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CONTENTS

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Editorial Note

The business and investment climate in the country appears to be on the upswing. With government pushing hard the business agenda at the national and international level, the confidence of investing community is bullish. The rise in the contribution of the industrial and service sector to the total national product, since the last few years is the result of the favorable policy climate created by the new regime. In spite of the short term fall in the production indices the analysts predict a quick recovery in the coming months. The coordinated policy decisions regarding the fiscal and monetary policy issues are sending the right signals to the markets. Keeping in view the dynamic changes taking place in the business environment the management concepts of mergers and acquisitions is selected for publication in the present issue.

But the only dark cloud appears to be the weak agriculture sector. The rising trend of farmers' suicide in different states is becoming a cause of concern to the policy makers at the state as well as national level. Accordingly an article on agriculture sector is being published in the present issue of our journal. Such studies on agriculture and their publication are the need of the hour. Discussions and deliberations in different forums as well as publications of findings of studies on agriculture will bring forth new solutions to the current burning problem in India. Keeping in view the issues of national importance articles pertaining to these are selected for publication in the present volume. The published articles will be of use for young researchers, scholars and academicians.

Dr. T. V. G. Sarma
Editor

An Economic Analysis of Organic Farming in Belagavi District of Karnataka State

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Abstract : The Green Revolution made Indian Economy self sufficient in the production of food grains but with declining crop productivity and the ill effects of the use of chemical fertilizers and pesticides. Organic Farming (OF) is considered as the best known alternative to conventional agriculture. OF involves the management of agro-eco system, as autonomous, based on the capacity of soil in local climatic conditions. The IFOAM established in 1972 has more than 120 member countries including India. The studies conducted by the Institute of Cotton Research Nagpur, results of field demonstration under National Project on Development and Use of Bio-fertilizers, etc., have shown the less cost of cultivation and increased profitability under OF than under Conventional Farming. The present study of organic farmers of two Talukas of Belagavi District of Karnataka State viz; Khanapur and Hukkeri shows that cost of cultivation organic farming is less than under conventional farming. The study also shows that yield under organic farming is less than under conventional farming. However, the yield loss is compensated by 20-25% more premium price for organic farm output.

Key Words : Organic Farming, Less Cost, Increased Profitability.

1. 0 Introduction:

The present crisis of food prices in India brings out the inability of Indian agriculture to meet the demand for food even after six decades of independence. Though the green revolution made the economy self sufficient in the production of food grains, it could not make the Indian agriculture sustainable. Droughts and deluges continue to haunt the agriculture and are proven constraints of its growth. Moreover the achievements of green revolution were at the expense of ecology and environment and to the detriment of the people. The ill effect of chemical agriculture, adopted from the West, has increasingly become the source of ill fate for thousands of Indian farmers. The negative effects of the modern technology, particularly the use of chemical fertilizers and pesticides on the environment are manifested through soil erosion, water shortages, salination, soil contamination, genetic erosion, etc.

The conventional farming has resulted in declining crop productivity and not able to meet the rising demand for food by increasing population of the country. Sustainable development is achievable only with sustainable agricultural development. According Food and Agricultural Organization (FAO), sustainable agriculture is the successful management of resources for agriculture to satisfy changing human needs while maintaining or enhancing the quality of environment and conserving the natural resources. It emphasizes on maintaining the agricultural growth rate to meet the demand for food of all living things without draining the basic resources. The necessity of having an alternative agriculture method which can function in a friendly eco-system while sustaining and increasing the crop productivity is realized now. Organic farming is recognized as the best known alternative to the conventional agriculture.

1.1 Organic Farming: Meaning and its Beginning

Organic farming is one of the many approaches found to meet the objectives of sustainable agriculture. Many techniques used in organic farming like inter-cropping, mulching and integration of crops and livestock are not alien to Indian agricultural system. However, organic farming is based on various laws and certification programmes, which

prohibit the use of almost all synthetic inputs and health of the soil is recognized as the central theme of the method.

The US Department of Agriculture (USAD) defines organic farming as "a system that is designed and maintained to produce agricultural products by the use of methods and substances that maintain the integrity of organic agricultural products until they reach the consumer. This is accomplished by using substances, to fulfill any specific fluctuation within the system so as to maintain long term soil biological activity, ensure effective peak management, recycle wastes to return nutrients to the land, provide attentive care for farm animals and handle the agricultural products without the use of extraneous synthetic additives or processing".

The origin of organic farming goes back, in its recent history, to 1940's. During this period, the path breaking literature on the subject published by J.I.Rodale in the United States, Lady Balfour in England and Sir Albert Howard in India contributed to the of organic farming. Organic farming involves management of the agro-eco system, as autonomous, based on the capacity of the soil in the given local climatic conditions. Despite of much ridicule, organic farming has come to stay and is spreading steadily but slowly all over the world. India has been very slow to adopt, though farming techniques practiced in the country prior to the green revolution were basically eco friendly.

Sensing the importance of rules and regulations of WTO trade regime, the Central and State governments have taken several initiatives to popularize organic farming in the country.

