitate the smooth functioning of all essential activities along the chain.
5. Support groups, such as NGOs that work with small-scale farmers on organic projects, should have the necessary capacity to deal with post-harvest, food safety and quality, finance, marketing and business management activities with their own staff or with alliances or subcontracts with specialist groups at universities, consultants and technical service companies.

The Case study of India reveals that the central and state governments have taken a number of steps to promote organic farming among farmers and consumers. These include a National Project on Organic Farming (NPOF) and a National Centre of Organic Farming (NCOF). Some state governments have also initiated programs to encourage farmers to convert to organic farming and to facilitate the organic certification process, which is necessary to obtain a premium price in the market. The cases indicate the importance of direct marketing to domestic consumers through organic marketplaces or fairs, home delivery and on-farm sales. With regard to financing, in most of the cases reviewed no distinction appears to be made between organic and conventional farming and their supply chains. Organic farmers have to compete with conventional farmers for credit through commercial banks and government programs.

### **1.10.2 Indian Literature on Organic Farming:**

**Salvador V. Garibay and Katke Jyoti (2003)[13]** illustrates status of Indian Organic products. The major organic products produced in India are tea, spices, fruits and vegetables, rice, coffee, cashew nuts, oil seeds, wheat, pulses, cotton and herbal extracts. The different regions in India has comparative advantage for the production of different products, specifically tea in the eastern region, spices and coffee in the southern region, rice and wheat in the northern region, cotton in the western region. Products with potential in the domestic market are fruit, vegetables, rice and wheat. Products with potential in the export market are tea, rice, fruits and vegetables, cotton, wheat and spices. The major potentials of India in the high quality production of tea, spices, rice specialties, *Ayurveda* herbs and rich heritage of agricultural traditions which are suitable for designing organic production systems; More than that, the labour is relatively cheap compared to agro-chemicals and NGO

sector in India is very strong and has established close linkages to large numbers of marginal farmers. The study summarises that the Organic agriculture is a preferable model for the development of agriculture in India which multiple benefits in different aspects. In the economic aspects price premiums are high global demand are the major benefits. In the environmental aspect natural resource conservation, improved soil fertility, prevention of soil erosion, preservation of agro-biodiversity and water quality is the major advantage. With regard to the social aspect, generation of rural employment, corresponding lower urban migration, improved household nutrition, reduced dependence on external inputs and local food security are the major welfare factors.

Singh Sukhpal (2004)[14] says that in India, environmental concerns have led many NGOs and governments to promote organic farming. High cost modern farming and its negative effects due to overuse of chemical fertilisers and rising input costs has made organic farming a necessity in many agriculturally grown regions. Organic farming is not only financially less draining for the small farmer and good for environment, it also helps the government to reduce its subsidy bill meant for modern inputs. The growth of organic farming in India and other Asian countries has been slow due to the emphasis given to food security rather than food safety. The major markets for Indian organic products are the EU, the USA, Canada, Australia and the Middle East Asian countries. Quality production with traditional methods, low use of chemical inputs in mountain and tribal areas, easy availability of cheap labour, NGO interventions, and various types of support provided by the governments as the main advantages of Indian organic products. On the other hand, high price expectations, delayed delivery, quality restrictions, lack of

certification and marketing networks are some of the constraints in marketing organic products internationally.

Jitendra Singh, G.P. Singh and Rajkishor (2006) [15] has presented the scenario about adoption and awareness of organic farming as well as costs and returns of major crops grown under organic farming vis-à-vis non-organic farming on a sample of 90 farmers (45 organic and 45 non-organic) selected from the Kashipur block of Udham Singh Nagar district of Uttaranchal during the year 2004- 05. The study has revealed a fairly good adoption status with 36.51 per cent of sample farmers engaged in organic farming. The organic paddy has been found more profitable than organic wheat. The study has suggested organization of training programmes to generate awareness regarding organic farming. Lack of inputs being a general problem among producers, government should ensure timely delivery of quality inputs at reasonable costs. Also, to encourage organic farming, market support system need be strengthened. The difference between the prices of organic wheat (Rs 875/q) and non-organic wheat (Rs 780/q) has not been much, and therefore growing wheat organically has not been found a profitable venture. Organic paddy has been found more profitable than organic wheat in the study area.

Gahukar (2007)[16] describes that Indian farmers are more benefited from the technical guidance, supply of quality farm inputs and assured purchasing at remunerative price. This can be executed by way of contract farming successfully for food crops. It would bring favorable changes in the present agriculture to make it sustainable and commercial with the adoption of organic farming. The contract farming is already implemented successfully for food crops in Punjab, Haryana, Maharashtra, Tamil Nadu, Rajasthan and Karnataka by private companies. The salient feature of these contracts is participatory approach which resulted in upgrading the livelihood of farmers.

Considering the present socio-economic status of Indian farmers, contract farming seems to be an ideal option because this system would have certain advantages over the present crop production and marketing systems.

Ponkshe Rashmi (2010)[17] summarized India's organic production as under-developed infrastructure, higher transaction costs and lengthy procedures for certification, low awareness about organic products in the markets and lack of marketing techniques. The government's role is very important to provide incentives to farmers in the form of subsidies for certification fees. If all conventional farming was to be substituted with organic farming the question that arises is whether pure organic food would suffice the growing population. If more and more people get convinced about the benefits of organic food the demand would outstrip the supply and organic yields would have to increase in order to cope up with the increasing demand. With advanced technologies, these issues could be addressed. The economic theory of production if implemented correctly would help achieve increasing returns to scale that would increase production with lesser inputs. India has been a major organic producer for the last couple of years and the endeavor towards achieving less dependence on inorganic farming must continue.

Charyulu and Biswas (2010) [18] conducted a study to ascertain the status of the organic input units sanctioned under National Project on Organic Farming (NPOF) scheme since October, 2004. The study reports that Green Revolution has encouraged an increase in the production of mainly two crops, wheat and rice, but the cost paid was in terms of destruction of other crops (especially coarse cereals and pulses) and over exploitation of precious water resources and fertile soils. The use of pesticides has been posing serious environmental and health problems. Due to the changed mode of traditional agriculture, disappearance of cattle from the farms, reducing biodiversity,

reducing biological productivity and nutrient recycling creating a crisis of non-sustainability, both economic and ecological. The study also criticise that, prior to the Green Revolution, diversity in crops was a key factor in agricultural systems in India. It provided stability and resilience to the systems as well as economic security to the farmers. The study recommends Organic farming as an alternative way to overcome the problems of sustainability, global warming and food security. The study summarises that the Indian organic farming has several opportunities to reap the untapped benefits in the future. The big and growing organic domestic market potential; growing purchasing power of consumers; nearly 70 per cent of gross cropped area under rain fed with limited fertilizer application; growing health awareness of consumers; can reduce heavy subsidies on food and fertilizers; control the nitrate leaching and CO<sub>2</sub> emissions and finally earn substantial export earnings. If India could tap all these potentials avenues, the growth in agriculture shall easily surpass the mile stone of 4 per cent per annum. At the same time study also express certain concerns such as high cost of organic food relative to conventional food; costly and complex nature of organic certification process; lack of sufficient number of infrastructure facilities and certification bodies; only export regulated organic market; low awareness about usage of organic inputs; most of the Indian fields are contiguous and problem of contamination and lastly interest towards introduction of GM crops in to the country. The study results are in conformity with the DEA efficiency analysis conducted on different crops indicated that the efficiency levels are lower in organic farming when compared to conventional farming, relative to their production frontiers. These results conclude that there is ample scope for increasing the efficiency under organic farms. The focal determinants of the efficiency in organic farming are education of the farmer and formal

participation in training programs. Finally, the most important task would be to ensure consistency of government policies on organic sector. Through focusing of policies and activities, the organic sector can be developed more quickly and more effectively. Institutional barriers to the development of the organic sector are considered greater than the technical and trade barriers. So, most relevant institutions and partners should be prepared to competently involve in the promotion of the organic sector in the country.

Reddy Suresh (2010)[19] in his paper attempts to bring together different issues and developments in organic farming. The paper has reviewed the global and Indian scenario with reference to organic farming. The key issues emerging in organic farming include yield reduction in conversion to organic farm, integration of livestock, certification constraints, ecology, marketing and policy support. It has been argued that organic farming is productive and sustainable, but there is a need for strong support to it in the form of subsidies, agricultural extension services and research. The paper reveals the developments in Organic agriculture in Andhra Pradesh. It was in the early-1980s that the Permaculture Association of India popularized the concept of 'Permaculture' (permanent agriculture) in AP. The study explains about three certifications schemes operating in the developing and transition economies. The first is the third party certification for individuals, a well-known and internationally recognized certification system.

Chandrashekar (2010)[20] describes Agriculture as the backbone of the Indian economy. But it is facing various constraints such as fragmentation of landholding, low productivity and conversion of agricultural land to non-agricultural uses. Still there are increasing investment opportunities in the sector due to the rising need for quality and value-added products. The study illustrates role of rural economy in developing organic farming in India which

can be leveraged to mitigate the ever-increasing problem of food security in India. Organic food production costs are higher in the developed countries as organic farming is labour intensive and labour is costly in these countries. However, in a country like India, where labour is abundant and is relatively cheap, organic farming is seen as a good cost effective solution to the increasing costs involved in chemical farming. The increasing demand for organic food products in the developed countries and the extensive support by the Indian government coupled with its focus on agri-exports are the drivers for the Indian organic food industry.

Sharma, A. K (2011)[21] finds that in dry lands, farmers are very poor and are largely unable to afford the cost of certification programs. Promoting certification as a universal requirement of organic farming has thus had a negative impact on its adoption by smallholders in these areas. Several government agencies and NGOs are working individually to promote organic farming. This individual approach, however, may result either in lack of adequate funding or lack of adequate knowledge of organic farming and/or marketing techniques. There is need for all related agencies to create integrated programs, linking the storehouses of technologies with financial institutions, in order to effectively promote organic farming. Since funding agencies always have the financial upper hand, they must take the lead to ensure sufficient technology backup and marketing of these products. This could be possible through a coordinating committee with representatives from all concerned organizations. The study also recommends that local, decentralized production of all inputs for organic farming should be encouraged; so that local resources can be utilized and village-level employment can be generated. Locally produced inputs are also much less likely to be adulterated. Subsidies or micro-financing to help set up small-



scale input production units that meet local requirements could be provided to village cooperatives and self-help groups. The dry land climate favours quality production of several spices and medicinal plants that are in already in great demand both nationally and internationally. The study recommends that organic clusters of villages by providing technical support will promote cost-effective production and certification process of organic produce.

Yadav A .K (2011)[22] illustrates that the growth of organic agriculture in India has three dimensions. First category of organic farmers are those which are situated in no-input or low-input use zones, for them organic is a way of life and they are doing it as a tradition. The Second category of farmers are those which have recently adopted the organic in the wake of ill effects of conventional agriculture, may be in the form of reduced soil fertility, food toxicity or increasing cost and diminishing returns. The third category comprised of farmers and enterprises which have systematically adopted the commercial organic agriculture to capture emerging market opportunities and premium prices. While majority of farmers in first category are traditional organic they are not certified, second category farmers comprised of both certified and un-certified but majority of third category farmers are certified. These are the third category commercial farmers which are attracting most attention. The study illustrates that, in India, there are two accreditation systems for authorizing Certification and Inspection agencies for organic certification. National Programme on organic Production (NPOP) promoted by Ministry of Commerce is the core programme which governs and defines the standards and implementing procedures.

Srishti Chauhan (2011)[23] describes that the Indian economy in its transition phase has shifted base from an agricultural sector to service sector. At the same time this transition leads to problem of surplus labour and deficit

capital, because manual labour is large and easily available in India, the capital required for a robust industrial growth is limited. The idea that is being considered as a potential turnover is that the government should sell stakes for these farmlands to big business houses and make it profitable to be a farmer. It means that the agricultural land can be used to grow organic foods- which are labour intensive and hence costly- and India can become an exporter of the same. The world demand for organic foods is set to rise exponentially. India can convert itself into a potential exporter of the organically produced foods. With regard to the state of Organic agriculture, the study reviews that agriculture provides a means of livelihood to around 60 per cent of the Indian population, and contributes approximately one-fifth of the total gross domestic product (GDP). Organic awareness and access to organic markets are now developing as Indian consumers become more health conscious and also there is a growing interest in avoiding chemical residues in foods. While the Indian organic industry is in its infant stage, it will expand rapidly because of growing incomes of upper- and middle-class citizens. The study estimated that the growth of Indian organic markets will be dramatic over the next ten years. The biggest challenges to developing conventional and organic markets in India are the lack of distribution infrastructure and the lack of sophisticated supply chain management systems. A great deal of the success of the Indian organic marketplace will directly depend upon India consumers' perceptions of the quality and organic integrity of certified organic products.

Sushil Kumar and Jabir Ali (2011)[24] analysed the factors affecting awareness level of consumers on organic food products, using a structured survey of 200 respondents covering New Delhi and a state capital Lucknow, Uttar Pradesh. Growing consumers' concerns on food safety, health and environment in the recent decade has resulted increased demand for organic

food across the world, including emerging economies such as India. The organic food industry in India is export oriented, with rapid production growth. A logit regression model has been estimated in the study to identify socio-demographic and other important factors affecting the consumers' awareness of organic food. Awareness and knowledge are crucial factors in changing the attitude and behavior of consumers towards organic foods, which stimulates the growth in the organic food markets. The results of logistics analysis in the study indicates that potential Indian consumers' awareness of organic food is strongly and significantly affected by factors such as education, stream of education and use of ICTs. The awareness is only slightly affected by factors such as gender and income level. The study concludes with the findings from factor analysis extracted five important factors indicating five groups of new generation potential organic consumers: Humanists, Food Phobic, Healthy Eaters, Environmentalists and Hedonists. This indicate that consumer's interest in organic food is influenced by their belief that organically produced food is safe and better for health, environment and welfare of farmers and poor. The results the study have great implication to understand the consumers' awareness and knowledge on organic food. To tap the market potential in organic food, the organic industry needs to educate consumers.

Mahendra Dev. S (2012)[25] describes trends in agricultural growth, cultivation patterns, participation and productivity performance of small holding agriculture in India. Indian agriculture consists of large number of small and marginal farmers (80%). Therefore, the future of sustainable agriculture growth and food security in India depends on the performance of small and marginal farmers. Multiple cropping indexes are higher for marginal and small farmers than that for medium and large farmers. The

contribution to output is higher for marginal and small farmers as compared to their share in area. In terms of production, small and marginal farmers also make larger contribution to the production of high value crops. Most important problem for the small farmers is output price fluctuations. There is a big gap between producer prices and consumer prices. There are different models for collective marketing by the small and marginal farmers such as self-help group model, co-operative model, small producer co-operatives and contract farming. Apni Mandi in Punjab, Rytu Bazaars in Andhra Pradesh, dairy co-operatives are some of the successful cases in marketing. The real challenge lies in organising the small and marginal farmers for marketing and linking them to high value agriculture. Thus, group approach is needed for getting benefits from marketing.

Dr. B. Gangwar (2013)[26] Project Directorate for Farming System Research (PDFSR), Modipuram, a constituent institution of the Indian Council of Agricultural Research (ICAR) has prepared Vision-2050 document. The document embodies a pragmatic assessment of the agricultural production and food demand scenario by the year 2050. Declining size of holdings without any alternate source of income has resulted in fall of farm income, thus causing agrarian distress. A large number of smallholders have to move to non-farm activities to augment their incomes. Under the changing scenario, a paradigm shift in research is inevitable with more focus towards small and marginal holders in Integrated Farming Systems (IFS) perspective. In India, the average holding size is estimated to be 0.32 and 0.24 ha in 2030 and 2050 respectively. As per estimates, more than 95 % of the holdings will be under the category of small and marginal holders in 2050. During the post-Green Revolution period, the Indo-Gangetic plain zone of India has experienced soil health degradation due to imbalanced fertilizer application. Although fertilizer

use has jumped up from 7 kg at the onset of the Green Revolution to 24.9 MT in 2008-09, food productivity did not keep pace with the continuous increase in fertilizer consumption, while soil quality has declined. Long-term use of synthetic fertilizers has resulted in nutrient imbalance, micro-nutrient deficiency and deterioration of soil health, causing low agricultural productivity. Technology gap is a major problem in the efforts to increase agricultural production in the country. To reduce the gap between the recommended agricultural technology and its acceptance by the farmers on their fields' efforts should be made to develop and improve the existing technologies in a participatory mode. Organic production systems aim at achieving optimal ecosystems, which are socially, ecologically and economically sustainable. The spread of organic farming on 1-5 per cent area in the high productive zone and large spread in the northeastern states would help to strengthen the organic movement. The document recommends making organic farming economically viable, issues like improving the productivity, reducing production costs, ensuring competitive price of organic produce to the grower in domestic and international markets, area approach of process certification are to be addressed at national level.

### **1.10.3 Review of Kerala based studies and Reports on Organic Farming:**

There are numerous studies have been undertaken in respect of Organic Agriculture in Kerala. Following are the major studies on Organic Agriculture in Kerala context which illustrates different aspects of Organic Agriculture in Kerala.

Balachandran (2004)[27] summarised the organic farming scenario in Kerala and analyzed case studies from different parts which shows different organic farming approaches adopted by the farmers. The economic viability of

organic farming depends on the ability of farmers produce enough for self-sufficiency and ensures sufficient returns to meet the costs. The yield as well as resource conservation and minimal risks should be the measure of the sustainable farm. The change to organic farming cannot mean a return to the traditional way of life. Kerala produces many important agricultural commodities such as Pepper (95% of India's production) Rubber (92%), Cashew (85%), Cardamom (70%), Ginger (60%) and Coconut (43%). Other than plantations and paddy fields, rural Kerala flourished with smallholding farms that have variety of crops. The study explains certain problems faced by farmers in the early stage of organic farming. While adopting organic farming method and resulting sudden withdrawal of the external inputs led fall in yield. The high yielding varieties of seeds had to be replaced by indigenous ones. The gap of 30 - 40 years created a vacuum in the knowledge of traditional agricultural practices. The prevalence of modern agriculture in the majority of the cultivable areas makes it difficult to maintain organic purity in the soil and atmosphere. Moreover, the organic farmers are scattered all over the state with a few pursuing it seriously. While it has been proven beyond doubt that the organically grown food is much better in quality, it remains to be established that, in terms of total productivity and economic viability, organic farming can compare with modern intensive agriculture. Organic farming in Kerala is mostly in a transitional stage; but there is a distinct movement among the farmers as well agriculture experts and scientists, in favour of ecological farming. There is considerable consumer awareness about the dangers of pesticide poisoning and hybrid crops and high fertiliser residue in food. This preliminary survey shows that organic farming is fast spreading roots in Kerala. Study concludes that organic farming is growing and spreading in Kerala. And it is a new venue for export earnings; it is part of a culture that

promotes conservation of nature and life on earth as the ultimate philosophy. The export potential is a short-term reward; restoration of environmental health is the long-term reward, which will influence all aspects of life of the people. Therefore, action plans for developing organic farming should be part of a larger plan for nature conservation and health of the community and the land, and should be relevant to the social, economic and cultural ethos of Kerala.

Jacob(2007)[28] examined the role of NGOs in the economic and community development of Kerala. A case study of Peermade Development Society (PDS), one of the prominent and major NGOs in Kerala in the Peermade Taluk of Idukki district, was undertaken. NGOs are somewhat stable groups with defined activities and programmes and have, barring some exceptions, an urge and also an exposure to the horizontal and sometimes vertical linkages within and across their chosen sectors of activity. In India, a large number of NGOs have been working in different parts of the country. In Kerala, the majority of NGOs working in the field of economic and community development, perform more or less similar responsibilities and functions with a slightly more stress on charity and relief and organizing the poor, the weak and the oppressed to empower them. The Peermade Development Society has been the largest NGO which has taken special attention and importance in the economic and community development scenario and has made a sustainability approach in their development interventions. The organic agricultural products and organic spices produced by the farmers are exported through PDS thereby earning a good margin to the organic farmers. The study observed that the occurrence of diseases have been substantially reduced in the families which have adopted organic farming practices. The monthly medical expenses of the families have come down due

to organic farming. The chemical fertilizers, pesticides and other chemicals have been completely avoided from the farm and it has naturally led to a reduction in the occurrence of diseases and to an improvement in the health conditions for each member of the family in the locality. The contributions of PDS in promoting organic farming practices produced good results in the agricultural front in the Peermade Taluk. The survey results have pointed out that there has been an average 18% reduction in the occurrence of pests and plant diseases after the adoption organic farming practices in the Peermade Taluk. It has been pointed out in the study that there has been an average 15.9% decrease in the overall cost of cultivation due to the adoption of organic farming practices in the Peermade Taluk. . It has also been pointed out in the study that there has been an average 26.2% increase in the labour cost as a result of adopting organic farming practices and it has been due to the adoption of manual weed control under organic farming in the place of use of chemicals in controlling weed. The study has concluded that the organic farming practices have been highly beneficial to farmers and society and have led to eco-friendly cultivation, conservation of natural resources and protection of soil and water from pollution

(PROJECT REPORT ON PEPPER PRODUCTION IN IDUKKI SPICES BOARD, GOVT. OF INDIA, 2009) [29]illustrates major issues and scope of pepper production in Kerala. The traditional producers like India and Indonesia showing a declining trend in pepper production. Major producers other than India are Brazil, Indonesia, Malaysia, Sri Lanka, Vietnam, Cambodia and China. Spices Board prepared a proposal on production development of pepper in Idukki District of Kerala in line with NHM guidelines which evolved as a project for implementation in the district with assistance under NHM. Idukki District of Kerala being the core producing



centre is selected for implementation of the project. Pepper produced in Idukki has better quality and the productivity (357 kgs/ha -2007-08) is higher when compared to other districts of Kerala. The agro-climatic condition of Idukki district is suitable for investing on programmes for increasing the yield. Varieties widely grown in the district are local land races such as Karimunda, Neelamundi, Kuthiravaly, Narayakodi, Chengannooran etc. The objective of the project is to address the issue of non-availability of sufficient planting material, low productivity/production, non-availability of organic inputs, adoption of Integrated Pest Management and bridging the technology gap by implementing programmes like establishment of certified nurseries, replanting/rejuvenation of senile plantations, setting up of vermicompost units, promotion of Integrated Pest Management (IPM) and training on planting material production and organic agricultural practices.

Dr.D.Alexander & Dr.Sajan Kurien, Directorate of research Kerala Agricultural University, 2009) [30]provide Ad hoc Package of Practices Recommendations for Organic Farming which were the outcome of research findings of Kerala Agriculture University and a series of interactions carried out by scientists of Kerala Agricultural University among themselves and also with scientists of CPCRI, CTCRI, IISR, the extension personnel of the Department of Agriculture and progressive farmers which aims at providing necessary guidelines to the practitioners and potential followers of organic farming. The study strongly advocated organic farming in the State and also mentioned the increasing requirement of food due to the ever-increasing population growth. The study recommends a need for an ideal organic farming policy to be formulated in the State. In Kerala, considering the unique situation both climatologically and topographically, organic farming can be promoted as an alternative farming system in selected areas and in selected crops.

**Farm Guide, Government of Kerala (2009) [31]** describes Certification as a procedure by which a third party gives a written assurance that a product causes or service is in conformity with certain standards. Organic standards are defined as a minimum production practices including storage, transportation, processing, handling, packing and labeling requirements which must be followed for certifying the products as organic. Organic certification improves the image of organic agriculture and provides transparency in quality. For gaining consumer's confidence, valid organic certification is an essential pre-requisite for marketing especially in the export market. Generally organic certification involves many standards, inspection and certification which vary with the country and to sell the products in a particular country, the standards of the importing country are to be followed.

SANTHOSH.K( September 12, 2012,The Hindu)[32] reports that Lynette Abbott, internationally-renowned soil biologist and professor with the School of Earth and Environment of the University of Western Australia said Kerala should take serious steps to switch over to organic farming. It is interesting to investigate what will be required to convert farming systems in Kerala into fully organic systems. Compare the areas where conversion to organic production is likely to be easy and where it is likely to be difficult. The background to such an investigation requires details of soil and land use practices at a local level, economics of production systems, understanding of supply chains for food in the market place, and understanding of knowledge of farmers and their willingness to adopt new practices. Also stated that the aim of organic agricultural systems was to achieve optimum production of nutritious food without the use of artificial fertilizers or manufactured pesticides. The biological capacity of the soils should be used for sustaining agriculture production. There are differences between organic standards of

different organisations and also between standards of countries. For example, the allowable levels of manure use differ in different countries. The organic agriculture in Australia had a strong knowledge base. This has been developed by farmers who have excellent knowledge of issues related to their own farming systems. Australia has a very good system of organic certification too. Kerala could learn a thing or two from these systems.

Viju B, (Aug 23, 2012, The Times of India)[33] reported that the state, for the first time, has drafted a road map for implementing organic farming in districts, taking Sikkim as a successful model. The picturesque northern state bordering the Himalayas will be declared as the first organic state in the country by 2015. Sikkim has got rid of the use of pesticides and chemical fertilizers in its agriculture fields, with 8,000 hectares of farm lands shifting to organic farming in the past two years alone. Kerala is planning to follow the same agro-model in Kasaragod district as a pilot project, and has taken the technical assistance of the Sikkim Organic Mission to kick-start the project. Senior agriculture officials say that Kasaragod was chosen as a sort of redemption from the abuse of endosulfan that brought misery to its people. Around 500 people lost lives due to excessive use of the pesticide in the cashew plantations in Kasaragod in the past 20 years. Senior officials from the agriculture department said that Sikkim being a small state, it was easy to implement the organic farming initiative. Kerala has a greater challenge, as it has to feed a larger population, but it is possible to switch over to organic farming as it has huge health benefits, which are far greater than the initial hardships. Punjab today is a classic example where so many people are suffering from cancer due to excessive use of pesticides and inorganic fertilizers.

Sivaharsh (IIM, Kozhikode, 2012)[34] discusses major two issues in Kerala, Farming and Solid Waste Management. A model for waste collection,

processing and distribution of the processed manure to different farms around the processing centre is designed in the study. With regards to organic agriculture, the study finds that the costs of inputs for organic farming is very high and the farmers facing the problems such as lack of support from research and government, long tedious process of certification, lack of organic manure as input, and lack of subsidies. More than this the labour intensive nature of organic farming is another constraint affecting profitability of Organic Farming due to higher labour charges in Kerala. A huge information gap is associated with organic farming techniques. The experts in organic farming are proved that organic farming can be done at low cost with proper technique. The incentives provided by government to organic farmers in India are minimal compared to foreign countries. In case of government policies, the implementation is not reaching out to farmers. These are cited as the reasons for not undertaking organic farming. The solid waste management possibilities also covered in the study, In Kerala the per capita generation of waste is relatively high compared to other parts of India, due to the higher per capita income, as well as difference in the consumption patterns. The study suggests that in order to assure successful organic farming and SWM, government support in terms of policy changes with a broad outline on two policies is essential. The study finds that the costs of inputs for organic farming are perceived to be very high by most of the farmers. The Organic farming can be done by many means, at low cost with the adoption of proper technique. One of the key issues in organic farming is the difficulty in the procurement of organic manure and organic pesticides. Since the solid organic waste can be an input to Vermin Composts which could generate both organic manure and organic pesticides. The integration of the two policies seems to be a viable option. The study illustrate a model which combines solid waste management and organic input generation by procuring waste from nearby areas as well as distribution of the processed manure to the nearby farms could help

reduce cost for both collection and distribution. This could minimize the transportation costs, which forms a considerable part of both waste collection and organic manure distribution.

### **1.11 Scope of the Study**

There have been numerous studies on organic farming comparing with conventional chemical fertiliser based farming. As certification is an important requisite for acceptance of organically grown crops both in national and international market, the study tries to understand economic aspects of certified organic spices cultivation and to find the scope of certified organic farming in Kerala. The study covers certified organic farming of spices in Kerala during the period of 2009 to 2014. The scope of certified organic farming of both institutional and individual certified organic farmers in Kerala are considered under the study.

### **1.12 Limitations of the Study**

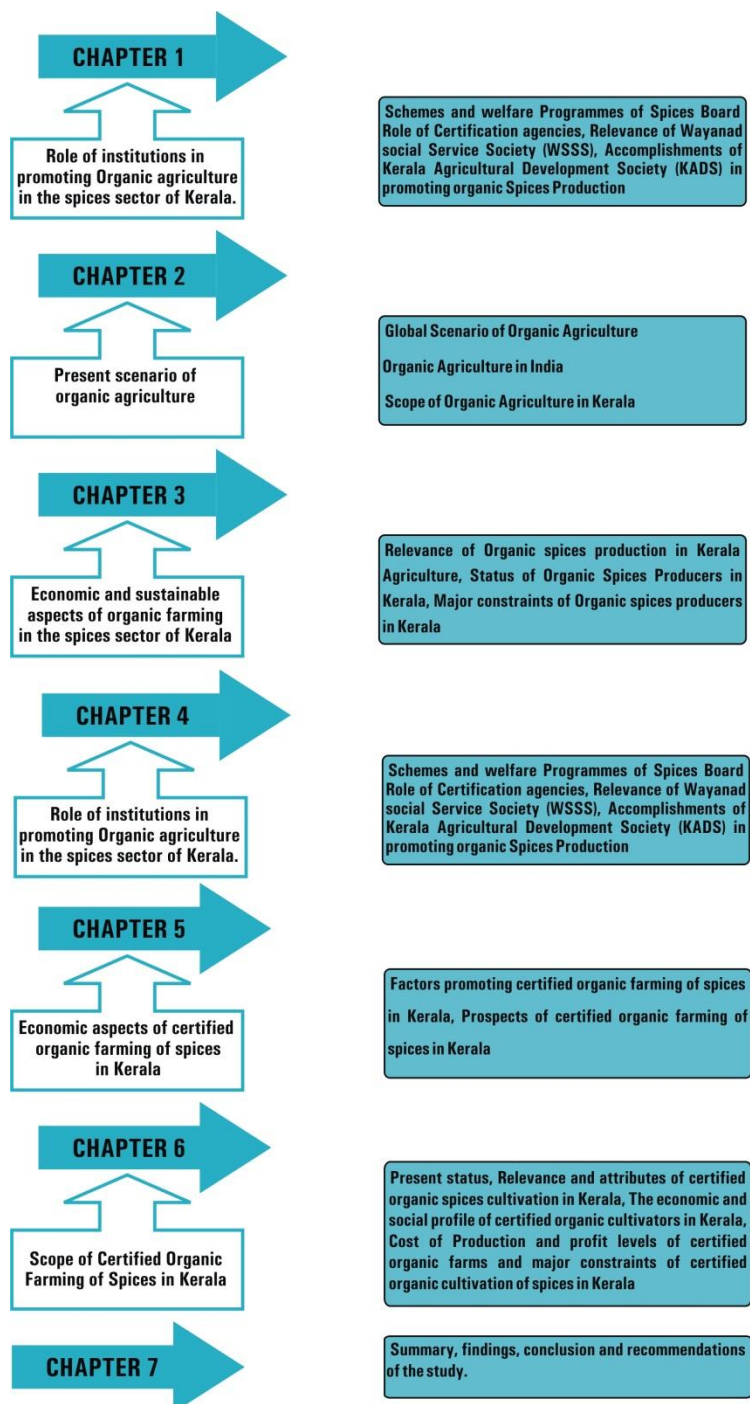
The certified organic farming is in developing phase in Kerala. The difficulty to get official data on organic farming is one of the major limitations of the study. The individual certified organic farmers do not maintain accounts or details of farming. The necessary data were collected basing the recall/memory of the farmers which has many inherent limitations.

### **1.13 Scheme of the Study**

The study is organized under seven chapters. The first chapter provides an introduction to organic farming such as meaning, definition, principles and benefits of organic farming. The chapter also includes the statement of the research problem, significance of the study, objectives, methodology, scope of the study, scheme of the study and detailed literature review covering Global, Indian and Kerala based literatures on organic farming. The second chapter is

titled as 'Present Scenario of Organic Agriculture' take account of global scenario of organic agriculture, organic agriculture in India and scope of organic agriculture in Kerala. The third chapter titled 'Sustainability of organic farming of spices in Kerala' discusses organic agriculture as a way to promote sustainable agriculture in Kerala, relevance of Organic spices production in Kerala, status of organic spices producers in Kerala and major constraints of Organic spices producers in Kerala. The fourth chapter illustrate 'role of institutions in promoting organic farming of spices in Kerala'. The chapter covers Schemes and welfare Programmes of Spices Board to promote Organic farming, role of Certification agencies in promoting Organic Certification in Kerala, relevance of Wayanad social Service Society in Promoting Organic Spices Cultivation and accomplishments of Kerala Agricultural Development Society in promoting organic Spices Production. The fifth chapter deals with 'economic aspects of certified organic farming of spices in Kerala' which illustrates present status of certified organic spices cultivation in Kerala, relevance and attributes of certified organic spices cultivation in Kerala, economic and social profile of certified organic cultivators in Kerala, cost of Production and profit levels of certified organic farms and major constraints of certified organic cultivation of spices in Kerala. The sixth chapter covers scope of certified organic farming of spices in Kerala considering the positive economic factors promoting certified organic farming of spices in Kerala, scope of certified Organic farming of spices in promoting rural development, prospects of certified organic farming of spices in Kerala and empowering aspects of organic farming initiatives in Kerala. The last chapter provides the summary, findings, conclusion and recommendations of the study.

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## Chapter **2**

# PRESENT SCENARIO OF ORGANIC AGRICULTURE

“Globally agriculture is the predominant industry than any other industry. Growth in agriculture production with value addition will not only increase the per capita income of the farmers, but also support increasing need of food and raw materials in the urban sector. Enhancing agriculture productivity is the key for agro-food processing and related industrial, manufacturing and service sector growth”

Dr. A.P.J. Abdul Kalam

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2.1. Global Scenario of Organic Agriculture

2.2 Organic Agriculture in India

2.3. Scope of Organic Agriculture in Kerala

Sustainable development is gaining importance in all over the world for more than a decade. Organic farming is one of the several approaches to promote sustainable agriculture. Organic farming is based on various laws and certification programs, which prohibit the use of almost all synthetic inputs, and protection of the quality of the soil and environment is recognized as the central theme of the method. During the last two decades, there has also been a significant sensitization of the global community towards environmental preservation and assuring of food quality.

### 2.1. Global Scenario of Organic Agriculture

The popularity of organic farming is gradually increasing and now organic agriculture is practiced in almost all countries of the world, and its share of agricultural land and farms is growing. The share of world's organic agricultural land of all agricultural land is 0.9 percent. In the 27 countries of the European Union, the share of organically managed land is 5.4 percent. In other regions, the share of organically managed land is less than one percent.

Seven countries have more than 10 percent organic land and 15 countries have between 5 and 10 percent organic land.

According to the latest FiBL-IFOAM survey (The World of Organic Agriculture - Statistics and Emerging Trends 2015) on certified organic agriculture worldwide, nearly 43.1 million ha land is being certified as organic in 170 countries (up from 160 in 2010). The regions with the largest areas of organic agricultural land are Oceania (17.3 million ha) and Europe (11.5 million ha). Latin America has 6.6 million ha followed by Asia (3.4 million ha), North America (3 million ha) and Africa (1.2 million ha).

The countries with the most organic agricultural land are Australia (17.2 million ha), Argentina (3.2 million ha), and the United States (2.2 million ha). By region, the highest shares of the total agricultural land are in Oceania (2.9 percent) and in Europe (2.2 percent). In the European Union, 5.4 percent of the farmland is organic. There were almost 2 million producers in 2013. Thirty-six percent of the world's organic producers are in Asia, followed by Africa (29 %) and Europe (17%). The countries with the most producers are India (650'000), Uganda (189'610), and Mexico (169'703). About a quarter of the world's agricultural land (11.7 million ha) and more than 80 percent (1.7 million) of the producers are in developing countries and emerging markets. In ten countries, more than ten percent of the agricultural land is organic.

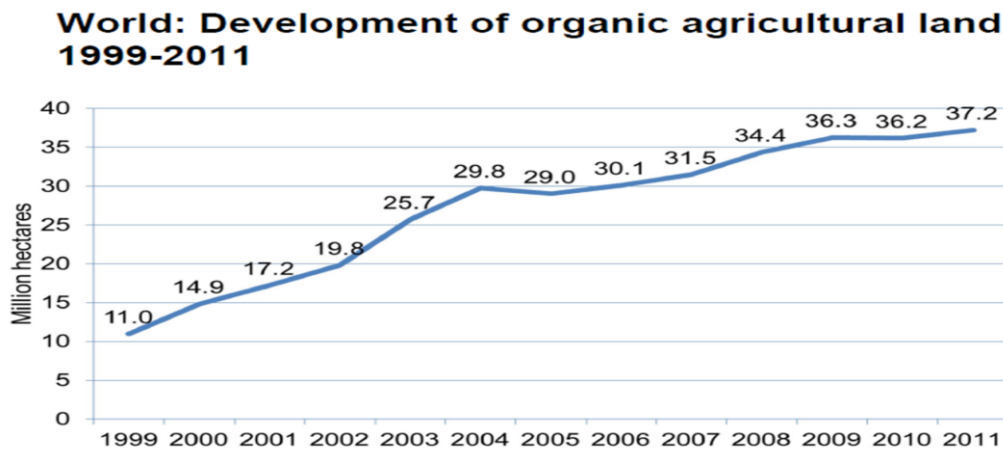
There has been an increase of the organic agricultural land in Asia, Europe, North America and Oceania. For Asia, after a major drop of organic land in 2010, 0.9 million more hectares were reported. There was also strong growth in Europe, where the area increased by 0.6 million hectares (6 percent). In Latin America the organic land decreased, mainly due to a decrease of organic grazing areas in Argentina.

The area under organic management is continually growing. Although production of organic crops is increasing across the globe, sales are concentrated in the industrialized parts of the world. Methods of organic farming vary. However, organic approaches share common goals and practices. In addition to the exclusion of synthetic agrichemicals, these include protection of the soil (from erosion, nutrient depletion, structural breakdown) promotion of biodiversity and outdoor grazing for livestock and poultry. Within this framework, individual farmers develop their own organic production systems, determined by factors such as climate, market conditions, and local agricultural regulations.

### 2.1.1. Global status of organic Agricultural land

The growth of Organic agricultural land is showing an increasing trend in the Global level. Compared with the revised data from 2010, the organic agricultural land has increased by 3 percent in 2011. Development of organic agricultural land is presented in fig.2.1

**Figure: 2.1**



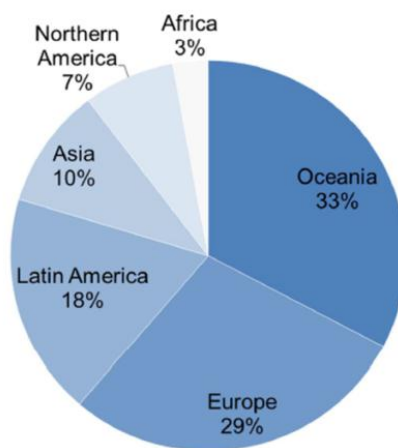
Source: FiBL-IFOAM-SÖL 1999- 2013

When compared with 1999, data on organic agricultural land has more than doubled. As per the FiBL-IFOAM survey 2013, a total of 1.8 million organic producers were reported. According to the data obtained, more than three quarters of the producers are located in Asia, Africa and Latin America. The world organic agricultural land is increased from 11.0 million hectares in 1999 to 37.2 million hectares in 2011(FiBL-IFOAM survey 2013).

Land-use details were available for almost 90 percent of the organic agricultural land. Some countries with very large organic areas, such as Australia, Brazil, China, and India had only little information on their land use. Almost two-thirds of the agricultural land was grassland/grazing areas (23.2 million hectares). With a total of at least 6.3 million hectares, arable land constitutes 17 percent of the organic agricultural land. Distribution of organic agricultural land by region is shown in fig.2.2

**Figure 2.2**

**Distribution of organic agricultural land by region 2011**



Source: FiBL & IFOAM 2013



**Figure 2.3****The ten countries with the largest numbers of organic producers 2013**

Source: FIBL-IFOAM survey 2015

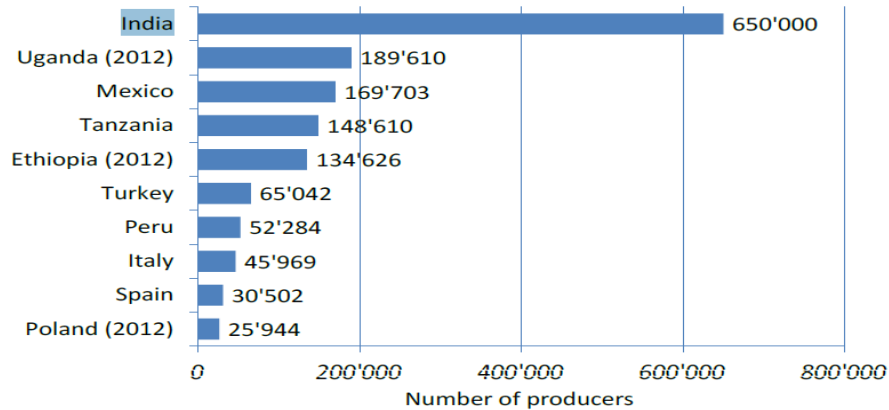


Figure 2.3 depicts the number of organic producers among ten countries with largest number of organic producers in the world. According to the data obtained, more than three quarters of the producers are located in Asia, Africa and Latin America. The country with the most producers is India (6, 50,000) followed by Uganda (189'610) and Mexico (169'703).

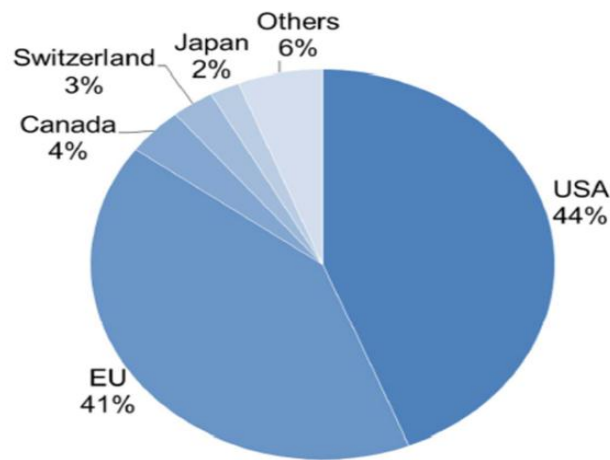
### 2.1.2 Global Demand for Organic Products

The global demand and the market for organic food and beverages are developing rapidly. Producers and traders of organic food and beverages in developing countries have strong potential to tap the global market. The demand for organic products is mainly from North America and Europe. Although organic farming is now practiced in every continent, the increasing demand for organic products offers a great export opportunity for organic producers from developing countries.

In 2011, the countries with the largest organic markets were the United States, Germany, and France. The largest single market was the United States. The highest per capita consumption was in Switzerland, Denmark, and

Luxemburg. The highest market shares were reached in Denmark, Switzerland and Austria. (FiBL-IFOAM survey 2013). Fig. 2.4 shows the global organic market and the distribution of revenues.

**Figure 2.4**  
**Global organic market: Distribution of revenues by single markets 2011**



Source: FiBL-AMI- IFOAM 2013, based on national data sources

In spite of the slowdown in the global economy, the international sales of organic products continue to rise. In 2011, the countries with the largest organic markets were the United States (44%), EU (41%), Canada, Switzerland, Japan and others. (FiBL-IFOAM survey 2013). Fig. 2.5 represents countries with the highest per capita consumption of organic products.

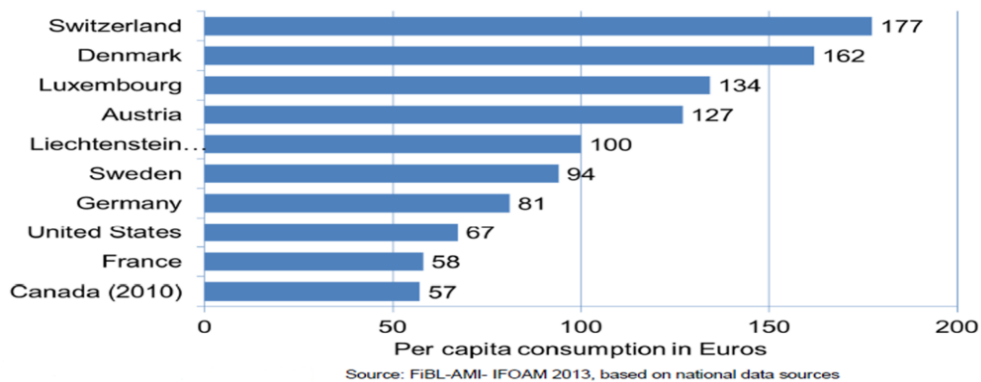
**Figure 2.5****The countries with the highest per capita consumption 2011**

Figure 2.5 illustrates the per capita consumption of organic products. The highest annual per capita consumption was in Switzerland (177 Euros) followed by Denmark (162 Euros) (FiBL-IFOAM 2013). The highest per capita consumption was in Switzerland, Denmark, and Luxembourg. The highest market shares were reached in Denmark, Switzerland and Austria.(FiBL-AMI-IFOAM 2013).

### 2.1.3. Major international organisations promoting organic Agriculture

At present many countries have implemented regulations on organic farming and about 468 organizations worldwide offer organic certification services. Most certification bodies are in Europe (37%), followed by Asia (31%) and North America (18%). The countries with most certification bodies are US, Japan, South Korea, China and Germany. All the standards and regulations for organic farming are guided by certain specified standards for Organic certification which addresses the needs of growing worldwide demand for organic food. The International Federation of Organic Agriculture

Movements (IFOAM) works to standardize the bodies certifying organic production and processing across the world.

### **2.1.3 a. International Federation of Organic Agriculture Movements**

The International Federation of Organic Agriculture Movements (IFOAM) is the worldwide umbrella organization for the organic agriculture movement, which represents close to 800 affiliates in 117 countries. An international framework for organic farming is provided by the International Federation of Organic Agriculture Movements (IFOAM), established in 1972. IFOAM is working with the mission to "Lead, unite and assist the organic movement in its full diversity." and its vision is "Worldwide adoption of ecologically, socially and economically sound systems, based on the Principles of Organic Agriculture." For IFOAM members, organic agriculture is based upon the Principles of Organic Agriculture and the IFOAM Norms. The IFOAM Norms consist of the IFOAM Basic Standards and IFOAM Accreditation Criteria.

The IFOAM Basic Standards are established through a democratic and international process and reflect the current state of the art for organic production and processing. They are best seen as a work in progress to lead the continued development of organic practices worldwide. They provide a framework for national and regional standard-setting and certification bodies to develop detailed certification standards that are responsive to local conditions.

Legislated standards are established at the national level, and that vary from country to country. In recent years, many countries have legislated organic production, including the EU nations (1990s), Japan (2001), and the US (2002). Non-governmental national and international associations also

have their own production standards. In countries where production is regulated, these agencies must be accredited by the government. Since 1993 when EU Council Regulation 2092/91 became effective, organic food production has been strictly regulated in the UK.

In India, standards for organic agriculture were announced in May 2001. As per the announcement, the National Programme on Organic Production (NPOP) is administered under the Ministry of Commerce. In 2002, the United States Department of Agriculture (USDA) established production standards, under the National Organic Program (NOP), which regulate the commercial use of the term organic. Farmers and food processors must comply with the NOP in order to use the word.

Among its wide range of activities, IFOAM maintains an organic farming standard, and an organic accreditation and certification service. The International Requirements for Organic Certification Bodies (IRoCb), a reference norm that can be used by governments and private accreditation and certification bodies as a means of accepting certification of organic products outside of their own system.

#### **i) IFOAM and Standards and Certification**

IFOAM's Organic Guarantee System (OGS) is designed to facilitate:

- a) The development of organic standards and third-party certification worldwide.
- b) Provision of an international guarantee of these standards and organic certification.

In recent years IFOAM's OGS approach underwent some significant changes. With the establishment and spreading of organic standards and

certification around the world a number of new challenges appeared. Especially smallholder farmers in developing countries struggle with the multitude of standards they are expected to farm conform to high certification costs and considerable administrative expenditures.

IFOAM had a breakthrough in the development and adoption of approaches to address these certification problems. The organization now directs special focus on the promotion of two new concepts:

### **IFOAM Family of Standards**

In the framework of a multi-year collaboration, IFOAM developed together with his UN partners: the Food and Agriculture Organization (FAO) and the United Nations Conference on Trade and Development (UNCTAD), a set of standard requirements that functions as an international reference to assess the quality and equivalency of organic standards and regulations. It is known as the COROS (Common Objectives and Requirements of Organic Standards)

The vision is that the Family of Standards will contain all organic standards and regulations equivalent to the COROS. Instead of assessing each standard against each other the Family of Standards can be used as a tool to simplify equivalence assessment procedures while ensuring a high level of integrity and transparency. The Family of Standard Program started in January 2011. One year later about 50 standards worldwide are approved.

### **Participatory Guarantee System**

Participatory Guarantee Systems are locally focused quality assurance systems. They certify producers based on active participation of stakeholders and are built on a foundation of trust, social networks and knowledge exchange (IFOAM definition, 2008).

Participatory Guarantee Systems represent an alternative to third party certification, especially adapted to local markets and short supply chains. They can also complement third party certification with a private label that brings additional guarantees and transparency. PGS enable the direct participation of producers, consumers and other stakeholders in the choice and definition of the standards, the development and implementation of certification procedures and in the certification decisions.

### **Accreditation and IOAS**

IFOAM also offers organic accreditation to certification bodies. Certifiers can have their processes audited against the IFOAM Accreditation Requirements. IOAS, an IFOAM daughter company set up in 1997, offers the IFOAM Accreditation (analyses of standards and verification process) or the Global Organic System Accreditation (analyses of verification process only) and grants special recognition of credibility. The document ISO/IEC 17011: 'Conformity assessment – General requirements for accreditation bodies accrediting conformity assessment bodies' lays down internationally agreed rules for how accreditation should be performed. Various national bodies verify this accreditation including the US Department of Commerce National Institute of Standards & Technology.

### **ii) IFOAM and GMOs**

On October 19, 1998, participants at IFOAM's 12th Scientific Conference issued the Mar del Plata Declaration, where more than 600 delegates from over 60 countries voted unanimously to exclude the use of genetically modified organisms (GMOs) in food production and agriculture. The undersigned participants at the 12th Scientific Conference of the International Federation of Organic Agriculture Movements (IFOAM) at Mar

del Plata, Argentina, call on governments and regulatory agencies throughout the world to immediately ban the use of genetic engineering in agriculture and food production.

### **iii) IFOAM and training**

IFOAM is providing special support to the development of the Organic Agriculture Sector in Developing Countries through several means. Organic Agriculture is a very knowledge intensive production system. Therefore capacity building efforts play a central role in this regard. There are many efforts all around the world regarding the development of training material and the organization of training courses related to Organic Agriculture. Existing knowledge is still scattered and not easy accessible. Especially in Developing Countries this situation remains an important constraint for the growth of the organic sector. For that reason, IFOAM created an Internet training platform whose objective is to become the global reference point for Organic Agriculture training through free access to high quality training materials and training programs on Organic Agriculture.

### **iv) IFOAM and the road to sustainable development**

The General Assembly of the Global Organic Movement in 2011 in Korea approved a mandate to IFOAM to lead development of organic agriculture towards sustainability. As a consequence, in 2012, the IFOAM World Board initiated the Sustainable Organic Agriculture Action Network (SOAAN). The purpose of SOAAN is to support the organic movement in identifying the areas where organic agriculture is sustainable and the areas where it needs to do more. SOAAN's goal is to contribute to improved sustainability and to increase the overall impact of organic farming and of other social and environmental standards. The manifested objectives embodied



by the principles of organic agriculture aims to provide guidance to further develop the organic sector.

### **2.1.3 b. Research Institute of Organic Agriculture - FiBL**

FiBL is an independent, non-profit, research institute with the aim of advancing cutting-edge science in the field of organic agriculture. FiBL's research team works together with farmers to develop innovative and cost-effective solutions to boost agricultural productivity while never losing sight of environmental, health and socio-economic impacts. Alongside practical research, FiBL gives high priority to transferring knowledge into agricultural practice through advisory work, training and conferences. FiBL has offices in Switzerland, Germany and Austria and numerous projects and initiatives in Europe, Asia, Latin America and Africa.

The Research Institute of Organic Agriculture FiBL Switzerland was founded in 1973. FiBL Germany and FiBL Austria are also centers for research and consulting on organic agriculture. FiBL has long been committed to the international development of organic agriculture. It works closely with the International Federation of Organic Agriculture Movements (IFOAM) and other international organizations. FiBL has a highly competent staff with expertise in organic soil management, plant production, holistic animal health, animal ethnology and organic animal breeding, in socioeconomics, in comprehensive analysis of the organic market and in organic food processing and production.

FiBL's strengths are closely linked interdisciplinary research and the rapid transfer of knowledge from research to extension to agricultural practice. FiBL Germany is a non-profit association registered in Frankfurt, with a staff of over 20, supported by experts who work under contract. Its work is financed

by project grants, fees for service, and donations from foundations and members. FiBL Austria was founded in May 2004. Headquartered in Vienna, FiBL Austria is a service hub and serves as an interface between science and practice.

Along with practical research, FiBL places a high priority to knowledge transfer into agricultural practice through advisory work, training courses and expert reports through many means of dissemination, including magazines, technical leaflets, reference books, video and internet. Numerous FiBL projects in Eastern Europe, India, Latin America and Africa promote the development of organic research services as well as advisory and certification services.

### **2.1.3.c. Food and Agriculture Organisation**

FAO an intergovernmental organization has 194 Member Nations, two associate members and one member organization, the European Union. Headquartered in Rome, Italy, FAO is present in over 130 countries. FAO has been involved in organic agriculture since the late 1990s, when the Committee on Agriculture recommended that an inter-disciplinary program on the topic. The long-term objective of the FAO Organic Agriculture Program is to enhance food security, rural development, sustainable livelihoods and environmental integrity by building capacities of member countries in organic production, processing, certification and marketing. Organic agriculture was officially included onto FAO's agenda as a means to promote sustainable development in March 1999.

These initial FAO activities were mainly concerned with disseminating information on organic agriculture to allow actors – legislators, producers, consumers – to make informed decisions.

FAO has also tried to harmonize standards and requirements for organic agriculture through partnerships with IFAOM and the United Nations Conference on Trade and Development ("UNCTAD").

To that end, the International Taskforce on Harmonization and Equivalence in Organic Agriculture, comprising representatives from ministries of agriculture and trade as well as actors in the field, was established in 2002 to facilitate international trade.

### **FAO and Codex alimentarius guidelines**

The increasing consumer interest in food quality and safety and the potential for food standards which can be applied as trade barriers led to the establishment of the Codex Alimentarius Commission (Codex) by a resolution of the governing bodies of the Food and Agriculture Organization of the United Nations (FAO) in 1961 and the World Health Organization (WHO) in 1963. Its primary objectives are to protect consumer health and to ensure fair practices in food trade through the elaboration, harmonization and publication of food standards and other related texts.

Codex brings together scientists, technical experts, government regulators and international consumer and industry organizations to develop food standards. Codex operates based on its Procedural Manual, which includes the Codex Statutes, the Rules of Procedure and the Procedures for the Elaboration of Codex Standards and Related Texts, as well as guidelines and other provisions applicable by Codex subsidiary bodies.

The Codex Alimentarius Commission meets in principle every year, alternately in Rome and in Geneva. Membership is open to all members of FAO or WHO, and currently includes 184 countries and one regional economic integration organization (the European Union). Members are

represented by delegations led by senior officials appointed by their governments, and each member state has one vote. Countries which are not yet members may attend meetings of Codex and its subsidiary bodies as observers, and international organisations representing industry, consumer associations and international academic institutes granted observer status may also participate, although no observers may vote.

### **Codex Alimentarius Guidelines on organically produced food:**

Organically produced food has been addressed by the Committee on Food Labeling, established as this question is related to a labeling claim. The Guidelines for the Production, Processing, Labeling and Marketing of Organically Produced Foods (Codex Guidelines) were developed in light of the growing production of and international trade in organically produced food, with a view to facilitating trade and preventing misleading claims. The Guidelines are intended to facilitate the harmonization of requirements for organic products at the international level, and may also provide assistance to governments wishing to develop national legislation in this area. They were adopted in 1999, but provisions on livestock and livestock products were adopted in 2001. Revisions were undertaken in 2003, 2004 and 2007 and amendments in 2008, 2009 and 2010.

#### Propose of Guidelines

- Protect consumers against deception and fraud in the market place and unsubstantiated
- Product claims;
- Protect organic producers against misrepresentation of other agricultural produce as being organic;

- Ensure that all stages of production, preparation, storage, transport and marketing are subject to inspection and comply with the guidelines;
- Harmonize provisions for the production; certification, identification and labelling of organically grown produce;
- Provide international guidelines for organic food control systems in order to facilitate recognition of national systems to find equivalence for the purposes of imports; and
- Maintain and enhance organic agricultural systems in each country so as to contribute to local and global preservation

#### **2.1.3 d. The Organic Trade Association**

The Organic Trade Association (OTA) is a membership-based business association representing the organic industry in Canada, Mexico and the United States. Members include growers, shippers, processors, certifiers, farmers' associations, brokers, importers, exporters, manufacturers, distributors, retailers and consultants. OTA encourages global sustainability and works to promote organic products in the marketplace and to protect the integrity of organic standards. The OTA's mission is to promote and protect organic trade to benefit the environment, farmers, the public, and the economy. OTA envisions organic products becoming a significant part of everyday life, enhancing people's lives and the environment. OTA represents businesses across the organic supply chain and addresses all things organic, including food, fiber/textiles, personal care products, and new sectors as they develop. Over sixty percent of OTA trade members are small businesses.

#### **2.1.4. Standards and regulation – Global view**

The year 2009 witnessed several major developments in the field of standards and regulations. The new EU regulation on organic production as well as the Canadian organic standard came into force. Furthermore, the Australian domestic organic standard was implemented. Canada and the U.S. concluded the world's first fully reciprocal agreement between regulated organic systems, and the EU introduced procedures for approving certification bodies from outside the EU. The number of countries with organic standards has increased to 73 in 2009 and there are 16 countries that are in the process of drafting legislation. In 2009, FAO, IFOAM and UNCTAD started the Global Organic Market Access (GOMA) project. The aim of GOMA is to facilitate equivalence, harmonization and other types of cooperation in order to simplify the process for trade flow of products among the various organic guarantee systems. There has been modest growth in the number of certification bodies. The total of 488 certification bodies in 2009 compared to 481 in 2008. Most certification bodies are in the European Union, the United States, Japan, South Korea, China, Canada, and Brazil.

According to the FiBL survey on organic rules and regulations, the number of countries with organic standards has increased to 86. There are 26 countries that are in the process of drafting legislation. A major development in 2012 was that the European Union and the United States achieved a breakthrough in their negotiations concerning the mutual recognition of their organic standards and control systems. The agreement makes it possible for organic products (with a few exceptions) certified in the EU or the USA to be sold in other country/region without any further inspection or certification. The EU-US agreement came into force by July 1, 2012 together with the revised European import scheme for organic products. With the new EU

scheme, imports in the EU are possible for products certified by a control body recognized for operations in the respective export country. The EU recognizes certification bodies either via the so-called Third Country list or directly.

### **COROS – Common Objectives and Requirements of Organic Standards**

In 2010, IFOAM led the way forward by creating the COROS – Common Objectives and Requirements of Organic Standards. Standards deemed to be equivalent to the COROS can be included in the IFOAM Family of Standards; to draw a line between what is organic and what is not. The Family is a key part of the Organic Guarantee System, which qualifies as a valid standard because it is deemed equivalent to the COROS. Aiming to further lead and unite the organic world, IFOAM offers a branding mark for products from operators in good standing in the OGS - the Global Organic Mark.

### **Organic Certification**

Organic certification remains the only way of ensuring certain quality standards have been met by organic products. Organic certification is particularly where mandated by law, as in the US and the EU. The label 'organic' has lost the fluidity it used to hold for the growers more concerned with quality than the bottom line, and consumers more concerned with nutrition than a static set of standards for labeling. Increasingly, organic farming is defined by formal standards regulating production methods, and in some cases, final output. Two types of standard exist, voluntary and legislated. In 1970s, private associations created standards, against which organic producers could voluntarily have themselves certified. In the 1980s, governments began to produce organic production guidelines. Beginning in the 1990s, a trend toward legislation of standards began, most notably the EU-Eco-regulation developed in the European Union. In 1991, the European

Commission formulated the first government system to regulate organic labeling. In one go, the European Regulation (EEC) 2092/91 set the rules in 12 countries, creating a huge market. Organic certification, which until then was a voluntary quality control system, became mandatory to all operations and was also to be applied for imports. In the meantime, Europe had become the most prominent market place for organic products and an increasing number of suppliers all over the world accepted this niche as a new challenge and a rewarding option to export high quality and high priced specialty products. All these supplies, of course, had to comply with the requirements of the European market and thus the Regulation (EEC) 2092/91 became a universal standard for organic production

### **Certification bodies**

The total number of certification bodies in 2013 is 576; increased from 549 in 2011. Most certification bodies are located in the European Union, South Korea, Japan, the United States, China, India and Canada. For the first time, Asia now has more organic certification bodies than Europe. There has been a slight decrease in the number of certification bodies in most regions of the world, although the number has increased rapidly in South. Participatory Guarantee Systems (PGS), locally focused quality assurance system certify producers based on active participation of stakeholders and are built on a foundation of trust, social networks, and knowledge exchange. It is estimated that at least 41 PGS initiatives exist now on all continents, and a similar number of initiatives are currently under development. Asia and Latin America remain the leaders in terms of both the number of farmers certified through PGS and the level of recognition achieved by the national governments.



National Programme on Organic Production (NPOP) notified under FTDR act regulates the certification of organic products in India. As on September 2013, there are 23 accredited certification agencies in India

### **WTO and Organic food standards:**

Organic food standards have been notified under the WTO Agreement on Technical Barriers to Trade (TBT), which tries to ensure that regulations, standards, testing and certification procedures do not create unnecessary obstacles, while also providing members with the right to implement measures to achieve legitimate policy objectives, such as the protection of human health and safety, or the environment. Trade policy issues include equivalence, subsidies, conformity assessment procedures and trade preferences. The current emphasis on bringing about a rapid increase in organic agriculture through a range of policy measures and growing international trade in organic food products may have implications for discussions in the WTO.

### **TBT and Organic Product Standards**

The 2011 Report on Technical Barriers to Trade (TBT Report) is a specialized report focused on significant foreign trade barriers in the form of product standards, technical regulations testing, certification, and other procedures involved in determining whether products conform to standards and technical regulations. These standards-related trade measures, known in World Trade Organization (WTO) parlance as “technical barriers to trade,” play a critical role in shaping the flow of global trade.

The organic standards-related measures play a critical role in shaping the flow of global trade in Organic products. The standards related measures are documents and procedures that set out specific technical or other requirements for products or processes as well as procedures to ensure that

these requirements are met. Standards-related measures have gained prominence in international trade because of a desire to:

- Ensure the connectivity and compatibility of inputs sourced in global markets;
- Manage the flow of product-related information through complex and increasingly global supply chains;
- Organize manufacturing or other production processes around replicable routines and procedures to yield greater product quality assurance;
- Meet important regulatory and societal objectives, such as ensuring product safety, preventing deceptive practices, and protecting the environment; and
- Promote more environmentally-sound or socially-conscious production methods.

### **Foreign regulations governing organic products**

In the organics sector, the United States has negotiated three types of agreements with major trading partners in an attempt to facilitate trade in organic products:

**A) Recognition agreement:** As per this agreement an importing country agrees to recognize USDA's National Organic Program (NOP) to accredit agents within the United States to certify products as organic under the importing country's requirements. The United States has negotiated such an agreement with the EU.

Similarly, USDA has recognized foreign conformity assessment bodies to accredit certifying agents in other countries (Denmark, India, Israel, Japan, New Zealand, and the United Kingdom) to certify products as organic under the NOP.

**B) Equivalency arrangement:** Under this Agreement, the United States and another country agree to allow some or all products produced and certified to the exporting country's organic requirements to be sold as organic in the importing country. The United States concluded its first equivalency arrangement with Canada, the largest U.S. organics trading partner, in 2009.

**C) Export arrangement:** According to the agreement, U.S. organics producers can sell their products as organic in another market, provided that their products meet specific requirements of the importing country. These efforts have been highly effective in facilitating trade in organic products. However, in some instances it has not been possible to bridge some, or all, of the differences between U.S. and foreign organics requirements using these tools.

**Zero tolerance policy and Organic Exports:** Japan's zero tolerance policy for pesticide and herbicide residues on organic products continue to be problematic for U.S. industry. Even though these substances are not applied to organic crops, they are often present in the natural environment, which makes achieving zero residue level very difficult. In addition, Japan's zero tolerance policy appears to exceed the Codex Guidelines for the Production, Processing, Labeling and Marketing of Organically Produced Foods. These guidelines apply to the process by which organic foods are produced, and do not mandate specific maximum residue levels for pesticides and contaminants.

Similarly, Korea's zero tolerance policy for adventitious presence of biotechnology content in organic products limits U.S. organics exports.

### **2.1.5. Sustainability aspect of Organic Agriculture**

Organic agriculture focuses on producing agricultural products without depleting the earth's resources or polluting the environment. Organic

Agriculture provides an environmental friendly strategy without damaging any of environmental factors by avoiding all types of synthetic inputs.

#### **2.1.5. A. Definition of Sustainable Agriculture:**

Sustainable agriculture is “the management and conservation of the natural resource base, and the orientation of technological and institutional change so as to ensure the attainment and continued satisfaction of human needs for present and future generations .Such sustainable development (in the agriculture, forestry and fisheries sectors) conserves land, water, plant and animal genetic resources, is environmentally non-degrading, technically appropriate, economically viable and socially acceptable”. (Source: FAO 1989)

The 1992 Rio conference provides a frame of sustainable development indicators with the following four categories:

- Social aspects of sustainable development;
- Economic aspects of sustainable development;
- Environmental aspects of sustainable development – further subdivided into water, land, atmosphere and waste;
- Institutional aspects of sustainable development.

#### **2.1.5. B. Dimensions of Sustainable Agriculture**

There are three dimensions in Sustainable agriculture namely, Economic, Social and Environment:

**i)Economic:** The economic aspects of Sustainable agriculture includes

- Increase the competitiveness to promote economic growth.
- Ensure the profitability of Farms, Farmers and rural workers

- Efficient use of resources such as land, labour and inputs.
- Development of Agricultural enterprises and markets
- Optimisation of the farm yield and their income
- Minimisation of the risks.
- Generation of Rural employment

**ii) Social:** The social aspect of Sustainable agriculture includes

- To reduce rural poverty and food insecurity
- To improve social equity among citizens,
- Improve the access to resources
- Increase the standard of living of the people
- Facilitation of involvement in local governance

**iii) Environment:** The major Environmental aspects of Sustainable Agriculture include:

- Maintain and Improve biodiversity
- Prevent air, soil and water pollution
- Preservation of Natural ecological balance
- Improve the fertility of soil
- Protect the environment

#### **2.1.5. C. Types of Sustainable Agriculture:**

There are different methods to adopt sustainable agriculture such as Organic farming, Biodynamic, Perm culture, Agro ecological Systems, and Low-input farming.

- i) Biodynamic Farming:** Bio dynamics is a spiritual-ethical-ecological approach to agriculture, food production and nutrition. Bio dynamics was first developed in the early 1920s based on the spiritual insights and practical suggestions of the Austrian writer, educator and social activist Dr. Rudolf Steiner (1861-1925), whose philosophy is called “anthroposophy.” Today, the biodynamic movement encompasses thousands of successful gardens, farms, vineyards and agricultural operations of all kinds and sizes on all continents, in a wide variety of ecological and economic settings.
- ii) Permaculture:** Permaculture is the conscious design and maintenance of agriculturally productive systems which have the diversity, stability and resilience of natural ecosystems. It is the harmonious integration of the landscape with people providing their food, energy, shelter and other material and non-material needs in a sustainable way.
- iii) Agro ecology:** Agro ecology can be defined broadly or narrowly. "Loosely defined, agro ecology often incorporates ideas about a more environmentally and socially sensitive approach to agriculture, one that focuses not only on production, but also on the ecological sustainability of the productive system. It implies a number of features about society and production that go well beyond the limits of the agricultural field. At its most narrow, “agro ecology refers to the study of purely ecological phenomena within the crop field, such as predator/prey relations, or crop/weed competition."
- iv) Organic farming:** is a holistic production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles, and soil biological activity. It emphasizes, the use of

management practices in preference to the use of off-farm inputs, taking into account that regional conditions require locally adapted systems. This is accomplished by using, where possible, agronomic, biological, and mechanical methods, as opposed to using synthetic materials, to fulfill any specific function within the system (FAO, 1999).

**V) Low-Input Sustainable Agriculture (LISA):** Alternative methods of farming that reduce the application of purchased inputs such as fertilizer, pesticides, and herbicides. The goals of these alternative practices are to diminish environmental hazards while maintaining or increasing farm profits and productivity. Methods include crop rotations and mechanical cultivations to control weeds; integrated pest management strategies such as introducing harmless natural enemies; plating legumes that transform nitrogen from the air into a form plants can use; application of livestock manures, municipal sludge, and compost for fertilizer; and over seeding or legumes into maturing fields of grain crops, or as post-season cover crops to curtail soil erosion

Sustainability is the most important concept in agricultural production today. Feeding the ever growing population is the concern of all the nations. This responsibility is more with the Governments in the Asia where the population growth rate outstrips all other growth rates. The essentials in sustainability are to optimise the use of all available resources with emphasis on recycling them wherever possible. In the context of fertiliser use, their supply in optimum levels and application in balanced proportion are the key components in sustainability.

## **2.2 Organic Agriculture in India:**

The concept of organic farming originated in the U.K during 1930s and certified organic produce has been available since 1970s. The principles of organic agriculture include concerns for safe food production, environment and social justice. Sustainability and organic farming are closely linked and it incorporates human (social), economic and environmental aspects of sustainability. Traditionally Indian farmers were following sustainable eco-friendly farming system. Later modernisations in Indian agriculture have led to shift from nature friendly farming system to chemical fertilizer based farming methods.

Modern farming systems based on chemical fertilisers and Pesticides resulted in increased cost and overcapitalization. Even though agriculture plays a significant role in the all-round socio-economic development of the country, as per estimates by the Central Statistics Office (CSO), the share of agriculture and allied sectors was 15.35 per cent of the Gross Value Added (GVA) during 2015–16 at 2011–12 prices. The average annual growth rate of 3.3 per cent during the 11<sup>th</sup> Five Year Plan has fallen short of the 4 per cent growth target, but has been much faster than the 9<sup>th</sup> and 10<sup>th</sup> Five Year Plan annual average growth rate of 2.5 and 2.4 per cent respectively. The growth target set for agriculture for the 12<sup>th</sup> Five Year Plan is 4 per cent. The situations such as declining soil fertility, stagnant levels of farm output and ill effects on human health necessitated the promotion of organic farming in India. These concerns have inspired many farmers, NGOs and governments to promote organic farming.

Major organic produces in India include plantation crops such as tea, coffee, and cardamom, spices such as ginger, turmeric, chillies and cumin,



cereals like wheat, rice, jowar, and bajra, pulses such as pigeon pea, chickpea, green gram, red gram, and black gram, oilseeds involves groundnut, castor, mustard and sesame, fruits such as banana, sapota, custard apple and papaya, and vegetables i.e. tomato, brinjal, and other leafy vegetables, besides honey, cotton and sugarcane especially for jiggery. The major foreign markets for Indian organic products are the EU, the USA, Canada, Australia and the Middle East Asian countries.

Currently, India ranks 33rd in terms of total land under organic cultivation and 88th for agricultural land devoted to organic crops compared to total farming area. In India, about 1.18 million hectares are under organic cultivation. This includes both certified land and that under transition to organic certification. The total value of organic products at the farm level now stands at \$889 million. Large number of NGOs engaged in promotion of organic farming by providing training, extension services, and marketing services to farming communities. (Fibl Survey, 2015).

In the Indian agriculture, organic agriculture has made a credible performance during the past fifteen years. Both, the 11th plan document on organic sector and the Report of the National Commission on Farmers, have recommended it as a tool for second green revolution in the country, in particular for agro-eco zones comprising rain fed areas, hilly areas and areas experiencing ecological aftermath of green revolution.

### **2.2.1 Present Status of Organic Agriculture in India:**

The organic farming was selected as one of the new areas for attention in the tenth five-year plan under National Programme on Organic Production, implemented by Ministry of Agriculture. A National Centre of Organic Farming was established by the Ministry to implement the scheme, which

covers interventions like support to organic input industries, demonstration, training; support for service providers to train farmers in organic farming techniques; support for Model organic farms, market development and promotion. A budget allocation of Rs 57crore was allocated to this scheme. In addition, organic farming received attention under several other programmes of APEDA and other Boards of Commerce Ministry, National Horticulture Mission and National Horticulture Board.

As a result of the efforts undertaken by various government departments, NGOs and farmers organisations organic agriculture has made a positive growth during the XI plan period. Today, India is among the few countries alongside EU, US, Japan, Brazil, Argentina, and Switzerland which have adopted organic standards and put in place an inspection and certification mechanism. Nine states of India have promoted policies and programs on Organic Farming. While, Uttarakhand made organic a thrust area for improving mountain agriculture based farm economy and livelihood, Mizoram, and Sikkim declared the intentions to move towards total organic farming. Karnataka formulated organic policy and Maharashtra, Tamil Nadu and Kerala supported public private partnership for promoting organic farming.

#### **IOAM (Indian Organic Agriculture Movement):**

The National Standard Committee has drafted both the concept and principles of basic standards of Organic Agriculture in 1996 in order to improve the socio economic condition of the farmers and also boost the International Trade. In India, IOAM (Indian Organic Agriculture Movement), member of IFOAM, adopted the IFOAM International Standards. The farmers can sale the organic produce in the local as well as International markets on the basis of IOAM label.

### **Government policies:**

The Indian Government has recognized the potential of organic agriculture and launched National Programme of Organic Production (NPOP) by the Ministry of Commerce during 2001 and National Project on Organic farming (NPOF) launched during 2004 by the Department of Agriculture and Cooperation, Ministry of Agriculture were the two milestones towards institutionalization of organic farming.

Under NPOF, Government of India has initiated systematic promotion of organic farming in the country in a project mode in specified areas. The project is being operated by National Centre of Organic Farming (NCOF) and its six Regional Centers of Organic Farming (RCOF). More than 400 Government and Non-Government agencies are working under the project. More than 300 farmers groups, each comprising of about 1500 farmers and 200,000 ha land under organic certification process. 1848 trainings organized under the project have benefited more than 37,000 trainers, extension professionals and farmers. Besides above more than 4100 demonstrations have been conducted and support has been provided for the establishment of 232 model organic farms throughout the country (NCOF, Ghaziabad)

### **International Competence Centre for Organic Agriculture (ICCOA)**

In 2003, a number of NGOs, farmer organizations, companies, research institutions and government agencies took the initiative of forming an organization to provide services to the organic farming and organic stakeholders in India. In a planning workshop at National Academy for Agricultural Sciences (NAAS), Delhi, the stakeholders agreed on a joint vision and road map for building up the Competence Centre. The first Board of Directors was elected from the initial members. Subsequently the centre was registered under the Karnataka

Societies Registration Act 1960. ICCOA is an effective interface organization, while remaining lean and efficient. Therefore, it values building Partnerships with national and international institutions and individuals in the organic sector such as National Centre of Organic Farming (Ministry of Agriculture), APEDA, FiBL, IFOAM, BioFach India, etc.

### **Government investment in organic agriculture:**

The Agricultural and Processed Food Products Export Development Authority (APEDA) launched the National Program for Organic Production (NPOP) in 2000. This marked the first step for the organized growth of organic farming in the country. States like Karnataka, Maharashtra, Madhya Pradesh, Bihar, Gujarat, Tamil Nadu and Kerala are promoting organic farming. Karnataka and Maharashtra have already provided \$4.5 million and \$2.2 million, respectively, in agricultural and market development allocations. Uttaranchal and Mizoram have already declared themselves as fully organic farming states. The state of Karnataka is a good example of a state-led program. The state government has put forth \$2.5million towards promoting organic production in Karnataka. This money is being used for technical training for farmers, infrastructure development, public awareness, opening outlets and others.

### **2.2.2 Prospects and Challenges of Organic Agriculture in India**

Organic farming is a promising and innovative means of tackling the challenges faced by Indian farmers in the area of agriculture and food production. Organic production has stimulated the agricultural growth, contributed to farm incomes and created employment. Organic farming offers various benefits of for small farmers include high premium, low capital investment, ability to achieve higher premium in the market, and the ability to

use traditional knowledge. Large number of small farmers have been practicing organic farming; however, they are unaware of the market opportunities which is the most important challenge faced by Indian farmers to reap the benefits of organic farming. At the same time, Indian Organic agricultural sector showing a positive growth trend. The area under organic farming is witnessing a steady growth with a growth rate of 39% during 2008-2009. The overall status of Organic farming is illustrated in the table.

**Table 2.1**

Overall status of organic production projects, processors, quantity produced, quantity exported and the value of export (Year 2008-09)

S.No.	Component	Quantum
1.	Area under Organic certification Process (ha)	
	Full organic	757978.71
	In-conversion	327669.74
	Total	1085648.45
2.	No. of Farmers under Organic certification Process	
	Full organic	351297
	In-conversion	246576
	Total	597873
3.	Number of operators	2099
4.	Number of processors	427
5.	Number of grower groups	919
6.	Number of exporters	253
7.	Total Production (MT)	1,811,111
8.	Total quantity exported (MT)	53,918
9.	Value of export in US \$	116.09 million
10.	Value of export in INR Rs.	591 crores INR

Source: National Project on Organic farming, Dept of Agriculture and Cooperation, Govt of India

Currently, in terms of cultivable land under organic certification India ranks 10th among the top ten countries. The certified area includes 10% cultivable area with 0.50 million hectare and the rest 90% (4.71 million hectare) is forest and wild area for collection of minor forest produces. The total area under organic certification is 5.21 million hectare (2013-14 Fibl Survey Data).

The National Programme for Organic Production (NPOP) involves the accreditation programme for Certification Bodies, standards for organic production, promotion of organic farming etc. The NPOP standards for production and accreditation system have been recognized by European Commission and Switzerland as equivalent to their country standards. Similarly, USDA has recognized NPOP conformity assessment procedures of accreditation as equivalent to that of US. With these recognitions, Indian organic products duly certified by the accredited certification bodies of India are accepted by the importing countries. This holds promise for the organic producers to tap the market which is growing steadily in the international market.

To tap the potential international market, certification of organic products is an important prerequisite. Certification assures consumers that a product processed and packaged according to rules that limit or ban synthetic and assures producers that use of the term ‘organic’ does not cheat them of price premiums. The ‘organic’ certification also makes the market more efficient by reducing information asymmetry along the marketing chain. The major commodities under organic cultivation in India are illustrated in Table. 2.2

**Table 2.2**

Production of important commodities under organic management (Year 2008-09)

S.No.	Commodities	Quantity produced in MT		
		Organic	In-conversion	Total
1.	Rice	44335	32354	76690
2.	Wheat	6892	15364	22560
3.	Other cereals/ millets	67333	63985	131318
4.	Pulses	17560	16785	34345
5.	Oil seeds including Soybean	163185	59647	222832
6.	Cotton (raw seed cotton)	284832	86906	371740
7.	Spices	17419	20084	37504
8.	Tea/ coffee	16506	10838	27344
9.	Fruits and Vegetables	194505	538073	732579
10	Herbal/ medicinal plants	129543	58767	188310
11.	Other miscellaneous crops	8001	25235	33236

Source: National Centre of Organic Farming

Table 2.2 shows that the major organic products available in the domestic market are rice, wheat, tea, coffee, cotton, spices, pulses, fruits and vegetables. The wholesalers and traders, super markets and own shops are the major channels in the domestic market which is mainly concentrated in metropolitan cities. The major foreign markets for Indian organic products are the EU, the USA, Canada, Australia and the Middle East Asian countries. Organic Farming is showing a positive growth trend in the country. The major factors attracting public and private attention include; increasing prospects of organic agribusiness trade because of increasing demand for safe food and an approach to sustainable development of farming based rural livelihoods in marginal areas and for small farmers. The table 2.3 and 2.4 illustrates organic statistics in India during the period 2009-10 and 2010-11.

**Table 2.3** Details of Organic Products (2009-10)

Total production	1.7 million MT
Total quantity exported	58,408 MT
Value of total export	USD 112 Million
Share of Exports to total Production	3.5 % approx.

Source: National Centre for Organic Farming

**Table: 2.4** Details of Organic Products (2010-11)

Total production	3.88 million M.T.
Total quantity exported	69837 M.T
Value of total export	USD 157.22 million (Rs. 699Crore)
Total area under Certification (including wild harvest)	4.43 million hectares
Total area under certified organic cultivation	0.24 million hectares
Share of Exports to total Production	4% approx.
Increase in Export Value over previous year	33% approx.

Source: APEDA

According to Agricultural and Processed Food Products Export Development Authority (APEDA), certified organic farming increased from 42,000 ha during 2003-04 to 4.48 million ha in March 2010. But this accounts only about 0.3% of the total agricultural land. Indian organic farming industry is estimated at US\$ 78 million and is almost entirely export oriented. The demand for organic products is mainly concentrated in developed and most affluent countries. Local demand for organic food also is growing. India is poised for faster growth with a growing domestic market. The increasing awareness about the safety and quality of foods and concern for environmental sustainability endorsing organic farming as an alternative system of farming not only address the quality and sustainability concerns but also ensures a debt-free, profitable livelihood option. Growing global as well as domestic markets is another important stimulant for organic farming. Consumers are willing to pay premium prices for organic products. According to Agricultural and Processed Food Products Export Development Authority (APEDA), about 585,970 tonnes of organic products worth of Rs 301 million are being exported from India. Growing awareness, increasing market demand, increasing inclination of farmers to go organic and growing institutional support have resulted in more than 20% growth in certified area during the last two years.

### **Major Challenges of Organic Agriculture in India:**

Along with the growth prospects Indian Organic sector is also facing certain challenges. The major barriers to organic farming are high initial cost (15-20 per cent) and high cost of certification. This is truer in the case of small farmers. Again, the yield reduces in the initial years of conversion to organic farming and it takes at least three to four years for a farmer to benefits from organic cultivation. Because of this, farmers are reluctant to start organic farming. So at the initial phase of organic farming farmers need strong institutional support.



### 2.2.3 Export Opportunities of Indian Organic Crops

India exported 135 products during the year 2012-13 with the total volume of 165262 MT including 4985 MT organic textiles. The organic agricultural products as well as organic textiles export realization was around 374 million US \$ in 2012-13 registering a growth of 4.38% over the previous year. Organic products are exported to EU, US, Switzerland, Canada, South East Asian countries and South Africa. The major export destinations of Indian organic products by value and volume are depicted in Table 2.5

**Table 2.5** Major Export Destinations of Indian Organic products

Country	Volume (%)	Value (%)
EU	52%	44%
Canada	22%	14%
US	19%	17%
Asia	13%	15%

Source: APEDA

The major categories of organic items produced and exported from India are shown in Table 2.6

**Table 2.6** Organic Products Produced and Exported from India

Cereals	Wheat, Rice (Basmati)
Spices	Cardamom, Black pepper, White pepper, Ginger, Turmeric, Vanilla, Mustard, Coriander, Tamarind, Clove, Cinnamon, Nutmeg, Chilli
Beverages	Tea, Coffee
Pulses	Red gram, black gram
Fruits	Mango, Banana, Pineapple, Passion fruit
Oil seeds	Sesame, Castor, Sunflower, Groundnut
Vegetables	Okra, Brinjal, Garlic, Onion, Tomato, Potato
Others	Cotton, Cashew nut, herbal extracts

Source: APEDA

The domestic market in India is now growing for organic products. There are now 2,500 outlets in India selling organic produce. The total value of organic products at farm level stands at \$889 million. With the increasing domestic demand for organic food, a number of organic food stores are springing up in the country. India produced around 396,997 MT of certified organic products, including all varieties of food products from Basmati rice, pulses, honey, tea, spices, coffee, oilseeds, fruits, processed food, and cereals, Herbal medicines and their value-added products. Organic production is not limited to food articles. Significant amounts of organic cotton fiber, garments, cosmetics, functional food products, and body care products are also produced through organic methods. Table 2.7 lists major product categories and their respective shares.

**Table 2.7** Indian Organic Products and Export share

<b>Product Categories</b>	<b>Export Volume (MT)</b>	<b>Export Contribution (% Value)</b>
Oil Crops (except Sesame)	17966	25.7
Cotton & Textiles	17363	24.86
Processed Food	8752	12.53
Basmati Rice	5243	7.51
Tea	2928	4.19
Sesame	2409	3.45
Honey	2409	3.45
Rice	1634	2.34
Dry Fruits	1472	2.11
Cereals	1348	1.93
Spices-Condiments	1174	3.68
Medicinal & Herbal Plants/Products	627	0.90
Coffee	320	0.46
Vegetables	167	0.24
Aromatic Oil	39	0.06

Source: APEDA 2012

The global food market today focuses on quality and safety aspects of food items. Since 1990 and especially with the inception of WTO regime in 1995 HCCP (Hazard Analysis Critical Control Point) is quite prevalent in global market which concerns food safety. This is an excellent opportunity for India to exploit the export potential of organic agricultural products. The price premiums offered for the organic products in the international market can attract the younger population of India towards agricultural operations. As India is now in the initial stage of organic farming, the quantity produced is not enough to feed the large Indian population. Under this situation, more and more farmers are to be prompted to enter the area of organic farming.

#### **2.2.4 Certification and Legislation of Organic Crops in India:**

The organic certification system in place in the European Union was established in the 1990s. At present, organic food and farming in the European Union is regulated by Council Regulation (EC) No 834/2007. Organic certification is a process for producers of organic food and other organic agricultural products which a third party gives a written assurance that a product or service is in conformity with certain standards. Organic standards are defined as a minimum production practices including input, storage, transportation, processing, handling, packing and labeling requirements which must be followed for certifying the products as organic.

In general, any business directly involved in food production can be certified, including seed suppliers, farmers, food processors, retailers and restaurants. Requirements vary from country to country, and generally involve a set of production standards for growing, storage, processing, packaging and shipping that include:

Avoidance of synthetic chemical inputs (e.g. fertilizer, pesticides, antibiotics, food additives, etc) and genetically modified organisms;

- Use of farmland that has been free from chemicals for a number of years (often, three or more);
- Keeping detailed written production and sales records (audit trail);
- Maintaining strict physical separation of organic products from non-certified products;
- Undergoing periodic on-site inspections.

### **Certification system in India**

In India, there are two accreditation systems for authorizing Certification and Inspection Agencies for organic certification. National Programme on organic Production (NPOP) promoted by Ministry of Commerce is the core programme which governs and defines the standards and implementing procedures. National Accreditation Body (NAB) is the apex decision making body. Certification and Inspection agencies accredited by NAB are authorized to undertake certification process. The NPOP notified under FTDR act and controlled by Agricultural Processed Foods Export Development Authority (APEDA) looks after the requirement of export while NPOP notified under APGMC act and controlled by Agriculture Marketing Advisor, Directorate of Marketing and Inspection looks after domestic certification. Currently 20 certification agencies have been authorized to undertake certification process in India. In 2006, India's organic certification process under NPOP has been granted equivalence with European Union and Switzerland. It has also been recognized for conformity assessment by USDA's NOP.

### **Purpose of certification:**

Organic certification addresses a growing worldwide demand for organic food. It is intended to assure quality and prevent the misuse of the label 'organic'. For organic producers, certification identifies suppliers of products approved for use in certified operations. For consumers, "certified organic" serves as a product assurance and reliable quality. Certification is essentially aimed in regulating and facilitating the sale of organic products to consumers. Individual certification bodies have their own service marks, which can act as branding to consumers. Most certification bodies operate organic standards that meet the National government's minimum requirements.

### **The certification process**

Certification is an important prerequisite for acceptability of organic products or foods as organic by Government Regulatory Authorities, exporters, importers, as well as consumers across the world. To satisfy their requirements, a sound system of certification and labeling of the produce by a competent agency is highly essential. The organic certification is a procedure by which a third party between the producer and consumer gives a written assurance that the product, process or service confirms to specific requirements. The farming unit for organic production has to be supervised and inspected at frequent intervals and at different stages of production before certification in order to ensure quality and authenticity.

The Certification Agency has to adopt very reliable methods such as Soil tests, Water tests, Food quality tests, and other natural quantitative indicators so as to ensure credibility of the system in order to prevent fraudulent labelling of the products. It is necessary to keep the records of all management practices and materials used in organic production for five years.

The crops must be grown on the land, which has been free of prohibited substances for three years prior to harvest. Crops grown on land in transition to organic (during the last three years after switching from conventional farming) cannot be labelled as ORGANIC.

Once the produce is certified as ORGANIC, the producer or the processors are entitled the symbol. Worldwide, inspection and certification of organic foods is carried out on the basis of two largely overlapping sets of guidelines and norms namely, Statutory Certification Norms and the Voluntary/Civil Certification Norms. Generally the Voluntary/Civil Certification Norms are stricter than statutory certification norms. Statutory certification norms are legal guidelines set by Government, which is related to certification of organic produce, regulatory governing import of organic foods, rules regarding equivalence between countries etc. On the other hand, various National and International forums and association such as Soil Association of UK, Organic Growers Association in various countries etc, set Voluntary/Civil Certification Norms. The most highly accepted voluntary certifications are from agencies like CODEX, IFOAM etc.

In India, Statutory Certification Norms relating to organic foods regulates the organic exports only and not the domestic organic food industries. Although in India, the External certification bodies have been introduced for inspection and certification programmes since 1987. But in March 2000, the Ministry of Commerce launched the National Programme for Organic Production (NPOP), designed to establish national standards for organic products, which could then be sold under the logo 'India Organic'. To ensure the implementation of NPOP, the National Accreditation Policy, and Programme (NAPP) was formulated, with accreditation regulations announced in May 2001.

These make it mandatory that all certification bodies, whether already engaged or proposing to engage in inspection and certification of organic crops and products, should be accredited by an accreditation agency. Foreign certification bodies operating in the country must also be accredited under the NAPP. For Organic Certification Agency, International Federation of Organic Agriculture Movements (IFOAM), Germany has established the IFOAM Accreditations Programme.

In order to certify a farm, the farmer is typically required to engage in a number of new activities, in addition to normal farming operations:

**Study the organic standards**, which cover in specific detail what is and is not allowed for every aspect of farming, including storage, transport and sale.

**Compliance** - farm facilities and production methods must comply with the standards, which may involve modifying facilities, sourcing and changing suppliers, etc.

**Documentation** - extensive paperwork is required, detailed farm history and current set-up, and usually including results of soil and water tests.

**Planning** - a written annual production plan must be submitted, detailing everything from seed to sale: seed sources, field and crop locations, fertilization and pest control activities, harvest methods, storage locations, etc.

**Inspection** - annual on-farm inspections are required, with a physical tour, examination of records, and an oral interview.

**Fee** – A fee is to be paid by the grower to the certification body for annual inspection and for facilitating a mark which is acceptable in the market as symbol of quality.

**Record-keeping** - written, day-to-day farming and marketing records, covering all activities, must be available for inspection at any time.

In addition, short-notice or surprise inspections can be made, and specific tests (e.g. soil, water, plant tissue analysis) may be requested.

For first-time farm certification, the soil must meet basic requirements of being free from use of prohibited substances (synthetic chemicals, etc) for a number of years. A conventional farm must adhere to organic standards for this period, often, three years. This is known as being in transition. Transitional crops are not considered fully organic. A farm already growing without chemicals may be certified without this delay. Certification for operations other than farms is similar. The focus is on ingredients and other inputs, and processing and handling conditions.

### **Certification & Product Labelling**

The Certification is intended to protect consumers from misuse of the term, and make buying organics easy. However, the organic labelling made possible by certification itself usually requires explanation. In many countries organic legislation defines three levels of organics. Products made entirely with certified organic ingredients and methods can be labelled "100% organic". Products with 95% organic ingredients can use the word "organic". Both may also display organic seal. A third category, containing a minimum of 70% organic ingredients, can be labelled "made with organic ingredients". In addition, products may also display the logo of the certification body that approved them. Products made with less than 70% organic ingredients cannot advertise this information to consumers and can only mention this fact in the product's ingredient statement.



## **National Programme on Organic Production**

National Program on Organic Production (NPOP) was launched during 2001 under the Foreign Trade & Development Act (FTDR Act). The document provides information on standards for organic production, systems criteria, and procedures for accreditation of Inspection and Certification bodies, the national organic logo and the regulations governing its use.

### **Scope of NPOP:**

The NPOP include:

- i. Policies for development and certification of organic products,
- ii. National standards for organic products and processes,
- iii. Accreditation of programmes to be operated by Inspection and Certification Agencies
- iv. Certification of organic products

### **Operational Structure:**

National Steering Committee for National Programme for Organic Production, is the apex policy making body and operates the entire programme through National Project on Organic farming include:

- Accreditation Body (NAB),
- Technical Committee (TC) and
- Evaluation Committee (EC).

Agricultural and Processed Food Products Export Development Authority (APEDA) is the secretariat and implementation office for NPOP for export while Agriculture Marketing Advisor, Directorate of Marketing and

Inspection, Department of Agriculture and Cooperation is the secretariat and implementation office for NPOP for domestic certification.

### **National Standards for Organic Production (NSOP)**

National Standards for Organic Production are grouped under following six categories:

- 1) Conversion
- 2) Crop production
- 3) Animal husbandry
- 4) Food processing and handling
- 5) Labelling
- 6) Storage and transport

Standard requirements for crop production, food processing and handling are listed below:

#### **1. Conversion Requirements:**

The time between the start of organic management and cultivation of crops or animal husbandry is known as the conversion period. All standard requirements should be met during conversion period. Full conversion period is not required where organic farming practices are already in use.

#### **2. Crop Production:**

- a) **Choice of crops and varieties** – All seeds and planting materials should be certified organic. If certified organic seed or planting material is not available then chemically untreated conventional material can be used. Uses of genetically engineered seeds, pollen, transgenic plants are not allowed.

- b) Duration of conversion period** –The minimum conversion period for plant products, produced annually is 12 months prior to the start of the production cycle. For perennial plants (excluding pastures and meadows) the conversion period is 18 months from the date of starting organic management. Depending upon the past use of the land and ecological situations, the certification agency can extend or reduce the minimum conversion period.
- c) Fertilization policy** – Biodegradable material of plant or animal origin produced on organic farms should form the basis of the fertilization policy. Fertilization management should minimize nutrient losses, avoid accumulation of heavy metals and maintain the soil PH. Emphasis should be given to generate and use own on farm organic fertilizers. Brought in fertilizers of biological origin should be supplementary and not a replacement. Over manuring should be avoided. Manures containing human excreta should not be used on vegetation for human consumption.
- d) Pest disease and weed management including growth regulators** – Weeds, pests and diseases should be controlled preferably by preventive cultural National Project on Organic farming Dept of Agriculture and Cooperation, Govt of India techniques. Botanical pesticides prepared at farm from local plants, animals and microorganisms are allowed. Use of synthetic chemicals such as fungicides, insecticides, herbicides, synthetic growth regulators and dyes are prohibited. Use of genetically engineered organisms or products is prohibited.

e) **Soil and Water conservation** – Soil and water resources should be handled in a sustainable manner to avoid erosion, salination, excessive and improper use of water and the pollution of surface and ground water. Cleaning of land by burning (e.g. slash and burn and straw burning) should be restricted. Clearing of primary forest for agriculture is strictly prohibited.