2.0 Review of Literature:

Howard's (1940) 'Agricultural Testament', deals with the destruction of soil and the consequences of it; and suggests methods to restore and maintain the soil fertility. It makes a detailed deposition of Indore method of maintaining the soil health. The reasons and the sources of erosion of soil fertility and its effect on living things are discussed. It criticizes the agriculture research and suggests the ways to protect the soil and its productivity.

Save and Sanghavi (1991) firmly believe in economic profitability of organic farming. They compare banana growing by natural and conventional farming. Comparing the yields for four rounds, they found that the aggregate output was 88 kg on the natural farm and 75 kg by conventional farming.

Rahudkar and Phate (1992), discuss the experiences of organic farming in Maharashtra. Farmers growing sugarcane and grapes, after using the vermi compost, found the soil fertility increased, irrigation decreased by 45% and sugarcane quality improved. It was found that the net profits from both the crops are high in organic farms.

Save (1992) found that after three years of natural cultivation the production increased and the use of inputs decreased. The farm yielding 200 to 250 coconuts per tree gave 350 to 400 per annum.

Korah Mathen (1992) points out at the problems in evolving representative and rigorous yardsticks for comparison between modern and alternative farming. Yields could not be compared because of the monoculture nature of the chemical farming with those of multi crops under natural /organic farming. Economic analysis faced problems because of the quantification of the intangibles. He suggests use efficiency analysis.

Kaushik (1997) analyses the issues and policy implications in the adoption of sustainable agriculture. He says that before adopting organic farming at the individual and national level careful consideration of public vis-à-vis private benefits, current vis-à-vis future incomes, current consumption and future growths, etc. are very pertinent issues to be determined.

Anon (1998) opines that the organic agriculture is economically viable. He emphasizes on the marketing of the organic products on the basis of reputation and credibility.

Singh and others(2001) recording the experiments on rice-chick pea cropping sequence using organic manure, found the yields substantially higher compared to the compared group. Similar results were obtained for rice, ginger, sunflower, soya been and sesame.

Sankaram Ayala (2001) the author admits that the benefits from high yielding varieties are short term in nature and cause adverse effects in the long term. The author suggests an appropriate blend of conventional farming system and its alternatives. He rules out organic farming based on the absolute exclusion of fertilizers and chemicals.

Veeresh (1999) says that in different countries organic farming is perceived differently. While in advanced countries its focus is on prevention of chemical contamination, in countries like India the concern is about low soil productivity. Doubts about the availability of massive sources of organic inputs also exist. He opines that both high technology and sustainable environment cannot go together. He advocates slow introduction of organic farming in India and recommends conversion of only 70% of the total cultivable area where un- irrigated farming is in practice.

Sharma (2001) discusses the disadvantages of conventional farming. He argues for organic farming as the most widely recognized alternative farming system to the conventional farming and discusses other alternatives such as biological farming, natural farming and perm culture.

The foregoing overview of literature makes it clear that opinions about organic farming are divided among the experts. Though there is divergence of views about the profitability and yield increases in organic farming, there is a consensus on its eco-friendly nature and inherent ability to protect human health. There are strong views for and against organic farming. The criticism is mainly on the grounds of practicability of feeding more than a million people, financial and economic viability, availability of organic inputs and the know-how. There are many who while approving organic agriculture want a mixture of both the systems or advocate approach by proceeding slowly towards the conversion of the conventional farms into organic. But the most important of all is the yield and financial viability form the point of view of farmers. The questions on the yield and economic viability are not clearly answered.

3. 0 Need for the Study

3.1 The World Scenario:

The relevance and the need for an eco-friendly alternative farming arose from the ill effects of the chemical farming practices adopted worldwide during the second half of the last century. People began to search for various alternative farming systems based on the protection of environment which in turn would increase the welfare of the mankind by various ways like clean and healthy foods, an ecology which is conducive to the survival of all living and non-living things, low use of the non –renewable energy sources, etc. Several systems of farming resulted as the result of many experts and laymen. Organic farming is considered to be the best among all of them because of its scientific approach and wider acceptance through out the world.

The organic farming was adopted on relatively large scales in those countries which had introduced it initially. There are very large organizations promoting the organic farming movement in European countries, America and Australia etc. The organizations like International Federation of Organic Agriculture Movements (IFOAM) and Greenpeace have studied the problems of the chemical farming methods and compared the benefits accruing to the organic farming with the former. Since then, organic farming movements have spread to Asia and Africa as well. The IFOAM was established in 1972 in France. It spearheads and coordinates organic farming efforts through out the world. It emphasizes the low use of non renewable natural resources and minimum pollution. There are more than 600 organizational members spread in 120

countries including India. The Food and Agricultural Organization (FAO) of the United Nations provide support to the organic farming in the member countries. It attempts for the harmonization of national organic standards which is essential to increase international trade in organic products. The FAO in association with the World Health Organization (WHO) evolved the Codex Alimentarius for organic products. Consumers too have become health conscious and are willing to pay for the clean, healthy and natural food.