### **3. Collection of non-cultivated material of plant origin and honey:**

Wild harvested products shall only be certified organic, if derived from a stable and sustainable growth environment and the harvesting shall not exceed the sustainable yield of the ecosystem and should not threaten the existence of plant or animal species. The collection area should not be exposed to prohibited substances and should be at an appropriate distance from conventional farming, human habitation, and places of pollution and contamination.

### **4. Food processing and handling:**

Organic products shall be protected from co-mingling with nonorganic products, and shall be adequately identified through the whole process. Certification programme shall regulate the means and measures to be allowed or recommended for decontamination, clearing or disinfection of all facilities where organic products are kept, handled, processed or stored. Besides storage at ambient temperature the following special conditions of storage are permitted.

### **5. Packaging**

Material used for packaging shall be eco friendly. Unnecessary packaging material should be avoided. Recycling and reusable systems should be used. Packaging material should be biodegradable. Material used for packaging shall not contaminate the food.

## **6. Labeling**

When the full standard requirements are met, the product can be sold as “Organic”. On proper certification by certification agency “India Organic” logo can also be used on the product.

## **7. Storage and transport**

Products integrity should be maintained during storage and transportation of organic products. Organic products must be protected from commingling with non-organic products and must be protected all times from contact with the materials and substances not permitted for use in organic farming.

### **Grower Group Certification System:**

This system is based on the internal quality system and shall apply to producer groups, farmer’s cooperatives, contract production and small scale processing units. The producers in the group must apply similar production systems and the farms should be in geographical proximity.

### **Constitution of group**

The group should have a legal status or constitution of the organization and shall be presented by an organizational chart.

### **Internal quality system**

Group certification is based on the concept of an Internal Quality System comprises of the following:

- Implementation of the internal control system
- Internal standards
- Risk assessment.

An external inspection and certification body should be identified for conducting annual inspection of the individual group / unit. The external inspection agency shall evaluate by checking the IQS documentation, staff qualifications and re-inspecting some farms.

### **Developing IQS**

The following are the minimum requirements for setting up an IQS for grower groups:

- Development of Internal Control System (ICS)
- Identification of producer groups
- Creation of awareness about group certification
- Identification of qualified personnel for maintaining the internal control system
- Give necessary training in production and IQS development
- Preparation of IQS manual containing policies and procedures
- Implementation of the policies and procedures
- Review and improvement of the IQS document for maintaining a harmonized IQS.

### **The system is operated through following workers:**

1. Internal quality system manager (IQS Manager)
2. Internal inspectors
3. Approval manager / committee
4. Field officers
5. Purchase officers

6. Warehouse manager
7. Processing manager (in case of processing unit)

**Internal standards:**

The internal standards shall be prepared in local language by the IQS manager for the region of operations under the framework of NPOP standards. If the farmers are illiterate, the internal standards shall contain illustrations in the text for better understanding.

**Conflict of interest**

The IQS personnel shall not have any conflict of interest that might hinder the work. All possible conflicts shall be declared in a written statement. In such cases, the IQS shall ensure that alternative solutions are found.

**Scope of certification**

The certification shall be granted to the group with reference to the regulations / standards adopted by the group.

**Procedure for implementation of ICS**

1. **Registration of members** - All members of the group will be formally (legally) registered under a single entity.
2. **Provision of documents to the members of the grower group** – Each member of the grower group will be supplied with docket in local languages, which will contain – Copy of IQS manual, Internal standards document, NPOP document, Definition of the production unit, .. Farm Entrance Form, Field records, written contract, Annual farm inspection checklist and Information on training programmes and provision of advisory services

### **Internal inspections**

At least two inspections of the group (one in growing season of each crop) shall be carried out by the internal inspector and will be documented. The inspection will be carried out in presence of the member or his representative and must include a visit of the whole farm, storage of inputs, harvested products, post harvest handling and animal husbandry. In case of non-compliance, the results will be reported to the IQS manager and all measures should be taken according to the internal sanction procedures.

### **External inspections**

The external Inspection and Certification Agency will re-inspect some of the farms for the evaluation of the grower group for efficient internal control system for compliance with the NPOP Standards. The sampling plan for inspection shall be based on the inspector's perception of risk.

### **Yield estimates**

Yields will be estimated for each crop for individual farmer in the group. This activity should be carried out especially during harvesting and should be counter-checked with the estimates during buying.

### **Certification Procedure in brief**

- Application is made to the certification agency in the prescribed format with necessary farm and process details
- Screening of application by certification agency and if necessary further
- details/clarification sought
- Cost estimate comprising of certification charge, inspection charge, travel



- cost, reporting cost, laboratory charges etc is sent for acceptance
- Acceptance of cost by the grower/producer
- Signing of agreement between grower/producer and certification agency
- Certification agency seeks cropping/production/cultivation /processing plan and supply a copy of the standards to the grower/producer to follow
- Certification agency raises an invoice and asks the producer to release 50% of the certification cost in advance
- Grower/producer pays the fee
- Inspection schedule is worked out
- Inspection is carried out at one or more than one occasion
- If required unannounced inspection can also be done. In case of doubt the inspection team can also draw plant/soil/raw material/input/product sample for laboratory analysis.
- Inspection report/(s) submitted to the certification committee
- Certification agency asks for final payment
- Final payment is made
- Certification is granted
- Grower/producer releases the stock for sale with Certification Mark (India Organic Logo)



There are 6 accreditation agencies in India:-

- 1. Agriculture Processed Food Products Exports Development Authority (APEDA).**
- 2. Coffee Board.**
- 3. Spices Board.**
- 4. Coconut Development Board.**
- 5. Tea Board.**
- 6. Directorate of Cashew and Cocoa Development.**





APEDA has recognized the following Inspections Certification bodies in India, all of these are able to certify based on the NPOP:

1. BVQ1(India) Pvt. Ltd (Mumbai)
2. E cocert (Aurangabad)
3. IMO control Pvt. Ltd (Bangalore)
4. Indian organic certification agency (Indocert, Aluva)
5. International Resources for farmer trade members
6. Lacon quality certification Pvt. Ltd (Theepany, Kerala)
7. National organic certification Association Pvt. Ltd (Pune)
8. One Cert Asia Agri Certification Pvt. Ltd (Jaipur)
9. SGS India Pvt. Ltd (Guragon)
10. Skal International (Bangalore)
11. Uttaranchal State Organic Certification Agency (Uttaranchal)

**Table 2.8** List of Accredited Certification Bodies under NPOP in India

Name of the Certification Agency	Accreditation No.	Scope of Accreditation	Certification Mark
Bureau Veritas Certification India (BVCI) Pvt. Ltd., Mumbai	NPOP/NAB/ 001	NPOP USDA NOP	
ECOCERT India Pvt. Ltd., Aurangabad	NPOP/NAB/ 002	NPOP USDA NOP	
IMO Control Pvt. Ltd.	NPOP/NAB/ 003	NPOP USDA NOP	
Indian Organic Certification Agency (INDOCERT)	NPOP/NAB/ 004	NPOP USDA NOP	
Lacon Quality Certification Pvt. Ltd., Thiruvalla (Kerala)	NPOP/NAB/ 006	NPOP USDA NOP	
Natural Organic Certification Agro Pvt. Ltd.	NPOP/NAB/ 007	-	
One Cert Asia Agri Certification (P) Ltd	NPOP/NAB/ 008	NPOP USDA NOP	
SGS India Pvt. Ltd.	NPOP/NAB/ 009	NPOP USDA NOP	
Control Union Certifications, Mumbai	NPOP/NAB/ 0010	NPOP USDA NOP	
Uttarakhand State Organic Certification Agency (USOCA)	NPOP/NAB/ 0011	NPOP USDA NOP	

APOF Organic Certification Agency (AOCA)	NPOP/NAB/ 0012	NPOP	
Rajasthan Organic Certification Agency (ROCA)	NPOP/NAB/ 0013	NPOP	
Vedic Organic Certification Agency	NPOP/NAB/ 0014	NPOP NOP (w.e.f 01-10-2011)	
ISCOF (Indian Society for Certification of Organic Products)	NPOP/NAB/ 0015	NPOP	
Food Cert India Pvt. Ltd	NPOP/NAB/ 0016	NPOP NOP (w.e.f 1-6-2011)	
Aditi Organic Certifications Pvt. Ltd	NPOP/NAB/ 0017	NPOP NOP (w.e.f 1-6-2010)	
Chhattisgarh Certification Society, India (CGCERT), Raipur	NPOP/NAB/0018	NPOP	
Tamil Nadu Organic Certification Department (TNOCD), Coimbatore	NPOP/NAB/0019	NPOP	
Intertek India Pvt. Ltd.	NPOP/NAB/0020	NPOP NOP (w.e.f 01-10-2011)	

Madhya Pradesh State Organic Certification Agency	NPOP/NAB/0022	NPOP (w.e.f 01-10-2011)	
Biocert India Pvt. Ltd	NPOP/NAB/0023	NPOP USDA NOP (w.e.f 01-12-2011)	
Export Inspection Agency(EIA) – New Delhi	NPOP/NAB/0024	NPOP	
Odisha State Organic Certification Agency (OSOCA) Bhubneshwar	NPOP/NAB/0025	NPOP	

Source: APEDA

The organic agriculture in India is experiencing a remarkable growth as more and more farmers and organizations are shifting to Organic Agriculture. So it is very essential to attract more and more consumers to purchase organic products. They are ready to pay premium price for organically produced products. Only those farmers who grow their products in accordance with the organic standards can label their products with a certificate and can market their produce at a higher price. And the Certification is an essential criterion to attain good position in the fast growing International organic market.

### 2.3. Scope of Organic Agriculture in Kerala:

The agriculture scenario of Kerala is blessed with diverse Climatic conditions and wide range of crop plants. The culture, heritage and festivals of Kerala have been closely related to Agriculture. The traditional cropping system prevalent in Kerala is homestead agriculture where the farmer has

integrated in a system approach consist of crop field and livestock. The Green Revolution in Kerala replaced the traditional varieties which needed tonnes of fertilizers, to achieve the targeted growth. The continuous use of chemical fertilisers resulted decline in microorganisms and soil fertility. Along with these problems, the sustainability of agricultural system is distorted. Considering the economic aspect, the cost of cultivation is increased and declining yield resulted in stagnation of agricultural sector. In the consumption perspective, Kerala economy is dependent on other states for agricultural products and which created frightening challenge food security and food safety. At present Kerala agriculture is passing through a new era of agriculture by regaining the importance of eco friendly farming system after realising serious hardships arises from chemical fertiliser based farming system.

### **2.3.1. Present Status of Kerala Agriculture**

The people in Kerala were generally followed healthy food habits which dependent on rice, vegetables, fruits like jackfruit, mango and a variety of plantains and they were used in raw also. But for the last few years enormous changes were occurred in food consumption pattern, occupational structure and life style of Kerala people. This resulted many impact on Kerala economy such as declining share and importance of agriculture, increased health problems arising from food habits, environmental pollution and increasing wages and cost of living. The farmers are caught in the debt trap to meet the high cost of farming, as it demanded more external inputs such as fertilizers, pesticides and water. These led to increasing instances of suicide by farmers. Along with all these problems the Kerala economy is facing the question of food security in terms of both quantity and in terms of quality of agricultural commodities in Kerala.

The globalization in India produced many challenges to Indian agriculture resulting the contribution of agriculture to GDP declining from 55% (1950) to 14.8% (2014). At the same time, the role of agriculture is crucial in Indian economy as 55% of the population is still dependent on agriculture. The sustainability and profitability of agriculture is one of the major concern as the agriculture income in India is declining and cost of agricultural produce is increasing, also the contribution of agriculture to GDP decreased drastically (from 30% to 14.5%) during the last two decades.

As a realisation arises from all the above mentioned problems poised in Kerala led many farmers in Kerala to taken up organic farming quite earnestly for the last 15-20 years. At the same time, those who reverted from modern intensive agriculture to organic farming had to face many immediate problems such as steep fall in yield and lower awareness about Organic farming both in production and consumption perspective. The prevalence of modern agriculture in the majority of the cultivable areas makes it difficult to maintain organic purity in the soil and atmosphere.

In recent years the farmers in Kerala are persuaded that the only way to return to the traditional sustainable ways of cultivation without harming the ecosystem is organic farming which was recognized nationally and internationally. The Food and Agriculture Organization reported at the International Conference on Organic Agriculture and Food Security 2007 as "Conversion of global agriculture to organic management, without converting wild lands to agriculture and using N-fertilizers, would result in a global agricultural supply of 2640 to 4380 kcal/person/day. Sustainable intensification in developing countries through organic practices would increase production by 56 per cent. Organic yields on average are comparable to conventional yields; although yields do decline initially when converting

from high-input systems and almost double when converting from low-input systems". It also has found that organic farms use 33 to 56 per cent less energy per ha than conventional farms. There is also an increasing awareness among the consumers about the harmful effects of pesticides and chemical fertilisers.

### Agriculture Income

The agricultural income of the state recorded a negative growth of 1.79% per cent during 2009-10. Agriculture contributed to 37% of the GSDP in 1980-81 which has declined to 16% in 2004-05. The trend in agricultural income in Kerala during the period 2004-05 and 2010-11 is shown in Table 2.3.1. The quick estimate for 2010-11 also indicated a decline of 0.78 per cent in growth over 2009-10. The share of agriculture and allied sectors in GSDP indicated a continuous decline in the state. The share was 17.48% during 2004-05 and declined to 10.59% in 2010-11.

**Table 2.9**

**Trends in Agricultural Income in Kerala  
(Base 2004-05)**

Sl.No	Year	Agricultural Income (₹ in crores)	Rate of change over previous year	Agriculture and Allied Sectors (₹ in crores)	Percentage
1	2	3	4	5	6
1	2004-05	16980.51		20843.75	17.48
2	2005-06	18041.97	6.25	21882.16	16.67
3	2006-07	16567.85	-8.17	20507.67	14.48
4	2007-08	16196.60	-2.24	20255.14	13.15
5	2008-09	16533.94	2.08	20656.57	12.70
6	2009-10*	16236.47	-1.79	20534.52	11.59
7	2010-11**	16110.59	-0.78	20486.12	10.59

\* Provisional \*\* Quick

Source: Directorate of Economics and Statistics

### Trend in Area, Production and Productivity of Crops and Performance

In Kerala total food grain production reached to 0.6lakh MT and gross cropped area of 26.6 lakh ha in 2011-12. Kerala state which had a low base in



food production is facing serious challenges is undergoing structural transformation from the mid seventies by switching over a large proportion of its traditional crop area which was devoted to subsistence crops like rice and tapioca to more remunerative crops like banana and plantations.

### **Average Size of Land Holding:**

The size of the average land holding in Kerala as per the Agricultural Census, 2000-01, was 0.13 hectares (0.32 acres) for a marginal land owner. There were 6,335,428 marginal land owners in Kerala at the time of census. A mere 7% of the total 1,569,487 hectares of land is classified as large holdings, while more than 90% of the holdings were marginal holdings.

**Table 2.10**

**Average Size of Land Holding**

Type of Holding	Average Holding (Hectares Per Person)	Average Holding (Hectares Per Group)	Average Holding (Hectares Per Institution)
Marginal	0.14	0.22	0.173
Small	1.32	1.32	1.32
Semi-Medium	2.51	2.68	2.63
Medium	5.26	5.43	5.80
Large	18.91	160.80	81.44

*Source: Directorate of Economics and Statistics*

### **2.3.2. Relevance of Promoting Organic Agriculture in Kerala:**

Kerala with rich endowments for cultivation of a wide variety of agricultural and horticultural crops specifically spices, plantation crops, medicinal plants etc with potential international markets, is an ideal destination for promotion of organic farming due to the changing preferences worldwide towards organic and eco-friendly products. Organic farming is an excellent tool for enhancing the livelihoods of small and marginal farmers and also helps to improve food quality and environment.

In the initial phase of organic cultivation the farmers usually experience some loss in yields after leaving synthetic inputs and converting farming operations to organic production. It may take few years to restore the ecosystem to the point where organic production is possible. So the initial stage necessitates a scientific strategy which involves converting farms to organic production "in installments", to reduce the risk of loss. Most studies have found that organic agriculture requires significantly greater labour input than conventional farms. Therefore, the diversification of crops typically found on organic farms, with their different planting and harvesting schedules, may distribute labour demand more evenly, which could help stabilize employment

The Green revolution adopted in India during 1956-65 period, led to the introduction of chemical inputs and pesticides into Indian agricultural system. After the adoption of Green revolution, Indian farmers experienced increased quantity of agricultural produce in lesser time. But the new system of farming which away from the traditional methods of farming threatened the sustainability of agricultural system. The experience of farmers who have adopted modern methods proved that they are forced to use increasing quantities of modern inputs to maintain their current levels of production which resulted in increasing cost of production and stagnation of income from agriculture. At present many of the farmers realised the ill effects of chemical inputs based farming methods and they moving to sustainable way of farming system which can provide long term food security and food safety in India. Such realisations gave birth to new concepts in farming, such as organic farming, natural farming, biodynamic agriculture, eco-farming, etc which involves nature friendly sustainable way of farming.

Availability of quality organic inputs is critical for success of organic farming in the country. Setting up of organic input units are being financed as

credit-linked and back-ended subsidy through NABARD and NCDC under NPOF Capital investment subsidy scheme. Three types of organic input production units namely; fruit/vegetable waste units, bio-fertilizer unit and vermi-hatchery units are being subsidized at 25 per cent of their total project costs respectively. The certified organic agriculture in 2006-07 in India was 4.14 lakh ha with a major share in Madhya Pradesh (1.12 lakh ha) Maharashtra (96879.06 ha), Orissa (67503.39 ha) and Kerala (11141.54 ha).

The growth of organic agriculture in India has three dimensions and is being adopted by farmers for different reasons. First category of organic farmers are those which are situated in no-input or low-input use zones, Second category of farmers are those which have recently adopted the organic in the wake of ill effects of conventional agriculture, may be in the form of reduced soil fertility, food toxicity or increasing cost and diminishing returns. The third category comprised of farmers and enterprises which have systematically adopted the commercial organic agriculture to capture emerging market opportunities and premium prices. While majority of farmers in first category are traditional organic they are not certified, second category farmers comprised of both certified and un-certified but majority of third category farmers are certified. The third category commercial farmers are attracting most attention. The entire data available on organic agriculture relates to commercial organic farmers.

The Agricultural sector of India has great potentials with respect to rural employment generation, availability of cultivable land etc. Organic farming is gaining gradual momentum across the world. The increased awareness about health and environmental issues associated with the intensive use of chemical inputs has necessitated alternate forms of agriculture in the world. Organic agriculture is one of the important sustainable agriculture

practice already promoted by advanced nations and world Organisations. India has great potential in relation to the traditional agricultural knowledge, availability of land and rural labour. The effective utilization of these resources and implementation of suitable agricultural policies with the active participation of farmers can stimulate the growth of organic farming in India.

Organic Farming is an effective agricultural strategy for Kerala also. A long term vision and effective strategy is essential to regain the priority and productivity of Kerala Agriculture. And it is very essential to fight against food insecurity. The organic Agriculture is more focusing on the qualitative aspect of agricultural produce and environmental sustainability. A fast growing consumer demand for organic products in foreign market is offering Kerala Farmers with a great opportunity. An effective agricultural sector strategy can contribute to a broader development of agricultural productivity, food security, generation of rural employment and poverty reduction while promoting the conservation of the natural resource base. This new strategy should be adopted with sound infrastructure, governance, the private public participation and effective implementation seeking to contribute to poverty reduction, enhance regional integration, accelerate human development, and improve productivity in agriculture.

### **2.3.3 History and Growth of Organic Agriculture in Kerala:**

In the year 2000, the Government of India released the National Standards for Organic Products (NSOP) under the National Programme for Organic Production (NPOP). Products sold or labeled as 'organic' needed to be inspected and certified by a nationally accredited certification body. As part of the Organic movement in India, Kerala state Dept. of Agriculture has set up a cell for promotion of Sustainable Agriculture and Organic Farming in Wayanad in 2003-04. In the year 2010, Kerala Government announced the

Kerala State Organic Farming policy aimed at making farming sustainable and ensuring toxin-free food to public within 10 years. In the year 2010-11 a programme to promote organic farming in selected 20 blocks was initiated.

In Kerala there are number of non certified organic farmers who produce rice, vegetables, spices and fruits. Some of them are under PGS certification (Participatory Guarantee System under PGS Council of India –a council formed by a group of organisations promoting organic farming among small and marginal farmers in the country and which is accredited by NCOF). Kerala State *Jaiva Karshaka Samithy* has a number of registered organic farmers in the state who are not certified. Similarly many other organisations and NGOs have promoted organic farming and many farmers are under conversion.

The mission to convert Kerala into an organic State is to be achieved focusing on potential crops and areas in a phased and solid manner with the aim of converting a minimum of 10% of the cultivable land into entirely organic every year and thus achieving the target within five to ten years. Production of organic tea, rice, vegetables, pepper etc is done in Kerala in small areas. Department of Agriculture, State Horticulture Mission (SHM) and VFPCCK are the major agencies supporting the organic farming directly in the state apart from NGOs. The area covered under organic farming during 2005-06 to 2008-09 by SHM is 14279 Ha out of which 950 Ha area is under certification. A number of 61695 farmers are also covered by the mission during the period.

#### **Kerala State Organic Farming Policy, Strategy and Action Plan:**

In the year 2010, Kerala Government announced the Kerala State Organic Farming policy with the main objective to make Kerala's farming

sustainable, rewarding, and competitive, ensuring poison-free water, soil and food to every citizen.

### **Objectives**

1. Make farming sustainable, remunerative and respectable.
2. Enhance natural soil fertility and productivity.
3. Ensure soil and water conservation.
4. Ensure agricultural bio-security and food and nutritional security.
5. Create and ensure domestic market for organic products controlled by the farmers.
6. Avoid the use of agrochemicals and other hazardous material
7. Ensure seed, food and sovereignty.
8. Promote biodiversity based ecological farming.
9. Ensure quality control in organic inputs and agricultural produce
10. Enable human health promotion by providing safe agricultural products
11. Conservation and extension of traditional knowledge related to agriculture.

### **Strategies and Action Plan**

The mission to convert Kerala into an organic State is to be achieved focusing on potential crops and areas in a phased and compact manner with the aim of converting a minimum of 10% of the cultivable land into entirely organic every year and thus achieving the target within five to ten years. On completion of the third year of implementation of the organic farming policy, a Committee of experts comprising representatives of farmers and scientists should make a comprehensive assessment of the farmer's well being, economy

and environment and, only after rectifying the drawbacks, if any, can the policy be implemented in rest of the areas.

### **Strategy 1: Ensure seed sovereignty of the farmers and the State**

#### **1.1 Establish seed villages exclusively for organic farming.**

- 1.1 (a) Begin programmes for the production of seeds, seedlings, planting materials and, traditional animal breeds at the Panchayat level, so as to become self-sufficient in the availability of good quality local seeds, both indigenous and breeder seeds developed by the KAU and other institutions of agricultural research.
- 1.1(b) Begin at the farmers' group levels, seed banks and seed cooperatives to produce, store, share and supply good quality seeds, including those which are traditional and location specific.
- 1.1(c) Promote farmers who produce organically good quality seeds and develop participatory seed production programmes along with the Kerala Agricultural University (KAU) and other institutions of agricultural research.
- 1.1(d) Develop storage facilities/protection measures using traditional methods

#### **1.2 Ensure maintenance of Traceability chain Mandatory at the Local Self Government**

Institution level by the Biodiversity Management Committees (BMC) with regard to seeds produced, sold, transferred and shared in the Panchayat to protect the farmers from spurious low quality seeds, including hazardous genetically modified seeds

### **1.3 Declare and ensure genetically modified (GM) free villages/panchayats and State**

1.4 Establish a mechanism to regulate the prices of seeds

1.5 Ensure supply of locally suitable seeds in each agro-climatic zone.

### **Strategy 2: Implementation of organic farming policy in a phased manner**

2.1 Conduct an initial assessment of the status of organic farming and farmers in the State including cultivated, certified and non-cultivated wild organic areas in the State.

2.2 Develop an action plan with an objective of converting annual crops such as grains, fruits and vegetables to organic within five years and the perennial crops within 10 years.

2.3 Develop a clear plan of action with budgets for incorporation into the planning process of the Local Self Government Institutions for phasing in organic farming in the State.

2.4 Special thrust should be initially given to complex, diverse and risk prone areas such as rain-fed districts, drought-prone districts, food crop producing districts and tribal districts.

2.5 All agricultural practices to be launched in the tribal belts of Kerala should compulsorily be organic.

### **Strategy 3: Compact Area Group approach in organic farming**

3.1 Encourage the formation of Organic farmers groups, especially women organic farmer groups, clubs, SHG's and cooperatives for the purpose of cultivation, input production, seed/seedlings/planting materials production, certification and marketing.



- 3.2 Each group should be of a minimum five members (as stipulated under the Participatory Guarantee System of Certification)
- 3.3 Models such as Vegetable and Fruit Promotion Council of Kerala (VFPCCK), Maarappanmoola Cooperative Society, Adat Cooperative Society for paddy, GALASA, Compact Area Group approach of Kannore KVK, Harithasree may be adopted.
- 3.4 Encourage Kudumbasree, Vanasamrakshana Samithi, Theera SVS, Grama Haritha Samithi to develop organic farming enterprises

**Strategy 4: Strengthen soil and ensure water conservation measures**

- 4.1 Declare the existing sacred groves, ponds and mangroves as protected areas and ensure their conservation.
- 4.2 Ensure organic farming approach in all the watershed development areas and extend support including capacity building and financial assistance for soil and water conservation measures through ongoing watershed development programmes.
- 4.3 Integrate the various institutions presently involved in watershed management and introduce organic farming as a key component.
- 4.4 Adopt appropriate agronomic practices suitable to the agro-ecological conditions as well as the topographical conditions at the micro watershed level and, discourage/restrict inappropriate crops and cropping practices.
- 4.5 Kerala Agricultural University and other research institutions should develop suitable crop combinations and locally suitable technology, through participatory research with farmers.

- 4.6 Encourage landowners and part-time farmers by providing adequate financial support to utilize their lands for organic farming, if left unutilized.
- 4.7 Formulate legislative measures to rejuvenate and protect traditional water resources including fresh water lakes, surangas and ensure rain water conservation, restriction of bore wells, especially in dark zones and recharging of existing bore wells, open wells and ponds, and other conservation measures so as to improve ground water table and also conserve top soil.
- 4.8 Establish testing facilities for soil, water, micronutrients and microorganisms at least at the block and introduce the system of providing Soil Health Cards.
- 4.9 Promote bio-fencing and thus help ensure soil and water conservation and, availability of green manure and green leaf manure
- 4.10 Conduct training programmes for resource persons at the Local Self Government  
Institution level on soil and water conservation measures
- 4.11 Avoid use of plastics in agricultural practices. Coir and other natural fibres should be encouraged to prepare shade for nurseries and flower farming.

**Strategy 5: Promote a mixed farming approach for livelihood security and ecological sustainability**

- 5.1 Make crop-livestock (including poultry) integrated farming as part of organic farming, with women centred ownership and management in the farmer households and groups. Emphasis may be given to

Kerala's traditional farming approach of integrated farming of dominantly coconut with cattle and poultry.

- 5.2 Develop Bee-keeping, fisheries and similar enterprises as part of the mixed farming programme.
- 5.3 Promote decentralized production of livestock feed from locally available resources, but excluding spurious ingredients such as growth promoters and hormones.
- 5.4 Document and popularise traditional knowledge related to animal health care.
- 5.5 Develop linkages between organic farmers and livestock growing farmers for exchange of manure for fodder.
- 5.6 Encourage mixed cropping of indigenous trees and medicinal plants through organic farming.
- 5.7 Promote proven and successful practices developed by farmers.
- 5.8 Tax relaxation shall be given to the land holding with maximum forest and wild trees.

**Strategy 6: Conserve and improve agro-biodiversity and undomesticated biodiversity**

- 6.1 Document agro-biodiversity and related traditional knowledge and practice, both cultivated and un-cultivated, in each Panchayat.
- 6.2 Encouragement in the form of financial support may be given for the establishment of model agro-biodiversity conservation farms.
- 6.3 Develop programmes for farmers to collect, purify and multiply traditional seeds.

- 6.4 Encourage protection of traditional agricultural systems such as Kaipad, Pokkali and Kole and Kuttanad as "agricultural heritage of Kerala"
- 6.5 Promote indigenous rice varieties such as navara, jeerakasala and gandhakasala and also other traditional indigenous varieties of crops.

**Strategy 7: Launch a state-wide intensive campaign on organic farming in the form of a popular movement: "*Jaiva Keralam*"**

- 7.1 Organise Organic Mela's in all districts.
- 7.2 Begin state-wide awareness programmes for the promotion of organic farming focusing on the advantages of organic produce and harmful effects of chemical-based farming.
- 7.3 Produce handouts, publications of case-studies and best practices, video films, posters and other awareness materials to reach out to all sections, especially women.
- 7.4 Organize workshops, seminars and exchange programmes for consumers, teachers, traders, farmers, government and semi-government officials in the related area.
- 7.5 Ensure the strict enforcement of the provisions of the Food Adulteration Act, 1954, and rules 1955, and bring suitable legislations to notify and enable Agriculture Officers, Veterinary Doctors and similar professionals as Inspectors under the Act and also establish quality and adulteration testing facilities at district level.
- 7.6 Encourage setting up of organic kitchen gardens, organic orchards in urban and rural households.

**Strategy 8: Ensure availability of quality organic manure to the farmers**

- 8.1 Encourage, with adequate support, the availability of biomass in the organic farm itself, through programmes such as crop rotation, tree crops, cover crops, leguminous crops, green manure and green leaf manure.
- 8.2 Provide support for cow, buffalo, duck, fish, poultry and goat, preferably traditional breeds, to organic farmers/groups to ensure integrated farming and the availability of farmyard manure and urine.
- 8.3 Required changes in the existing Cattle Breeding Policy may be made to ensure availability of indigenous varieties of cow and buffalos to the organic farmers.
- 8.4 Encourage the production of various types of compost in the farm itself, including vermin composting and biogas slurry.
- 8.5 Formulate special programmes for increasing the biomass and organic manures, especially in rain-fed cultivation areas where soil depletion is high, so as to drought proof the farm.
- 8.6 Encourage indigenous species of earthworms and effective microorganisms in composting.
- 8.7 Establish a decentralized system to produce organic manure from biodegradable organic waste segregated at source.
- 8.8 Ensure the quality of the organic manure and establish a centralized testing laboratory to monitor the same.
- 8.9 Discourage burning of all organic materials in the field, which could be utilized as manure.

8.10 Under the leadership of the "Padasekhara Samithi" and other farmer groups draw the benefits of the provisions of the National Rural Employment Guarantee Programme to ensure production of green leaves and extraction of silt from the rural ponds, tanks, reservoirs, streams and rivulets for augmenting the fertility of the farm lands.

**Strategy 9: Ensure farm inputs for organic farming**

- 9.1 Implement programmes for the production of seeds, seedlings and other planting materials, manure, plant protection materials at the farm with the help of agriculture department, Agricultural university, at local level.
- 9.2 Encourage Farmers Associations/Clubs/Cooperatives/Companies of farmers, SHG's/Youth groups at the local level to produce need based farm inputs.
- 9.3 Link organic municipal solid waste segregated at source, especially from markets, hostels, densely populated areas and other institutions including night soils to farms through such means as simple and cost-effective decentralised composting, bio gasification and vermi-composting and thus ensure organic matter recycling. Organic waste treatment plant should be made compulsory for the flats.
- 9.4 Conduct training programmes for local resource persons for producing good quality input, quality testing and for such related aspects at the Local Self Government Institution level.
- 9.5 Formulate legislative measures to empower the Local Self Government Institutions, reputed NGO's for ensuring quality of inputs, including necessary rules, guidelines, standards, monitoring and testing procedures and establishment of laboratories.

- 9.6 Establish special financial assistance schemes, and/or link existing support schemes to groups to start production facilities for farm inputs.
- 9.7 Develop local linkages for low cost input materials to farmers and ensure markets for good quality input materials at reasonable price
- 9.8 Steps may be taken to formulate the organic farming packages developed by the Agricultural University in collaboration with organic farmers. Priority may be given for crops like banana, ginger, pine apple, vegetables, pepper, cardamom, paddy etc.
- 9.9 Prepare a database on the organic content of the soil in different zones of Kerala.
- 9.10 Ensure the quality of fruits and vegetables coming from other states.

**Strategy 10: Capacity Building for farmers, implementing officers, agencies, and local self government members**

- 10.1 Conduct orientation, training and exposure visit programmes.
- 10.2 Group of 10-20 unemployed youth in each Panchayat (50% women) in the model of kudumbasree would be designated as "Karshaka Sevakar", trained in all facets of organic farm management supported through Local Self Government Institution programmes to assist farmers in organic farming.
- 10.3 Develop the existing Agro-clinics of the Department of Agriculture into Organic Farming Resource Centres and the staff should be given training on organic farming.
- 10.4 Create awareness on organic farming practices among the agriculture officers in the Agriculture Department.

**Strategy 11: Develop Model Sustainable Organic Farms in the State**

- 11.1 Every Local Self Government Institution would develop model organic farms in select farmers' fields.
- 11.2 Research Stations in each agro-ecological zone under the KAU and other agricultural institutions should be converted to organic management systems, and thus become a field study centre for students, farmers and peoples' representatives.
- 11.3 Such farming areas could be made as part of the responsible tourism programme.

**Strategy 12: Ensure and improve the health and wellbeing of the tribal through special tribal agriculture programmes.**

- 12.1 Ensure adequate nutritional food availability for tribes, whose traditional agriculture has been degraded.
- 12.2 Develop specific programmes for the rejuvenation of their traditional agriculture and knowledge protection.
- 12.3 Ensure sustainable collection of minor forest produce and facilitate the fair marketing of these produce through organic outlets.
- 12.4 Formulate specific schemes to provide tribal children with their traditional food at least once in a day.
- 12.5 Develop village (Ooru) level seed banks of their traditional crops and medicinal plants.
- 12.6 Integrate watershed programmes, NREG etc in the rejuvenation of tribal agriculture.



**Strategy 13: Establish Producer Companies promoted by organic farmers**

- 13.1 Facilitate establishment of Organic Farmer Producer Companies or similar concerns as an organic farmers promoted enterprise with share investment by the organic farmers and the LSGs

**Strategy 14: Establish storage and transportation facilities**

- 14.1 Establish separate and decentralized storage facilities for organic farm produce to ensure its organic integrity and help farmers in certification processes.
- 14.2 Provide separate local transportation facilities for organic produce to nearby domestic markets.

**Strategy 15: Promote farm level processing, value addition and encourage the use of organic farm produce in food industry**

- 15.1 Encourage farm processing by farmers groups, SHGs and Farmer Producer Companies for value addition.
- 15.2 Ensure value addition does not compromise organic produce quality by facilitating testing and evaluation of processes with help from KAU and other research institutions.
- 15.3 Encourage organic food-based industry in Kerala to procure and use organic produce in their products.
- 15.4 Set up food industries at manageable decentralised levels in the State with special incentive packages.

**Strategy 16: Develop diverse channels for marketing of organic produce:**

- 16.1 Set up separate markets/facilities for organic produce certified by the PGS process through the existing channels of marketing of

Agriculture products such as the Milma, Supplyco, Horti-corp, Haritha and People's Market.

- 16.2 Encourage direct marketing/linkages by farmers groups with end user institutions such as schools, hostels, hotels, hospitals, Ayurveda centres, SHG's making food products and food-based industries in the State.
- 16.3 Encourage institutions such as schools, hostels, hospitals and government institutions to procure local organic produce following rules and specific guidelines.
- 16.4 Disallow large private retail corporations through suitable legislations.
- 16.5 Encourage existing vegetable, fruits and grocery vendors to promote organic products
- 16.6 Facilitate the establishment of organic farm produce outlets in all the districts, with the help of Governmental and Non-governmental organizations.
- 16.7 Ensure that the tourism industry, through the Responsible Tourism Initiative, source organic produce from local producers as much as possible for their hotels and resorts.

**Strategy 17: Develop a simple certification process in the State for all organic farmers**

- 17.1 Encourage through specific scheme the implementation of an internal control system for organic farmer group.
- 17.2 Encourage the Participatory Guarantee System of Certification for small and marginal farmers to supply to the domestic market.

- 17.3 NGOs accredited by the PGS Council of India shall be authorised to help implement and monitor the PGS system in the State
- 17.4 The State will develop an Organic Kerala Certification and a logo and, "Jaiva Keralam" shall be developed as a brand. Since each country is following different norms, crops aimed at export may go for third party certification.
- 17.5 Fix local standards for quality testing and certification.
- 17.6 Ensure that every organic farmer who is doing organic farming for three years is given the certificate free of cost.
- 17.7 Include organic livestock rearing, (Animal husbandry) in the certification system

**Strategy 18: Provide financial incentives for promoting organic farming**

- 18.1 Provide interest-free loans to organic farmers, especially small and marginal farmers.  
  
Credits linked to banks shall be subsidized through Central/State Governments.
- 18.2 Set in place production linked incentive system supports.
- 18.3 Promote revolving funds system.
- 18.4 Provide assistance during conversion period; two years for annual crops and three years for perennials.
- 18.5 Introduce a State led insurance scheme for small and marginal organic farmers
- 18.6 Introduce pension for organic farmers.

**Strategy 19: Encourage the use of renewable energy sources**

- 19.1 Assistance in terms of expertise and finances should be given for use of biogas plants, solar energy and wind energy units wherever feasible to reduce dependence on external energy sources.
- 19.2 Develop appropriate small farm machinery for reducing energy, cost and drudgery

**Strategy 20: Introduce organic farming in education institutions**

- 20.1 Introduce organic farming in educational institutions, prisons and juvenile homes, through academic inputs. A specific campaign shall be started among students to ensure that they take organically grown food.
- 20.2 Set up a system in all schools in Kerala to have organic vegetable and fruit gardens as well as paddy, in potential regions, as part of inculcating among the children the love for organic farming and biodiversity conservation and, perpetuation in their households. Necessary support schemes may be formulated and implemented through the Local Self Government Institutions.
- 20.3 Encourage schools to have seed banks and seed farms in the premises, wherever feasible, to produce and supply good quality seeds for the use in their nearby regions.
- 20.4 Promote children-farmer interfaces in each school, which shall include visits to organic farms.
- 20.5 Encourage schools to link with organic farmers for supply of rice, vegetables, fruits, pulses, milk, egg and honey as part of the noon-meal and nutritional supplement programmes. The ICDS can also be

encouraged to supply organic food processed and prepared through SHG's for the Anganwadi's.

- 20.6 Provide suitable incentives to baby food industries that use organic inputs and processes.
- 20.7 Develop a curriculum for school students on organic farming.
- 20.8 Publicity through the Farm Information Bureau.

**Strategy 21: Reorient Research, Education and Extension**

- 21.1 The KAU would set up a special multi-institutional special task force to re-orient the Research, Education and Extension systems to support the Organic Farming Policy and the transition of the State's agriculture to organic farming.
- 21.2 The KAU shall develop package of practices and model demonstration farms for organic farming in different agro-ecological zones.
- 21.3 Introduce as part of the course curriculum, both at under and post graduate levels, interactions with leading organic farmers, groups and NGO's promoting organic farming in the state.
- 21.4 Develop participatory research programmes with organic farmers on all aspects of organic farming, ensuring a monthly remuneration for the farmers of the participatory research programme.
- 21.5 Research and inventories so as to recognize and document existing practices of organic farmers.
- 21.6 Identify and screen native livestock/fish breeds which are locally adaptable and resistant to parasites and diseases.
- 21.7 Develop herbal remedies for control of diseases and pests of livestock/ crops/ fish.

- 21.8 To institutionalise the above, an Organic Farming Research Institute (OFRI) may be set up.

**Strategy 22: Phase-out Chemical Pesticides and Fertilizers from the farming sector**

- 22.1 Ensure phased restriction/ban of sale and use of chemical agricultural inputs such as fertilizers and pesticides parallel to the implementation of the organic farming policy in the region.
- 22.2 Through necessary legislation stop the sale and use of the highly toxic Class-1a and 1b pesticides as a preliminary step.
- 22.3 Declare and maintain ecologically sensitive areas with rich biodiversity and natural resource base (e.g. water bodies), as Chemical Pesticide and Fertilizer-Free Zones.
- 22.4 Regulate the sale and use of pesticide through necessary legislations, enforcing a prescription based system ensuring that pesticides are sold only on a case-to-case basis after obtaining prescription from the Agriculture Officer.
- 22.5 Strictly prohibit the sale of pesticides to children, pregnant women and non-farmers
- 22.6 Generate a database on the non-agricultural use of pesticides (e.g.: household, storage, food processing, construction) and regulate its sale and use.
- 22.7 Review and regulate promotional activities and advertisements of pesticides as per the FAO Code of Conduct and Guidelines for Pesticide Use.

22.8 Conduct periodical analysis of water, soil, milk and crops at the district level where pesticides continue to be used and the data made public.

22.9 Precautionary measures should be taken before using exotic organisms for biocontrol programmes.

**Strategy 23: Integrate the programmes and activities of various departments, local self governments and organizations**

23.1 Integrate the various government departments, institutions, civil societies, and their schemes in a harmonious manner duly considering organic farming principles and local situations. These include government departments such as Agriculture, Animal Husbandry, Forest, Fisheries, Local Bodies, Finance, Revenue, Industries, Tribal, Khadi and Village Industries; Financial Institutions, State Cooperation Department; institutions, such as Kerala Agriculture University, ICAR institutions in the state; Commodity Boards for Spices, Coffee, Tea, Coconut and Rubber; APEDA, MILMA and other milk marketing societies; Farmers' Organisations and Societies, Self Help Groups; Organic Farming Associations and, NGOs promoting organic farming

**Strategy 24: Organisational set-up for promotion of organic farming**

24.1 Set up an Organic Kerala Mission to implement the organic farming policy, strategy and action plan and ensure their success. Since the coordination of the various departments is vital for the same, a General Council to be chaired by the Honourable Chief Minister and, since the policy has to be implemented by the Agricultural Department, an Executive Committee to be chaired by the

Honourable Minister for Agriculture will supervise and guide the functioning of Organic Kerala Mission.

### Organic standards

Minimum requirements for a farm or product to be certified as 'organic' are precisely defined by organic standards. There are organic standards on the national as well as international level. For certification, the standards of the target market or importing country are relevant.

### The Organic Sustainability of Kerala

The State Agriculture Department conducted 300 training programs to setup Collection Centers for Organic Produce Three Districts, Wayanad, Idukki and Palakkad were declared as Organic Farming Zones. The important spices and condiments crops being cultivated in Kerala are pepper, ginger, cardamom, areca nut, cloves, etc. Major contribution of spices & condiments is from *Idukki* district in all the years and is 36% during 2010-11. Pepper contributes 48% area to the total area of spices. The total area under the cultivation of spices & condiments during the agricultural year 2010-11 is 353,370 Ha. The promotion of Organic Spices production has great scope with respect to the increasing world demand for Organic Products.

**Table 2.11:** Organic Certification Area and Production Statistics (2006--2012)

Year	Area in Hectare				Total	
	Certified Area(Kerala )	Certified (C) Area (All India total)	In Conversion (IC) Kerala	In Conversion (IC) All India	Kerala	All India
2006-07	11631.93	311786.94	3112.73	217143.4	14744.7	538171.35
2009-10	7352.67	757978.7	7516.67	327669.74	14869.34	1085648.45
2010-11	3870.27	600003	2727.37	177513.9811	6597.65	777516.882
2011-12	-	-	-	-	15790.49	-

(Source: APEDA)



**Table 2.12:** Certified Organic Area and number of organic Farmers in Kerala registered under Lacon and Indocert

Year	Area in Hectare		Total number of Farmers	
	LACON	INDOCERT	LACON	INDOCERT
2006-07	523.18	-	-	-
2009-10	3420.75	6325.41	3682	-
2010-11	5634.97	9579.63	7775	-
2011-12	8795.76	1063.09	10076	-
2012-13	10387	11496.79	13290	4579
2013-14	10537.07	12122.78	13514	18399

(Source: APEDA).

There is rich potential for promoting organic farming in Kerala in the light that intensity of inorganic agriculture here is not that severe compared to that in other States in the country. While the national average consumption of fertilizers and pesticides during 2002-2003 was 90kg/ha and 288g/ha respectively, it was only 60kg/ha and 224g/ha respectively in Kerala. This points to the positive side of agriculture in Kerala in terms of the already low levels of consumption of hazardous chemicals and, therefore, chances of redeeming farmers to organic agriculture are quite high.

#### **2.3.4. Organic Certification Agencies in Kerala:**

The State has a number of certified organic farmers who produce rice, vegetables and fruits. Some of them are under PGS certification (Participatory Guarantee System under PGS Council of India –a council formed by a group of organisations promoting organic In Kerala there are two major Certification Bodies operating in Kerala:

### **INDOCERT (Indian Organic Certification Agency):**

INDOCERT (Indian Organic Certification Agency) is an independent, nationally accredited, body accredited by APEDA (Agricultural and Processed Food Products) whose primary aim is in conducting inspections and granting certification for organic production methods. It started its activities in August 2002. This organization is operating in technical collaboration with FIBL (Research Institute on Organic Agriculture, Switzerland) and bio.inspecta (Swiss based organic certification agency). Currently, INDOCERT offering FSMS based ISO 22000:2005/I.S. 343:2000 (HACCP) certification to sectors such as seafood, dairy, meat, poultry, fruits & vegetables and other long/stable shelf life products like bakery & confectionaries, canned products, cashew, whole spices, cereals, tea, coffee etc.

INDOCERT provides organic crop production certification as per following standards:

- i. National standards for organic production (NPOP), Govt. of India
- ii. European Union regulations for organic production rules equivalent to EC.No.834/2007
- iii. United States organic standards USDANOP (National Organic Programme).

### **Lacon India**

Lacon Quality Certification (India) Pvt. Ltd, a subsidiary of LACON GmbH, Germany, offers a wide range of certification services for agriculture and food production sectors. The main areas of services are inspection and certification of organic production; processing and handling of agricultural produces; export and import of such products as per the relevant national rules and Certification for International Featured Standards (IFS) LACON Quality

Certifications (India) Ltd. is incorporated as a Private Limited company in the state of Kerala as per the Companies Act 1956. It is the subsidiary of LACON GmbH., Germany having its head office at Theepany, Pathanamthitta (District), Kerala.

### **Standards inspected and certified by Lacon**

- Organic regulation (EC) No. 834/2007
- National Organic Program (NOP) USDA
- National Programme for Organic Production (NPOP), India
- Japanese Agricultural standards (JAS)
- Private organic labels
- International Featured Standards (IFS)
- GLOBAL G.A.P. (EUREPGAP) certification
- Protected Geographical Indications (PGI) Reg. (EC) No. 510/2006
- Beef labelling regulation (EC) No. 1760/2000

### **Accreditations**

Lacon is accredited in INDIA by APEDA (Agricultural and Processed Products Export Development Authority), Ministry of Commerce, Government of India, on behalf of NAB (National Accreditation Board), under the National Programme for Organic Production (NPOP). Lacon was first officially approved for organic inspection and certification in the European Union in 1992. Lacon is accredited according to EN45011 by AKS, the governmental Accreditation Body in Germany under the registration number AKS-Z-60801 Lacon has been registered in Austria since 1997 and is accredited by the Ministry of Economy and Employment in Vienna, Austria.

Lacon is directly accredited by USDA (United States Department of Agriculture) for inspection and certification based on US-NOP (National Organic Programme) standards. Lacon is accredited for GLOBAL G.A.P (EUREPGAP) certification by the Ministry of Economics and Labour, Austria.

Kerala with rich endowments for cultivation of a wide variety of agricultural and horticultural crops specifically spices, plantation crops, medicinal plants etc with potential international markets, is an ideal destination for promotion of organic farming due to the changing preferences worldwide towards organic and eco-friendly products. A holistic approach involving integrated nutrient management, integrated pest management, enhanced input use efficiency and adoption of region-specific promising cropping systems would be the best farming strategy for Kerala.



## **ECONOMIC AND SUSTAINABLE ASPECTS OF ORGANIC FARMING IN THE SPICES SECTOR OF KERALA:**

**Contents**

- 3.1 Organic Farming and Sustainability of Agriculture in Kerala
- 3.2. Organic Agriculture as a Way to Promote Sustainable Agriculture in Kerala
- 3.3. Relevance of Organic Spices production in Kerala Agriculture
- 3.4. Status of Organic Spices Producers in Kerala
- 3.5. Major constraints of Organic Spices Producers in Kerala

The last chapter illustrated the present scenario of organic farming in Global, Indian and Kerala context. The scopes of promoting organic agriculture in Kerala also were explained herein. This chapter deals with the current scenario of organic farming of Spices. The chapter focuses the economic and sustainable aspects of Organic farming in the spices sector of Kerala. The relevance of organic spices production, status of spices producers, possibility of promoting organic spices production and present constraints connected with organic farming of spices in Kerala is reviewed in the present chapter.

The growing demand for Organic spices and herbs in developed nations especially in EU market is providing opportunities for suppliers who can meet the strict EU market quality requirements. The certified Organic spices which address the sustainability issues will provide better opportunities for organic spices producers. The foreign market entry is mainly based on quality as they conduct strict checking for pesticide residues. Demand for Organic Spices and herbs are showing an increasing trend in EU. In 2012, total EU imports of

spices and herbs amounted to 480 thousand tonnes with a value of € 1.7 billion. The volume of imports grew by an average of 3.5% per year between 2008 and 2012. Even though the price of some spices and herbs show large fluctuations, in general the prices are on the rise. The Spices and herbs are characterised by inflexible demand meaning that the import and demand for spices and herbs does not drop when prices rise. This feature of Spices market provides long lasting opportunity for Organic Spices producers. The organic spices cultivators in Kerala should seize this astonishing opportunity.

### **3.1 Organic Farming and Sustainability of Agriculture in Kerala:**

The concept of ‘Sustainability’ in agriculture integrates environmental health, economic profitability and social equity. Sustainability rests on the principle that meets the needs of the present without compromising the ability of future generations to meet their own needs. Therefore, natural and human resources are prime factors in sustainable agriculture. The major emphasis of the sustainable agriculture on a system that allows a larger and comprehensive view of the consequences of farming practices on both human communities and the environment. A transition to sustainable agriculture is a process which requires a series of small, but realistic steps to convert present agricultural practice into sustainable agriculture. Many inputs and techniques used by conventional farmers are also used in sustainable agriculture.

In the Sustainable agriculture, reliance on natural, renewable, and on-farm inputs are more relevant. The strategy adopted in sustainable agriculture gives equal importance to the environmental, social, and economic impacts. Converting to sustainable practices does not mean simple input but, enhanced management and scientific knowledge for conventional inputs, especially chemical inputs that harm the environment on farms and in rural communities.

The goal is to develop efficient, biological systems, which do not need high levels of material inputs. Sustainable approaches are those which use least toxic and least energy intensive inputs and maintain productivity, profitability and environmental quality.

Kerala has endowments for cultivation of a wide variety of agricultural and horticultural crops specifically spices, plantation crops, medicinal plants etc. The growing international market for organic products makes Kerala as an ideal place for promotion of organic farming. Kerala is a major producer of spices that form an important part of the cash crops of the state. Kerala produces 96% of the country's output of pepper. The important spices produced here are cardamom, cinnamon, clove, turmeric, nutmeg and vanilla. The State accounts for 45% of the plantation crops in the country. Nearly 20% of its population depend on plantation crops for their livelihood.

The first half of the nineties witnessed some enthusiasm in the farm economy of Kerala, which reflected in the marked rural prosperity resulting from better growth rate in Kerala's agricultural economy. Price decline and lower productivity levels experienced during the late Nineties and its perseverance since then had created crisis and stagnation in Kerala's agrarian sector. Tables 3.1 and 3.2 illustrate the fluctuations in Kerala's agricultural sector.

**Table 3.1** Share of Agriculture on Income

Income	1987-88		2004-05		2008-09		2014-15	
	Kerala	India	Kerala	India	Kerala	India	Kerala	India
	33.8	31.2	16.1	20.3	13.6	17.8	8.98	17.9

Source: Central Statistical Organization

Table 3.1 shows that Kerala experienced steep decline in the share of agriculture and allied sectors. The share of agriculture to the state income declined from 33.8% in 1987-88 to 13.6% in 2008-09.

**Table 3.2:** Annual Growth Rate in Agricultural Income and Share of Agricultural GSDP in Kerala (Base 2004-05)

Year	Rate of change over previous year	Share of Agriculture and Allied Sectors in GSDP
2004-05	-	17.48
2005-06	6.25	16.67
2006-07	-8.17	14.48
2007-08	-2.24	13.15
2008-09	2.08	12.7
2009-10	-3.01	11.5
2010-11	-7.28	10.1
2011-12*	-0.15	9.1
2012-13**	5.62	8.95

Source: Directorate of Economics and Statistics

\*Provisional \*\* Quick

Table 3 .2 shows that the trend in agricultural income and the share of agriculture and allied sectors to Gross State Domestic Product (GSDP) in Kerala during the last ten years witnessed a declining trend. The agriculture sector in the State recorded a negative growth of 1.3 per cent during the 11<sup>th</sup> Plan period (2007-2012). Its share in the GSDP dropped to 9.1 per cent in 2011-12 compared to 26.9 per cent in 1990-91. At the same time, a large section of the rural population is still depends on agriculture for employment and livelihood. This poses a serious challenge to planners and administrators. The Economic Review, 2012, notes that growth performance of agriculture



sector in the State has been fluctuating with a positive growth of 1.8 per cent in the Tenth Plan period.

In the context of declining share of agriculture sector, it is relevant to promote Sustainable agriculture which adds new productive elements to the system by maintaining or improving on- and off-farm biodiversity. The Sustainable agriculture can contribute significantly to increased food production, as well as make a significant impact on rural people's welfare and livelihoods. But, a successful sustainable agricultural sector requires both integrated action by farmers and communities along with appropriate policy support at the Government level. A wide variety of resource conserving technologies and practices such as integrated pest management, integrated nutrient management, conservation tillage, agro-forestry, water harvesting in dry land areas, and livestock and aquaculture integration into farming systems were adopted in sustainable agriculture. These practices not only increased yields, but also reduced adverse effects on the environment.

There have been a number of initiatives and several movements in Kerala in agricultural sector to promote sustainable agricultural practices such as organic and bio-dynamic agriculture. The Organic agriculture movement gained attention in the 1990's. During this period the Organic Certification agency INDOCERT has been established. The International Trade Trends and WTO Concerns in this area, prompted the Government of Kerala to establish a National Institute for Organic Farming in the state. During 2003-04, Dept. of Agriculture has set up a cell for promotion of Sustainable Agriculture and Organic Farming in Wayanad. In the year 2010-11 a programme to promote organic farming in selected 20 blocks was initiated. One of the earliest initiatives in this field was in 2002 at the Poabs Organic Estates, which was certified organic by Skal International of the Netherlands and Naturland of

Germany. The estate, in the Nelliampathy hills in Palakkad district, was taken over by the Kerala forest department after the 99-year lease ran out. Adat panchayath in Thrissur district has started organic cultivation of rice in an area of 2,500 acres, promoting integrated farming system, which is known as Adat model. Similarly Marappanmoola in Wayanad has another model organic farming system involving hundreds of farmers. Marketing of organic produce is also growing in the form of Eco-shops, Organic Bazaars, farmer's open market etc. Self help groups of women are encouraged to undertake organic farming of vegetables in some panchayats.

There is a rich potential for promoting organic farming in Kerala as the intensity of inorganic agriculture is not that high in Kerala compared to other States in the country. While the national average consumption of fertilizers and pesticides during 2002-2003 was 90kg/ha and 288g/ha respectively, it was only 60kg/ha and 224g/ha respectively in Kerala. This points to the positive side of agriculture in Kerala in terms of the already low levels of consumption of hazardous chemicals and, therefore, chances of redeeming farmers to organic agriculture are quite high. The State Department of Agriculture commenced organic farming promotional activities since 2002-03. In the following year, the Department set up a cell for Promotion of Sustainable Agriculture and Organic Farming. It has also launched two brands, namely 'Kerala Organic' and 'Kerala Naturals' to market organic farm produces.

The State has a number of non-certified organic farmers who produce rice, vegetables and fruits. Some of them are under Participatory Guarantee System (PGS) under the PGS Council of India –a council formed by a group of organisations promoting organic farming among small and marginal farmers in the country and which is accredited by NCOF. Kerala State Jaiva Karshaka Samithy has a number of registered organic farmers who are not

certified. Similarly Kudumbashree Mission, Mahila Samakhya Society and many other organisations have promoted organic farming among women and most of them can be treated as farmers under conversion.

### **3.2 Organic Agriculture as a way to promote Sustainable Agriculture in Kerala**

Sustainable agriculture is an agricultural system that promotes environmentally, socially and economically sustainable sound production of food and agricultural produces leading to Integrated Sustainable Development. In addition to improving food quality and environment, the potential for organic agriculture to reduce production costs, to stabilize yields and to increase farmers' income, is considered as high under Indian scenario other than the WTO stipulation on export of agricultural products. The organic agriculture is one of the methods for Sustainable agriculture which integrates three main goals-environmental health, economic profitability, and social and economic equity.

There are different approaches such as agro ecology, organic agriculture, ecological agriculture, biological agriculture etc for sustainable agriculture. Sustainable agriculture fulfils local food production with low-cost, readily available technologies and inputs without harming environment. The organic agriculture is one of the methods adopted for promoting sustainable agriculture. Compared to developed nations, in developing countries the organic practices to a great extent can boost output as the existing system of farming is based on low-input method.

Kerala with strong agrarian tradition could employ inherited farm knowledge in resource conservation, integrated pest and nutrient management and innovative eco-friendly farm practices into farming systems. These practices not

only increases yields, but also reduce unfavourable effects on the environment. In the initial phase of organic farming, many farmers experienced lower yields and increased cost of production. The productivity loss of organic agriculture often converted to increased incomes for farmers by eliminating the costs of purchasing chemical inputs and fetching premium price in the market.

Organic agriculture is still in an early stage of growth in Kerala. The domestic market for organic produce is not well developed here. The awareness level of consumers in Kerala about organic products is gradually increasing as the news on hazardous chemical pesticides content in vegetables from other states is getting reported every day. For promoting organic agriculture in Kerala, strong regulations, institutional development, subsidies, investments and capacity-building including measures such as financial support for farmers in conversion; and establishment of the Department for Organic Agriculture are essential.

The major economic benefits of organic farming largely fall into three categories:

1. **Higher profitability:** Compared with conventional farming organic farming gains higher economic benefits as a result of lower costs or higher price or both.
2. **Increased sustainability:** The organic farming incurs considerably lower external costs resulting from damage to the environment, ecosystem services and human health. This reduced externalities preserves quality of eco system for future generations.
3. **Public benefits:** The organic farming ensures public benefits such as better eco-system, biodiversity conservation, landscape preservation, human health, reduced water contamination and carbon sequestration.

### **Means to promote organic agriculture in Kerala:**

As the organic agriculture is in the initial phase in Kerala, to get the most out of the opportunities and overcome the challenges, organic agriculture needs to reach mainstream policies and must be seen as a crucial strategy. It would be helpful to concentrate on committed effort by government, NGOs, farmers and entrepreneurs. A starting point for government engagement is to give recognition and encouragement to the organic sector. Stimulation of private investment is an important element to promote organic farming. The government can encourage private investments by providing funds or through public-private partnerships; mapping investment possibilities; showing long-term commitment to the sector; and tax rebates.

In most countries, NGOs assisted the early development of the organic sector. NGOs come in many forms, including associations of organic producers; publicly-oriented interest groups and environmental or consumer organizations. NGOs play an important role in creating and raising awareness among consumers and farmers and also promote certified organic farming. In Kerala also large organic movements are based on NGOs and farmer organisations. They play a vital role in farmer support, market promotion and information guidance. So NGOs and farmer groups are encouraged and promoted for organic agricultural Development in Kerala.

One of the important obstacles in the organic farming development in Kerala is shortage of organic manures. Farmers also need organic seeds and good quality planting materials in organic farms. Those needs create new business opportunities and in some countries the input suppliers have themselves been very active promoters of organic farming. The promotion of farmers to use local resources more efficiently, training facilities, as well as

education programmes in organic farming must be provided. The input production units must be created at local level. For this, technical and financial assistance must be provided by the Government.

To enhance the farm practices, organic farming practices related information via conducting seminars on organic farming; providing informative publications through institutions, associations and or government agencies. The advisory service that offers training and information are provided to organic farmers.

### **3.3 Relevance of Organic Spices Production in Kerala Agriculture:**

Spices are defined as "a strongly flavoured or aromatic substance of vegetable origin, obtained from tropical plants, commonly used as a condiment". Spices are to a large extent processed into other products: bakery products, soups and sauces, snacks, etc. Although they are ingredients to a wide range of products, the most spices have a medicinal and aromatic property which necessitates the sustainability and organic value of spices.

The demand for spices and its products are continually increasing both in the domestic and external markets. India has a worldwide reputation as the only country which produces almost all kinds of spices and it is through the export of spices the country earns foreign exchange over a long period of time. India is the largest producer as well as the consumer of the spices in the world. There is stunning prospect for Kerala in the export of spices; but at the same time, exporters must convey products that abide by with quality requests and environmental standards of impulsive international markets. This necessitates costly certification procedures and training for farmers. An intensive multi feted effort is essential to induce organic farmers in Kerala who have

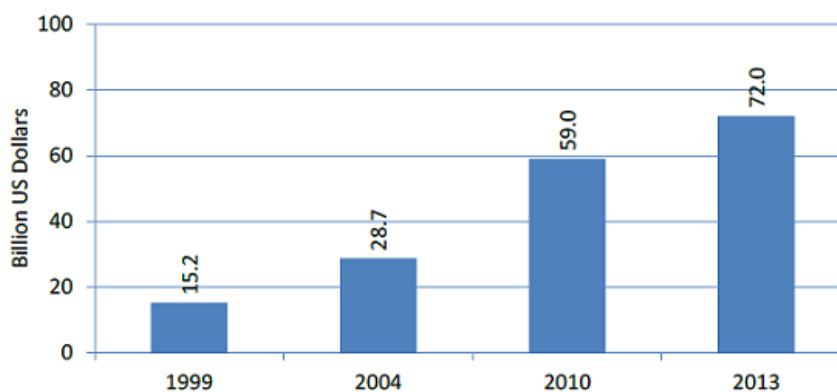
indigenous knowledge and experience in natural farm practices with technical up gradation, effective farm management and marketing skills.

The perception of sustainability has become focal point of the foreign markets in recent years, which necessitates adoption of organic cultivation. Demand for organic spices is growing in Western Europe, especially North-Western Europe. In countries such as Germany, The Netherlands, Denmark and Sweden, consumers have become more and more conscious about the health and ecological problems arising from chemical fertiliser and pesticides based farming. At the same time, the organic sector faces supply shortages of spices and herbs. If the organic spices cultivators of Kerala can exploit these opportunities in the foreign market, the organic spices sector of Kerala could generate a sustainable growth of organic spices cultivation. Figure 3.1 illustrates the steep increase in organic food and drink in the global market:

**Figure 3.1**

**Growth of the global market for organic food and drink 1999-2013**

Source: Organic Monitor



The major export destinations of organic products are EU, US, Switzerland, Canada, South East Asian Countries and South Africa. Kerala has lot of potential to produce all varieties of organic products due to the favorable agro climatic amenities. More than that, Kerala has inherited tradition of organic

farming which guarantees organic producers to utilise the market potential. Table 3.3 illustrates the export details of organic spices.

**Table 3.3**  
**Export of Select Organic Spices from India, 2009-2010**

	<i>Quantity (MT)</i>	<i>Value (lakhs Rs.)</i>	<i>Kerala's share (MT)<sup>a</sup></i>	<i>Kerala's share (lakhs Rs.)<sup>b</sup></i>
<i>Ginger</i>	79.34	133.09	71.41	119.78
<i>Pepper</i>	295.71	710.02	266.14	639.02
<i>Cardamom</i>	0.17	3.06	0.15	2.75
<i>Clove</i>	3.51	14.46	3.16	13.01
<i>Nutmeg</i>	3.02	13.67	2.72	12.3
<i>Mace</i>	0.11	1.01	0.1	0.91
<b>Total</b>	<b>381.86</b>	<b>875.31</b>	<b>343.67</b>	<b>787.78</b>
<sup>ab</sup> Estimated at 90% of total production. Data Source: Spices Board of India, Kerala office (April 2011)				

Another important affirmative aspect of organic product is the premium price received for organically certified products. This attractive feature of organic products entrust the organic farmers with enhanced economic gain for their farming. Table 3.4 shows the premium price rates of certain organic commodities.

**Table 3.4**  
**Average Price Premium Received for Certified Organic Commodities for IOFPCL Farmers from 2010-2011 (as Reported by IOFPCL)**

<i>Product</i>	<i>Conventional Price (rs./kg)</i>	<i>Organic Price (rs./kg)</i>	<i>% Difference in Price</i>	<i>Quantity sold (kg)</i>
Black Pepper	150	180	20	1,300
White Pepper	200	350	75	101
Cardamom	1,000	1,300	30	135
Coffee	52	55	5.77	57,555
Vanilla	1,000	2,000	100	329
Fresh Coconut	14	18	28.57	8,573
Fresh Turmeric	20	25	25	2,500
Fresh Ginger	20	40	100	500
Fresh Chili	50	300	500	500



The Spices Board of India has taken many initiatives in promoting the production and export of organic spices. The Organic production of pepper and cardamom is being undertaken for exports in the international circuit. The market for Indian organic spices is growing; at present exports around 50tonnes of different varieties of organic spices. Exports of spices have been significantly increased due to the major shift of farming practices to organic methods.

The Spices Board encourages non-governmental organisations and farmers' groups to promote and adopt organic farming techniques. Infrastructure development for production of organic inputs is on stream in prominent growing areas. Development of vermi-compost units and supply of post-harvest aids for upgrading quality of the produce at farm level are also in progress. Spices Board India has prepared a comprehensive document on production of organic spices. It includes the organic concepts, principles, basic standards, production guidelines, documentation, inspection and certification related to production methods. Research programs on organic cultivation form the important part in spice production. The research work is carried out at the Spices Board's Indian Cardamom Research Institute at Idukki district in Kerala.

### **3.4. Status of Organic Spices Producers in Kerala**

Kerala accounted for 95 per cent of the total pepper production in India and its share in the cardamom production of the country is 78 per cent. The cultivation of spices is heavily concentrated in Idukki and Wayanad districts of Kerala. The organic farming has an immense potential to augment the sustainability of Kerala agriculture by enhancing the social and cultural well being of rural people and communities. It also offers economic gain through foreign exchange earnings from the export of organic spices. The organic

farming can provide better net returns to farmers than conventional agriculture. It also plays an important role in the creation of employment opportunities in the rural economy of Kerala.

The organic spices are used mainly for food flavoring and preservation. However, spices have medicinal, aromatic properties that also make them useful in a number of industries including:

- Perfumes
- Cosmetics
- Medicine
- Food Flavoring
- Food Preservation
- Personal Hygiene Products
- Aromatherapy
- Pharmaceuticals
- Beverages

Medicinal Spices and herbs are known not only for their taste, aroma and flavor, but also for their medicinal properties and value. Because of the medicinal value of spices, majority foreign demand for spices is stick on the certified organic spices. The certified organic spices cultivation in Kerala is mainly lead by NGOs such as Kerala Agricultural Development Society, Peeurmedu Development Society (PDS) in Idukki district and Wayanadu Social Service Society (WSSS) in Wayanadu district. The export of organic spices is showing marginal increase with the addition of more items and increased number of exporters. PDS Organic Spices is the Topmost Exporter of Organic

Spices from India. It exports certified organic spices to countries like USA, Japan, Germany, U.K, The Netherlands, France, Belgium, Australia etc. At the same time, the certification for organic spice farms is an essential pre-requisite for marketing their produce, especially in the international markets. The following are the details of certified organic spices exporters in India:

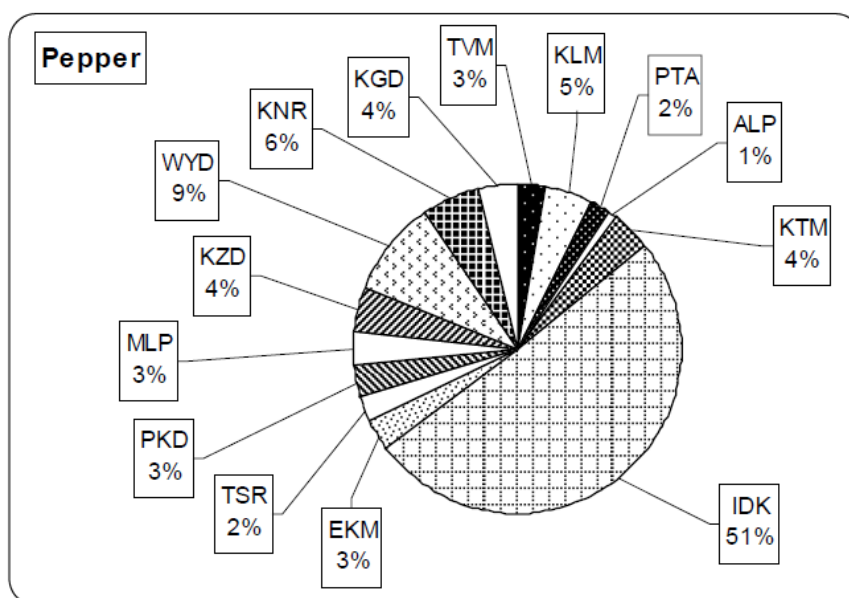
**Table 3.5:** Major Indian exporters of Certified Organic spices

Name of Exporter	Address	Items exported
Peerumade Development Society(PDS)	Peerumade, Idukki District, Kerala.	Cardamom, Black & White Pepper, Ginger, Turmeric, Vanilla, Clove, Camboge, Nutmeg and Mace
Samanwita	G.Udayagiri Kandhamal Dist. Orissa	Ginger, Turmeric, Mustard and Tamarind.
Health of People and Environment (HOPE)	155, Ettines Road, Ooty, Tamilnadu	Rosemary, Thyme, Parsley and Oregano(fresh, dehydrated and oils)
Bosco Reach-Out	Don Bosco, Guwahati, Assam.	Don Bosco, Guwahati, Assam.
Destitute Women's Upliftment Society , (DWUS)	Nagamapal Lamabam Leikai, Imphal, Manipur	Ginger, Turmeric and Chillies.
Waynad Social Service Society (WSSS)	P.B..No 16, Mananthavady, Wynad Dist. Kerala.	Black & White Pepper, Ginger and Turmeric.
Varanashi Agro Farm	Adyanadka - 574 260 D.K, Karnataka	-
Echo-Agri Research Foundation	142, 4th Cross, 4th Main Bannimantap "C" Layout Mysore -15, Karnataka	-
M/s.Indian Farmer's Movement (INFARM)	M.C.B.S Bhavan Sagar Road Shimoga-577 204	-
Harrisons Malayalam Limited	PB No. 502 Bristow Road, Wellington Island, Cochin	Black & White Pepper, Ginger, Turmeric

Source: Spices Board data, 2014

According to International Pepper Community (IPC) the pepper produced in Kerala fetches a premium price in international market in view of its intrinsic quality. The focused effort on organic pepper cultivation in the state has to be given priority to tap the international market. Among the spices cultivated in Kerala, black and cardamom are the two major ones. The figure 3.2 illustrates the pepper production in various districts of Kerala.

**Figure 3.2:** Pepper production (Percentage contribution) of various districts of Kerala 2010-11.



Source: *Agricultural Statistics 2010-2011, Department of Economics and Statistics, Kerala State.*

According to the Spice Board of India, India is one of the largest producers, consumers and exporters of spices in the world with different varieties of over 65 out of the 109 spices listed by the Indian Standards Institute. The estimated world trade in spices is 1.05 million tonne valued at approximately \$2,750 million. Kerala is one the largest spice-producing regions in the country with 252,660 hectare of land under spice cultivation and production volume of approximately 137,862 tonne. The area under spice

cultivation in Kerala has declined from 258,932 hectare in 2008, but the production has increased from 127,534 tonnes in the last four years. Kerala produced approximately 36,000 tonne of pepper and 11,440 tonne of cardamom in 2011

India produced around 1.34 million MT of certified organic products which includes all varieties of food products namely Sugarcane, Cotton, Basmati rice, Pulses, Tea, Spices, Coffee, Oil Seeds, Fruits and their value added products. The production is not limited to the edible sector but also produces organic cotton fibre, functional food products etc Among all the states, Madhya Pradesh has covered largest area under organic certification followed by Rajasthan and Uttar Pradesh India exported 135 in 2012-13 with the total volume of 165262 MT including 4985 MT organic textiles. The organic agri-export realization was around 374 million US \$ including 160 US \$ organic textiles registering a 4.38% growth over the previous year. Organic products are exported to EU, US, Switzerland, Canada, South East Asian countries and South Africa. Oil seeds - Soybean (41%) lead among the products exported followed by Cane Sugar (26%), processed food products (14%), Basmati Rice (5%), Other cereals & millets (4%), Tea (2%), Spices (1%), Dry fruits (1%) and others The table 3.6 illustrates the years of organic farming or experience of sample respondents who are registered certified spices producers in Kerala.

**Table 3.6:** Years of organic farming or experience of sample respondents

Years of organic farming	Frequency	Percent
1 -4 years	164	27.8
5 -8 years	377	63.9
More than 9 years	49	8.3
Total	590	100

Source: Survey data, 2013-14

Majority of certified organic spices producers in Kerala have five to eight years of organic farming

**Table 3.7:** Certification Agency of organic farmers in Kerala

Certification Agency	Frequency	Percent
INDOCERT	299	50.7
Lacon	291	49.3
Total	590	100.0

Source: Survey data, 2013-14

As illustrated in the table 3.7, 50.7 percentage of certified organic spices producers acquired organic certification from INDOCERT and 49.3 percent sample respondents acquired certification from Lacon.

**Table 3.8:** Percentage of certified organic farmers received Premium price

Status of premium price	Frequency	Percent
Premium price received	473	80.2
Not Received	117	19.8
Total	590	100.0

Source: Survey data, 2013-14

Among the sample respondents 80.2 percentage received premium price for their produce as illustrated in table 3.8.

The type of certification is an important determinant of cost of organic certification. About 52 percent of sample respondents obtained individual certification and rest 48% obtained group certification which is presented in table 3.9

**Table 3.9** Type of Certification

Type of Certification	Frequency	Percent
Group	283	48.0
Individual	307	52.0
Total	590	100.0

Source: Survey data, 2013-14

Majority of certified organic spices producers experienced increase in revenue after two years of organic farming, which is depicted in table 3.10

**Table 3.10:** Increase in revenue after 2 years of organic farming

Status of Revenue after 2 years	Frequency	Percent
Yes	519	88.0
No	71	12.0
Total	590	100.0

Source: Survey data, 2013-14

Table 3.11 illustrates the willingness of certified organic spices cultivators to continue with organic production.

**Table 3.11:** Ready to continue with organic production

Continue with organic production	Frequency	Percent
Yes	565	95.8
No	25	4.2
Total	590	100.0

Source: Survey data, 2013-14

About 95.8 percentages of certified organic spices cultivators are ready to continue with organic cultivation

### **3.5 Major constraints of Spices Producers in Kerala:**

Along with the opportunities in the international market, the organic spices producers in Kerala face so many hurdles in the adoption of organic farming. The awareness on organic farming techniques is low among cultivators. In order to fetch the premium price in the international market, basic law on organic farming and certification of organic produce, which would comply with the international legislative requirements are essential. But the present development in the organic farming sector is not enough to guide the small scale farmers into certification procedures. The difficult procedures and cost of certification keeping many farmers away from certified organic production of spices.

There are so many economic, social and technological problems connected with introduction of organic farming in Kerala. Even though organic farming is based on our traditional eco-friendly farming practices, scientific and innovative farming techniques are essential for economically successful organic cultivation. The traditional farming knowledge should cope with the present farming situation in Kerala in a sustainable way. As a social obligation to safeguard human and environmental health, from personal farms to large agricultural associations are essential to root up organic farming in Kerala.

The social and economic problems connected with introduction of organic farming in Kerala are following:

- Lack of respective internal infrastructure (associations/unions/centres for organic produce growers) to enhance existing organic farmers.
- Lower integration with international structures (EU, IFOAM) to get access to external markets for organic produce.



- Lower popularization of organic farming technologies, ecological education among the population and agricultural commodity producers, extension services to producers.
- Limited knowledge among organic farmers about markets for organic produce.
- There are risks connected with possible changes of the situation on the market for organic produce during conversion period (2-4 years).
- Temporary decrease of overall production may cause financial losses for farmers who converting to organic farming
- There is no effective mechanism for risk insurance in agricultural production.
- The state financial support during the conversion period and grant of subsidies for organic agricultural production is few.
- The costs for getting farms certified as organic it is a major restraint for enhancing organic production in the country. As the certification process for organic farming is very lengthy and complex, the cost of certification is also unaffordable for small farmers.

In order to induce farmers to introduce new forms of agricultural production and support them during the conversion period, when financial losses are possible, governments of many countries provide them with corresponding financial assistance. According to a recent monitoring survey, producers say they have improved their organizational and entrepreneurial skills, have a better understanding of organic cultivation and have acquired the necessary technical knowledge on producing organic spices. The NGOs have an important role to play in training the producers, providing market

information and facilitating their relationships with exporters or directly with export markets. As the demand for Indian spices is increasing day by day, Kerala possesses many inherent advantages in organic spices production. The promotion of organic spices production in Kerala could be done effectively with strong organic development strategy and marketing network. The support for certification cost also to be provided.



## ROLE OF INSTITUTIONS IN PROMOTING ORGANIC AGRICULTURE IN KERALA

● Contents ●	4.1 Schemes and welfare Programmes of Spices Board to Promote Organic Farmers
	4.2 Certification Agencies in Kerala and their Role in Promoting Organic Certification
	4.3 Relevance of Wayanad Social Service Society in Promoting Organic Spices Cultivation
	4.4 Accomplishments of Kerala Agricultural Development Society as a Model in promoting Organic Spices Production

The last chapter dealt with the relevance of promoting organic spices cultivation in Kerala. The present chapter explains the role of institutions such as Government, NGOs, Farmers' associations in promoting organic agriculture, especially certified Organic farming of spices. The chapter deals with the objective of analysing the role of institutional support in promoting certified Organic production of spices in Kerala.

The organic spices export has been increasing over the years. At present India exports around 50 tonnes of different varieties of organic spices. The increase in exports of spices is due to the major shift in farming practices to organic methods. India grows over 50 different varieties of spices. North America and Europe are the major organic spices markets. The organic spices command 10-30% premium in the international market. According to ITC, UNCTAD/GAT, more than 130 countries produce certified organic foods. The Indian share of the world trade in spices is 45-50 per cent by volume but only 25 per cent in value terms. In order to meet the quality criteria in the

international market, the organic farmer has to follow so many procedures. Under this situation, the NGOs and the other farmer supportive institutions have a great role to play. In Kerala, such organizations have great importance in promoting organic farming. NGOs have promoted 45 certified products such as spices, coffee, fruits and Ayurvedic preparations. Export of organic spices from Kerala is showing an increasing trend with the efforts of NGOs in Idukki and Wayanadu districts.

#### **4.1 Schemes and welfare Programmes of Spices Board to promote Organic Farmers:**

The Spices Board was constituted in 1986 under the Spices Board Act 1986. Spices Board is one of the five Commodity Boards functioning under the Ministry of Commerce & Industry. It is an autonomous body responsible for promotion of spices exports. It is also the flagship organization for the development and promotion of Indian spices worldwide. The Board acts as an international link between the Indian exporters and the importers abroad. The Board has been spearheading activities for excellence of Indian spices, involving every segment of the industry. The following are the main functions of Spices Board.

-  Promotion of exports of spices and spices products
-  Maintenance and monitoring of quality of exports
-  Development and implementation of new production methods through promoting scientific, technological and economic research
-  Encouraging organic production and export of spices
-  Registration and licensing of all spices exporters

- ✚ Assistance for studies and research on better processing practices, foolproof quality management systems, improved grading methods and effective packaging techniques.
- ✚ Facilitating infrastructure for processing and value addition
- ✚ Guidance to farmers on getting higher and better quality yields through scientific agricultural practices

The global demand for organically produced spices and other food products is growing rapidly in developed countries like Europe, USA, Japan and Australia. Worldwide, food trends are changing with the increasing health concern. Since spices form part of many medicines, the demand for organically produced spices is increasing. Spices Board of India is taking many initiatives for promoting the production and export of organic spices. Following are the major promotional measures adopted by Spices Board for organic cultivation of spices:

- Spices Board of India has prepared a document on production of organic spices during 1998. It features the organic concepts, principles, basic standards, production guidelines, documentation, inspection and certification. The document has been published after approval by the National Committee constituted by the members of IFOAM in India.
- The Board with the Association of Members of IFOAM in India has conducted a training program on 'Inspection and certification Procedures' to the officials of the Board and NGOs during 1998. The Board encourages non-governmental organisations and farmers' groups to promote and adopt organic farming techniques. Infrastructure development for production of organic inputs is on stream in prominent growing areas.

- Development of vermi-compost units and supply of post-harvest aids for upgrading quality of the produce at farm level is provided by the Board.
- Spices Board is regularly conducting training programmes to the spice growers, farmers' groups, members of NGOs and Officials of State Agriculture Dept on principles and practices of organic farming with special reference to spices.
- Research programs on organic cultivation form the important part in spice production. The research work is carried out at the Spices Board's Indian Cardamom Research Institute at Idukki district in Kerala.
- **Providing Assistance for Certification of Organic farms/Processing units:** Certification for organic spice farms is an essential pre-requisite for marketing the produce as organic especially in the international markets. Realizing the potential for export of organic spices, the Spices Board provides assistance for certification of organic farms. The programme aims to help growers/processors of spices in acquiring organic certification. Board is assisting individual farmers/processors and groups of farmers, NGOs and Farmers Co-operative Societies/Associations in acquiring certification for their farms/processing units. The Eligibility for assistance is Possession of a valid confirmation or non conversion or organic certificate from any of the Inspection And Certification Agency accredited under National Programme For Organic Production (NPOP). A subsidy of 50% cost of the certification, subject to a maximum of Rs.75000/- for group of farmers, NGOs and Farmers Co-operative Societies/Associations were

provided by the Board. Individual farmers and processors are eligible for 50% of the cost of certification subject to a maximum of Rs.25000/- per certification. Cost for maintaining Internal Control System in groups also will be considered within the maximum limit of Rs.75000/- provided the cost involved for ICS is certified by a competent authority decided by the Board.

- **Facilitate sourcing of organic spices:** The Spices Board facilitates overseas buyers in sourcing organic spices from India. Spices Board regularly participates in Biofach, Germany to showcase and promote the Indian certified organic Spices to the international buyers. The country at present exports around 1400 MT (2011-12) tonnes of organic spices, valued at 47crore. USA, Germany, the Netherlands are the major countries to which Indian organic spices are exported.
- During the XII Plan period Spices Board implemented the scheme for “Export Oriented Production and Post Harvest Improvement of Spices” for improving productivity of cardamom (small and large) and, Post Harvest Improvement Programmes for Other Spices. Integrated Pest Management in chilli, Organic Production of Spices and Development of Spices in North East are also implemented. An amount of Rs.0.24 Cr. covering an area of 483.41 ha. have been disbursed to growers as subsidy under the scheme.
- **Project on Production Development of Pepper in Idukki District under National Horticulture Mission (NHM):** This is a comprehensive project of the Board for replantation/rejuvenation of pepper in Idukki district with financial assistance of NHM. The project

has been implemented since 2009-10 and completed in 13-14. The achievements of the project include replanting and rejuvenation of pepper for a total area of 21396 Ha and 602 vermi compost units have been set up for promoting organic Farming in pepper. The Kerala programme was organized by State Horticulture Mission with technical support from CTC cell Spices Board at KPMC Trust Premises namely, Nallathanni and Peermade in Idukki District, Kerala on 18th and 19th October, 2013. The officers from Kerala State Agricultural Department, organic spices farmers and NGOs were present in the training.

To promote organic farming of spices in India Spices Board has also taken certain initiatives in the recent past. They are:

- Providing subsidy for obtaining Certification of Organic farms/ Processing units;
- Providing a maximum subsidy of Rs.1.30lakh per unit towards 50% cost to purchase equipments and accessories and mother culture for setting up the unit;
- Providing subsidy for setting up of vermin-compost (an organic manure which can be produced from farm-waste using earthworms) units.

The table 4.1 depicts the picture of assistance received by Kerala Agricultural Development Society (KADS) for various purposes from government agencies and Spices Board.



**Table 4.1:** Details of financial and technical assistance received by KADS from various govt. agencies

Year	Amount	Supporting Agency	Mode of Support	Purpose
2003	1.4 Lakhs	NCOF	Subsidy	Conduct of Training
2004	1 lakh	Spices Board	Financial and Technical	Organic Farming, Preparation of Vermicompost
2005	1.2 Lakh	Spices Board	Financial and Technical	Organic Farming, Preparation of Vermicompost
2006	1.4 Lakhs	Spices Board	Financial and Technical	Conduct of Training
2007	2 Lakh	Spices Board	Financial and Technical	Conduct of Training
2008	3.82 Lakh	Spices Board	Financial and Technical	Subsidy for organic certification & Seminar
2009	6.3 Lakh	Spices Board	Subsidy	Subsidy for organic certification & Seminar
2010	6.3 Lakh	Spices Board	Grant in Aid	Subsidy for organic certification & Seminar including study tour
2011	3.75 Lakh	Spices Board	Grant in Aid	Subsidy for organic certification & Seminar including study tour
2012	2.5 Lakh	Spices Board	Grant in Aid	Seminar on Value Addition
2013	17.5 Lakhs	SHM	Grant in Aid	Implementation of Organic Farming

Source: KADS data 2013

The Table 4.1 shows the details of both technical and financial assistance received by KADS for the promotion of organic farming in Idukki. During the period 2003-13, Spices Board provided financial and technical assistance to KADS for organic certification, training, Seminar and organic input production. The NCOF provided a subsidy of Rs 1.4 lakh for conducting training in the year 2003. The State Horticulture Mission (SHM) provided a grant in Aid of Rs 17.5 Lakh in 2013 for implementing organic farming in Idukki.

## **4.2 Government's Role in Promoting Organic Farming in Kerala:**

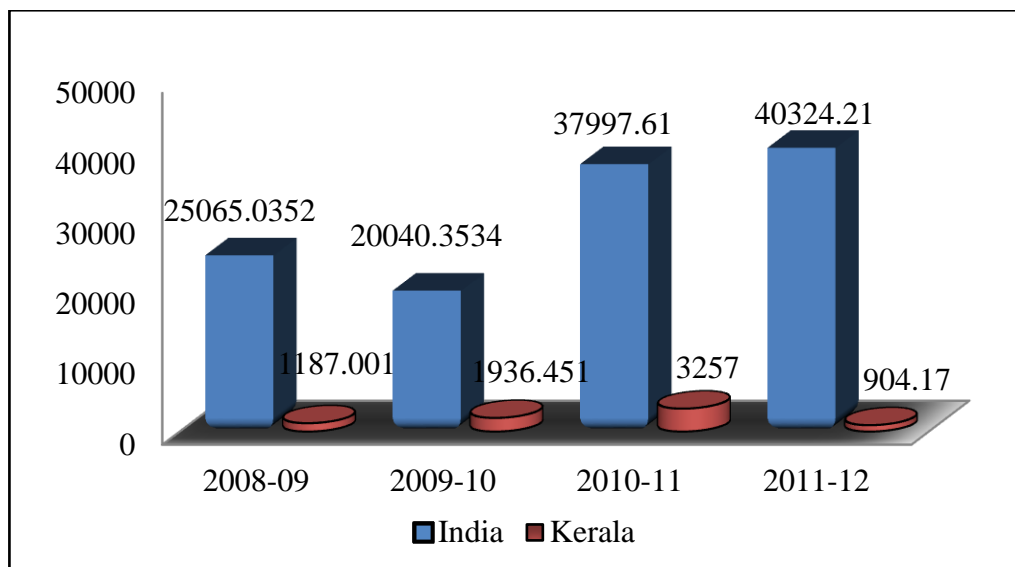
The government has a greater role to play in the initial development phase of organic farming in the following areas.

- *Investment and allocation of fund for the promotion of organic farming*
- *Production and distribution of Bio-fertilizers (BFs)*
- *Developing Standards for different BFs and Quality control*
- *Releasing of grants for setting up BF units*
- *Training and Publicity*
- *Promotion of export of certified organic products*

The government of India and the various departments of Government have initiated many development programs and policies for the promotion of organic farming. Some of the initiatives are:

- As part of 10<sup>th</sup> Five year Plan, Government of India has earmarked about Rs. 100 crore for the promotion of organic agriculture in the country.
- Central Government is promoting production and use of bio-fertilizer. Government has initiated a project called “National Project on Development and Use of Bio fertilizers” for this purpose.

- APEDA (Planning Commission, 2001) was created to serve as a nodal agency to promote organic agriculture and its exports.
- In May 2001 the National Steering Committee under the Chairmanship of Secretary, Commerce has approved the National Program for Organic Production (NPOP) ([www.apeda.com](http://www.apeda.com)).
- Under the NPOP, National Organic Standards have been evolved and developed Criteria for Accreditation of certification agencies, Accreditation Procedure and Inspection and Certification Procedures. In developing these standards and procedures due attention was paid to the guidelines as enumerated by international organizations such as International Federation for Organic Agricultural Movement (IFOAM), EU Regulations and FAO Codex Standards. \
- The National Logo for organic products on behalf of Government of India has also been developed (<http://www.apeda.com/organic.htm>).
- For promotion of organic produce exports, collaboration with all the major organic importing countries were made. Towards this APEDA is deliberating with European Union for inclusion of India in the list of third countries under Article 11 of the EU regulations No 2092/91. So that India's National Programme for Organic Production gets the required recognition under the EU regulations.
- As part of promotion of organic farming the government is providing aid for Bio- fertilizer production. Figure 4.1 illustrates the Bio fertilizer production in India and Kerala during 2008-09 to 2011-12

**Figure 4.1: Bio-fertilizer production in India and Kerala**



Source: compiled from NCOF (Data as provided by Production Units / State Governments (2013))

Figure 4.1 illustrates the status of bio-fertiliser production units in all India and Kerala. Compared to all India level, Kerala has only negligible quantity of bio-fertiliser production. It is one of the important areas that the state Government has to concentrate to ensure further growth of organic sector in Kerala.

### 4.3 Certification agencies in Kerala and their role in promoting Organic Certification

The most appropriate organic certification standard depends mainly on the final market of the organic product. The products must be certified based on those standards required by the importing countries to market them as “organic”. According to the Latest NPOP data (2014), there are 24 accredited certification bodies under NPOP in India. Among these, two Certification agencies are operating in Kerala. Table 4.2 presents the details.

**Table 4.2:** Details of Accredited Certification Bodies under NPOP in Kerala:

Name of the Certification Agency	Accreditation No.	Scope of Accreditation	Certification Mark
Indian Organic Certification Agency (INDOCERT)	NPOP/NAB/ 004	NPOP USDA NOP	
Lacon Quality Certification Pvt. Ltd, Thiruvalla (Kerala)	NPOP/NAB/ 006	NPOP USDA NOP	

Source: NPOP data

The two Organic certification agencies in Kerala promote organic certification with their intervention in the organic farming Groups. The following are the major developmental initiatives of INDOCERT and LACON.

The first agency in Kerala who received accreditation certificate from the Spices Board is M/s.Indian Organic Certification Agency (INDOCERT). The INDOCERT is supported by two international organisations from Switzerland, viz; M/s.FiBL(Research Institute of Organic Agriculture) and M/s.bio.inspecta, an internationally accredited Swiss Organic Certification Agency. M/s.FiBL support INDOCERT in the planning process, management consultancy, assistance in developing structures, procedures and documents, technical training of staff and support in achieving accreditation requirements. The other agency who received accreditation certificate from the Spices Board is M/s LACON, GMBH, a certification body for organic farming, based in Germany who is setting up a branch office at Renewable Energy Centre, Mithradham, Kerala, India. This agency has been in operation over 10 years in Germany and has branch offices in some other countries as well.

### **4.3.1 Indian Organic Certification Agency (INDOCERT):**

INDOCERT is an Indian certification body accredited as per National Programme for Organic Production (NPOP), Govt. of India and as per EN 45011/ISO 65, to carry out inspections and issue certificates for organic production systems. INDOCERT is offering certification for the domestic market based on the National Standards for Organic Production, and certification for export markets based on USDA NOP and rules equivalent to Reg. (EC) No.834/2007 & 889/2008. INDOCERT provides organic crop production certification as per following standards:

- i. National standards for organic production (NPOP), Govt. of India
- ii. European Union regulations for organic production rules equivalent to EC.No.834/2007
- iii. United States organic standards USDANOP (National Organic Programme).

#### **Steps for INDOCERT Certification:**

**Initial Application:** As an initial step for getting INDOCERT certification, the operator (the person responsible for the unit to be certified) has to contact the INDOCERT office. Upon request INDOCERT sends a detailed application package including the application form and procedure for INDOCERT certification. To apply for certification the operator needs to complete the application form and submit the filled in application form to the INDOCERT office.

**Pre-inspection procedure:** After receiving the filled in application form, INDOCERT sends an offer for inspection and certification along with the rate of fees. On accepting the offer, the operator needs to send 75 percent of the offer fees as advance in the form of DD in favour of M/s. INDOCERT payable at Aluva.

**Inspection:** Upon receipt of the advance payment, INDOCERT, in consultation with the operator, fixes the date and time for inspection. Prior to the inspection the operator must sign the inspection and certification contract. During the inspection, the INDOCERT inspector inspects the operational activities with regard to the compliance with the chosen organic standards. Specific questions about measures to be taken to ensure compliance can be discussed at that point. At the end of the inspection, the findings are discussed and documented in the inspection report. The operator acknowledges the inspection report with his/her signature and receives a copy of the same. The original inspection report will be forwarded to INDOCERT office for further certification process.

**Balance Payment:** After inspection, the total inspection and certification costs are finalised and an invoice is sent to the operator. The operator must send the remaining amount of the final invoice to INDOCERT.

**Certification:** Upon receipt of the full payment, INDOCERT will review the inspection report and the file will be submitted to the certification committee. If additional documents are required, a communication will be sent to the operator.

**Certification decision:** The certification committee will take the certification decision based on the available documentation. Certification decisions will be intimated within two months after the inspection report.

**Appeals:** If the operator does not accept the certification decision, he/she can request for reconsideration of the decision in writing. Then the case will be submitted to the certification committee for re-consideration. If the operator still does not agree with the revised decision, he/she can appeal to the appeals committee in writing within 30 days of the notification of certification decision. The file will then be submitted to the appeals committee, which takes the final decision on the case.

As per the National Standards for Organic Production, one year conversion period is a must. Sample analysis of the specified system has to be carried out for recognition of prior organic management. Validity of the certificate will be for one year from the date of certification. But according to NSOP and Reg. (EC) No.834/2007, Article 27(3), inspections of farm must be carried out annually for renewing certification status.

**Export:** For export, the certification services of INDOCERT cover the following countries:

- EU: rules equivalent to Regulation EC No. 834/2007 & 889/2008
- US: USDA National Organic Program
- Other countries upon request

**Efforts of INDOCERT to promote Organic Farming:**

INDOCERT offers various trainers training and awareness programmes in the field of organic agriculture certification, organic aquaculture certification, UTZ Certification and GLOBALGAP. The training programme is intended to disseminate various certification standards, procedure for Certification and the concept of Internal Control system for small holder group certification. The target participants are:

- Lead farmers
- NGOs interested in spreading the message of organic farming and clean environment
- Processing industry
- Traders and Exporters
- Government officials



- Trainers Training programme on “Organic Agriculture Standards and Internal Control System (ICS) for Small Holder Group Certification”.
- To enhance the competence of farmer groups/ entrepreneurs, INDOCERT provides trainers training programme on “Internal Control System for Small Holder Group Certification”. This training programme helps the participants to acquaint themselves with the inspection and certification procedure, Standards for Organic Production, minimum requirements of ICS and basic criteria of implementation of ICS. One day field visit to a certified farmer group/farm is also a part of training programme.
- INDOCERT provides training programme on organic aquaculture and “Internal Control System for Small Holder Group Certification” as per rules equivalent to EC regulations 834/2007.
- **GLOBALGAP Awareness programme:** Awareness program elements include:

Introduction to GLOBALGAP certification, GLOBALGAP Farmer Group Certification through farmer group quality management systems , GLOBALGAP control points and compliance criteria and General Regulation.

#### **UTZ Certified Code of conduct**

UTZ CERTIFIED Code of Conduct is an internationally recognized set of criteria for economic, social and environmentally responsible crop production.

INDOCERT conducts training programmes on:

- UTZ Certified code of conduct- Tea, coffee, Cocoa
- Main criteria for setting up an ICS in UTZ code of conduct.

- Chain of custody requirements for tea, coffee and cocoa
- The Codex General Principles of Food Hygiene (GMP/GHP) Awareness Training Program.
- The HACCP (Hazard Analysis and Critical Control Point) Awareness Training Program.
- ISO 22000:2005 Food Safety Management Systems (Requirements for Any Organization in the Food Chain) Awareness Training Program.
- NABET Accredited Training Program.

**Major achievements of INDOCERT:**

- The Royal Society for Public Health (RSPH), UK has given approval to INDOCERT as their International Training Centre (Centre No: 4257) to offer various Food Safety Training Programmes from Basic Level to Level 4.
- INDOCERT has acquired approval from HABC (Highfield Awarding Body for Compliance) as their International Training Centre (Centre No: 12399) to offer various Food Safety Training Programmes from Basic Level to Level 4.

**ACCREDITATIONS**

- INDOCERT is accredited by leading national and international accreditation agencies as per accepted norms for certification bodies operating product and process certification system. These accreditations are accepted all over the world as the strongest indicators of the competency and credibility of a certification body.
- INDOCERT is having the following accreditations

### **International Accreditations**

- INDOCERT is internationally accredited and is competent under the terms DIN/EN ISO/IEC 17065:2013, Germany to carry out certification of Products in the field of Organic production for the categories of unprocessed plant products, aquaculture products, agricultural products for the use as food and feed according to the certification program of INDOCERT Organic standard for Non EU country operators (equivalent to Reg EC.No 834/2007 & EC No. 889/2008) certificate

### **National Accreditations**

- INDOCERT is accredited by National Accreditation Body (NAB), Ministry of Commerce & Industries, Government of India, as per National Program for Organic Production (NPOP) (equivalent to EU regulations EC.No.834/2007 and approved by USDA NOP
- INDOCERT is recognized as equivalent certification body (listed from European Union in the List of inspection and certification bodies recognized from EU). On June 20th 2012 the European Commission implemented the Regulation (EU) No. 508/2012 by amending Regulation (EC) No 1235/2008 with the actualized and consolidated List of Third Countries and the List of Control Bodies and Control Authorities for the Purpose of Equivalence. Therefore no import authorizations will be needed anymore after July 1st 2012 for imports of organic products certified by the Certification Bodies and originating from the listed countries, as mentioned in the Annex III and IV of the Regulation (EU) No 508/2012. The products categories, which are recognized as equivalent, are specified accordingly for each

country. INDOCERT has attained scope in the following product categories: Category A-Unprocessed Plant Products, Category C-Aquaculture products, Category E-Feed.

- **IOAS SAN ACCERDITION:** INDOCERT is India's first indigenous certification body accredited by IOAS (International Organic Accreditation Service) as per current version of the Sustainable Agriculture Network - Rainforest Alliance (SAN/RA) Accreditation Requirements for Certification Bodies for Agriculture farms, Group administrators & Chain of Custody.
- **National Accreditation Board for Certification Bodies (NABCB):** INDOCERT is accredited as per ISO 17021 & ISO 22003 by National Accreditation Board for Certification Bodies (NABCB, QCI, India) for providing Food Safety Management System Certification Based on ISO 22000:2005 and IS 343:2000 (HACCP)
- **National Accreditation Board for Education and Training (NABET):** INDOCERT also has accreditation of National Accreditation Board for Education and Training (NABET, QCI, India) Accreditation for conducting lead auditor training course for FSMS (ISO 22000:2005)

#### **4.3.2 LACON Quality Certification Pvt. Ltd**

LACON Quality Certifications (India) Ltd. is incorporated as a Private Limited company in the state of Kerala as per the Companies Act 1956. It is the subsidiary of LACON GmbH Germany, offers a wide range of certification services for agriculture and food production sectors. The main areas of services are inspection and certification of organic production; processing and handling of agricultural produces; export and import of such

products as per the relevant national rules and Certification for International Featured Standards (IFS).

**Standards inspected and certified by LACON**

- Organic regulation (EC) No. 834/2007
- National Organic Program (NOP) USDA
- National Programme for Organic Production (NPOP), India
- Japanese Agricultural standards (JAS)
- Private organic labels
- International Featured Standards (IFS)
- GLOBAL G.A.P. (EUREPGAP) certification
- Protected Geographical Indications (PGI) Reg. (EC) No. 510/2006
- Beef labeling regulation (EC) No. 1760/2000

**Accreditations**

- LACON is accredited in INDIA by APEDA (Agricultural and Processed Products Export Development Authority), Ministry of Commerce, Government of India, on behalf of NAB (National Accreditation Board), under the National Programme for Organic Production (NPOP).
- LACON was first officially approved for organic inspection and certification in the European Union in 1992.
- LACON is accredited according to EN45011 by AKS, the governmental Accreditation Body in Germany under the registration number AKS-Z-60801.

- LACON has been registered in Austria since 1997 and is accredited by the Ministry of Economy and Employment in Vienna, Austria.
- LACON is directly accredited by USDA (United States Department of Agriculture) for inspection and certification based on US-NOP (National Organic Programme) standards.
- LACON is accredited for GLOBAL G.A.P (EUREPGAP) certification by the Ministry of Economics and Labour, Austria.

#### **Organic Certification and training under LACON:**

##### **NPOP-India**

Ministry of Commerce and Industry, Govt. of India launched the National Programme for organic production (NPOP) in the year 2000, which was formally notified in October 2001 under the Foreign Trade & Development Act (FTDA Act). Lacon is officially accredited by APEDA on behalf of National Accreditation Board to certify organic production of agricultural products and processing and trade with such products.

##### **Regulation EC 834/2007**

The European Union was the first market to have governmental legislation on organic production. The regulation is the legal basis for production, processing and trade of organic products in 25 countries of the European Union. LACON is accredited according to this norm by the Governmental Accreditation body in Germany AKS and is certifying since many years according to Reg. (EEC) 2092/92.

##### **US-NOP**

In 2002 the legislation about production of ecological products in the United States of America, the National Organic Program (NOP), has become effective. The USDA accredits LACON as official inspection agency.

### **Global G.A.P (EurepGAP) Certification**

GLOBALGAP is a private sector body that sets voluntary standards for the certification of agricultural products around the globe. GLOBALGAP serves as a practical manual for Good Agricultural Practice (G.A.P.) anywhere in the world.

### **Organic Input Approval Programme**

LACON offers expert verification for producers of organic farm inputs to get an approval as per all major organic standards of production.

### **International Food Standards (IFS)**

IFS have been designed as a uniform tool to ensure food safety and to monitor the quality level of producers of retailer branded food products. The standard can apply for all steps of the processing of foods subsequent to their agricultural production. LACON is accredited to certify for IFS for a plethora of food sectors.

### **Protected Geographical Indications (PGI) (EEC) No. 2081/92**

The protected geographical indications designate products attached to the region whose name they bear. These rules are based on the idea that a geographical indication deserves protection even where it cannot be proven that the product owes its special features to its region of origin.

### **Trainings**

LACON offers a wide range of training programmes on the following areas, which help to empower organic farmers with the legislative requirements of organic production and labeling. The targeted groups of participants are lead farmers, NGOs, processing industry, traders, exporters, government officials etc on:

- Organic standards (NPOP, EEC& NOP)
- Smallholder farmers' group certification
- Organic Inspector training

**Table 4.3:** Certified organic grower groups in Kerala (producers)

<i>Operator Name</i>	<i>District</i>	<i>Certification Agency</i>
Kerala Agricultural Development Society (KADS)	Idukki	Lacon
Manarcadu Social Service Society (Organic Grower Group(Kottayam))	Kottayam	Lacon
Manarcadu Social Service Society (Organic Grower Group(Idukki))	Idukki	Lacon
Girijyothi Organic Development Project	Idukki	Lacon
Eco Development Committee- Poopara	Palakkadu	Lacon
Fourstar Naturals – Farms	Thrissur	Lacon
Wayanad Social Service Society(WSSS)	Wayanad	Lacon
Fair Trade Alliance Kerala	Kasargode	Lacon
Kavery Jaiva Karshaka Kuttayma	Kasargode	Lacon
State Seed Farm Aluva	Ernakulam	Lacon
Mankulam New ICS (SHM Project)	Idukki	Lacon
Highrange Organic Producers Society (HOPS)	Idukki	Indocert
Organic Wayanad ICS	Wayanad	Indocert
Aralam Farming Corporation (Kerala) Ltd	Malappuram	Indocert
Kadamakudy Varapuzha Jaiva Pokkali ICS	Ernakulam	Indocert

Source: Indocert & Lacon data

#### **4.4 Role of NGOS/Farmers' Groups/Societies in Promoting Certified Organic Farming in Kerala:**

The procedural difficulties in getting certification and higher cost of acquiring individual certification dispirit many organic farmers to continue



with certified organic farming. More than this, marketing inefficiency of individual organic certified farmers has been creating constraints on fetching premium price for their produce. Under this situation, collective organic farming under NGOs/Societies helps organic farmers to overcome these constraints. Kerala Agricultural Development Society (KADS) in Idukki district and Wayanad Social Service Society (WSSS) in Wayanad have been promoting organic farming in these districts through Institutional support. The major initiatives and development activities for promoting organic farming by these two organisations were considered under the present study.

#### **4.4.1. Relevance of Wayanad social Service Society in Promoting Organic Spices Cultivation**

Wayanad Social Service Society (WSSS) is a registered charitable society and a secular voluntary organization established in the year 1974. The Wayanad Social Service Society is one of the pioneering organizations in promoting and propagating organic cultivation closely collaborating with the programs of the Government and other national agencies like Spices Board, NABARD and State Horticulture Mission. It is the official social service organization of the Catholic Diocese of Mananthavady. It aims at Socio-economic empowerment of the target group consisting of tribes, women, small and marginal farmers through participatory development interventions. The primary sector of agriculture is still distanced from technological advancement, credit facilities, marketing linkages etc. Organisation of the marginal farmers becomes an unavoidable necessity. This was because it was realized more and more that the genuine development of the people of Wayanad, whose vast majority belongs to the agricultural community, can be attained only through the betterment of the socio-economic status of the farmers.

The major plantation crops include coffee, tea, pepper, cardamom and rubber. As per the latest agricultural statistics coffee and pepper equally shares the cropping area accounting for about 60% in the whole district. Other inter cultivated major crops are coconut, areca nut, cardamom, cassava and ginger. Wet land area occupies 22,772 hectares cropped with rice, banana, areca nut and vegetables seasonally. These fields are mostly lying along the valleys formed between hillocks. Ninety percent of the farming community is invariably small and marginal farmers occupying 60% of the total cultivated land. The remaining land is in the possession of planters including companies in the form of coffee and tea estates.

WSSS is concentrating in particular among the small and marginal farmers for their betterment in the overall context, highlighting ‘Sustainable Development’ as the motto. At the awareness and organizational levels, the Society has done a lot apart from introducing several innovations in the farming sector and popularizing them by implementing specific projects and programmes. The Society envisages sustainable agriculture with optimum returns, stability and regenerative management of natural resources. In accordance with the above it is purported to equip and empower the farming communities for judicious and progressive agricultural practices and absolute control and management over the means of production and produces including fair pricing of it. In the process the participation of the entire community ought to be there with desirable levels of equity in appropriating the output.

**Achievements of WSSS:**

- In year 2000 Spices Board selected WSSS as an implementing agency for promoting organic spices cultivation among Small & marginal farmers in Wayanad - a project funded by International Trade Centre

(ITC), Geneva. Three clusters having five small farmers' groups from Marakav, Edayoorkunnu and Kammana villages with 106 small land holders started organic certification process under an Internal Control System (ICS).

- National Centre for Organic Farming (NCOF) approved WSSS with Service Provider status for promoting organic farming among 1500 farmers in Wayanad since 2003. Moreover State Horticulture Mission (SHM) department also provided support for promoting organic farming by availing subsidy for farm inputs and organic certification programme in Wayanad for couple of years.
- On 10th October 2014 WSSS launched “Biowin Agro Processing Centre” a project supported by Ministry of Commerce, Government of India under the ASIDE Scheme and NABARD under UPNRM scheme. This will enable WSSS to give value addition to all items of organic agro produces and provide price stability for the farmers. The key strategy and measure adopted in this respect is common pooling of products and value added processing before sale.

**Organic Certification, Training and ICS under WSSS:** Organic Certification programme under WSSS includes training with advanced concepts of organic farming, the procedures and formalities of an accredited certification, the importance of food safety/security, various methods for soil and water conservation, significance of Natural Resources Management, and relevance of growing organic global markets for ensuring premium price for the producers etc. Meaningful participation of the farming community in the learning programmes is realized through their contributions by way of financing the programme partially. The subject matter experts from various

organizations, including WSSS team will resource the training by delivering talks on different topics and passing on clear cut information on the modalities of certification. Table 4.4 provides information on these aspects

**Table 4.4: Details of Farmers and Training programs under WSSS**

Year	2009-10	2010-11	2011-12	2012-13
Total number of organic farmers	783	2607	2706	8068
No of training programmes conducted	34 (residential)	102	120	368
Cost of Organic Trainings	25500	48650	50000	169200

Source: WSSS data

The WSSS initiatives in forming and maintaining farmer groups in the district ensures proper evaluation of organic farming practices with the active participation of farmers. Farmers sharing their experience and concerns with courses corrections jointly deliberated upon under the guidance of resource persons.

The group farming system guarantees passing of accurate information on various schemes that has bearing on farming sector development such as bank credit schemes, marketing support systems, good governance and practical training avenues on various appropriate technologies etc. The table 4.5 depicts the picture of number of certified organic farmers under WSSS.

**Table 4.5: Number of certified Organic farmers under WSSS**

Year	2009-10	2010-11	2011-12	2012-13
Number of Certified organic farmers	225	694	724	1370

Source: WSSS data, 2014

The data from the table4.5 illustrates the increase in the number of certified organic farmers under WSSS from 225 in 2009 to 1370 in 2013. The WSSS is engaged in wide range of activities such as conducting regular

trainings, production and supply of farm inputs, organic certification and organic products through quality control, processing, marketing, empowerment of farming communities, development of progressive agricultural practices, control and management over the means of production and fair pricing of it. The picture of input production under WSSS is illustrated in the table 4.6.

**Table 4.6:** Yearly details of input production units under WSSS

Year	2009-10	2010-11	2011-12	2012-13
Number of Input production Units	2 Units	7 Units	12 units	20 units

Source: WSSS data, 2014

The WSSS established many organic input production units to ensure the availability of organic inputs. The number of input production units increased from 2 units in 2009 to 20 units in 2013.

**Table 4.7:** Details of ICS groups of WSSS certified by Lacon

Name of ICS Group	Number of Farmers 2014	Area (Ha)2014	Type of Certification
WSSS Padinjaraathara ICS	451	268.91	Group
WSSS Edavaka ICS	460	273.69	Group
WSSS Sulthan Bathery ICS	500	367.7	Group
WSSS Thondernadu ICS	499	313	Group
WSSS Ambalavayal ICS	465	376.32	Group
WSSS Nellekotta ICS	140	109	Group
WSSS Kottathara ICS	482	266.33	Group
WSSSPulpally ICS	495	471.92	Group
WSSSMananthavady ICS	469	283.7	Group
WSSS Panamaram ICS	494	286.7	Group
WSSS-Tavinjal ICS	500	283.11	Group
WSSS-Meenangadi ICS	424	315.02	Group

Source: Lacon data, 2014

The Internal Control System (ICS) is one of the key criteria and a basic prerequisite of the Organic Group Certification Programme. There has to be a professional team in place for the task. The existing ICS personnel with WSSS, the team authenticated by including General co-ordinator, ICS Manager, Agronomist, Training officer, Soil Chemist, Documentation Officer, Finance officer, Internal Inspectors and Filed Organizers in order to cater the farm holdings. Regular monitoring of the organic farm is mandatory in the certification processes. In this respect every organic farm has to remain under the purview of inspections in conformity with the said organic standards with a minimum of three visit/inspections by qualified and authorized persons. In reinforcement of the Internal certification process underway, an accredited external Certification agency has also to assess the internal control system by visiting the organic farm units and verifying the processing allied activities and upon passing through the comprehensive evaluation procedures certificates will be issued on yearly basis. It is mandatory to organize an ICS meeting every month participated by all the members of ICS team including the management personnel participated. Review and planning of programs/activities related to organic certification programme are the main agenda of the meetings.

Each and every farmer has to maintain a record with him about the farm, giving details of the various activities in the farm, crops, quantities, etc., regularly updated for the verification and certification purposes. It will also help the farmer for a scientific and critical approach towards farming activities as well as the crop profile in his farm. These records are inspected as part of both internal and external inspection processes. The central level record keeping/ documentation is an essential part of the organic certification programme attuned with 'Documented Quality Assurance System'. This

process is very important in the matter of marketing of organic produces into various countries. Full time documentation officer has vital role in the certification process.

**Organic Crop Production under WSSS:** The crops cultivate in this region is highly export orientated and concentrated in the production and marketing of organic spices, coffee and other farm commodities. The major plantation crops include coffee, tea, pepper, and fruits like Jackfruit and Mango. Coffee based farming system is a notable feature of Wayanad. Coffee is grown both as pure crop and as mixed crop along with pepper. Pepper is grown largely along with coffee in the north eastern parts of the district.

**Farmer groups and Clusters in WSSS:**

The farmers identified are formed into neighbourhood groups of 25 members on an average. Usually the farm land of the group members would be geographical cluster and a micro watershed in character. Crop similarity is another consideration of homogeneous grouping. Moreover, the common binding factor of the groups would be that the members practice thrift and micro credit and accordingly they will be given orientation and linkages worked out for uninterrupted farming activities and livelihood affairs. The group system also is advocated for internal monitoring and documentation arising out of the envisaged systematic organic farming. It is mandatory that the group meet every week for learning, experience/ knowledge sharing, micro credit transactions, review and recurrent planning, farm level documentation etc. Two commonly accepted persons each form every group and kept in place to discharge leadership responsibilities.

To maintain farmer groups and clusters WSSS has got into the spices processing and marketing. In order to familiarise the organic products to larger

segments of buyers through dealers and firms in other parts of the country and abroad, the WSSS deals with two different types of dealership in vogue:

- a) Whole sellers / Exporters who buy the processed / semi-processed commodities in bulk who in turn do retailed business upon it and
- b) Manufactures who use the commodities as ingredients for their branded products.

Established export firms also transact business with Society who, in fact, constitutes the major clientele. The organisation makes it a point to attend both National & International exhibitions and trade fares frequently which used to provide good business openings for organic farmers in Wayanad. The WSSS tries to ensure National and International Market everywhere for spices grown in Wayanad.

**Farmer support measures of WSSS:** WSSS has taken up the responsibility of giving value addition to all items of organic agro produces and provide price stability for the farmers. In order to fulfill this responsibility, following farmer support measures were undertaken by WSSS.

- A) Spices Processing centre at Dwaraka:** WSSS has entered into agro processing sector since 2003 with steady progress made ever since and system of demand with trust created. In early 1990's the Spices Board came to accept WSSS as a potential and credible partner and has been extending both technological and financial collaboration for spices development enlisting meaningful participation of the spices farming community. In the year 2000 the Spices Board put forward a suggestion for starting a spices processing unit in Wayanad and prevailed upon WSSS to take up the venture. Accordingly in 2002 a spices processing units was commissioned in hired premise, WSSS



discharging managerial and financial responsibilities of running it and engaged in trade arising from it. Initially for two years,, the processing unit was handling only Raw Black pepper. But later moved into diversified commodities such as White pepper,

De-hydrated Green Pepper, Cracked Black pepper, Black pepper powder, Cardamom, Vanilla, Clove, Cinnamon, Nutmeg, Mace, Allspice, Ginger, Turmeric and Coffee. In quantity, the commodities processed and marketed last financial year registered 275 Mt. scaling up from the 8Mt. during the base year of production (2003-04). Retail/mixed processing of spices also added value and consumer satisfaction.

**B) Training centre at Boys town:** WSSS undertakes regular training programmes for farmers regarding new farm techniques, input production, planting and seeding pattern etc. Every year WSSS conducting not less than 50 training programmes at Boys Town.

**C) Procurement and marketing of Farmers produce:** WSSS maintains trained field personnel for promotion, technical support, purchase, quality assessment, product handling, farm information, transport, etc. All farmers have accounts in specified banks to which the price amount is deposited on the third day.

D) Products quality testing Lab at Dwaraka

E) Eco-shoppe at WSSS Campus

F) White Pepper production unit at Dwaraka

G) Seedlings Nursery at Mananthavady

H) Wayanad Agro Processing Centre

D) Arranging inputs for organic farming

J) Model demonstration units at Boys town

K) IPM – Radio ‘Mattoli ‘is using for providing information for farmers, market Promotion of organic products and accreditation for WSSS Producers

#### **4.4.2 Accomplishments of Kerala Agricultural Development Society as a model in promoting organic Spices Production**

Kerala Agriculture Development Society (KADS) is a Charitable Organization formed in 2001 for the development of farming communities in Kerala. The mission of KADS is to secure fair price for farm produce by avoiding middlemen, promotion of organic production of quality agricultural produce, and assistance in sustainable management of natural resources through awareness campaign, promotion and practicing of eco-friendly agriculture. KADS envisaged grouping of 1500 farmers from Thodupuzha and Elamdesom blocks covering 12 Panchayaths and one Municipality during the first phase and implementing a unique agro development project. The main mission of KADS is to channelize and effectively utilize various Government funds and funds from other sources profitably to redress the problems of farmers. The KADS concentrated in the production and marketing of spices and condiments like nutmeg, cardamom, pepper, cloves, vanilla, ginger etc. Further crops like cocoa, vegetables, tapioca, coconut, areca nut, banana, rubber, and coffee, ornamental and medicinal plants also include in the product list of KADS.

##### **The main objectives of KADS are the following:**

- Farmers’ intervention for improving the existing marketing system by developing a farmer - controlled open marketing system.

- Creation of an effective collection, transporting, storage and sales system for various products with farmers' participation.
- Promotion of organic certification of individual farmers and group certification under ICS.
- Conduct seminars and workshops for farmers with assistance from Government and other agencies.
- Production and distribution of bio fertilizers.
- Restoration of the eco-system, conservation and improvement of the natural resources of farmers (soil, water and vegetation)
- Assistance to farmers for scientific land utilization and effective scientific farm practices.
- Popularising the use of proper and improved agro machinery, tools and implements.
- Enhancement of the income generating capability of farmers through improved agricultural and allied activities.
- Facilitating farmers' access to modern developments in the field of agriculture through an agro-information and training centre.
- Establishment of a permanent infrastructure for storage and marketing of agricultural products.
- Promotion of women's participation in marketing various quality food items rich in balanced nutrients.
- Promoting kitchen gardens, especially in the municipality area.
- Establishment of sales points for natural and eco-friendly farm produce.

- Channelling and effective utilization of various Government assistance programmes and funds from NABARD, National Horticultural Board, Agri-Business Consortium and other such agencies to redress farmers' grievances.

### **Major initiatives of KADS:**

Kerala Agricultural Development society has been engaged in a wide range of activities and programmes to promote organic agriculture in Idukki district. KADS acts as an effective supporting agency for farmers in the district in various perspectives. They work with a strong in mission to promote sustainable agriculture in Idukki district. The major initiatives of KADS in this area are:

- A) Training Programmes and Seminars:** The KADS is organizing various training programmes at different levels in collaboration with research organizations, universities etc. During the past few years of KADS' functioning, it had organized 78 training programmes for the benefit of the farmers on agriculture and allied activities. It had also organized seminars, nearly 300 seminars on agriculture and allied activities were held by KADS' initiative for the benefit of farmers. KADS initiatives with the help of Government and non Governmental organizations in this regard benefited its members.
- B) Organic Certifications:** KADS Organic Project has covers total organic area of 4460 Acres and there are 55 groups formed in 32 Panchayaths of Idukki, Kottayam and Ernakulam districts. KADS implemented organic certification under Internal Control System and had submitted proposal to higher authorities to declare Idukki as Organic District of Kerala. KADS was appointed as a service provider

under NCOF (National Centre for Organic Farming). The training programmes were conducted with the help of 'INDOCERT' (Indian Organic Certification Agency) Thottumugham, Aluva, from July 2002 onwards. Organic certification under Group Certification programme was initiated by KADS as early in July 2002. Organic certification under Group Certification programme was initiated by KADS as early in July 2002. Now about 1000 farmers exist under various stages of certification as C1, C2 and C3 Organic Certifications.

- C) Bio - Fertilizer Production and Distribution Unit:** KADS conducted training on vermi-compost production and organic farming with the assistance of Spices Board, in different localities and 1000 farmers were trained in vermi-composting. About 700 vermi-compost units have been established in various pockets in operational area, with the technical and financial support of Spices Board, Coconut Development Board and Department of Agriculture.
- D) 'Puthumazha' Magazine:** 'Puthumazha' - a farmer's magazine is being published by KADS which serves as a medium for passing on latest scientific and other practical information to the farmers. This house journal provides various innovative ideas from different sources for the benefit of the farming community. It also provides necessary technical advice on crop production and information regarding marketing of farm produce with the help of KADS.
- E) KADS Open market:** KADS facilitates marketing through 'farmers open KADS with farmers' participation also facilitates collection, transporting and storage of various produces. 'Farmers' Open Market' (FOM) sells farm produces directly to the customers realizing fair

price to farmers. The FOM is essentially open only to those who are registered farmers. KADS officials claim that FOM facilitates to realize at least 15-20% higher price on 'organic' produce, the market for which is increasing.

The 'FOM' has three sections. First is 'Daily sale center' (OSC), where farmers sell perishable commodities directly to the customers. Distress sale of any perishable produce is prevented. Second is 'Bulk produce auction center' (BPAC), where farmers auction off their produce to traders in bulk on prices decided by farmers. Third is 'Produce exchange Center' (PEC), where farmers exchange farm produces and planting materials. KADS has good short-term storage space for handling excess commodities. There is a sale counter for natural and eco-friendly farm produces, 'The Prakruthi'. The 'Karshika Vipanana Sangham' organized at Panchayat is linked to the Market and it helps farmers in collecting and transporting produces to the market at nominal service fee. The head load workers' union, which extorts wages for loading and unloading in the market area, is excluded from the KADS operational area. It also promotes capacity building of women SHGs in value addition and marketing. According to the market officials, the average monthly sale turn over in open market comes to RS.7 lakhs and it is increasing over period. KADS is supported by an internet facility, which assists farmers with day-to-day and continuous trading details from various markets.

The capacity building to member farmers in collaboration with different public institutions includes supply of information on new agricultural techniques, improved varieties and other new innovations

and quality planting materials as well as distribution of layer chicks, rabbits, fish fingerlings, goats, etc.

- F) Fair Trade:** KADS is active in providing training for farmer groups to comply with fair trade norms to market their produce profitably. Fair trade certification facilitates farmers to get high price for their products as well as assured marketing arrangements through KADS. The crop products coming under fair trade standards have to comply with Social Development, Economic Development and Environmental Development. Every year KADS conducting an Agro organic trade fair for promoting the marketing of agricultural products. These trade fair include seminar, competition for students, exhibition etc.
- G) Supply of Inputs Like Quality Planting Materials:** Supply of quality planting materials for crop production and distribution of chicks, rabbits, fish fingerlings, goats etc. are carried out by KADS for the benefit of farmers with the help of Kerala Agricultural University, Fish Farmers Development Agency, Department of Agriculture, Kerala Forest Research Institute, Department of Animal Husbandry, Central Tuber Crops Research Institute etc. KADS has so far distributed above mentioned items to nearly 75,000 farm households in Idukki District.
- H) Agro Information and Training Centre:** KADS maintaining a full-fledged library consisting of books and periodicals related to agriculture, and a reading room. The centre functions as a database for farmers providing them information about the availability, price structure, quality etc.

### **Key Achievements of KADS:**

The Kerala Agricultural Development Society (KADS) keep a close touch with the farmers in the district. Majority of the projects were initiated under KADS with the strong participation of farmers. Following are the major achievements of KADS.

- I. KADS Idukki Organic Project:** The Idukki Organic Project is introduced in Idukki District, Kerala State by KADS Idukki in the year 2002 for the sustainability of Idukki District. The project aims to the small and marginal farmers. The main objectives of the project are:

To make aware farmers about the need of organic farming  
To conserve fertility of soil and achieve self-sufficiency in organic food production

To promote the certification of the organic farms  
Enhance the sustainability of Idukki District and the farmers, and

To develop organic marketing system.

### **II. Internal Control System (ICS) under KADS:**

According to IFOAM definition, “An Internal Control System (ICS) is a documented quality assurance system that allows an external certification body to delegate the annual inspection of individual group members to an identified body/unit within the certified operator”. The organic certification body then mainly evaluates whether the Internal Control System is working well and efficiently. The evaluation is done by checking the ICS documentation system and staff qualifications and re-inspecting some farmers.



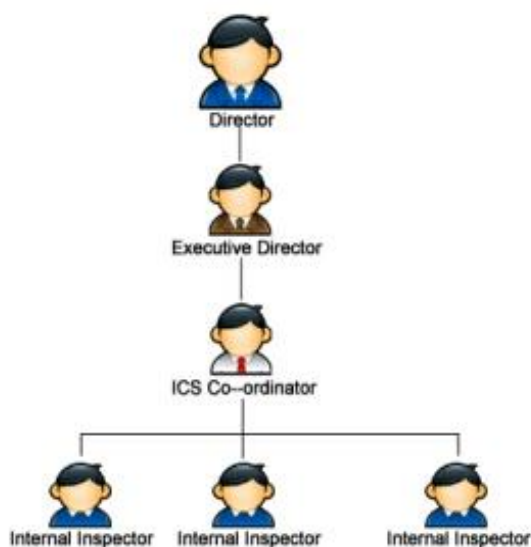
KADS is one of the approved Service Providers for certification process by National Centre of Organic Farming (NCOF) and nearly 1000 farmers are in the conversion periods for final organic certification. KADS is in the process of forming ICS groups (Internal Control System) in various pockets in Idukki, Kottayam and Ernakulam districts. About 1000 farmers have already become members of ICS groups and their certification is in the final stage. ICS was established to ensure quality organic farming, processing, storage and marketing. The farmer's agreement comprises all essential elements of regulation 2092/91 and ICS regulations. The ICS aims to ensure the certification cost as low as possible.

The ICS group farmer has to undergo 3 stages of certification process usually called three year conversional period. The individual farmer has to obtain C1, C2 and C3 certificates for each year to qualify for an organic farmer under ICS programme. The classification details are given in table 4.8 as per the prescribed norms of certification for an individual farmer.

**Working of ICS and primary Financial Expenses for an ICS Farmer:** The International norm to become a conventional farmer in to an organic farmer is an expensive procedure since each farmer has to incur an annual fee ranging from Rs.5000 to Rs.25000 based on his farm area. Considering the local situation and the financial constraints of our farmers, Government of India introduced farmers groups (Internal Control System) consisting of 10 to 50 farmers in a group instead of an individual farmer to attract farmers for organic farming. It is mandatory for an ICS group farmer to follow the principles of organic farming and the norms prescribed by certification agencies to qualify for classification of their farm products under organic sector. At present KADS is working in association with the approved certification agency- M/s INDOCERT, Aluva. The accreditation of INDOCERT is approved both by

Government of India and International Forum for Organic Agricultural Movement (IFOAM).

**Figure 4.2:** ICS Staff Pattern of KADS



**Table 4.8:** Certification fee of KADS ICS farmers

Total area	Certification fee in RS
Up to 2 Acre	600
2-5 Acre	700
5-10 Acre	850
Above 10 Acre	1500

Source: Data from KADS 2014

KADS is committed to provide all necessary technical and financial services including incentives for the farmers of its ICS groups from all possible sources.

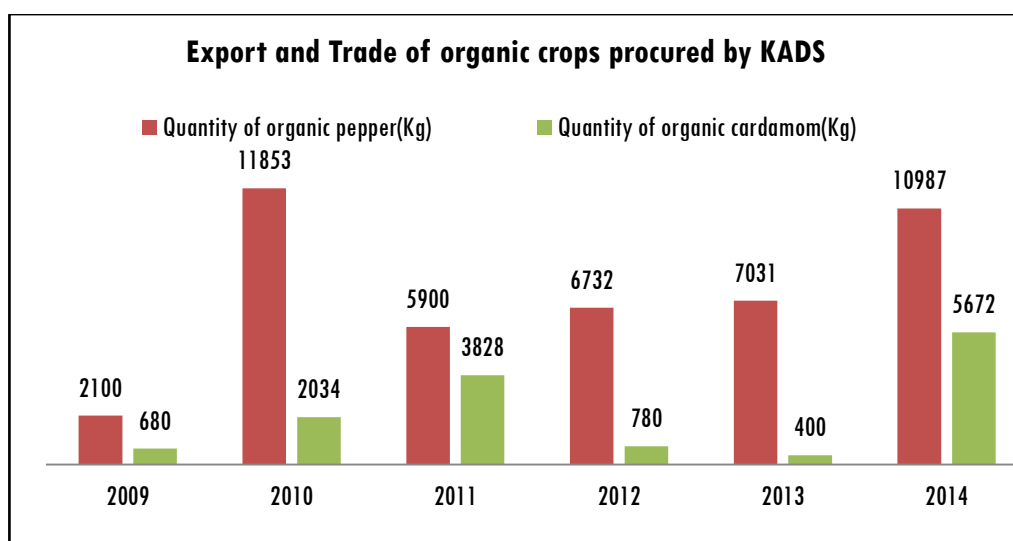
**III. KADS Agro Development Project:** KADS envisaged grouping of 1500 farmers from Thodupuzha and Elamdesom blocks covering 12 Panchayaths and one Municipality during the first phase and implementing a unique agro

development project. The object will be totally implemented by the farmers themselves with the farmers' participation. During the later phase of the project, large number of farmers will be given participation extending the activities to other adjoining areas.

**IV. KADS Mankulam Project:** Mankulam is one of the six panchayaths of Devikulam block in Devikulam Taluk in Idukki district. The effort to transform Mankulam into an organic village was initiated under the Idukki Organic Project in 2005. The project, conceived by Kerala Agricultural Development Society (KADS) and around 2,200 farmers of 32 village local bodies in the district have so far been declared organic farmers. Production and protection of crops mainly depend on indigenous wisdom modified to latest scientific techniques. The promotion of organic farming aims at reducing the cost of production and helps farmers to get more returns. KADS' intervention in Mankulam commenced in 2007 and there are two groups with a membership of 41 farmers who are in the organic conversion period. The area covered under organic farming by these farmers is 131 acres. KADS baseline survey with the involvement of farmers groups (ICS) of Mankulam panchayath have found Mankulam village highly suitable for organic agriculture. KADS has opened its office at Mankulam for the proper implementation of organic farming and to bring the whole panchayath / village under organic farming. All the necessary infrastructural facilities and trained staff are provided in all the regions for the successful operation of the scheme. The various Organic Development Agencies like National Centre of Organic Farming (NCOF) – a wing of Ministry of Agriculture and Co-operation, Local Panchayath, Department of Agriculture, Revenue, Animal Husbandry, Forestry, NABARD, APEDA, Spices Board, Coffee Board, NGOs like INDOCERT, KADS etc are involved in promoting organic farming in Mankulam area. KADS concentrates more on local market for organic products. The efforts of KADS contributed to develop a local market for organic

produce at Thodupuzha where the Farmers' Open Market is functioning. Along with local marketing of organic produce, KADS procure and export high quality certified organic spices. Figure 4.3 illustrates the details regarding exported organic pepper and cardamom.

**Figure 4.3**



Source: Data from KADS 2014

Table 4.9 outlines the details of Buyers who exported KADS organic products and marginal price rate given to farmers.

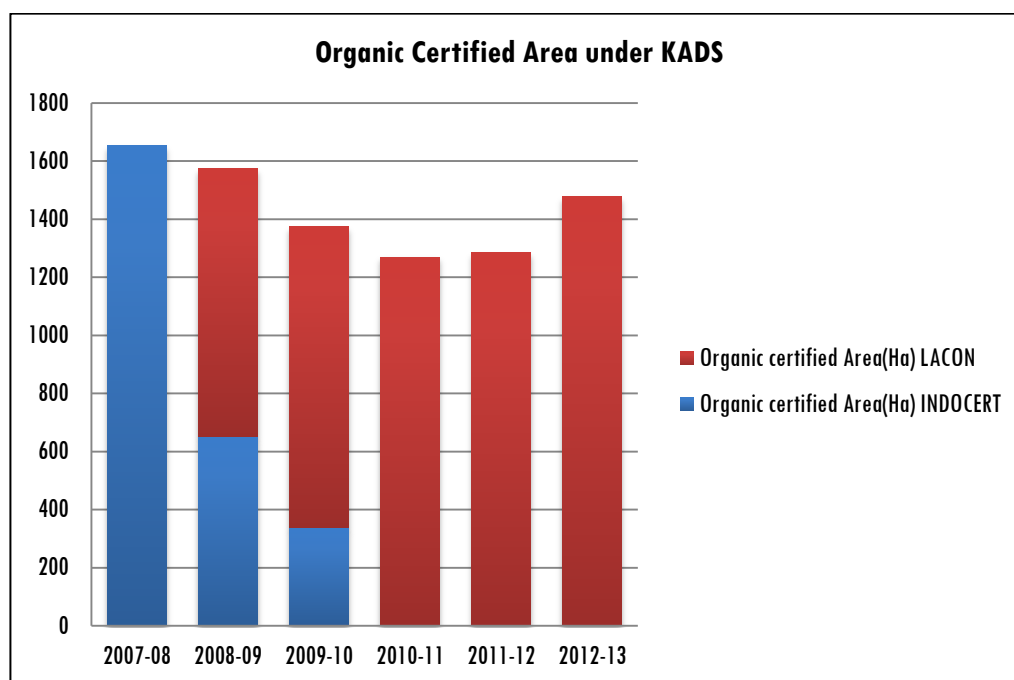
**Table 4.9:** Details of Buyers who exported KADS organic products

Year	Buyer	Marginal % given to Farmers
2009	Jill Farm Product, Idukki	20%
2010	M V P Traders, Kalady	20%
2011	Sreshta Company, Hyderabad	20%
2012	Richabel, Ernakulam	20%
2013	Tharakan & Kottayam	20%
2014	Jill Farm Product, Idukki	20%

Source: Data from KADS 2014

The KADS acquired organic certification for ICS groups from LACON and INDOCERT. Figure 4.4 depicts the organic certified area under KADS.

**Figure 4.4**



Source: Data from KADS 2014

During 2007-08 to 2009-10 organic certified area under KADS obtained certification from INDOCERT. After 2010-11 the certification is mainly obtained from LACON. Compared to INDOCERT more number of Group certification is provided by LACON. After 2010-111 the number of Group certified farmers and ICS Groups under KADS increased.

**Table 4.10:** Organic Certification details of KADS

Year	Certification-Individual or Group	No. of Farmers	Total Area Ha	Certification Agency	Supporting Agency
2003	Individual	125	130	INDOCERT	NCOF
2004	Individual	130	142	INDOCERT	Spices Board
2005	Individual	135	149	INDOCERT	Spices Board
2006	Individual	136	49.8	INDOCERT	Spices Board
2007	Individual	725	653.83	INDOCERT	Spices Board
2008	Individual	1487	873	INDOCERT	Spices Board
2009	Individual	1239	700	LACON	Spices Board
2010	Individual	730	675	LACON	Spices Board
2011	Individual	380	269.32	LACON	Spices Board
2012	Individual	520	376.67	LACON	Spices Board
2013	Individual	909	646.46	LACON	Spices Board
2013	GROUP	42	45.162	LACON	Spices Board
2014	GROUP	83	56.62	LACON	Spices Board
Total		6641	4766.88	-	-

Source: KADS data, 2014

The data from KADS shows that the number of organic farmers and area under organic farming is showing a positive trend. The traditional organic background of Idukki district, the natural topography, the positive attitude of the farmers to switch over to organic farming and KADS' training programs and Open market facilities are the major drivers in promoting organic farming in Idukki. For the long-term development of organic farming in Idukki necessitates assistance such as financial assistance for certification fee, technical and financial support to set up production and processing units for organic inputs, financial assistance for value addition and processing of

organic produce etc. An intensive effort from all participating agencies will help to achieve the ultimate objective to convert all farmers and entire district as 'organic'.

#### **4.4.3 KADS and WSSS- Comparison**

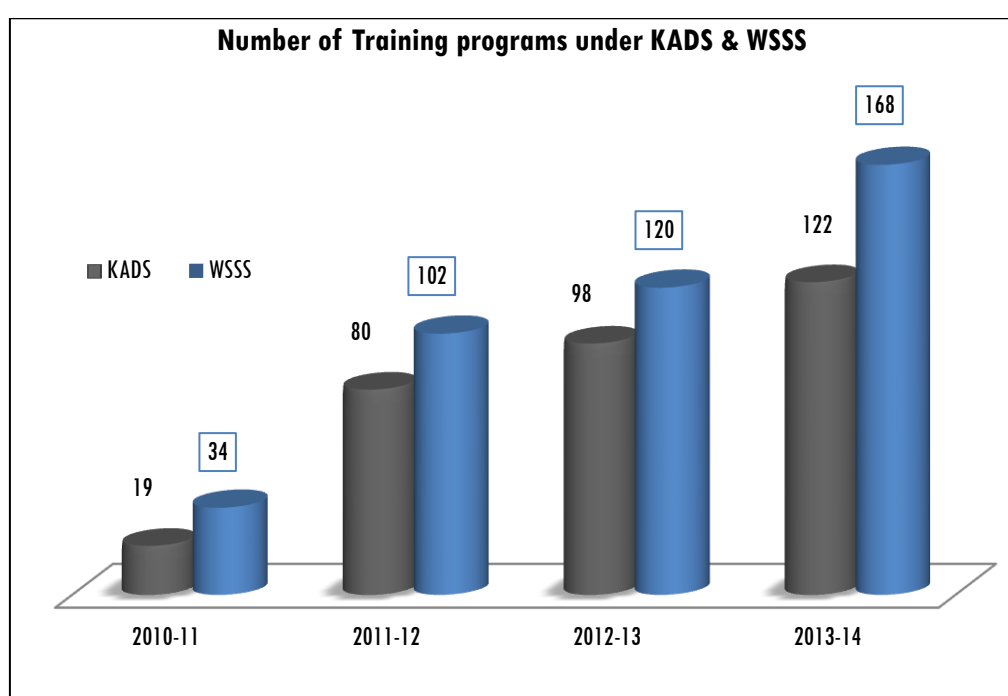
Kerala Agricultural Development Society (KADS) in Idukki district and Wayanad Social Service Society (WSSS) in Wayanad have been promoting organic farming in these districts through Institutional support. Their initiatives and efforts are outstanding models in Kerala. For promoting organic farming other institutions can emulate them. The major efforts of KADS and WSSS are:

- KADS and WSSS have focused on linking various institutions for better organic farming in Idukki and Wayanad districts and contribute for organic production and better profitability. They bring into play NCOF for financial support, APEDA for standards and quality control, Certification agencies such as LACON and INDOCERT for organic certification and marketing institutions for marketing information and procurement.
- KADS and WSSS intervened through imparting trainings and demonstrations for knowledge and skill up-gradation. They have imparted training to organic farmers on various aspects such as soil fertility management, principles and practices of organic farming, organic input production technologies, documentation in organic farming and certification, post-harvest techniques etc. This helped enhanced knowledge sharing among organic farmers and methods of organic cultivation

- Exhibitions, mass media programmes and seminars were organized by KADS and WSSS to create awareness among consumers as well as organic farmers about the benefits of organic farming.

The details of total number of trainings imparted by the KADS and WSSS over the years are depicted in Figure 4.5

**Figure 4.5**

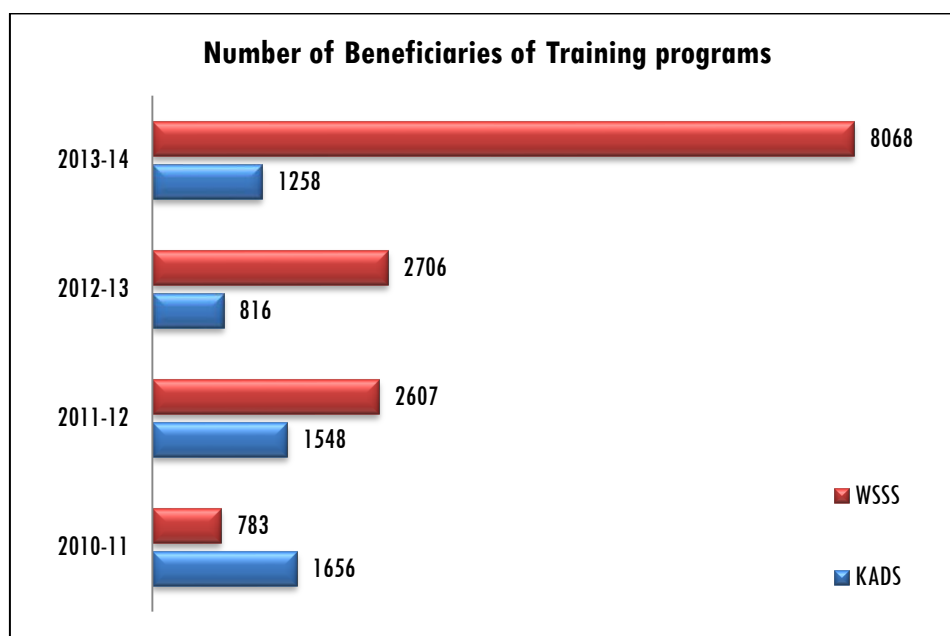


Source: Data from KADS & WSSS, 2014

Figure 4.5 outlines the total number of training programs conducted by KADS and WSSS in each year. The numbers of training programs conducted by both organisations increased persuadably from 19 and 34 in 2010 to 122 and 168 in 2014. Figure 4.6 illustrates the total number of beneficiaries of these training programs.



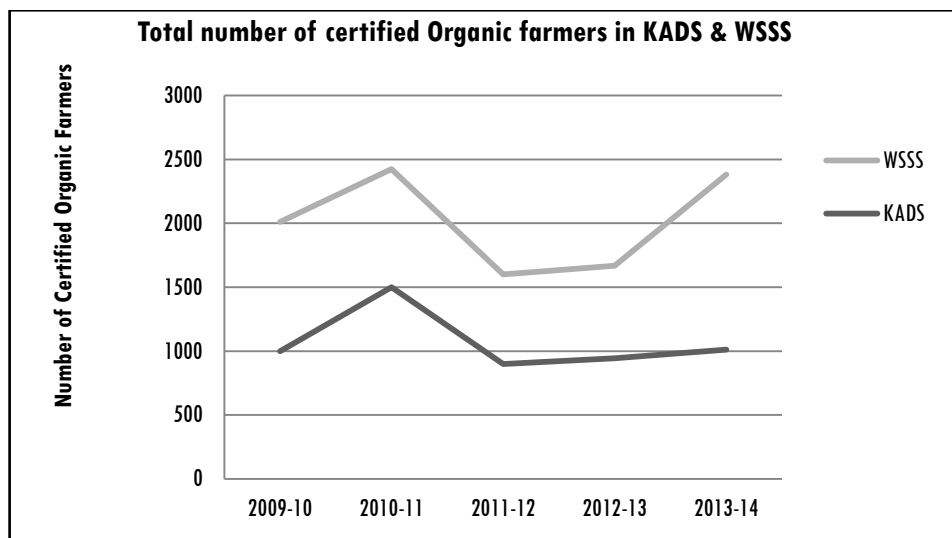
Figure 4.6



Source: Data from KADS & WSSS, 2014

The number of beneficiaries of training programs is comparatively high in case of WSSS which is depicted in 4.6. The major reason for this difference is the larger geographical coverage of WSSS than KADS and also the number of organic farmer’s clusters or ICS Group under WSSS is higher than KADS. Figure 4.7 illustrates the growth of total number of certified organic farmers under KADS and WSSS.

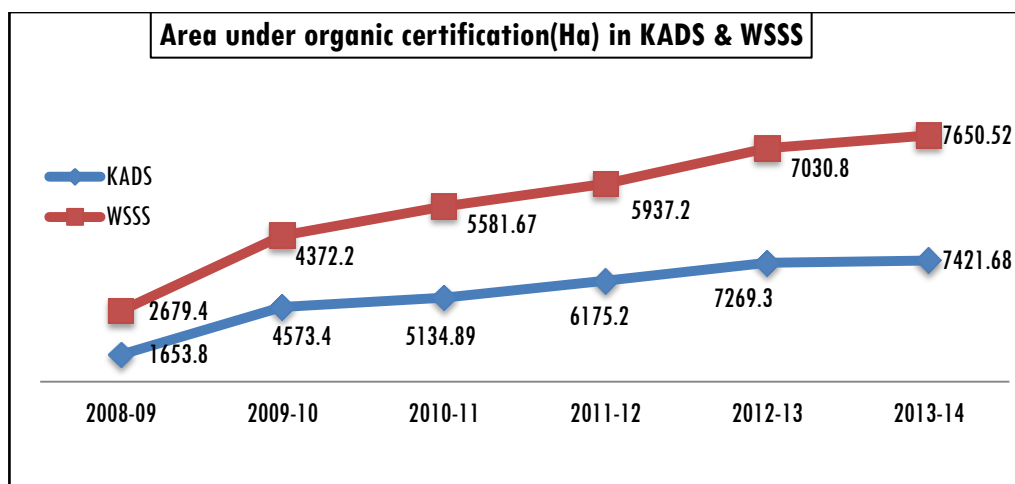
Figure 4.7



Source: Data from KADS & WSS, 2014

The certified area under organic cultivation in Idukki and Wayanad districts is mainly dominated by ICS group of KADS (in Idukki district) and WSS (in Wayanad district). The Growth of Area under organic certification of these two organisations are illustrated in the Figure 4.8.

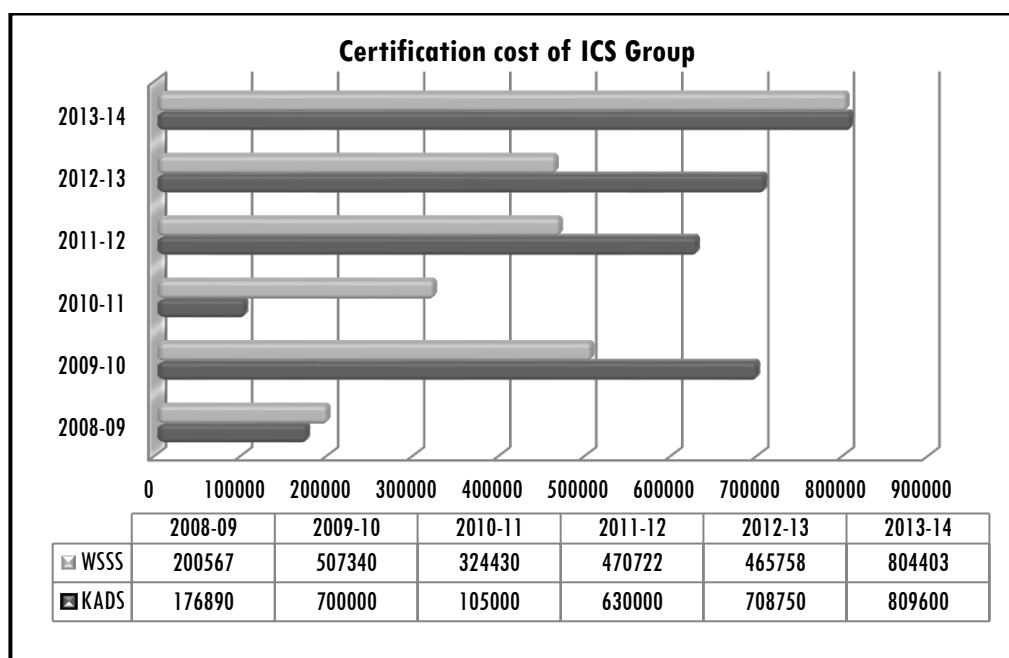
Figure 4.8



Source: Data from KADS & WSS, 2014

With the help of KADS and WSSS majority of organic farmers in Idukki and Wayanad obtained organic certification. Compared to those farmers who attained individual organic certification, the farmers within group certification require lower cost of certification. The overall cost of certification is met by ICS Group organisations such as KADS and WSSS. The certification cost of ICS Group of KADS and WSSS illustrated in Figure 4.9

Figure 4.9



Source: Data from KADS & WSSS, 2014

Another vital area where KADS and WSSS play critical roles is Procurement and marketing of certified organic products. The WSSS is concentrating on the export aspect of certified organic spices and giving priority for procurement processing and value addition. To substantiate this requisite, WSSS has entered into agro-processing sector since 2003. A modest spices processing unit was commissioned in 2002 with diversified commodities such as White pepper, Dehydrated Green Pepper, Cracked Black

pepper, Black pepper powder, Cardamom, Vanilla, Clove, Cinnamon, Nutmeg, Mace, Allspice, Ginger, Turmeric and Coffee. As per the WSSS data, commodities processed and marketed in 2013 registered 275 Mt. A 'Bio win agro processing centre' also launched in October 2014 to meet the requirements of processing and value addition of organic crops.

Out of the total 590 sample respondents of the study, 470 certified organic farmers are belongs to WSSS and KADS. The Cross tabulation results presented in table 4.11 compares annual revenue earned by the certified organic farmers under KADS and WSSS.

**Table 4.11:** Annual Revenue with premium price of certified organic farmers under KADS and WSSS-Cross tabulation

Supporting Agency	Annual Revenue with premium price					Total
	Less than 1 Lakh	1 to 3 Lakh	3 to 6 Lakh	6 to 9 Lakh	Greater than 9 Lakh	
<b>KADS</b>	35.0	24.1	18.7	12.8	9.4	100% (203)
<b>WSSS</b>	1.5	15.7	31.8	30	21.0	100% (267)
<b>Total</b>	16.0% (75)	19.4% (91)	26.2% (123)	22.6% (106)	16.0% (75)	100% (470)

Source: Calculation based on survey data 2013-14

The cross tabulation results show that the higher levels of annual revenue are earned by certified organic farmers who belong to WSSS. About 21 percent certified organic farmers under WSSS have more than Rs 9 lakh annual income. The farmers organised under KADS attained more than Rs 9 lakh is 9.4 percent.

The Chi-Square analysis results between Supporting agency and annual revenue earned presented in table 4.12 proves that there exists significant association between these two.

**Table 4.12:** Chi-Square Test between Supporting agency and Revenue with premium price

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	117.579 <sup>a</sup>	4	.000
N of Valid Cases	470		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 32.39

Source: Calculation based on survey data 2013-14

The major factors contributing to difference in annual revenue earned by farmers registered under WSSS and KADS are:

**1. The years or experience in organic farming-** WSSS have more number of organic farmers who have more than 8 years of organic farming.(12.4 percent WSSS farmers have more than 9 years of Organic farming, only 5.4 percent KADS farmers have more than 9 years of organic farming )

**Table 4.13:** Years of organic farming of certified organic farmers under KADS and WSSS-Cross tabulation (Percentage)

Supporting Agency	Years of organic farming			
	1 Year-4 Years	5 -8 Years	9 Years and above	Total
KADS	23.2	71.4	5.4	100% (203)
WSSS	29.6	58.1	12.4	100% (267)
Total	26.8% (126)	63.8% (300)	9.4% (44)	100% (470)

Source: Calculation based on survey data 2013-14

The cross tabulation results depicted in table 4.13 shows that farmers with more than 9 years of organic farming are 12.4 percent under WSSS. Majority of organic farmers registered under WSSS and KADS have 5 to 8 years of organic farming. About 71 percent KADS farmers and 58 percent of WSSS farmers are under this category.

**Table 4.14:** Chi-Square Test between Supporting agency and Years of organic farming

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	10.948a	2	.004
No. of Valid Cases	470		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 19.0  
Source: Calculation based on survey data 2013-14

Chi-Square analysis between Supporting agency and annual revenue earned proves that there exists significant difference between years of organic farming of farmers under KADS and WSSS.

## 2. Cost of Certification:

The cross tabulation results of cost of certification of farmers under KADS and WSSS presented in table 4.15 reveals that majority of organic farmers under KADS (45 percent) have Rs 5000 to Rs 20000 annual expenditure for certification. 40 percent of organic farmers under WSSS have cost of certification of Rs 2500 to Rs.5000.

**Table 4.15:** Cost of Certification of certified organic farmers under KADS and WSSS-Cross tabulation (percentage)

Supporting Agency	Cost of Certification				Total
	Rs 1000- Rs 2500	Rs 2500- Rs 5000	Rs 5000- Rs 20000	Greater than Rs 20000	
KADS	11.8	17.2	45.3	25.7	100% (203)
WSSS	12.7	40.8	30.3	16.2	100% (267)
Total	12.3% (58)	30.6% (144)	36.8% (173)	20.2% (95)	100% (470)

Source: Calculation based on survey data 2013-14

The major reason behind this difference is that the number of farmers obtained group certification than individual certification is higher in case of WSSS compared to KADS.

**Table 4.16:** Chi-Square Test between Supporting agency and Cost of Certification

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	Pearson Chi-Square	33.205a	3
N of Valid Cases	470		

a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 25.05

Source: Calculation based on survey data 2013-14

Chi-Square analysis between certified organic farmers under supporting agencies (KADS & WSSS) and cost of certification illustrated in table 4.16 proves that there significant difference in cost of certification of farmers under KADS and WSSS

### 3. Rate of price premium

The rate of premium price received for organic produce is an important determinant of annual revenue from certified organic cultivation.

**Table 4.17:** Rate price premium received by certified organic farmers under KADS and WSSS-Cross tabulation (percentage)

Rate of price premium (%)	Supporting Agency		
	KADS	WSSS	Total
1	2.4	6.3	4.68% (22)
2	2.4	7.1	6.2 (24)
3	6.41	11.9	9.6 (45)
4	18.7	7.8	14.7 (59)
5	34.4	39.3	39.2 (175)
6	25.6	27.3	27.5 (125)
Total	100% (203)	100% (267)	100% (470)

Source: Calculation based on survey data 2013-14

As WSSS is mainly focusing on export market for certified organic spices, higher price premium (5% and 6%) received by certified farmers are more under WSSS.

**4. Market efficiency:** The efficiency in marketing certified organic produce is an important determinant of annual revenue. As a supporting agency of organic farmers, WSSS and KADS are playing a very influential role in marketing organic produce of certified organic farmers.

**Table 4.18:** Market efficiency of KADS and WSSS – Cross tabulation

Supporting Agency	Market efficiency		Total
	Efficient	Inefficient	Total
KADS	87.7	12.3	100% (203)
WSSS	36.0	64.0	100% (267)
Total	58.3 (274)	41.7% (196)	100% (470)

Source: Calculation based on survey data 2013-14

The cross tabulation results presented in table 4.18 finds that market efficiency is more in case of KADS with 87 percent. Only 36 percent certified organic farmers under WSSS responded market efficiency. The reason is that KADS concentrates more on local market for organic products. The efforts of KADS contributed to develop a local market for organic produce at Thodupuzha where the Farmers' Open Market is functioning. Along with local marketing of organic produce, KADS procure and export high quality certified organic spices. The WSSS is more focusing on foreign market for certified organic spices. Therefore majority of certified farmers under WSSS finds difficulty in local marketing of their produce.



As the certified organic agriculture is in the initial stage in Kerala, governmental and non governmental institutions have great roles to play in promoting certified organic farming in Kerala. In the case of certified organic spices cultivation, Spices Board has to intervene in different phases of organic farming developmental initiatives. In many parts of India, the non Governmental Organisations or Societies and farmers associations have been contributing more than the Governmental organisations in promoting of organic farming. In Kerala also the role of institutional support, both Governmental and Non Governmental is an inevitable part of certified organic farming developments. The KADS and WSSS are playing very relevant role to promote organic farmers in Idukki and Wayanad to obtain organic certification. Compared to those farmers who attained individual organic certification, the farmers within group certification under WSSS and KADS incurred lower cost of certification. Another vital area where KADS and WSSS play critical roles is Procurement and marketing of certified organic products. The WSSS is concentrating on the export aspect of certified organic spices and giving priority for procurement processing and value addition. And KADS concentrates more on local market development for organic products.



“ I know of no pursuit in which more real and important services can be rendered to any country than by improving its Agriculture”  
George Washington

## **ECONOMIC ASPECTS OF CERTIFIED ORGANIC FARMING OF SPICES IN KERALA**

### **• Contents •**

- 5.1. Present Status of Certified Organic Spices Cultivation in Kerala
- 5.2. Relevance and Attributes of Certified Organic Spices Cultivation in Kerala
- 5.3. The Economic and Social Profile of Certified Organic Cultivators in Kerala
- 5.4. Cost of Production and Profit Levels of Certified Organic Farms
- 5.5 Major Constraints of Certified Organic Cultivation of Spices in Kerala

The previous chapter discussed the Schemes and welfare Programmes of Spices Board to promote Organic Farming. It also dealt with the role and relevance of institutions such as Certification agencies, Wayanad Social Service Society and Kerala Agricultural Development Society in promoting Organic spices cultivation and Certification in Kerala. The present chapter deals with different economic aspects of certified organic farming of spices including social and economic profile of certified organic spices cultivators in Kerala. It also explains the relevance and major constraints of certified organic cultivation of spices in Kerala.

The apprehensions regarding chemical contaminated agricultural products in recent years created the awareness, need and necessity of organic farming among the general public. Consequently there is a new surge among the public to initiate organic farming in the case of many agricultural crops.

But, at the same time, lack of authenticity of organic products stands as a big constraint in providing economic benefit to the genuine organic cultivators. This created the need and necessity of genuine agencies to certify organic farming products.

### **5.1. Present Status of Certified Organic Spices Cultivation in Kerala**

According to Spices Board, there are two certification agencies in Kerala namely Indian Organic Certification Agency (INDOCERT), Aluva and LACON, Thiruvalla. All the organic products certified by the above agencies are eligible for export with effect from the date of issue of the certificate. The first agency who received accreditation certificate from the Spices Board is M/s. Indian Organic Certification Agency (INDOCERT). The INDOCERT is supported by two international organisations from Switzerland, namely M/s.FiBL (Research Institute of Organic Agriculture) and M/s.bio.inspecta, an internationally accredited Swiss Organic Certification Agency. M/s.FiBL support INDOCERT in the planning process, management consultancy, developing structures, procedures and documents, technical training of staff, and achieving accreditation requirements. M/s.bio.inspecta assists INDOCERT to start inspections right from the beginning through co-certification for the export market. The Swiss State Secretariat of Economic Affairs (SECO) is funding the establishment of INDOCERT. Presently the inspection and certification programme of INDOCERT is proposed for Kerala, Karnataka, Tamilnadu and Gujarat.

The other agency who received accreditation certificate from the Spices Board is M/s.LACON, GMBH, a certification body for organic farming, based in Germany with branch office at Theepany, Thiruvalla, Pathanamthitta

(District), Kerala, India. Lacon was first officially approved for organic inspection and certification in the European Union in 1992. Lacon is a governmental Accreditation Body in Germany. The accreditation of inspection and certification agencies provides better services for Indian farmers at affordable cost and access to foreign markets for marketing their produces.

The data provided by the Spice Board indicate that India is among the largest producers, consumers and exporters of spices in the world. The country produces different varieties of over 65 out of the 109 spices listed by the Indian Standards Institute. India produced 5.7.MT spices from an area of 3.10 million ha during 2012-13. The estimated world trade in spices is 1.05 million tonne valued at approximately \$2,750 million. Out of this, India has a significant share of about 48 per cent in terms of quantity and about 43 per cent as far as value is concerned.

Kerala has over 2,52,660 hectare of land under spice cultivation. With an estimated production volume of approximately 1,37,862 tonne, the southern state is one the largest spice-producing regions in the country, according to Spices Board data for 2011-12. Kerala is one of the leading producers of small cardamom, nutmeg and pepper, but of late, the state has witnessed a sharp decline in area under cultivation. The area under spice cultivation in Kerala has declined from 2,58,932 hectare in 2008, but the production has increased from 1,27,534 tonnes in the last four years. Kerala produced approximately 36,000 tonne of pepper and 11,440 tonne of cardamom in 2011. The state produced approximately 11,911 tonne of nutmeg in 2012.

**Table 5.1:** Certified farmers' groups producing Organic spices in Kerala

Operator Name	District	Certification Agency
Organic Wayanad ICS	Wayanad	Indocert
Aralam Farming Corporation (Kerala) Ltd	Malappuram	Indocert
Malabar Greens	Kannur	Indocert
District Agriculture Farm	Ernakulam	Indocert
Haritha Farms And Aviaries	Kozhikode	Indocert
The Plantation Corporation Of Kerala Ltd.	Kottayam	Indocert
Higrange Organic Producers Society (HOPS)	Idukki	Indocert
Kerala Agricultural Development Society (KADS)	Thodupuzha	Lacon
Manarcadu Social Service Society	Kottayam	Lacon
Girijyothi Organic Development Project	Idukki	Lacon
Wayanad Social Service Society(WSSS)	Wayanad	Lacon
Periyar Foundation -Vanchivayal	Idukki	Lacon
Mankulam New ICS (SHM Project)	Idukki	Lacon
Manarcadu Social Service Society (Organic Grower Group(Idukki)	Idukki	Lacon

Source: Data from Indocert and Lacon (Certification Agencies), 2014

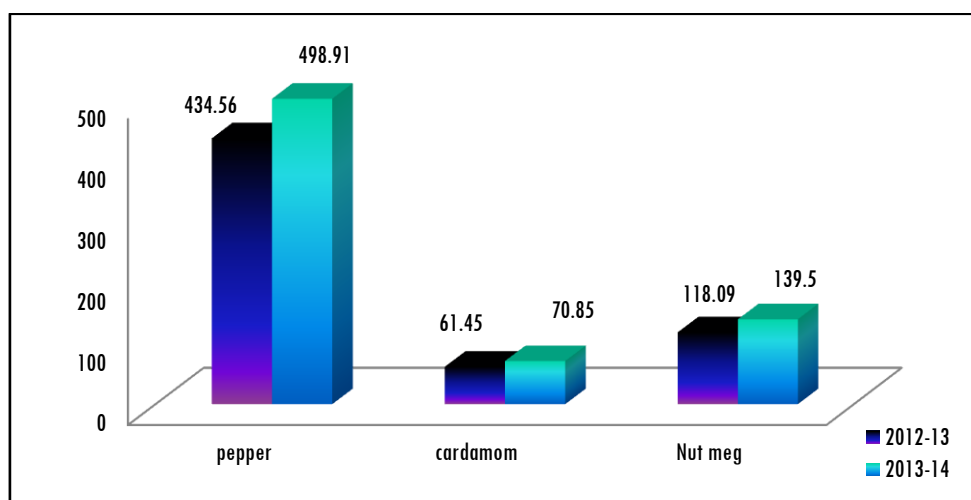
Organic farming of spices is showing an increasing trend in Kerala. The data from two certification agencies in Kerala namely INDOCERT and Lacon presented in the table 5.1, shows that the certified organic cultivation is limited to farmers associations and NGOs especially in Wayanad and Idukki. The certification is mainly allotted for production, processing and trading. The organic spices producers are allotted certification for production.

Other than the above listed institutional organic spices cultivators, individual organic spices producers also acquired organic certification for production from the certification agency. As per the data from certification

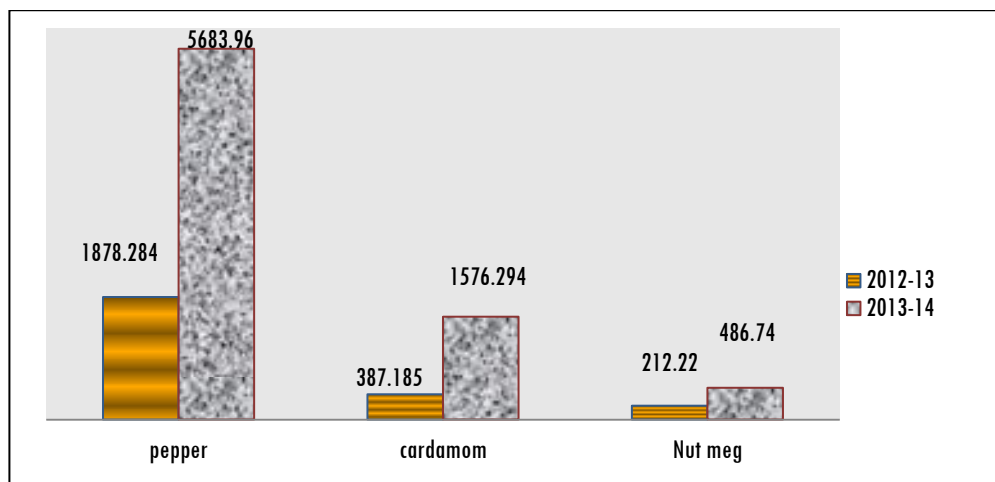
agencies, the number of certified organic spices cultivators is showing an increasing trend. According to the data from Lacon Certification agency, the total number of certified organic spices producers in Kerala increased from 5850 in 2011 to 9694 in 2014. The area under organic spices cultivation certified under Lacon increased from 2238.5 ha to 6814.38 ha in 2014. As per Indocert data, According to Indocert, 5,175 farmers in Kerala have won the organic certification. Out of this, nearly 2000 organic spices producers certified under Indocert. Total 55 farmer groups in Kerala acquired the organic certification from Indocert.

The figure 5.1 and figure 5.2 depicts the amount spices produced by Wayanad Social Service Society and Kerala Agricultural Development Society.

**Figure 5.1:** Quantity of organic spices produced (MT) KADS



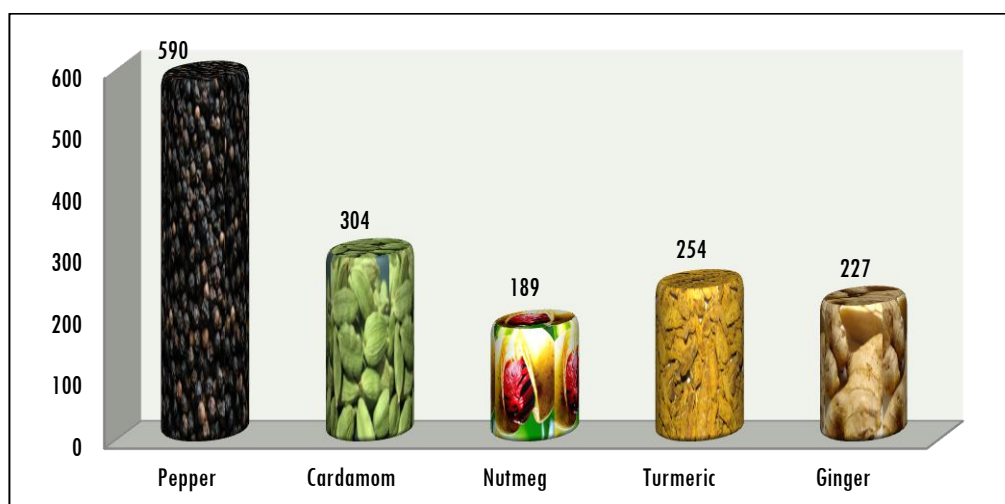
Source: KADS data, 2014

**Figure 5.2:** Quantity of organic spices produced (MT) WSSS

Source: WSSS data, 2014

Among the spices produced by WSSS and KADS, Organic pepper constitutes major spice.

All the sample respondents including both group certified and individual certified organic farmers are producing organic pepper. The number of certified organic farmers cultivating each spice is presented in figure 5.3.

**Figure 5.3:** Number of certified organic farmers producing organic spices

Source: Primary Survey, 2013-14

As presented in the figure 5.3 all certified farmers are producing organic pepper. Out of the total 590 respondents, 304 certified organic farmers produces Cardamom, 254 certified farmers produces turmeric, 227 organic farmers produces ginger and 189 farmers produces nutmeg.

## **5.2. Relevance and Attributes of Certified Organic Spices Cultivation in Kerala**

Spices are mainly used as flavoring agent in food and as medicine. The demand for domestic spices is high in countries such as the United States, European Union, Arab countries and South Asian countries. India is among the major producer and exporter of spices with 3.72 million tonnes of spices production, out of which India exports about 8-10%. India's share in world trade of spices is about 40-50% in volume terms and 25% in value terms. The medicinal properties of spices generate demand for organically produced spices with a market growth of 10% in Europe, USA and Japan. The European market and the US market are the largest organic markets in the world and most relevant to exporters of organic spices.

During the first half of the financial year 2013-14, Indian spices exports have been able to record gains in both volume and value. The growth in the export volume of spices is 20% and that of value is 43% in rupee terms and 31% in dollar terms. During the period, a total of 3,78,755 tons of spices and spice products valued Rs.6117.83 crore (US\$1031.11 Million) has been exported from the country as against 3,14,835 tons valued Rs.4285.74 crore (US\$ 787.49 Million) in 2012. The total export of Spices during the first half of FY 2013-14 has achieved around 60% of the target fixed both in terms of quantity and value.

The major constraint of Indian spices exporters is comprehensive legal and non-legal market requirements. US and European buyers demands reliable supplies of constant quality. The certified organic spices production is the only solution to overcome the constraint in the global market. Table 5.2 shows the



major market access requirements related to food safety and certification of organic products:

**Table 5.2:** International market access requirements:

<b>General legislation</b>	Codex Alimentarius adopted an international Code of Hygienic Practice for Spices and Dried Aromatic Plants in 1995 (CAC/RCP 42-1995).	Hygienic requirements in the production area, in the company's facilities, for personnel hygiene, for hygienic processing requirements and product specifications, including ginger, chillis and vanilla.
<b>EU legislation</b>	The code is used as a basis for EU legislation; General Food Law (Regulation (EC) 178/2002), laying down general principles and requirements of food legislation, establishing the European Food Safety Authority and laying down procedures in matters of food safety and traceability.	Maximum Residue Levels (MRLs) (Regulation (EC) 396/2005, (EC) 178/2006 and (EC) 149/2008), Microbiological contamination (Regulation (EC) 2073/2005), Contaminants (Regulation (EC) 1881/2006). Irradiation (Directive 1999/2/EC, 1999/3/EC)
<b>EU organic legislation</b>	Laid down in Regulation (EC) 834/2007, Regulation (EC) 889/2008 and Regulation (EC) 1235/2008.	EU establishes requirements on the production and labelling with which an organic product of agricultural origin must comply, in order to be marketed in the EU as "organic".
<b>Swiss legislation</b>	Imported spices have to comply with the requirements of Swiss food legislation. The basis for enforcement and implementation of food legislation is formed by the Swiss Food Act.	These provisions apply to the manufacture, treatment, storage, transportation and delivery of food, for the marking and advertising of food, as well as for agricultural food production. Ordinance on indication of country of origin of foodstuffs, ingredients and raw materials used in foodstuffs
<b>US legislation</b>	Regulations and guidance on certification, production, handling, and labelling of USDA organic products are laid down in the National Organic Program (NOP).	

Source: International Trade Centre

Dried organic spices and herbs in bulk are used as ingredients in a wide range of products. In the organic spices sector, processors/exporters buy certified spices, mostly from small-scale farmers. The processors process the spices and make sure that they comply with the standards of the destination markets. The certified organic spices producers in Kerala have vast prospect in this regard. According to APEDA data following are the major organic Spices exporters from Kerala. Table 5.3 provides information with respect to Organic spices exporters from Kerala:

**Table 5.3:** Certified Organic spices exporters from Kerala

Organic Spices Exporter	Type of Certification	District
Peermade Development Society	Production	Idukki
Plant rich Agri-Tech Private Limited	Trade	Kottayam
Wayanad Social Service Society	Production	Wayanad
Indian Organic Farmers Producer Co. Ltd	Processing	Ernakulam
Samac Exports	Trade	Ernakulam
Sumi Mercantile Company Pvt. Ltd	Trade	Ernakulam

Source: APEDA 2013

Among organic spices, organic pepper has the maximum export demand. As the Idukki and Wayanad district were significant in pepper production large area has been covered under organic cultivation in this district. There domestic demand for organic spices is low. The local market for organic pepper and other spices compared to fruits, vegetables, cereals and beverage crops is negligible. At the same time the foreign demand for organic spices especially in Europe and in USA is increasing. In Europe, Germany is the biggest importer. Countries such as Japan, Australia and New Zealand are potential buyers in the coming years; thus improving demand for organic pepper and other spices. But the organic spices exporters from Kerala are limited to NGOs. The export prospects of organic spices are not sill

recognised by organic spices cultivators in Kerala. Within the share of 24% of total EU imports of spices and herbs, pepper is the largest product group imported. After some years of decreasing, import values have been increased from 2006 onwards, to € 272 million in 2008. In volume terms, pepper imports experienced a slight average annual growth of 0.2% and reached 84 thousand tonnes in 2008. With a share of almost 29%, Germany is by far the largest importer of pepper. The major DC suppliers of pepper are Vietnam, Brazil and India. The export of organic spices from India is growing steadily and in general the DC import value of pepper increased steadily by 15% between 2006 and 2013. The following table shows the EU imports of Pepper from different suppliers during 2004-08. Table 5.4 provides information regarding EU imports and leading suppliers of pepper.

**Table 5.4**

**EU imports and leading suppliers of pepper  
14 - 2008, share in % of value**

	2004 € mln	2006 € mln	2008 € mln	Leading suppliers in 2008 (share in %)	Share (%)
<b>Total EU, of which from</b>	<b>159</b>	<b>191</b>	<b>272</b>		
Intra-EU	63	75	104	Germany (13%), The Netherlands (12%), France (4.4%), Austria (1.8%), Belgium (1.5%)	38%
Extra-EU ex. DC*	2.9	2.7	3.3	Singapore (0.7%), USA (0.2%)	1.2%
DC*	93	113	165	Vietnam (24%), Brazil (10%), India (10%), Indonesia (9.0%), China (3.0%)	61%

Source: Eurostat (2009)

\*Developing Countries

Many exporters do not have the capacity to meet the requirements for quality management systems that are being imposed in international markets. ISO 9000 certification and Hazard Analysis at Critical Control Points (HACCP) are becoming essential tools in the management of food-processing companies. Spices cultivated in Kerala are mainly in small holdings, frequently as inter crops. Promotion of Certified organic cultivation of spices provides good opportunity for Spices producers in Kerala. The organic spices

are relevant both in national and international market because of the following attribute and benefits of organic spices.

- ❖ Spices are relevant because of its medicinal chattels and it is constituent for many medicines that protect against disease and promote healing.
- ❖ Many studies in World have been identified knack of spices for the prevention and treatment of chronic conditions such as heart disease, cancer, Type II diabetes, and Alzheimer's.
- ❖ The Piperine in Pepper stimulates taste buds and improves digestion. It has a pride of place in treatment of gastrointestinal disorders. Regular use of pepper inhibits growth of human colon cancer cells; piperine compounds reduce inflammation in rheumatoid arthritis, and also found to reduce Alzheimer's disease.
- ❖ The nutmeg is effective in reducing cholesterol, improving memory, relieving anxiety, indigestion.
- ❖ Indian spices were known the world over since ancient times but were mostly used as ingredients or additives in food. Recent research has brought to light several medicinal applications of spices that could give a further boost demand for several Indian spices.
- ❖ The Times of India reported that a siddha drug 'Venthamarai choornam', a mixture of cardamom, ginger, cumin seeds, long pepper (thippili), dill(sada kuppi), licorice (adhimadhuram) and white lotus petal can bring down blood pressure.
- ❖ It has reported that capsaicin; a hot chemical found in chilli peppers can be effective in treatment of arthritic pain. The report said that

adding curry powder to food could give anti-inflammatory benefits for those facing ortho ailments. The cur cumin compound in curry powder and turmeric has strong anti-inflammatory effects.

- ❖ Dried organic spices and herbs in bulk are used as ingredients in a wide range of products; this increases the international demand for organic spices.
- ❖ The medicinal application of spices demands the production of certified organic spices production. The agro-economic ambience of Kerala is apt for the production of organic spices.
- ❖ The rising international demand for organic spices and advantage of premium price for organic spices in the foreign market offers huge scope for organically certified spices producers in Kerala

The growing demand for organic agricultural products in Europe and US has stirred the organic produce all over the world. The non-governmental organisations (NGOs) have considerable role in promoting and developing Organic farming projects and programmes in Kerala. The training programs and the farmer s supporting measures of NGOs aiming for increased farmers' incomes stimulates organic farming sector to tap opportunities in growing organic sector. Many farmers in Kerala produces organic agricultural products, but the reluctance in taking organic certification makes marketing of organic produce difficult. The underdeveloped domestic organic market is another constraining factor in Kerala. One of the positive aspects of Kerala agriculture is by tradition, Kerala farmers are organic farmers, making it relatively easy to convert to true organic agricultural practices. However, these smallholders often have no access to international markets. Many Organic Agricultural Movements in Kerala by NGOS and farmers associations synchronizes and

promotes the development of the organic farming sector among smallholder producers, in order to realize sustainable livelihoods in rural Kerala.

### 5.3. The Economic and Social Profile of Certified Organic Cultivators in Kerala

Majority of farmers registered for organic certification in INDOCERT and LACON are small holders with one acre to five acres of land. Most of them undertake farming as primary occupation. Those who convert from inorganic agriculture to organic agriculture practices facing the problems such as decline in farm output during conversion, increased cost of production, non availability of organic input and difficulty in obtaining organic certification. On the other hand those farmers who have years of experience in organic cultivation not faced the problem of decline in yield. And their traditional know how on methods of organic farming and own produced organic inputs makes the farming more profitable and attractive. The farmer who takes individual organic certification rather than group certification finds certification process more difficult and costlier. Table 5.5 depicts total area under organic certification during the period 2006-07 to 2011-12 certified organic spices producers in Kerala:

**Table 5.5:** Organic Certified Area in India and Kerala

Year	Total Area in Ha	
	India	Kerala
2006-07	538171.4	14744.7
2009-10	1085648	14869.34
2010-11	5550405	15790.49
2011-12	5550405	15790.49

Source: NCOF

Total area under organic certification is showing an increasing trend both in India and Kerala during the period 2006-07 to 2011-12. Table 5.6 depicts the number of farmers certified under INDOCERT and LACON during the period 2011 to 2014.

**Table 5.6:** Number of farmers certified under INDOCERT and LACON

Year	Lacon	Indocert
2011	7775	3178
2012	10076	5713
2013	13290	6579
2014	13514	14399

Source: APEDA

The number of farmers acquired organic certification from LACON Quality Certification increased from 7775 in 2011 to 13514 in 2014. The data from Indian Organic Certification Agency (INDOCERT) also depicts an increase in certified farmers from 3178 in 2011 to 14399. Table 5.7 illustrates the statistics regarding total organic area under certification in Kerala and all-India level under the two certification agencies in Kerala.

**Table 5.7:** Organic area under certification in Kerala and India under LACON and INDOCERT

Year	Lacon		Indocert	
	INDIA	Kerala	INDIA	Kerala
2006-07	523.18	252.28	33579.63	9776.31
2007-08	5306.684	539.35	60019.05	6198.57
2008-09	29602.18	1432.363	31496.79	-
2009-10	33178.61	2238.58	39622.78	3803.924

Source: APEDA

The certified organic area under the two certification agencies is showing an increasing trend at the all India as well as in Kerala. Majority of farmers who took certification from LACON belong to category while individuals and groups obtained certification from INDOCERT.

At present, organic farming in Kerala is fairly fragmented, with several organisations each with its own mission and organisational methods in undertaking organic farming. The certified organic farming is mainly undertaken by organisations than individual farmers. There are several initiatives in Kerala using third-party certification and Internal Control System (ICS) to target export markets. Table 5.8 depicts the picture of organisations and societies took organic group certification in Kerala.

**Table 5.8:** Organisations obtained Group Certification in Kerala

<i>Operator Name</i>	<i>District</i>	<i>Certification Agency</i>
Kerala Agricultural Development Society (KADS)	Idukki	Lacon
Manarcadu Social Service Society (Organic Grower Group)(Kottayam)	Kottayam	Lacon
Manarcadu Social Service Society (Organic Grower Group)(Idukki)	Idukki	Lacon
Girijyothi Organic Development Project	Idukki	Lacon
Eco Development Committee- Poopara	Palakkadu	Lacon
Fourstar Naturals – Farms	Thrissur	Lacon
Wayanad Social Service Society(WSSS)	Wayanad	Lacon
Fair Trade Alliance Kerala	Kasargode	Lacon
Kavery Jaiva Karshaka Kuttayma	Kasargode	Lacon
State Seed Farm Aluva	Ernakulam	Lacon
Mankulam New ICS (SHM Project)	Idukki	Lacon
Highrange Organic Producers Society (HOPS)	Idukki	Indocert
Organic Wayanad ICS	Wayanad	Indocert
Aralam Farming Corporation (Kerala) Ltd	Malappuram	Indocert
Kadamakudy Varapuzha Jaiva Pokkali ICS	Ernakulam	Indocert

Source: INDOCERT & LACON data



The institutions listed in Table 5.8 took group certification for production of organic agricultural items such as paddy, coconut, vegetables and spices. Other than the above listed organisations, certain other organisations such as Associated Coconut Products (Ernakulam), Enbee Exim (Kochi-Trading), Indian Organic Farmer's Producer Company Limited (Ernakulam- Processing), Keratech Coconut Oil Manufacturing Company (P) Ltd (Trissur) etc took Certification for Processing and Trading of Organic products. The table 5.9 illustrates type of occupation of sample respondents.

**Table 5.9:** Type of Occupation

Type of Occupation	Frequency	Percent
Yes	576	97.6
No	14	2.4
Total	590	100.0

Source: Survey data, 2013-14

About 97 percent age of certified organic farmers undertakes organic farming as primary occupation.

**Table 5.10:** Status of Certification

Status of Certification	Frequency	Percent
Organic	508	86.1
In conversion	82	13.9
Total	590	100.0

Source: Survey data, 2013-14

As illustrated in the table 5.10. 86 percentage of sample respondents acquired 'organic' status of certification and rest 14 percentage respondents are in 'In conversion' status of certification. The table 5.11 depicts the farm size of sample respondents.

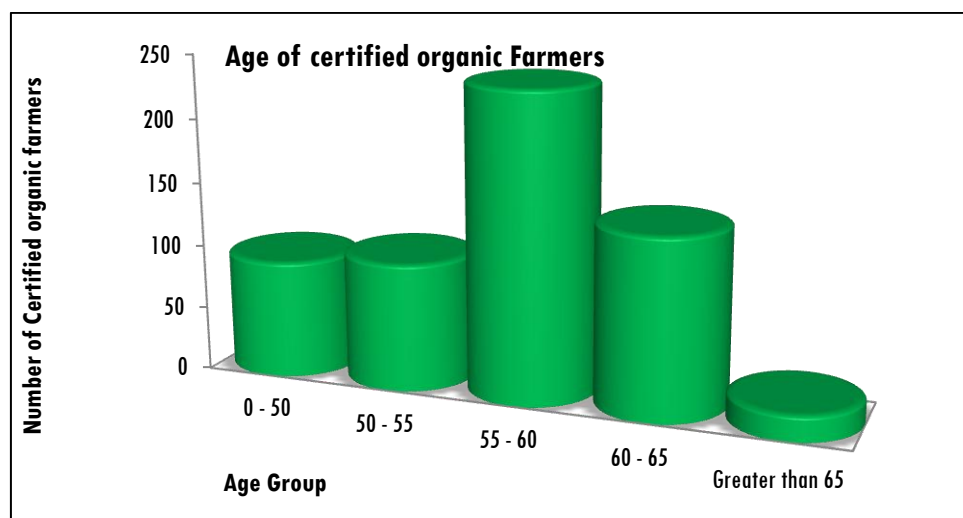
**Table 5.11: Size of the Farm**

Size of the Farm	Frequency	Percent
Less than 1 Acre	121	20.5
1 – 4 Acre	332	56.3
More than 4 Acre	137	23.2
Total	590	100.0

Source: Survey data, 2013-14

Majority of farmers registered for organic certification in Indocert and Lacon are small holders with one acre to five acres of land. Table 5.11 depicts the average size of organic farms surveyed.

Majority of farmers who conventionally followed organic farming and acquired organic certification is belonging to the age group of 55-60 years which is depicted in figure 5.4

**Figure 5.4**

Source: Survey data, 2013-14

#### 5.4. Cost of Production and Profit Levels of Certified Organic Farms

There are many variable and fixed cost involved in the organic production of crops as in the case of conventional farming. But one additional

cost incurred in the case of organic farming is cost of organic certification because; the organic certification is an important determinant to exploit the growing worldwide demand for organic food. The certification is basically aimed at regulating and facilitating the sale of organic products to consumers. Individual certification bodies have their own service marks, which can act as branding to consumers. Most certification bodies operate organic standards that meet the National government's minimum requirements. The cost of acquiring organic certification is an inevitable aspect of organic farming in the present scenario to detain the market and to ensure profitability from organic farming. The following table shows the inspection and certification cost incurred by organic farmer in a year as per the calculation of APEDA taking ECOCERT as an example. Table 5.12 present data with respect to annual expenses for inspection and certification under Ecocert.

**Table 5.12**  
**Annual expenses for inspection and certification (Eg: Ecocert)**

Type	NPOP + International Certifications (EC, NOP or JAS)
<b>1. Inspection and reporting</b>	
1.1 Small Holder Groups	Rs. 16,000 per day
1.2 Estates	Rs. 16,000 per day
1.3 Individual Farmers	Rs. 8000
1.4 Small Processors	Rs. 16,000 per day
1.5 Medium Size Processors	Rs. 16,000 per day
1.6 Manufacturers/exporters/ importers	Rs. 17,000 per day
<b>2. Certification</b>	
2.1 Small Holder Groups	Rs. 15,000 per day
2.2 Estates	Rs. 15,000 per day
2.3 Individual Farmers	Rs. 15,000 per day
2.4 Small Processors	Rs. 15,000 per day
2.5 Medium Size Processors	Rs. 15,000 per day
2.6 Manufacturers/exporters/Importers	Rs. 15,000 per day

Source: APEDA, 2010

Table 5.13 shows the latest NCOF data on certification fee charged by INDOCERT and LACON.

**Table 5.13:** Annual Certification fee charged by INDOCERT and LACON.

CATEGORY	INDOCERT	LACON
SMALL HLODER GROUP/ICS	27500	29000
INDIVIDUAL SMALL FARMER	17600	16000
INDIVIDUAL BIG FARMER	22800	25000
ESTATES	30800	42000

Source: NCOF, 2014

*Note: Individual Small farmer: A farmer with a crop production area less than or equal to 10 acres, Individual Big farmer: A farmer with a crop production area more than 10 acres but less than or equal to 50 acres, Estates: A farm which has more than 50 acres of land*

The certified organic farming is more profitable and successful in Kerala when it is undertaken by NGOs or farmers associations. The marketing of produce and certification process is comparatively easier for institutional organic farmers than individual organic farmers. The farmers groups or ICS groups within such institutional farmers acquires group certification for their produce. The cost of conducting training programs for the farmers within each organic farming organisation is another item of expenditure incurred under organic farming. Table 5.14 depicts the cost of training programs conducted under KADS, Idukki.

**Table No: 5.14:** Cost of training programs conducted under KADS, Idukki

Year	No. of Seminars	Amount in Rs.
2003	14	30000.00
2004	15	4000.00
2005	35	125000.00
2006	26	50000.00
2007	10	15000.00
2008	16	16000.00
2009	15	1750000
2010	10	65000.00
2011	8	64000.00
2012	22	125000.00
Total	171	511500.00

Source: KADS data

Table 5.15 illustrates the annual expenditures incurred by WSSS for conducting trainings and organic certification (WSSS).

**Table No: 5.15:** Cost of training programs and organic certification under WSSS, Wayanad

Year	2009-10	2010-11	2011-12	2012-13
Cost of Organic Trainings	25500	48650	50000	169200
No: farmers benefited	783	2607	2706	8068
Cost of Organic Certification	24430	470722/-	465758/-	804403/-

Source: WSSS

According to WSSS data, about 1 lakh is spent on training and more than 8 lakh spent for organic certification program (2012-13 data). Quantity and total expenditure on total input production under WSSS is Rs. 69000/10 MT. The Number of Farmers benefited from organic input production 20-30% organic farmers under WSSS. Table 5.16 shows the annual cost of production and percentage of revenue from organic spices production under WSSS.

**Table No: 5.16:** Annual cost of production and revenue from organic spices production

Year	2009-10	2010-11	2011-12	2012-13
Cost of production(Organic spices)	32247270	32247270	56348520	170518800
Percentage Revenue generated from organic spices production	8-9%	8-10%	10-16%	15-30%

Source: WSSS data

The profit levels of organic farmers depend on the price premium received by organic farmers for their produce. The certified framers groups and farmers organised under certified organic Institutions have more opportunity to get price premium price than individual certified organic farmers. The timely and easily marketing of organic produce with price premium is more possible in case of organised certified farmers. Table 5.17 shows the average price premium received for certified organic products for IOFPCL farmers in 2010-11 (as reported by IOFPCL).

**Table 5.17**

**Average Price Premium Received for Certified Organic Commodities for IOFPCL Farmers from 2010-2011 (as Reported by IOFPCL)**

<i>Product</i>	<i>Conventional Price (rs./kg)</i>	<i>Organic Price (rs./kg)</i>	<i>% Difference in Price</i>	<i>Quantity sold (kg)</i>
Black Pepper	150	180	20	1,300
White Pepper	200	350	75	101
Cardamom	1,000	1,300	30	135
Coffee	52	55	5.77	57,555
Vanilla	1,000	2,000	100	329
Fresh Coconut	14	18	28.57	8,573
Fresh Turmeric	20	25	25	2,500
Fresh Ginger	20	40	100	500
Fresh Chili	50	300	500	500

There are certain other factors such as years of experience in organic farming, availability of organic input, technical knowhow of organic farmers to produce organic input, initial investment required to setup of bio fertiliser production unit and status of certification such as conversion or Organic etc in determining the success or profitability of organic farming. In the conversion period, majority of farmers experiences increase in cost of production and drop in output. But it is observed that agricultural produce output is reduced in organic farming only in initial 1-2 years o and after that, production increases more than that of modern farming system giving much earning than the chemically produced commodities.

Kerala has a great potential for organic farming due to its diversity in soil types, climate. The awareness of farmers are need to improve and the availability of organic inputs like bio fertilisers, bio pesticides etc. need to be increased and expenses of certification process are to be minimised. The collaborative efforts of Government, policy makers, organisations, institutes, local bodies, consumers and ultimately farmers are essential for promoting organic farming in Kerala.

## **5.5 Major Constraints of Certified Organic Cultivation of Spices in Kerala:**

The organic farmers in developing and transition countries normally face institutional and economic constraints to success as certified organic producers. In this aspect as Organic farmers in Kerala faces so many constraints as Kerala is in the developing phase of organic farming. One of the important constraints of Kerala organic farmers is underdeveloped organic market which further creates the constraint of unable to get the premium on its produce. Lack of support especially for the resource-poor small farmers is main reason for the financial and other constraints faced by certified organic farmers in Kerala. Despite serious efforts of some NGOs, Kerala is lagging far behind in the adoption of certified organic farming. Following are the major constraints faced by organic farmers in Kerala:

- Lack of financial support by the governments which is absolutely necessary to promote Organic farming
- Inappropriate market development of organic products in the domestic market and untapped foreign markets of organic produce.
- Inconsistent government support to the producer and consumer associations to undertake organic production
- Difficult process of certification and high certification cost of organic produce.
- Lower awareness level of both farmers and consumers; A spirited campaign to highlight the benefits of organic farming against the conventional system is essential.

- Unavailability of organic inputs necessitates promotion of local organic input production

Despite the above constraints, studies and survey reports presented it is evident that organic farming is capable of yielding similar productivity; some studies have indicated that modern organic farming is not very far behind the conventional agriculture. The efficient inputs availability and proper marketing facilities can increase the scope for organic farming in Kerala. The organic agriculture is a neglected field in research and development and practically no investment in terms of subsidies is just 10% behind the conventional agriculture. This gap can be filled through appropriate policy regime, investment in input production, infrastructure and development of practices and packages through research. The unclear standards and tedious documentation process along with the lack of a single window certifying agency and expensive certification have keeping away the farmers from acquiring organic certification. Thus, a large segment of the organic farming community remains marginalized and is unable to get the premium on its produce. The support of Government and other institutions are necessary for the resource-poor small farmers to successfully venture into the organic farming.





## Chapter 6

# SCOPE OF CERTIFIED ORGANIC FARMING OF SPICES IN KERALA:

“Agriculture not only gives riches to a Nation,  
but the only riches she can call her own”

Samuel Johnson

### • Contents •

- 6.1 Positive Economic Factors Promoting Certified Organic Farming of Spices in Kerala
- 6.2 Scope of Certified Organic Farming of Spices in Promoting Rural Development
- 6.3. Prospects of Certified Organic Farming of Spices in Kerala
- 6.4. Empowering Aspects of Organic Farming Initiatives in Kerala

The last chapter was on economic aspects of certified organic farming of spices in Kerala. The chapter examined the factors that facilitate adoption of certified organic farming among spices producers. The present chapter deals with the scope of promoting certified organic farming in Kerala. The chapter examines the economic factors promoting certified organic farming of spices in Kerala, relevance of organic farming in promoting rural development, future prospects and empowering aspects of organic farming initiatives for certified organic farming in Kerala.

Many farmers in Kerala started gaining the benefits organic farming. The resulted farmers’ movements and collective actions are encouraging adoption of organic farming. The farmers’ producer companies, Societies and NGOs engaged in certified organic farming usually forming clusters to achieve group organic certification. These organisations have designed and supported projects and programmes aiming for increased farmers’ incomes by tapping the opportunities of growing organic markets. Many farmers in Kerala

produce organically by default, making it relatively easy to convert to true organic agricultural Practices.

The study examined the economic options of farmers producing certified organic spices such as pepper, cardamom and Ginger. The opportunities for value addition of organic crops are more in case of institutional organic farmers such as KADS, PDS and WSSS. They collect, process, pack and distribute the products to their final destination. In case of spices, this means that organic spices exporting are limited to these societies/NGOs. Most farmers (associations) have made agreements with processing companies, which buy their crops. These organisations often provide training on organic practices and assist with inspections and certification. Normally farmers registered under these organisations receive a premium of 3% to 8% over domestic market price. Premiums are directly related to years of organic farming, status of certification and quality of produce.

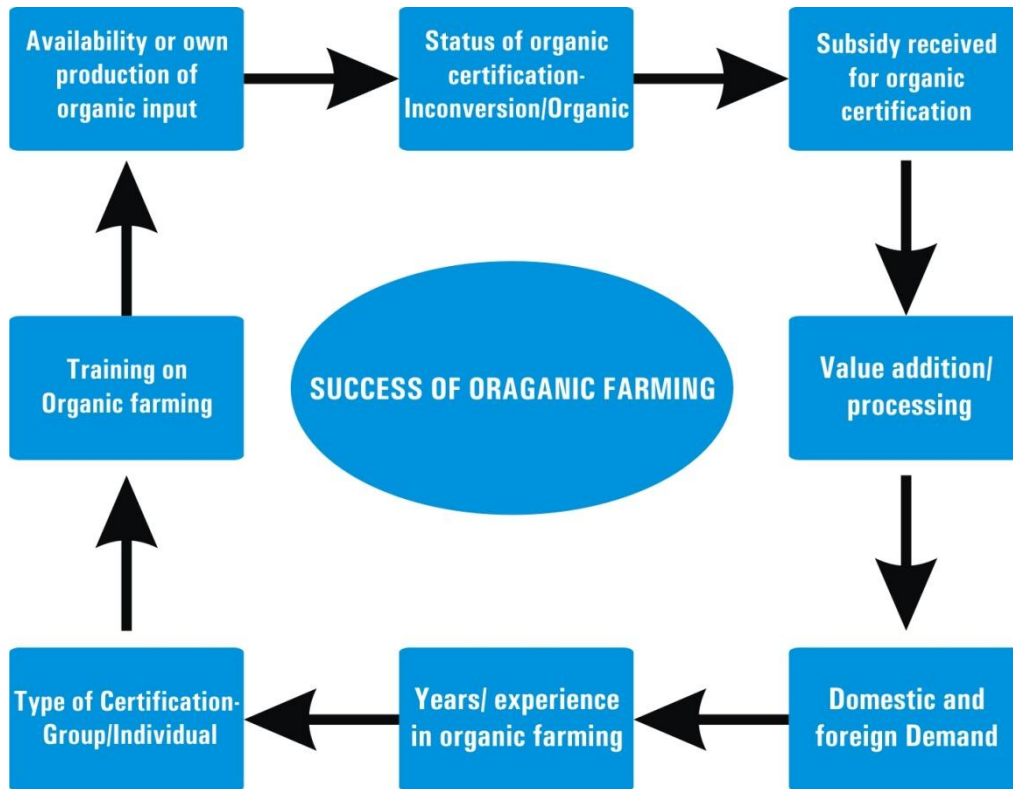
### **6.1 Positive Economic Factors Promoting Certified Organic Farming of Spices in Kerala:**

The certified organic farming of spices is mainly inspired by opportunities in growing international organic markets; many initiatives for certified organic production have emerged in Kerala. The international organic markets, mainly in Europe and in US, have been growing considerably offers large scope for existing suppliers to expand and for new players to enter these markets. The domestic organic markets are also growing. A number of organic shops are opening in cities focus on organic products; indicate that interest for organic consumption is on the rise. At the same time, the local demand for organic spices is still very limited and consumers are not well informed about the availability of certified organic products and some did not even know such

certification exists. Current opportunities for organic spices producers are limited to only few farmers, but the expanding organic market will increasingly offer opportunities to others as well. .

The critical factors determining the success of certified organic farming involves the cheap availability or own production of organic input, years/ experience in organic farming, status of organic certification, premium price for organic produce, training on Organic farming, subsidy received for organic certification and value addition/processing carried out at the export units. Figure 6.1 gives an outline positive economic factors certified organic farming of spices in Kerala.

**Figure 6.1:** Factors influencing success of organic farming- Kerala



The study was conducted on the basis of certified farmers registered under two certification agencies in Kerala viz. Lacon and Indocert. Both Individual and Institutional organic certified farmers were selected for the study. To examine the economic factors promoting organic spices production, the certified organic spices cultivators were selected through purposive sampling from the list of Indocert and Lacon. Out of the total certified farmers in these two certification agencies in Kerala, a micro level study is conducted among individual certified spices cultivators using structured interview schedules. In order to understand the role of institutions in promoting organic farming of spices, two institutions engaged in certified organic farming were selected; one is functioning at Wayanadu and other at Idukki. The study results on role of these two institutions in promoting certified organic farming is presented in the chapter 4.

Majority of farmers registered for organic certification in Indocert and Lacon are small holders with one acre to five acres of land. Most of them undertake farming as primary occupation. As has been stated earlier, majority of certified organic spices cultivators undertake farming as primary occupation. About 97 percent of certified organic cultivators undertake organic farming as primary occupation and the remaining as secondary occupation.

The cost of certification depends on the size of farms. One of the important aspects of organic farming is the use of organic manures and organic inputs. The organic input content per unit quantity have longer residual effect besides improving soil physical properties compared to chemical fertilizer. The local availability and capacity to produce organic manures have positive impact on the economic success of organic farming. Table 6.1 depicts the major organic inputs used by the certified organic

cultivators. The organic farmers' applies following combinations of organic manures on rotation basis to improve soil fertility.

**Table 6.1:** Combinations of Organic fertilisers

Combination of organic inputs applied	No of certified organic farms	Percent
Compost, Green Manure, Vermi wash	15	2.5
Cow dung, Green Manure	15	2.6
Cow dung, Green Manure, Vermi wash	83	14.1
Green manure, cow dung, Farm yard	11	1.9
Jeevamruthu, Vermi wash, Green manure	25	4.2
Organic fertiliser	1	.2
Panchagavya, Green Manure, Vermi compost	105	17.8
Panchagavya, Vermi wash	256	43.4
Vermi compost, Bio gas plant slurry water	73	12.4
Cow dung, Green Manure, Vermi Compost	6	1.0
Total	590	100.0

Source: Survey data, 2013-14

As illustrated in table 6.1 organic farming practices involves use of combinations of organic input such as Green manure, cow dung, Farm yard, Vermi compost, Bio gas plant slurry water, Panchagavya, Vermi wash, Jeevamruthu etc. Organic inputs are applied through a combination of structural and tactical management options to ensure quantity and quality organic output. Many farmers' uses traditional and indigenous farming inputs such as cow dung, farm yard etc. Many organic farmers and NGOs have developed large number of innovative formulations which are effectively used for modern technologies to manage and enhance diversity, to incorporate biological principles and resources into farming systems, and to ecologically intensify agricultural production. Vermi Compost production units, Panchagavya, Jeevamruthu are such type of organic fertilisers. The farmers who are organised under societies/ NGOs such as KADS and WSSS received training for the own production of organic inputs. This enhances the economic success of organic farming by stimulating cost effective application of organic inputs.

Many variants of liquid manures are being used by farmers of different regions/ groups in Kerala. Few important and widely used formulations are given below:

**Jeevamruthu** –This is prepared by mixing 10 kg. Cow-dung, 10 lit. Cow-urine, 2 kg, Jiggery, 2 kg of any pulse grain flour, 1 kg. Live-forest soil in 200 lit. of water. Keep the mixture for 5 to 7days for fermentation. The solution is to be stirred regularly three times a day. Use the solution with irrigation water. The solution is sufficient for one acre of land.

**Amritpani** – This is prepared by mixing 10 kg cow-dung with 500 gm of honey. This is to be stirred thoroughly to form a creamy paste. To this add 250 gm of cow ghee and stir the same at high speed. Pour 200 lit. of water to dilute the same. This can be either sprinkled on soil or can be used with irrigation. This suspension is adequate one acre over soil. After 30 days, apply second dose in between the rows of plants or through irrigation.

**Panchgavya** – This is prepared by mixing 5 kg. fresh cow-dung, 3 lit. cow-urine, 2 lit. cow milk, 2 lit. curd and 1 kg cow butter. Keep the mixture for 7 days to ferment. Stir the mixture twice a day. Dilute 3 lit of Panchgavya in 100 lit water and spray over soil. 20 lit panchgavya is needed per acre. Apply it along with irrigation.

**Manures** – Plant and animal wastes are used as sources of plant nutrients. They release nutrients after their decomposition. Manures are the organic materials derived from animal, human and plant residues which contain plant nutrients in complex organic forms. Manures with low nutrient, content per unit quantity have longer residual effect besides improving soil physical properties compared to fertilizer with high nutrient content. Major sources of manures are cattle shed wastes-dung, Human habitation wastes, Poultry

wastes, Crop wastes-sugarcane trash and Green manure from crops and green leaf material.

**Vermiwash**– It is a brown coloured liquid fertilizer, which is collected by passing water via a worm culture column. Vermiwash as a storehouse of nutrients and microorganisms, is used as a foliar spray for crops.

**Vermicompost** is manufactured from the buffalo/Cow dung & biomass by vermin-culture technology and scientific composting. It increases crop yield, improves soil health, fertility, structure, creates favourable conditions for healthier plant growth & development.

As stated earlier, 43 percent of the certified organic farmers (who received training for organic input production), applies Panchagavya and Vermiwash as organic input. About 17.8 percent organic farmers apply combination of Panchagavya, Green Manure and Vermi compost. Only few certified organic farmers (2%) purchase organic fertiliser from outside. Training in organic farming has an influential role in determining efficiency of organic farming. Table 6.2 shows the organic certified farmers received training.

**Table 6.2:** Training received by organic certified farmers

No of Certified organic farmers		Percent	
	Not attended training	66	11.2
	Attended training	524	88.8
	Total	590	100.0

Source: Computed from the data from KADS and WSSS (2013-14)

Among the respondents about 88 percent organic farmers attended training programs on organic farming conducted by agencies such as Spices Board, KADS, WSSS, PDS, and Farmers' Groups etc. Certain individual farmers (11%) who are not part of any associations, NGOs or societies do not attended training on organic farming.

Premium price received for organic produce is another determinant of economically successful organic farm. Table 6.3 shows the number of certified farmers who received premium price for their produce.

**Table 6.3:** Organic farmers who received premium price

<b>No of farmers</b>		<b>Percent</b>
Not received Premium price	117	19.8
Premium price received	473	80.2
Total	590	100.0

Source: Survey data, 2013-14

Among the respondents about 80% of farmers received premium price for their produce. The status of organic certification, years of organic farming, quality of output and marketing efficiency are the important determinants of premium price. Those farmers who have acquired group certification and organised under societies or NGOs are receiving better premium price than individual certified organic farmers. The marketing opportunity also better for group certified organic farmers. Table 6.4 depicts rate of premium received by certified organic farmers.

**Table 6.4:** Rate of Premium price (%)

<b>Rate of premium</b>	<b>No of farmers</b>	<b>Percent</b>
No premium price Received	39	6.6
1	25	4.2
2	37	6.3
3	64	10.8
4	189	32.0
5	155	26.3
6	81	13.7
Total	590	100.0

Source: Survey data, 2013-14



The highest rate of premium received by the respondents is 6% and about 13% of certified organic farmers received this premium price rate. At the same time 6% of farmers did not receive any premium price. The reason is that, these farmers are under the 'In conversion' status of organic certification. Thirty-two percent of the surveyed certified farmers received 4% premium price rate for their produce. The years of experience in organic farming determines the price premium for organic produce, which is illustrated in Table 6.5

**Table 6.5:** Years of Experience in Organic farming

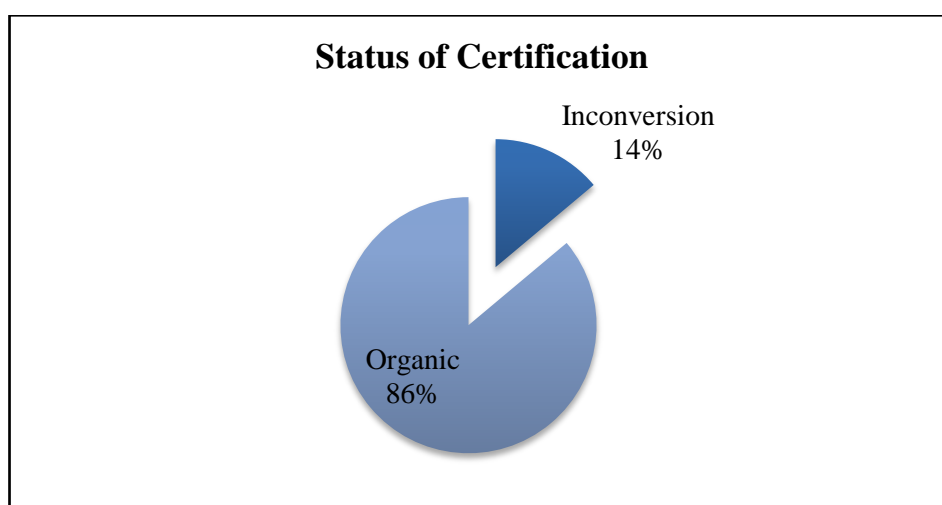
Years of organic farming	No of certified organic farmers	Percent
1-4 Years	164	27.8
5-8 years	377	63.9
9 Years and above	49	8.3
Total	590	100.0

*Source: Survey data, 2013-14*

The status of certification is another important determinant of economic success of organic farming. Only those farmers who are in the status of 'Organic' certification receive better premium price for their produce. The time between the start of organic management and certification of crops is known as the conversion period. The whole farm, including livestock, should be converted according to the standards over a period of three years. The standards requirements shall be met during the conversion period. All the standards requirements shall be applied on the relevant aspects from the beginning of the conversion period itself. Plant products produced can be certified organic when the national standards requirements have been met during a conversion period of at least two years before sowing or in the case of perennial crops other than grassland, at least three years (thirty-six months) before the first harvest of products. The accredited inspection and certification

agency may decide in certain cases (such as idle use for two years or more) to extend or reduce the conversion period in the light of previous status of the land but the period must equal or exceed twelve months. Among the surveyed organic spices producers 86% acquired the status of 'organic' Certification. Figure 6.2 illustrates the status of certification of surveyed organic farmers.

**Figure 6.2**



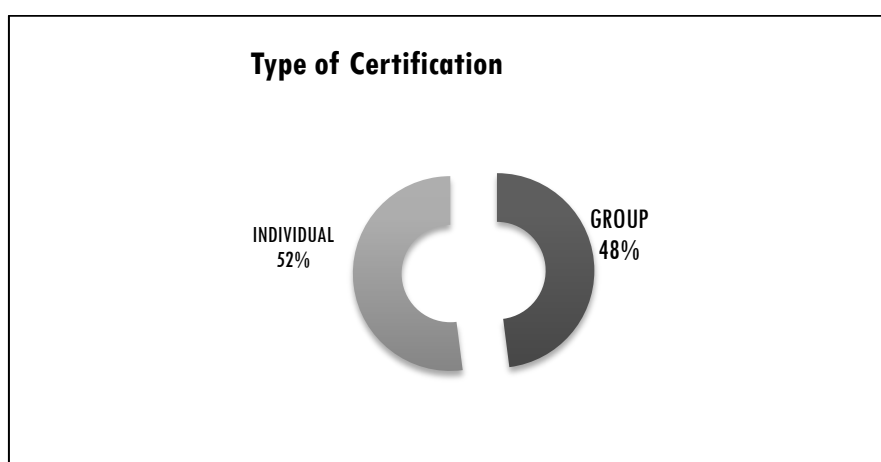
Source: Survey data, 2013-14

The experience in organic farming is one of the important aspects of successful organic farming. Many farmers surveyed were conventionally following organic farming. The use of chemical fertilisers and pesticides has been limited for such farmers. The process of conversion period for acquiring organic certification is much easier for such farmers compared to the farmers who have practiced farming by applying chemical fertilisers and pesticides. In this aspect, the age of organic farmers is one of the important determinants in determining the factors promoting organic farming. Majority of farmers who conventionally followed organic farming and acquired organic certification is belonging to the age group of 55-60 years

Those who convert from inorganic agriculture to organic agriculture are facing problems such as decline in farm output during conversion, increased cost of production, non availability of organic input and difficulty in obtaining organic certification. On the other hand those farmers who have years of experience in organic cultivation is not faced the problem of decline in yield. And their traditional know how on methods of organic farming and own produced organic inputs makes the farming more profitable and attractive.

The type of certification followed by organic farmer is one of the important determinants of the cost of organic certification. The farmer who takes individual organic certification rather than group certification finds certification process more difficult and costlier. Figure 6.3 depicts the picture of type of certification followed by surveyed organic farmers.

**Figure: 6.3**

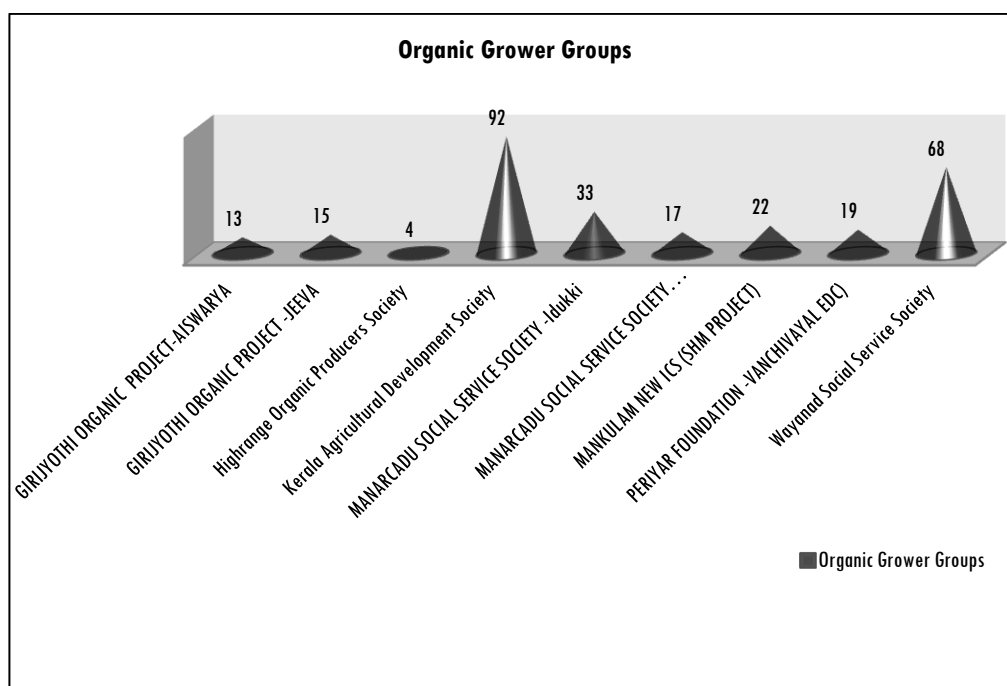


*Source: Survey data, 2013-14*

Among the surveyed farmers 52% acquired individual organic certification. Rest of them acquired Group certification and attended training programs from the following NGOS/ Societies as illustrated in the figure 6.3

Farmers who have acquired group certification are registered members of organic farmers Groups/ Societies/ NGOs as depicted in Figure 6.4. The number of organic grower groups of different societies or NGOs are illustrated in the figure 6.4.

**Figure: 6.4**

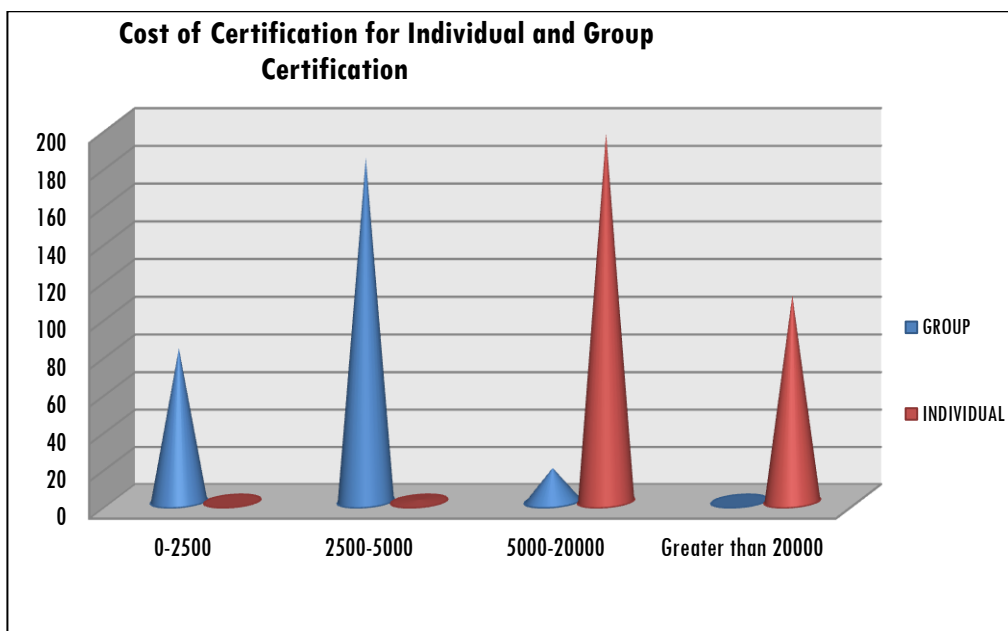


Source: Survey data, 2013-14

As illustrated in the figure, majority of surveyed organic farmers are belongs to Kerala Agricultural Development Society (KADS), Idukki followed by Wayanad Social Service Society (WSSS) and Manarcadu Social Service Society, Idukki. These organised farmers who have acquired group certification attains advantage over individual certified farmers from the training programs, better information sharing, collective marketing of organic products and better price for organic produce.

The type of organic certification determines the cost of certification. Among the surveyed farmers, those who acquired group certification find certification process more comfortable than those who attained individual organic certification. The certification cost also lower in case of Group certification which is illustrated in the figure 6.5.

**Figure: 6.5**



Source: Survey data, 2013-14

As depicted in the Figure 6.5 the cost of certification is higher for individual certified farmers and the certification cost varies from Rs.5000 to Rs.20000 for individual certified farmers. In the case of farmers who acquired group certification the certification cost ranges only between Rs.2500-and Rs.5000 depending on their farm size.

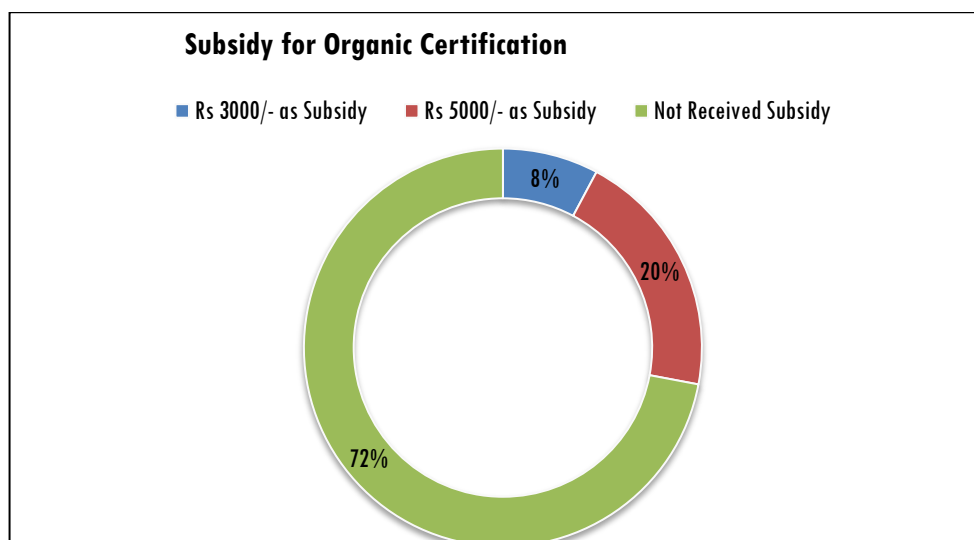
The burden of cost of organic certification can be reduced with the aid of organic certification assistance subsidy provided by Spices Board. The

programme aims to help growers / processors of spices in acquiring confirmation, in conversion and organic certification. It is applicable to group of farmers, NGOs, Farmers Co-operative Societies /Associations, Individual farmers and processors.

Group of farmers, NGOs and farmers' Co-operative Societies / Associations are eligible for 50% cost of certification subject to a maximum of Rs.75, 000/- for certifying their farms / processing units. Individual farmers and processors are eligible for 50% of the cost of certification subject to a maximum of Rs.25, 000/- per certification. The assistance under the programme will be availed only thrice from Spices Board.

But majority of organic farmers are unaware about such programs and schemes provided by Spices Board or Governmental agencies. Only organised farmers registered under NGOs/Societies are aware about such provisions. Because of this reason, as illustrated in the figure 6.7, 72% of surveyed farmers not even applied for organic certification assistance. Whereas farmers who have registered members of Societies/NGOs are aware about such benefits and availed Rs 5000/- or Rs 3000/- as subsidy depending on their farm size and total cost of certification. But the percentage of farmers utilised such program was limited to less than 30% from the surveyed organic farmers.

**Figure 6.6**



Source: Survey data, 2013-14

On the basis of the surveyed farmers the positive economic factors such as availability and capacity to produce organic manures, training on organic farming, status of certification, and experience in organic farming, type of certification and organic certification assistance / subsidy received by farmers are the vital determinants of the accomplishments in organic farming initiatives in Kerala. The responses of certified organic farmers divulge the fact that all these factors are more benefited for farmers registered under Societies/NGOs/Famers Associations.

## **6.2 Scope of Certified Organic Farming of Spices in Promoting Rural Development:**

Since 2007 the number of organic farming initiatives in Kerala has risen sharply, capturing massive public attention on importance of organic farming. Simultaneously the relevance of rural development and role of farmers has been raised with the questions of food quality. In this milieu,

organic farming is considered as vehicle to deliver safe food from an enhanced farmed environment, at the same time stimulating rural development through enhanced employment opportunities in organic farming sector. In such a highly stimulating situation, the large scope for organic farming in promoting rural development. For the last few decades the rural economy of Kerala has seen a structural shift away from agriculture. The resulted decline in growth rate in agriculture sector growth created so many ill impacts in the rural community especially in the employment generation. Table 6.6 illustrates annual growth rate and share of agricultural sector in Kerala GSDP.

**Table 6.6:** Annual Growth rate in Agricultural Income and share of agriculture in Kerala GSDP

Year	Rate of change over previous year	Share of Agriculture and Allied Sectors in GSDP
2008-09	2.08	12.7
2009-10	-3.01	11.5
2010-11	-7.28	10.1
2011-12	-0.15	9.1
2012-13*	1.46	9.51
2013-14**	-2.88	8.83

\*Provisional \*\* Quick Source: Directorate of Economics and Statistics

Table 6.6 clearly depicts decline in share of agriculture. According to the Economic review 2014, the service sector continues to dominate the Kerala economy which is heavily depended on overseas remittance. At the same time, the most important sector in terms of food security and rural development is showing a declining trend from 12.7 contributions to state GSDP in 2008-09 to 8.83 in 2013-14 with -2.88 changes over previous year.



As per the fourth Annual Employment & Unemployment Survey report for 2013-14 Labour Bureau, under Union Ministry of Labour and Employment, the unemployment rate per 1,000 persons aged more than 15 years was lowest in Gujarat at 12, followed by Karnataka at 18, Maharashtra at 28, UT Chandigarh at 28, Madhya Pradesh at 29 and Telangana at 33. However, the maximum unemployment was found in Sikkim at 158 persons, followed by Arunachal Pradesh at 140, Kerala at 118, Tripura at 116 and Goa at 106, as per survey report.

The data compiled from the NSS(66th round) Report from Ministry of Statistics and Programme Implementation, Government of India also depicts that Kerala has the highest unemployment rates and ranks worst, while Rajasthan and Gujarat has the least unemployment rate among major States of India. The data reveals that the unemployment situation in Kerala is worse with more than national average rate. The rural unemployment rate is 76 per 1000 people in Kerala compared to national average rural unemployment rate of 16 per 1000 people. Unemployment in Kerala is found to be over three times the all India average.

Since the decreasing contribution of Agricultural sector and rural unemployment are inter related and form a vicious circle, the promotion of organic farming is an indispensable aspect of rural development to improve the situation of rural economy of Kerala. The food security is also a vital apprehension in Kerala due to very high deficit in production of food grains; Kerala produces only 15 per cent of actual requirement. Inevitably, Organic farming has a critical and functional role in Kerala to ensure safe food for all.

A broader perspective on the potential contribution organic farming in rural development derives from the organised farmers movements in Kerala.

Although organic farming is often promoted as a vehicle to deliver multiple benefits to rural areas relatively little research has examined the wider economic and social role of organic farming. The initiative of Kerala Agricultural Development Society (KADS) in enforcing rural development with the promotion Organic farming is taken into account in the study.

### **Mankulam - Intervention of KADS in Organic agricultural Development:**

Mankulam is one of the six panchayaths of Devikulam block in Devikulam Taluk in the district. KADS initiated a study of the panchayath with the help of women SHG members of Kudumbasree (Poverty Eradication Mission) -a Kerala Government programme. The information collected during the base-line survey is recorded with KADS for making suitable development programme for the area. 90% of the people are engaged in agriculture since they started agricultural activities in 1967 except a few tribes. The main crops cultivated are pepper, cardamom, nutmeg, ginger, vanilla, coconut, areca nut, vegetables and fruits like banana ,pineapple etc. They also carryout integrated farming and animal husbandry activities like dairying, goat rearing, poultry and bee-keeping. KADS is one of the approved Service Providers for certification process by National Centre of Organic Farming (NCOF) and nearly 1000 farmers are in the conversion periods for final organic certification. KADS formed ICS groups (Internal Control System and about t 1000 farmers have already become members of ICS groups and their certification is in the final stage.

KADS' intervention in Mankulam commenced in 2007 and there are two groups with a membership of 41 farmers who are in the organic conversion period. The area covered under organic farming by these farmers is 131 acres. KADS provides necessary assistance for integrated development of

the people particularly in the sustainable management of natural resources through awareness creation programmes, promotion and practicing of eco-friendly agricultural operations and organic farming. With the effective intervention of KADS, the certified organic area increased to 254.83 Ha in 2013 and the number of organic farmers increased from 41 in 2007 to 370 in 2013 which is illustrated in table 6.7.

**Table 6.7:** Organic Certified Area & Number of Organic farmers in Mankulam Panchayath

Total land(Ha)	Organic area(Ha)	Number of Certified organic farmers
271.964	254.83	370

Source: KADS data, 2013

From Table 6.7 it is clear that, a large portion of area of 254.83 Ha is converted to organic area as the land is very fertile and the use of fertilizer and pesticides is very much limited the conversion to organic area is much easier.

Table 6.8 depicts the major crops and yield of each crop in Mankulam Panchayath in the year 2013.

**Table 6.8:** Major crops and yield of crop in Mankulam Panchayath

Name of Crops	Yield of crop(mt)
Pepper	40.652
Cocoa	195.926
Coffee	33.636
Nutmeg	1.776
Coconut	13.2
Cardamom	6.952
Clove	0.03
Areca nut	1.65

Source: KADS data 2013

The main crops cultivated by the identified certified organic farmers are nutmeg, cocoa, cardamom, pepper, clove, areca nut, nutmeg and coffee. The

Cocoa constitutes main crop with 195.92 Mt. yields in 2013 followed by pepper (40.65mt) and Coffee (33.63).

KADS has opened its office at Mankulam for the proper implementation of organic farming and to bring the whole panchayath under organic farming. All the necessary infrastructural facilities and trained staff are provided in all the regions for the successful operation of the scheme. These efforts of KADS helped to improve the conditions of a large number of rural populations. In the case of organic farming, the costs of organic input comparatively lower than chemical fertilisers. At the same time the need for labour is comparatively higher in organic farming which creates employment generation in rural areas like Mankulam Panchayath. The KADS also provides efficient marketing of Organic products with KADS 'Farmers Open Market' facility which ensures premium price for produce. The KADS intervention in Mankulam Panchayath in promoting organic farming is an effective model in Kerala which interlinks organic farming and rural development.

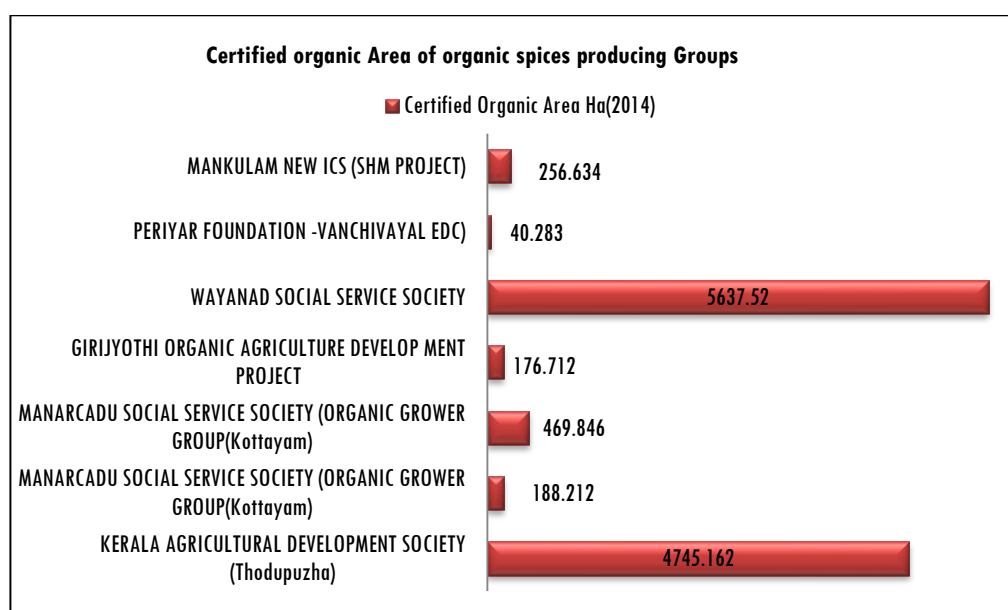
### **6.3. Prospects of certified organic farming of spices in Kerala:**

The Certified organic farming of spices in Kerala is still not well developed and individual farmers producing certified organic spices facing difficulty to find end-markets for their products. As the local Market for certified organic spices is still very limited, they depend on certified processors and traders to sell their products to the international organic market in Europe and the EU. Whereas the farmers registered under societies or NGOs taking the advantage of collective marketing with the label of organisation and also capture the export potential of organic spices.

The major organisations/Societies supporting smallholder certified organic spices cultivation in Kerala place major position in organic farming of

spices in Kerala. Certified Organic farming has been successful under such institutional arrangements. The Figure 6.7 outlines the area under certified organic cultivation of Spices in Kerala by major organisations/Societies supporting smallholder certified organic spices cultivation. Figure 6.7 provides information regarding certified area of organic spices producing groups.

**Figure 6.7**

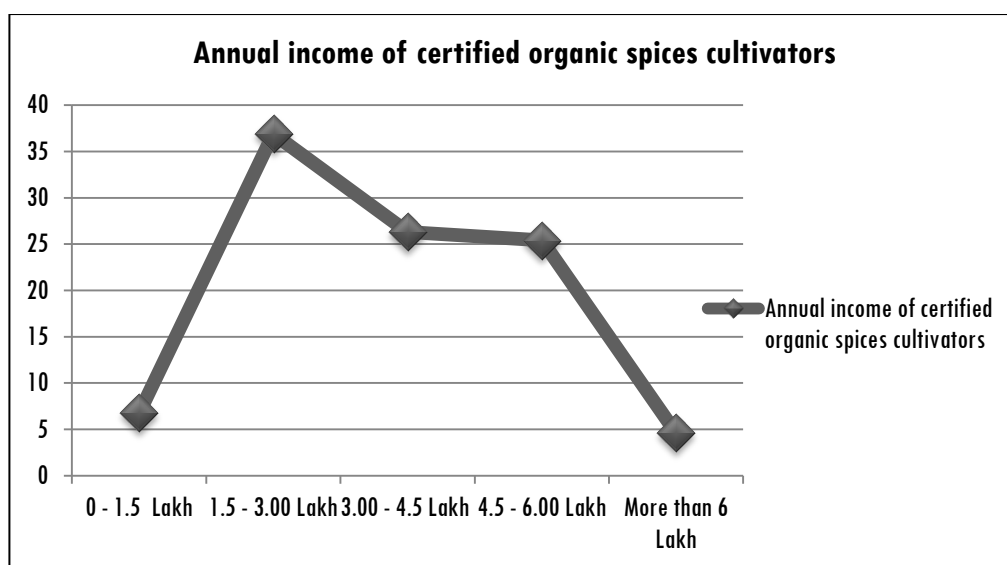


Source: Data from Indocert and Lacon (2014)

The major prospects of organic farming in Kerala involves the organised certified group farming opportunity for small farmers which provides high premium, low capital investment, ability to achieve higher premium in the market through collective marketing and the ability to use traditional knowledge. According to a research conducted by the Office of Evaluation and Studies (OE), International Fund for Agriculture Development (IFAD), small farmers in Latin America, China and India can benefit drastically from organic farming and will help in alleviating poverty in these

countries. Numerous small farmers in Kerala have been practicing certified organic farming of spices and they earn an average of Rs 3 lakh to 4 Lakh annual incomes from organic cultivation. Figure 6.8 shows the annual income of surveyed small holder certified organic spices cultivators.

**Figure: 6.8**



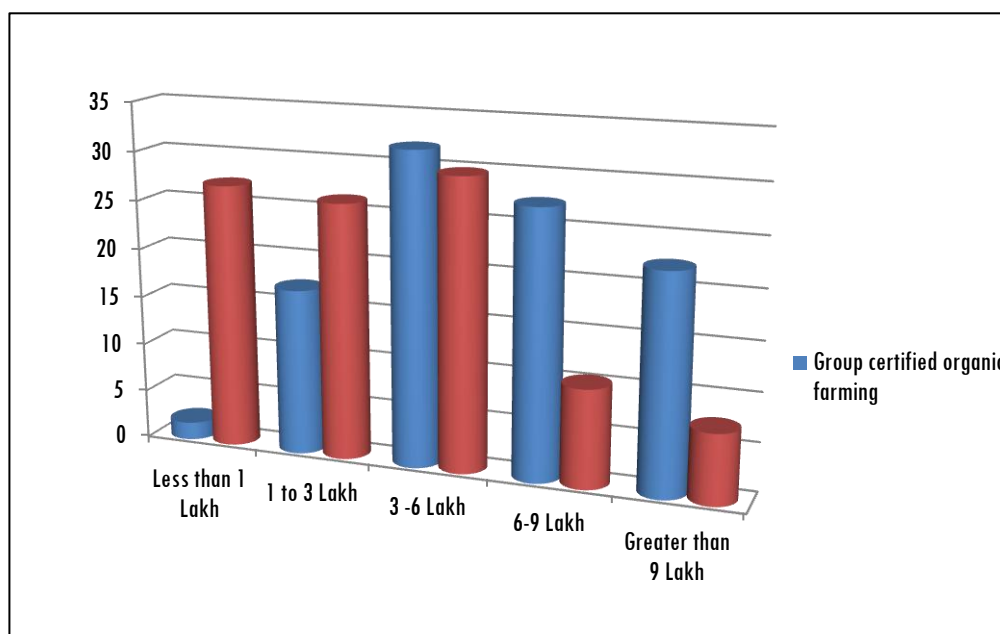
Source: Survey data, 2013-14

From Figure 6.8 it is clear that majority of certified organic spices producers (36% of surveyed certified organic farmers) earn Rs 1.5 Lakh to 3 Lakh annual incomes. And 26% of respondents earns Rs 3 to 4.5 Lakh followed by 25.4% respondents earns Rs 4.5 Lakh to 6 lakh annual income from certified organic cultivation of spices.

The experience in organic cultivation, training received for organic cultivation and rate of premium price received for organic produce are interrelated factors which determines the profit from organic cultivation of Spices. As the Certified organic farming is in the pre development stage in Kerala, the annual income of certified organic farmers is positively related to

organic farming under a group/Society/ NGO. The certified group farming finds more profitable than the individual certified organic farming. The economic success of certified organic farming is more depend on collective actions of organic farmers such as organic input production, training on methods of farming, knowledge sharing, collective marketing of produce etc. It is possible only if the farmers are organised under any group/Society/NGO. Figure 6.9 depicts the difference in range of annual income earned by individual certified organic farmers and Group certified organic farmers.

**Figure 6.9:** Annual income of Group Certified Organic farmers & Individual certified organic Farmers



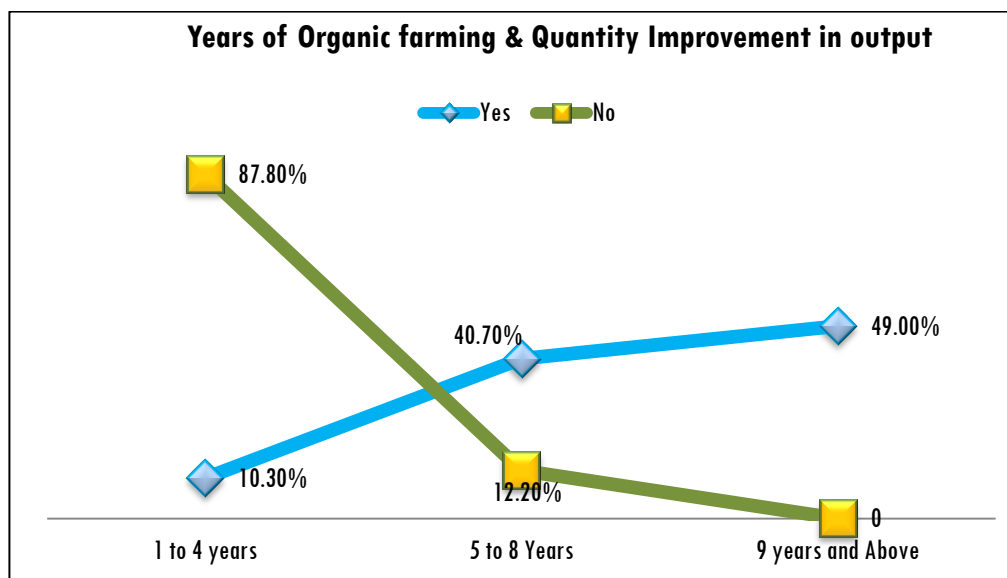
Source: Survey data, 2013-14

Figure 6.9 clearly depicts increased range of annual income from organic farming for Group certified organic farmers. More than Rs 6 lakh and 9 Lakh annual income is earned by the farmers undertaking group certified organic farming. The reduced cost of certification, chance to get training on

organic farming, efficiency of collective marketing are the favorable factors for Group certified organic farmers.

Another important factor determining the economic scope of organic farming involves the years or Experience in organic farming and improvement in Quantity. During the conversion period of organic farming majority of farmers experienced declining yield. After four to five years of continuous organic farming the both quantity and quality of organic output improves which is illustrated in Figures 6.10 and 6.11.

**Figure 6.10**

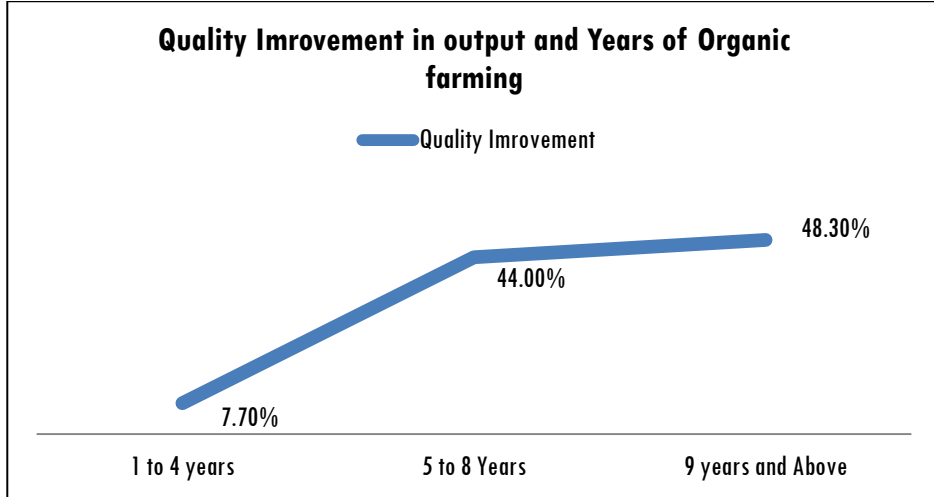


Source: Survey data, 2013-14

Among the respondents 87.8% not experienced improvement in Quantity during 1 year to 4 years of organic farming. In Figure 6.11 it is clear that majority of respondents experienced improvement in Quantity after 5 years of organic farming.



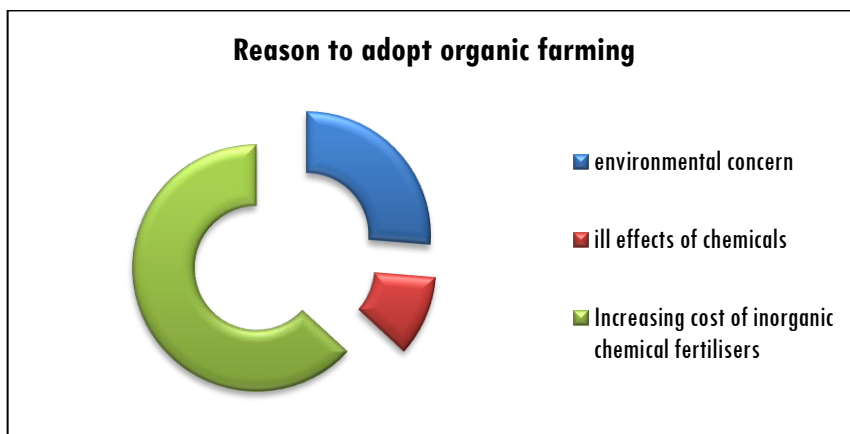
**Figure 6.11**



Source: Survey data, 2013-14

Figure 6.11 illustrates the condition of quality improvement in output. As in the Figure, 44% of the respondents experienced improvement in quality of output after five to eight years of organic farming. After 9 years of organic farming, 48.30% of respondents experienced improvement in Quality. There are many factors influencing the adoption of organic farming by farmers. Figure 6.12 illustrates reason to adopt organic farming by sample respondents.

**Figure 6.12**



Source: Survey data, 2013-14

Figure 6.12 clearly shows that the major reason to adopt organic farming is the increasing cost of chemical fertilisers in inorganic farming.

#### **6.4 The scope of Group Certification in Promoting certified Organic Farming of Spices**

One of the unique factors of organic farming is the importance of acquiring organic certification. Therefore the cost of attaining organic certification is the additional cost incurred by certified organic farmers than conventional inorganic farmers. The difference in unit Cost of individual organic certification and Group organic certification is one of the important determinants of growth of certified organic farming in Kerala.

As the Certified organic farming is in the pre development stage in Kerala, the annual income of certified organic farmers is positively related to organic farming under a group/Society/ NGO. The certified group farming finds more profitable than the individual certified organic farming. The economic success of certified organic farming is more depend on collective actions of organic farmers such as organic input production, training on methods of farming, knowledge sharing, collective marketing of produce etc. It is possible only if the farmers are organised under any group/Society/NGO

**Table 6.9:** Cost of Organic certification and Type of Organic Certification Cross tabulation

Cost of Organic certification	Type of Organic Certification		Total
	GROUP Certification	INDIVIDUAL Certification	
Rs 1000-2500	28.97	0	13.9 (82)
Rs 2500-5000	64.6	0.32	31.2 (184)
Rs 5000-20000	6.3	63.84	36.3 (214)
More than Rs 20000	0	35.83	18.6 (110)
TOTAL	100 (283)	100 (307)	100 (590)

Source: Survey data, 2013-14

In the case of Group organic certification, about 64.6 percent certified farmers have spent Rs 2500- 5000 for attaining organic certification. Whereas 35.83 percent organic farmers who have acquired individual organic certification washed-out more than Rs 20,000 for achieving organic certification. Therefore the certified Group farming is more cost effective than individual certified organic farming. t- Test is statistically proved the difference on mean values if any on cost of organic certification and Type of certification.

*H0 There is no significant difference between cost of individual certification and cost of group certification*

*H1 There is significant difference between cost of individual certification and cost of group certification*

**Table 6.10:** t- Test results of Cost of Organic certification and type of Organic Certification

	Levene's Test for Equality of Variances		t-test for Equality of Means				
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed	145.021	0	50.415	588	0	15358.81	304.647
Equal variances not assumed			52.156	365.65	0	15358.81	294.478

Source: Calculation based on survey data 2013-14

The t test result after analysing the difference in the mean cost of certification across type of organic certification is depicted in Table. The 't' value of 50.41 is significant i.e. p value < 05, so rejected the null hypothesis and conclude there is clear difference in the mean values of average cost of certification of Group certified and individual certified organic farmers.

### **6.5. The Factors which Determine Revenue from Certified Organic Farming of spices**

Based on the literature review and preliminary survey, the following factors are identified as major determinants revenue from certified organic spices cultivation.

The major factors determining the revenue from certified organic farming of spices are:

1. YEARS OF ORGANIC FARMING
2. COST OF CERTIFICATION
3. COST OF ORGANIC FERTILIZER
4. LABOUR COST

5. TRAINING

6. TYPE OF CERTIFICATION- Group/Individual

7. FARM SIZE

These factors contribute significantly in towards average revenue from organic output. In case of group farming by forming clusters enables reduction of certification cost. Certification cost being very high, bigger size of organic farming cluster reduces certification cost per unit area and therefore unit cost of output. The Multiple regressions is applied for impact assessment of major inputs on annual revenue from organic farming

**6.5.1 Years of Organic Farming**

The years of organic farming or experience of organic farmers have an influential role in determining successful organic cultivation.

**Table 6.11:** Years of organic farming of sample respondents

<b>Years</b>	<b>Frequency</b>	<b>Percent</b>
1 year-4 years	164	27.8
5-8 years	377	63.9
More than 9 years	49	8.3
Total	590	100

Source: Survey data, 2013-14

63.9 percent sample respondents have 5 years to 8 years of organic farming. The certified organic farmers who have more than 9 years of organic farming is only 8.3 percent, because majority of organic farmers acquired organic certification after 2007.

The years of organic farming is relevant determinant of annual revenue from certified farming, because the quantity of organic output or yield and

price premium for certified organic products are depend on Years of farming, which is analysed using cross tabulation results.

**Table 6.12:** Years of organic farming and visible increase in Output- Cross Tabulation (Percentage)

Visible increase in Out put	Years of organic farming			
	1 to 4 Years	5 to 8 Years	9 years and above	Total
Yes	77.4% (127)	98.9% (373)	98.0% (48)	92.9% (548)
No	22.6% (37)	1.1% (4)	2.0% (1)	7.1% (42)
Total	100% (164)	100.0% (377)	100% (49)	100% (590)

Source: Calculation based on survey data, 2013-14

The years or Experience of organic farming offers better increase in organic output. 98.9 percent certified organic farmers with 5 to 8 years of organic farming and 98.0 percent with nine and more years of farming experienced visible difference in organic output.

### 6.5.2 Rate of Price premium and Years of organic farming

In the international developed organic market, the certified organic products obtain 15- 25% higher price. But in Kerala owing to the underdeveloped nature of organic market the certified organic farmers get only 5% to 10 % rate of premium price for their produce. Still the rate of premium price received for certified organic commodities is one of the major aspects for promoting certified organic farming in Kerala. Years of organic farming affects the rate of premium price received by organic farmers. The rate of premium price received for certified organic spices is mainly determined by the 'organic' status of certification, which indeed depends on years of organic farming.

**Table 6.13:** Rate of Price premium (%) and Years of organic farming - Cross tabulation (Percentage)

Rate of price premium (%)	Years of organic farming			Total
	1- 4 Years	5 to 8 Years	9 years and above	
0	11.0	5.6	.0	6.6% (39)
1	14.6	.3	.0	4.2% (25)
2	12.2	4.0	4.1	6.3% (37)
3	20.1	8.2	.0	10.8% (64)
4	16.5	36.9	46.9	32.0% (189)
5	20.1	27.3	38.8	26.3% (155)
6	5.5	17.8	10.2	13.7% (81)
Total	100% (164)	100% (377)	100% (49)	100% (590)

Source: Calculation based on survey data 2013-14

The higher rate of premium (6%) is attained by those farmers who have experience between 5 to 8 years in organic farming. Only 17.8 percent organic farmers who are belonging to this category got 6 percent price premium. Table 6.13 shows that 46.9% organic farmers who have more than 9 years of organic farming got only 4 percent price premium. This paradox is due to the fact that these organic farmers who were conventionally practicing organic farming applied for organic certification only in recent years. About 6.6%

organic farmers not received premium price- they are under conversion status and not part of any Group farming.

**Table 6.14:** Year of Organic certification

Year of Organic certification	Frequency	Percent
2006	5	.8
2007	159	26.9
2008	104	17.6
2009	150	25.4
2010	88	14.9
2011	67	11.4
2012	12	2.0
2013	5	.8
Total	590	100.0

Source: Survey data 2013-14

From the table 6.14 it is clear that majority of organic farmers obtained organic certification during 2007-09 period.

**Table 6.15:** Chi-Square Test-Years of organic farming and rate of price premium

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	137.002a	12	.000

Source: Calculation based on survey data 2013-14

In order to see, if there exists, any relationship between Years of organic farming and rate of premium price received by certified organic Farmers chi square test was undertaken. The result shows that there exists association between years of organic farming and rate of premium price received. The Chi Square test shows that significant at one percent level as in Table 6.15. The result validates the argument that higher is the chance of getting greater premium price as the years of organic farming increases.



**Table 6.16:** Years of organic farming and Annual Revenue with premium price Cross-tabulation (Percent)

Years of organic farming	Annual Revenue with premium price					Total
	Less than 1 Lakh	1 to 3 Lakh	3 to 6 Lakh	6 to 9 Lakh	Greater than 9 Lakh	
1-4 Years	12.2	36.0	23.2	19.5	9.1	27.79 (164)
5-8 Years	16.1	16.7	31.5	22.8	12.7	63.89 (377)
9 year and Above	6.12	6.1	8.1	24.4	55.1	8.30 (49)
Total	14.23 (84)	21.18 (125)	27.28 (161)	19.5 (130)	15.25 (90)	100 (590)

Source: Calculation based on survey data 2013-14

It is clear from table that the experience in organic cultivation has positive role in determining revenue from certified organic spices cultivation. Among the organic certified farmers with 1 to 4 years of organic farming only 9.1 percent earn more than Rs 9 Lakh annual revenue. Whereas 12.7 % of organic certified farmers who have 5 to 8 years of organic farming and 55.1 percent of organic certified farmers who have more than 8 years of organic farming earns more than Rs 9 Lakh.

**Table 6.17:** Chi-Square Test between Years of organic farming and Annual Revenue with premium price

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	96.903	8	.000

Source: Calculation based on survey data 2013-14

Chi-Square results also prove to the fact that there exists significant Relation between years of organic cultivation and annual revenue from

organic farming. Therefore it can be rightly said that the annual revenue from organic farming increases as the years of organic farming increases.

To check the relationship between years of organic farming and annual revenue earned by certified organic farmers, the following hypothesis is formulated.

***H0 There is no significant relationship between the years of organic farming and annual revenue.***

Chi square test offers statistical support to the observation that there exist relationship between years of organic farming and annual revenue with price premium from organic spices cultivation. As the P value is significant at 1 percent level, the null hypothesis is rejected.

### **6.5.3 Cost of Organic Certification:**

One of the unique factors of organic farming is the importance of acquiring organic certification. Therefore the cost of attaining organic certification is the additional cost incurred by certified organic farmers than conventional inorganic farmers. The type certification is an important determinant of cost of certification. The type certifications obtained by sample respondents are presented in the table 6.18.

**Table: 6.18:** Type of Certification

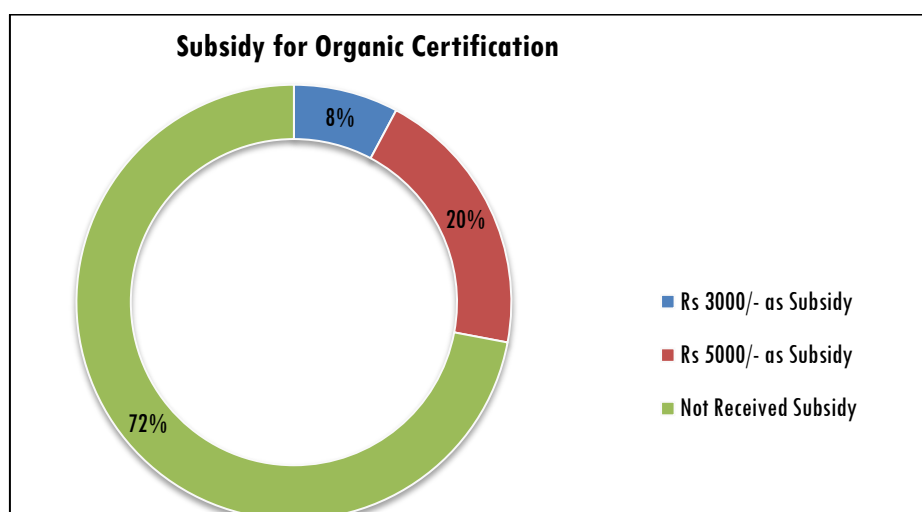
<b>Type of Certification</b>	<b>Frequency</b>	<b>Percent</b>
Group	283	48.0
Individual	307	52.0
Total	590	100.0

Source: Survey data, 2013-14

As depicted in the table 6.18, 52 percent sample respondents obtained individual organic certification.

In the case of farmers who acquired group certification the certification cost ranges only between Rs.2500-and Rs.5000 depending on their farm size. Group of farmers, NGOs and farmers' Co-operative Societies / Associations are eligible for 50% cost of certification subject to a maximum of Rs.75, 000/- for certifying their farms / processing units. But majority of organic farmers are unaware about such programs and schemes provided by Spices Board or Governmental agencies. Only organised farmers registered under NGOs/Societies are aware about such provisions. Because of this reason, 72% of surveyed farmers not even applied for organic certification assistance.

**Figure 6.13**



Source: Survey data, 2013-14

#### **6.5.4 Cost of Organic Fertilisers:**

Organic farming practices involves use of combinations of organic input such as Green manure, cow dung, Farm yard, Vermi compost, Bio gas plant slurry water, Panchagavya, Vermi wash, Jeevamruthu etc. Organic inputs are

applied through a combination of structural and tactical management options to ensure quantity and quality organic output. Many farmers' uses traditional and indigenous farming inputs such as cow dung, farm yard etc. Many organic farmers and NGOs have developed large number of innovative formulations which are effectively used for modern technologies to manage and enhance diversity, to incorporate biological principles and resources into farming systems, and to ecologically intensify agricultural production. Vermi Compost production units, Panchagavya, Jeevamruthu are such type of organic fertilisers.

**Table 6.19:** Combinations of Organic inputs

Combinations of Organic inputs	Frequency	Percent
Vermi Compost, Green Manure, Cow dung	131	22.3
Panchagavya, Vermi wash	362	61.3
Jeevamruthu, Vermi wash, Green Manure	25	4.2
Vermi compost, bio gas plant slurry water, cow dung	72	12.2

Source: Survey data, 2013-14

Majority of certified organic farmers applies Panchagavya and Vermi wash as organic fertilisers.

**Table 6.20:** Annual cost of organic fertilisers

Annual cost of organic fertilisers	Frequency	Percent
Rs 1500- Rs 2500	112	18.9
Rs.2500- Rs.5000	407	68.9
Rs.5000-Rs.8000	71	12.0
Total	590	100.0

Source: Survey data, 2013-14

About 68.9 percent of certified organic farmers spent Rs 2500 to Rs 5000 for organic fertilisers. The farmers organised under groups received training for organic input production. The collective input production by means of vermi compost unit, bio Gas plant etc helps the organised farmers reduce cost of organic input.

### 6.5.5 Cost of Labour:

The number of hired workers and labour charges are the major components of cost of labour which is depicted in Table 6.21 and 6.22

**Table: 6.21:** Number of hired workers

Number of hired workers	Frequency	Percent
1-3 workers	105	17.8
4-8 workers	420	71.2
9 and above workers	65	11.0
Total	590	100.0

Source: Survey data, 2013-14

Majority of certified organic farms hired 4 to 8 workers which are depicted in the table 6.21.

**Table 6.22:** Daily labour charges

Daily labour charges	Frequency	Percent
Rs 350	13	2.2
Rs 380	67	11.3
Rs 450	245	41.52
Rs 500	226	38.3
Rs 600	39	6.6

Source: Survey data, 2013-14

As per the local conditions of hired workers, the labour charge slightly varies across different regions. About 42 percent organic farmers incur Rs 450 per labour as labour charges.

### 6.5.6 Training Received

The efficiency of organic farms and effectiveness organic inputs are depend on the knowhow of organic farmers about various methods and inputs of organic farming which indeed depends on training received by organic farmers.

**Table: 6.23:** Training received by organic farmers

No of Certified organic farmers			Percent
	Not attended training	66	11.2
	Attended training	524	88.8
	Total	590	100.0

Source: Survey data, 2013-14

Among the respondents about 88 percent organic farmers attended training programs on organic farming conducted by agencies such as Spices Board, KADS, WSSS, PDS, and Farmers' Groups etc. Certain individual farmers (11%) who are not part of any associations, NGOs or societies do not attended training on organic farming.

### 6.5.7 Type of Certification

The annual revenue from organic farming depends on the cost reduction of efficacy which depends on type of certification. The cost difference of group and individual certification which affecting annual revenue is already presented in Fig 6.5.

### **6.5.8 Farm Size**

The cost of certification depends on the size of farms. Majority of farmers registered for organic certification in Indocert and Lacon are small holders with one acre to five acres of land

### **6.5.9 Premium Price Received**

Among the respondents about 80% of farmers received premium price for their produce. The status of organic certification, years of organic farming, quality of output and marketing efficiency are the important determinants of premium price. Those farmers who have acquired group certification and organised under societies or NGOs are receiving better premium price than individual certified organic farmers. The marketing opportunity also better for group certified organic farmers.

These factors contribute significantly in towards average revenue from organic output. In case of group farming by forming clusters enables reduction of certification cost. Certification cost being very high, bigger size of organic farming cluster reduces certification cost per unit area and therefore unit cost of output. The Multiple regressions is applied for impact assessment of major inputs on annual revenue from organic farms.

*The Linear multiple regression model is used to explain the factors determining certified organic spices cultivation in Kerala.*

The Multiple Log Linear regression model is used to explain the factors determining certified organic spices cultivation in Kerala. The Log linear form of production function is used to reduce variations in data.

The log linear production function used in the study is as follows:

$$\begin{aligned} \text{Log(Revenue)} = & a_1 \text{Years of organic farming} + a_2 \text{Log(Cost of certification)} \\ & + a_3 \text{Log(Cost of fertilizer)} + a_4 \text{Log(Cost of laour)} + a_5 \text{Training} \\ & + a_6 \text{Type of certification} + a_7 \text{Farm size} + e \end{aligned}$$

Where training and type of certification are dummy variables with

0 = No training received, 1 = training received and

0 = Individual farming, 1 = Group farming

**Table 6.24: Multiple Log Linear regression Output**

Factors/inputs of certified organic farming	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
Years of Organic Farming	(1.13)*.121	.020	.055	5.952	.000
Cost of Certification	.419	.126	.294	3.325	.001
Cost of Fertilizer	.363	.100	.217	3.637	.000
Labour Cost	.338	.091	.348	3.712	.000
Training	(1.35)*.302	.120	.022	2.517	.012
Type of Certification	(4.7)*1.557	.254	.084	6.124	.000
Farm Size	.030	.026	.009	1.133	.258

a. Dependent Variable: REVENUE

b. Linear Regression through the Origin


\*Exponential value of coefficients

Source: Computed from Survey Data, 2013-14

The impact assessment of seven major input factors of certified organic cultivation of spices is considered under the study. The years of organic farming, cost of organic certification, cost of organic fertilisers, cost of labour, training received by farmers and type of certification are the major factors. The multiple regression results illustrate that the labour cost, cost of organic certification, and cost of organic fertiliser has considerable impact on annual revenue from certified organic spices production. The farm size and training have least impact on annual revenue from certified organic farming of spices.



The most contributing factor is labour cost with a regression weight of 0.348, followed by cost of certification with a regression weight of 0.294. The cost of organic fertilizer, type of certification, years of organic farming are the other factors affecting annual revenue from certified organic farming. The least contributing factor is farm size with a regression weight of 0.009.

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## **SUMMARY, FINDINGS, CONCLUSION AND RECOMMENDATIONS**

The main objective of the study is to give an overview of the scope of certified organic farming in Kerala among the organic Spices cultivators. Specifically, the factors which may determine the revenue from certified organic farming of spices is assessed. On the basis of the data of certified organic farmers in Kerala, the role of institutional support in promoting certified Organic production of spices in Kerala is determined by comparing individual certified organic farmers producing spices and organisations engaged in cultivation of organic spices.

### **Findings:**

- Certified group farming promotes organic farming by ensuring efficient marketing of organic produce and guarantees minimum premium price for organic products.
- Farmers Societies and NGOs promoting adoption of certified organic spices production and makes certification process more trouble-free for farmers by group certification and by forming ICS units.
- The environmental degradation arising from chemical fertilizer based farming induces farmers (26.2 %) to adopt organic farming.
- The increasing input cost of chemical fertilizer based farming entices 63.2% of farmers to adopt certified organic farming.

- The ill effects of chemical fertilizer based farming such as declining soil fertility, fading agricultural output and continuous increase in cost of production force 10.5% farmers to espouse organic farming.
- The Spices Board, Indocert, KADS, WSSS, farmer's societies and NGOs are providing training and information regarding certified organic cultivation for farmers.
- The KADS and WSSS are playing very relevant role to promote organic farmers in Idukki and Wayanad to obtain organic certification. Compared to those farmers who attained individual organic certification, the farmers within group certification under WSSS and KADS incurred lower cost of certification.
- Kerala Agricultural Development Society (KADS) promoting organic certification of individual farmers and group certification under ICS in Idukki District. KADS facilitates 'Farmers' Open Market' through which farmers can sell farm produces directly to the customers realizing fair price to farmers. The FOM is essentially open only to those who are registered farmer and realises at least 5 to 8 % higher price for 'organic' produce. The KADS 'Farmers Open Market' is an outstanding model to develop local market for organic produce which will benefit both organic farmers and consumers.
- Wayanad Social Service Society (WSSS) is promoting organic cultivation and collaborating with the programs of the Government, Spices Board, NABARD and State Horticulture Mission. WSSS play critical roles is Procurement and marketing of certified organic products. The WSSS is concentrating on the export aspect of certified organic spices and giving priority for procurement processing and value addition.

- The certified group organic farming finds more economic and profitable than individual certified organic farming. There is clear difference in the mean values of average cost of certification of Group certified and individual certified farmers. The cost of group certification is comparatively less than individual certification.
- The promotion of farmers group within NGOs ensures large scope for profitable certified organic farming
- The experience in organic cultivation, training received for organic cultivation and rate of premium price received for organic produce are interrelated factors which determines the profit from organic cultivation of Spices. The most contributing factor is labour cost followed by cost of certification. The cost of organic fertilizer, type of certification, years of organic farming are the other factors affecting annual revenue from certified organic farming.
- The number of organic farmers and area under organic farming is showing a positive trend in Idukki. The traditional organic background of Idukki district, the natural topography, the positive attitude of the farmers to switch over to organic farming and KADS' training programs and Open market facilities are the major drivers in promoting organic farming in Idukki.

## Summary

The certified organic farming in Kerala is still not well developed and individual farmers producing certified organic spices have limited opportunities to find end-markets for their products. As the local market for certified organic spices is still very limited, they depend on processors, which exports products to the international organic market in Europe and the EU.

The opportunities for value addition of organic crops are more in case of institutional organic farmers such as KADS and WSSS. In case of spices, this means that organic spices exporting are limited to these societies/NGOs. Most farmers (associations) have made agreements with processing companies, which buy their crops. These organisations often provide training on organic practices and assist with inspections and certification. Normally farmers registered under these organisations receive a premium of 3% to 8% over domestic market price. Premiums are directly related to years of organic farming, status of certification and quality of produce.

In order to improve the efficiency of organic farmers need to be certified and already certified farmers need training in order to improve productivity/quality. Farmers' associations are important for this, because organized farmers can share the cost of organic certification and have the advantage of collective marketing which enhance stronger negotiations with processors. Associations can also play an important role in financing mechanisms and together with processors, farmers' associations can realize workshops to improve farmers' skills. Sustainable development of the organic spices sector in Kerala requires an integrated approach and commitment from all parties involved.

Inspired by opportunities in growing international organic markets, many initiatives for certified organic production have emerged in Kerala. Nevertheless, the certified organic farming in Kerala is small and not well organised. A major constraint to organic agricultural development is a lack of market. However, international organic markets, mainly in Europe and the US, have been growing considerably. The international market for organic spices offers large scope for existing suppliers to expand and for new players to enter these markets. The domestic organic market is also growing. A number of

organic shops are opening in urban areas focus on organic products indicate that interest for organic consumption is on the rise. Nevertheless, demand for organic spices is still very limited.

### **Recommendations of the Study**

- The collective action from the part of farmers associations and governmental organizations are recommended for the growth of certified organic production of agricultural produce in Kerala
- Efficient training programs on different methods of organic farming and organic input production are recommended for the development of organic farming in Kerala.
- Awareness creation about certified organic products are recommended to improve the market for organic produce and assurance of minimum premium price for organic produce which will encourage further development of certified organic agriculture in Kerala.
- The certified Group farming and the innovative Concept of ‘Farmers Open Markets’ with proper Governmental aid and planning are recommended for promoting certified organic farming in Kerala.

### **Concluding Remarks**

The Kerala organic sector is still not well developed and individual farmers producing certified organic spices have limited opportunities to find end-markets for their products. As the local market for certified organic spices is still very limited, they depend on processors, who distribute the products to the international organic market. Farmers’ associations have important role, because organized farmers can share transaction costs, certification costs and also effectively market their certified organic produce. The certified Group

farming, organic input production, awareness programs and training could enhance the certified organic farming in Kerala. The certified framers groups and farmers organised under certified organic Institutions have more opportunity to get price premium than individual certified organic farmers. The timely and easily marketing of organic produce with price premium is more possible in case of organised certified farmers.

The innovative formulations of organic fertilisers are mainly applied by those certified farmers organised under groups. KADS and WSSS plays dominant role in promoting certified organic farming in Idukki and Wayanad. Compared to those farmers who attained individual organic certification, the farmers within group certification require lower cost of certification. In order to improve the availability of certified organic spices, more farmers need to be certified and already certified farmers need training in order to improve productivity/quality. Farmers Associations, NGOs and Government departments need to bring together strategic development programs and development abets for existing as well as new certified organic farmers for the long term development of certified organic cultivation in Kerala.



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- [http://www.Indianspices.Com/Html/Spcgnrl\\_Infor2.Html](http://www.Indianspices.Com/Html/Spcgnrl_Infor2.Html)
- European Spice Association - <Http://Www.Esa-Spices.Org>
- Food and Agriculture Organization, Faostat Data - <Http://Faostat.Fao.Org>
- [http://Www.Apeda.Gov.In/Apedawebsite/Organic/Organic\\_Products.Htm](http://Www.Apeda.Gov.In/Apedawebsite/Organic/Organic_Products.Htm)
- [http://Www.Indianspices.Com/Html/Spcgnrl\\_Infor2.Html](http://Www.Indianspices.Com/Html/Spcgnrl_Infor2.Html)
- [www.Cbi.Eu/Disclaimer](http://www.Cbi.Eu/Disclaimer)
- <http://Www.Fnbnews.Com/Article/Detnews.Asp?Sectionid=1&Articleid=34174>
- [http://Www.Apeda.Gov.In/Apedawebsite/Organic/Organic\\_Products.Htm](http://Www.Apeda.Gov.In/Apedawebsite/Organic/Organic_Products.Htm)
- <http://www.fnbnews.com/article/detnews.asp?SectionId=1&articleid=34174>
- [http://www.indianspices.com/html/spcGnrl\\_Infor2.html](http://www.indianspices.com/html/spcGnrl_Infor2.html)
- [www.indianspices.com](http://www.indianspices.com)
- [www.apeda.gov.in](http://www.apeda.gov.in)
- [www.intracen.org/organICS](http://www.intracen.org/organICS)
- <http://www.intracen.org/mds/sectors/organic/>
- [www.keralaspices.com](http://www.keralaspices.com)



**APPENDIX**  
**Part I**  
**Interview Schedule**

**Organic Agriculture in Kerala: An Evaluation of Certified Organic Spices Producers**

**A Micro Level study among Certified Organic Spices cultivators**

**1. GENERAL INFORMATION:**

- a) Name:
- b) Village:
- c) Taluk :
- d) District:
- e) Age:
- f) Education:
- g) Farm size:
- h) Primary Occupation: [1] Farming [2] off-farming
- i) Secondary Occupation:
- j) Annual Income from Agriculture (In Rupees):
- k) Total Number of Family members:
- l) Number of family members engaged in Farming:
- m) Average size of the farm:

**1. How long are you engaged in Organic Farming?**

- [1] Months                      [2] 1 Year                      [3] 2 Year                      [4] 3 Year
- [5] 4 Year                      [6] More than 5 Year                      [7] More than 5 Year

**2. Do you find any visible difference??**

- [1] Yes                      [2] No

**3. Quantitative differences?**

- [1] Yes                      [2] No

4. Major Crops cultivated under organic farming

[1] Vegetables      [2] Spices      [3] Paddy

5. Major spices under organic cultivation:

[1] Cardamom      [2] Pepper      [3] Ginger      [4] Clove,

[6] Cumin (Jeera)      [7] Turmeric      [8] Chilly

6 Organic inputs used:

[1] FYM      [2] Compost      [3] Vermicompost

[4] Biofertilizer      [5] Biopesticides      [6] Green manuring

7. Have you attended any training on organic farming?

[1] Yes      [2] No

8. Do you maintain records of farm operations?

[1] Yes      [2] No

If yes, how? .....

9. Reasons for shifting to organic cultivation?

- a) Increasing cost of inorganic chemicals : [1] Yes [2]No
- b) Increasing return from vegetables under Organic Cultivation [1] Yes [2]No
- c) Quality of vegetables under organic cultivation : [1] Yes [2]No
- d) Soil health oriented motives [1] Yes [2]No
- e) Environmental concern [1]Yes [2]No
- f) Motivation by neighboring organic farmers: [1] Yes [2]No
- g) Motivation by media [1] Yes [2]No

10. Application of organic manure

[1] Yes      [2] No

If yes, why

11. Do you purchase organic manure from market or prepare on farm?

[1] Yes      [2] No

12. What production technologies applied for Organic Farming?

[1] Integrated Farming            [2] Complete farming

13. Have you acquired Organic Certification?

[1] Yes                                [2] No

14. If Yes, **Details of Certification:**

a) Name of Certification Agency:

[1] Indian Organic Certification Agency (INDOCERT)/

[2] Lacon Quality Certification Pvt. Ltd., Thiruvalla

b) Cost of Certification:

c) Status of Certification: (Confirmation/ Inconversion/ Organic)

d) Certificate No., Date & Validity period:

15. **Details on area under certification**

**Table No: 1**

<b>A</b> Name of the spice certified	<b>B</b> Area (ha)	<b>C</b> Production (Kgs/Tons)	<b>D</b> Status (Confirmation/ In conversion/ Organic)

Column D: For Confirmation Status mark the code – C

For In confirmation Status mark the code – I

For Organic Status mark the code - O

16. Have you received subsidy for certification from Spices Board: [1] Yes, [2] No

If yes, give details: Year:....., amount:.....

17. Are you member of any International Organisation?

[1] Yes                                [2] No

18. If yes, give name and address of the group

.....



**19. COST OF CULTIVATION**

A) Crop:

B) Area (acres):

C) Are you employing hired labours? [1]Yes [2] No

D) If Yes, Labour charges:

E) Cost of hiring labour

1. Men (Rs. /day):

2 Women (Rs. /day):

F) Ploughing Charges Per season:

G) Transportation Charges per month:

H) Sowing:

I) Fertilizer /organic manure application Cost:

J) Spraying:

K) Irrigation:

L) Harvesting:

M) Others

N) Use of Machinery: [1] Yes [2] No

O) If Yes, Details of Machinery used:

**Table No: 2**

<b>A</b> Type of Machinery	<b>B</b> Purchase Price	<b>C</b> Unit Cost /Month	<b>D</b> Total number of Machinery	<b>E</b> Number of farmers need to operate
1. Tractor				
2. Tiller				
3. Harvester				
4. Seed Cleaner				
5. walking tractor				
6. Organic Fertilizer machines				
7. Others				

**20. Input cost per month:****Table No: 3**

<b>A</b> Type of Machinery	<b>B</b> Purchase Price	<b>C</b> Unit Cost /Month	<b>D</b> Total number of Machinery
Seeds			
Seed treatment			
Fertilizers/Biofertilizers			
Pesticides/Biopesticides			
Irrigation charges			
Labour charges			
Rental value of land			
Marketing cost			
Transportation cost			
Commission paid			
Certification			
Inspection			
others			

**21. Details of Total production per month****Table No: 4**

<b>A</b> Crop	<b>B</b> Organic/Inorganic	<b>C</b> Area sown	<b>D</b> Yield/acre	<b>E</b> .Price	<b>F</b> Returns/month

**22. General problems faced in shifting towards organic farming:**

a) Income:

[1] Increased

[2] Same

[3] Decreased

b) Quality improvement:

[1] Increased

[2] Same

[3]Decreased

c) Premium price in the local market:

[1] Yes [2] No

d) Economic use of byproducts:

[1] Increased [2] Same [3] Decreased

e) Market development:

[1] Increased [2] Same [3] Decreased

f) Certification procedure:

[1] High Cost [2] Difficult/ [3] No awareness [4] No difficulty

g) Fluctuation in the prices of commodities

[1] Yes [2] No

h) Quantity improvement?

[1] Increased [2] Same [3] Decreased

i) Are you getting any kind of support from any organizations?

[1] Yes [2] No

j) If yes, supporting Agency

[1] Govt [2] NGO [3] Spices Board [4] Others

k) Kind of support:

[1] Financial [2] Non-Financial

### 23. Details of spices under organic cultivation

A) Area of cultivation Average annual (Hectares):

B) Production per annum:

**Table No: 5**

<b>A</b> <b>Organic Spice</b>	<b>B</b> <b>Production (Kilograms)</b>	<b>C</b> <b>Price</b>	<b>D</b> <b>Market price</b>
<b>1.</b>			
<b>2</b>			
<b>3</b>			
<b>4.</b>			
<b>5.</b>			

24. Do you get remunerative prices for your produces?  
[1] Never [2] Rarely [3] Sometimes [4] Most of the time [5] Always
25. Is there steady demand for spices produced under organic Farming in the domestic market?  
[1] Yes [2] No
26. How do you market your Spices produced under organic Farming?  
a) Local marketing /  
b) Small traders at the collection centres/ Spices Board  
c) Marketing societies /  
d) IPSTA ICE D /  
e) Exporters /  
f) Direct export /  
g) Auction centres /  
h) Others.
27. Do you agree to the statement that the present marketing system is efficient?  
[1] Strongly disagree [2] Disagree [3] cannot say [4] Agree [5] Strongly agree
28. When do you market your produces?  
[1] Immediately after cropping [2] During favorable market situations only
29. Are you able to supply spices as per the international quality specifications?  
[1] Yes [2] No [3] Don't know
30. What is your opinion about the attitude of the central and state Governments towards the spices producers?  
[1] Favorable [2] Passive [3] Unfavorable
31. Is the Spices board helpful in marketing organically produced spices?  
[1] Yes [2] No [3] Don't know
32. Is there regular demand for spices produced under organic Farming in the market?  
[1] Never [2] Rarely [3] Sometimes [4] Most of the time [5] Always

33. To whom do you sell your spices produced under organic Farming I?

[1]Exporters [2] Wholesalers [3] Others

34. Do you get the adequate price for the c spices produced under organic Farming?

[1]Always [2] Most of the time [3] Sometimes [4]Rarely [5] Never

35. Are you satisfied with the income generated form spice produced under organic cultivation?

[1]Yes [2].No

**36. Unit Cost for organic cultivation of Spices Table No:6**

Sl. No. A	Particulars [A]Operational costs	Spice 1	Spice 2	Spice 3	Spice 4
A1	Site clearance				
A2	Marking lines				
A3	Digging pits				
A4	Planting, and staking				
A5	Weeding				
A6	Trashing				
A7	Irrigation				
A8	Harvesting				
A9	Application of manures				
<b>A10</b>	<b>Total Operational costs</b>				
<b>B</b>	<b>[B] Materials Cost</b>				
B1	Planting material				
B2	Manures				
B3	Bio fertilizers				
B4	Plant protection measures				
<b>B5</b>	<b>Total material costs</b>				
<b>C</b>	<b>[C]Curing</b>				
C1					
C2					
C3					
<b>C4</b>	<b>Total Curing</b>				
<b>D</b>	<b>[D]Certification cost</b>				
D1	Inspection charges				
D2					
<b>D3</b>	<b>Total Certification cost</b>				
	<b>Total cost (A + B + C + D)</b>				

**37. Details of Revenue from organic cultivation of Spices per annum:**

A) Area of cultivation Average annual (Hectares):

B) Production per annum:

C) Revenue per Annum:

**Table No: 7**

A Organic Spice	B Domestic Sale (Total Qty)	C Price	D Foreign Market Total Qty	E Price	F Total Revenue /annum
1.					
2.					
3.					
4.					
5.					

**38. Year wise details of Revenue Generation:****Table No: 8**

A Year	B Organic Spice	C Total Cost	D Total Revenue	E Profit
1st year				
2nd year				
3rd year				
4th year				
5th year				
Last year				
Present year				

39. Do you find any reduction in cost of production after two years of adopting organic farming?

[1] Yes [2] No

40. Do you find any increase in revenue after two years of adopting organic farming?

[1] Yes [2] No

41. Are you ready to continue organic production of Spices?

[1] Yes [2] No

42. If No, Give the reason:

*Thank You*

**Part II**

**INTERVIEW SCHEDULE**

**Organic Agriculture in Kerala: An Evaluation of Certified Organic Spices Producers**

**A Macro Level study among Institutions promoting certified Organic farming  
(KERALA AGRICULTURAL DEVELOPMENT SOCIETY & WAYANAD SOCIAL SERVICE SOCIETY)**

**1. GENERAL INFORMATION:**

- a) Village:
- b) Taluk :
- c) District:
- d) Major Programmes:
- e) Total Number Of Members:
- f) Main Objective:
- g) Economic Activities:
- h) Annual Income from Agriculture (In Rupees):
- i) **Total Number of Farmers:**
- j) Certified Organic Farmers:
- k) Non Certified:
- i) Total Number Of Farms:
- j) Average size of the farm:

**1. How long the organization engaged in Organic Farming?**

- [1]Months                      [2] 1 Year                      [3] 2 Year
- [4] 3 Year                      [5] 4 Year                      [6] More than 5 Year
- [7] More than 10 Year                      [8] More than 15 Year

**2. Do you find any visible difference??**

- [1] Yes                      [2] No

## 3. Quantitative differences?

[1] Yes [2] No

## 4. Major Crops cultivated under organic farming

[1] Vegetables [2] Spices [3] Paddy

## 5. Major spices under organic cultivation:

[1] Cardamom [2] Pepper [3] Ginger [4] Clove,  
[6] Cumin (Jeera) [7] Turmeric [8] Chilly

## 6 Organic inputs used:

[1] FYM [2] Compost [3] Vermicompost  
[4] Biofertilizer [5] Biopesticides [6] Green manuring

## 7. Have you providing any training on organic farming?

[1] Yes [2] No

## 8. Do you maintain records of farm operations?

[1] Yes [2] No

If yes, how? .....

## 9. Reasons for shifting to organic cultivation?

- |  |         |        |
|--|---------|--------|
| a) Increasing cost of inorganic chemicals :                    | [1] Yes | [2] No |
| b) Increasing return from vegetables under Organic Cultivation | [1] Yes | [2] No |
| c) Quality of vegetables under organic cultivation :           | [1] Yes | [2] No |
| d) Soil health oriented motives                                | [1] Yes | [2] No |
| e) Environmental concern                                       | [1] Yes | [2] No |
| f) Motivation by neighboring organic farmers:                  | [1] Yes | [2] No |
| g) Motivation by media   | [1] Yes | [2] No |

## 10. Application of organic manure [1] Yes [2] No

If yes, why?



11. Do you purchase organic manure from market or prepare on farm?

[1] Purchase from market [2] Prepare at Farm

12 Cost of Organic Manure or Input:

13. What production technologies applied for Organic Farming?

[1] Integrated Farming [2] Complete farming

14. Have you acquired Organic Certification?

[1] Yes [2] No

If Yes, **Details of Certification:**

a).Name of Certification Agency:

[1] Indian Organic Certification Agency (INDOCERT)/

[2] Lacon Quality Certification Pvt. Ltd., Thiruvalla

b)Cost of Certification:

c) Status of Certification: (Confirmation/ Inconversion/ Organic)

d) Certificate No., Date & Validity period :

**15. Table No:1 Details on area under certification**

A Name of the spice certified	B Area (ha)	C Production (Kgs/Tonns)	D Status (Confirmation/ In conversion/ Organic)

Column D: For Confirmation Status mark the code – C

For In confirmation Status mark the code – I

For Organic Status mark the code - O

16. Have you received subsidy for certification from Spices Board:

[1] Yes, [2] No

If yes, give details:

Year:....., amount:.....

17. Are you member of any International Organisation? :

[1] Yes

[2] No

18. If yes, give name and address of the group

-----

### 19. COST OF CULTIVATION

A) Crop:

B) Area (acres):

C) Are you employing hired labours? [1] Yes [2] No

D) If Yes, Labour charges:

E) Cost of hiring labour

1. Men (Rs. /day):

2. Women (Rs. /day):

F) Ploughing Charges Per season:

G) Transportation Charges per month:

H) Sowing:

I) Fertilizer /organic manure application Cost:

J) Spraying:

K) Irrigation:

L) Harvesting:

M) Others

N) Use of Machinery: [1] Yes [2] No

O) If Yes, Details of Machinery used:

Table No: 2

A Type of Machinery	B Purchase Price	C Unit Cost /Month	D Total number of Machinery	E Number of farmers need to operate
1. Tractor				
2. Tiller				
3. Harvester				
4. Seed Cleaner				
5. walking tractor				
6. Organic Fertilizer machines				
7. Others				

**20. Input cost per month:**

Table No: 3

A Particulars	B Quantity (kgs)	C Price /unit: cost(Rs):	D Total
Seeds			
Seed treatment			
Fertilizers/Biofertilizers			
Pesticides/Biopesticides			
Irrigation charges			
Labour charges			
Rental value of land			
Marketing cost			
Transportation cost			
Commission paid			
Certification			
Inspection			
others			

**21. Details of Total production per month****Table No: 4**

<b>A Crop</b>	<b>B Organic/Inorganic</b>	<b>C Area sown</b>	<b>D Yield/acre</b>	<b>E .Price</b>	<b>F Returns/month</b>

**22. General problems faced in shifting towards organic farming:**

a) Income:

[1] Increased

[2] Same

[3] Decreased

b) Quality improvement:

[1] Increased

[2] Same

[3] Decreased

c) Premium price in the local market:

[1] Yes

[2] No

d) Economic use of byproducts:

[1] Increased

[2] Same

[3] Decreased

e) Market development:

[1] Increased

[2] Same

[3] Decreased

f) Certification procedure:

[1] High Cost

[2] Difficult/

[3] No awareness

[4] No difficulty

g) Fluctuation in the prices of commodities

[1] Yes

[2] No

h) Quantity improvement? :

[1] Increased                      [2] Same                      [3] Decreased

i) Are you getting any kind of support from any organizations?

[1] Yes                      [2] No

j) If yes, supporting Agency

[1] Govt                      [2] NGO                      [3] Spices Board                      [4] Others

k) Kind of support    [1] Financial                      [2] Non-Financial

### 23. Details of spices under organic cultivation

A) Area of cultivation Average annual (Hectares):

B) Production per annum:

**Table No:5**

<b>A</b> <b>Organic Spice</b>	<b>B</b> <b>Production (Kilograms)</b>	<b>C</b> <b>Price</b>	<b>D</b> <b>Market price</b>
1.			
2			
3			
4.			
5.			

24. Do you get remunerative prices for your produces?

[1] Never    [2] Rarely                      [3] Sometimes    [4] Most of the time                      [5] Always

25. Is there steady demand for spices produced under organic Farming in the domestic market?

[1] Yes                      [2] No

26. How do you market your Spices produced under organic Farming?

- a) Local marketing /
- b) Small traders at the collection centres/ Spices Board
- c) Marketing societies /
- d) IPSTA ICE D /

- e) Exporters /
  - f) Direct export /
  - g) Auction centres /
  - h) Others.
27. Do you agree to the statement that the present marketing system is efficient?  
[1]Strongly disagree [2] Disagree [3] cannot say [4]Agree [5] strongly agree
28. When do you market your produces?  
[1] Immediately after cropping  
[2] During favorable market situations only
29. Are you able to supply spices as per the international quality specifications?  
[1] Yes [2] No [3] Don't know
30. What is your opinion about the attitude of the central and state Governments towards the spices producers?  
[1]Favorable [2] Passive [3] Unfavorable
31. Is the Spices board helpful in marketing organically produced spices?  
[1] Yes [2] No [3] Don't know
32. Is there regular demand for spices produced under organic Farming in the market?  
[1] Never [2] Rarely [3] Sometimes [4] Most of the time  
[5] Always
33. To whom do you sell your spices produced under organic Farming I?  
[1]Exporters [2] Wholesalers [3] Others
34. Do you get adequate price for the c spices produced under organic Farming?.  
[1]Always [2] Most of the time [3]Sometimes [4]Rarely  
[5] Never
35. Are you satisfied with the income generated form spice produced under organic cultivation?  
[1]Yes [2].No

**36. Unit Cost for organic cultivation of Spices****Table No: 6**

<b>Sl. No. A</b>	<b>Particulars Operational costs</b>	<b>Spice 1</b>	<b>Spice 2</b>	<b>Spice 3</b>	<b>Spice 4</b>
A1	Site clearance				
A2	Marking lines				
A3	Digging pits				
A4	Planting, and staking				
A5	Weeding				
A6	Trashing				
A7	Irrigation				
A8	Harvesting				
A9	Application of manures				
<b>A10</b>	<b>Total Operational costs</b>				
<b>B</b>	<b>Materials Cost</b>				
B1	Planting material				
B2	Manures				
B3	Bio fertilizers				
B4	Plant protection measures				
<b>B5</b>	<b>Total material costs</b>				
<b>C</b>	<b>Curing</b>				
C1					
C2					
C3					
<b>C4</b>	<b>Total Curing</b>				
<b>D</b>	<b>Certification cost</b>				
D1	Inspection charges				
D2					
<b>D3</b>	<b>Total Certification cost</b>				
	<b>Total cost (A+B+C+D)</b>				

**37. Details of Export of Organically Produced Spices:****Table No: 7**

<b>A Organic Spice</b>	<b>B Quantity</b>	<b>C Price(foreign)</b>	<b>D Price(Domestic)</b>	<b>E Price Premium%</b>	<b>F Destination</b>
1.					
2.					
3.					
4.					

**38. Details of Revenue from organic cultivation of Spices per annum:**

A) Area of cultivation Average annual (Hectares):

B) Production per annum:

C) Revenue per Annum:

**Table No: 8 Details of Revenue from organic cultivation of Spices per annum:**

<b>A Organic Spice</b>	<b>B Domestic Sale (Total Qty)</b>	<b>C Price</b>	<b>D Foreign Market Total Qty</b>	<b>E Price</b>	<b>F Total Revenue /annum</b>
1.					
2.					
3.					
4.					
5.					

**39. Year wise details of Revenue Generation:****Table No: 9**

<b>A Year</b>	<b>B Organic Spice</b>	<b>C Total Cost</b>	<b>D Total Revenue</b>	<b>E Profit</b>
1st year				
2nd year				
3rd year				
4th year				
5th year				
Last year				
Present year				



40. Do you find any reduction in cost of production after two years of adopting organic farming?

[1] Yes [2] No

41. Do you find any increase in revenue after two years of adopting organic farming?

[1] Yes [2] No

42. Are you ready to continue organic production of Spices?

[1] Yes [2] No

43. If No, Give the reason:

*Thank You*