There have been significant strides in the growth of organic food market in the world. In 1990s the international trade in organic foods showed an annual growth rate of about 20-22%. Many retail chains and super markets in advanced countries are accorded with "green status" to sell organic foods. The organic food processing industry is considered nature friendly and thus encouraged. The important organic products traded in the international market are dried fruits and nuts, processed fruits and vegetables, cocoa, spices, herbs, oil crops and derived products, sweeteners, dried leguminous products, meat, dairy products, alcoholic beverages, processed fruits and fruit preparations. The US and the European Union have very comprehensive National Organic Farming Programmes and the early nineties have witnessed organic farming regulations in Japan, Canada, Australia, New Zealand, Israel and Brazil. China, Thailand, South Korea, Turkey, Philippines have established certifying agencies. India too has adopted the National Programme for Organic Production (NPOP) with national standards.

3.2 The Indian Scenario:

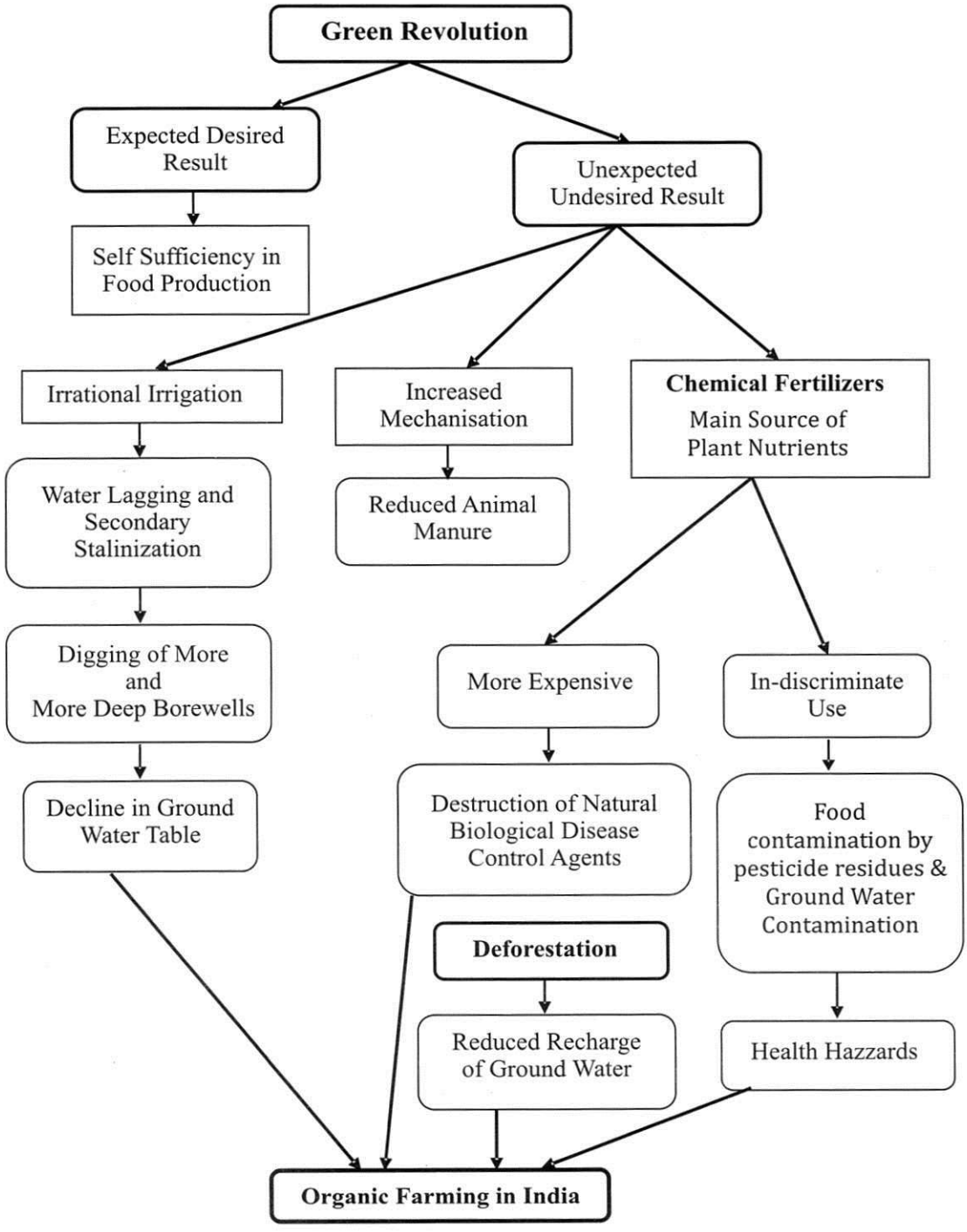
The Indian agriculture switched over to the conventional system of production on the advent of the green revolution in the 1970s.The change was in the national interest which suffered setbacks because of the country's over dependence on the foreign food sources. The national determination was so intense that all the attention was focused on the increase in agriculture production. The increase in population has led to a rise in the demand for food grains. An estimated area of 140 million hectares under cultivation cannot be increased. At the same time there has been decline in the cultivable area because of the urbanization and industrialization. This in turn exerts pressure on the existing cropped area.

Organically cultivated soils are relatively better attuned to withstand water stress and nutrient loss. Their potential to counter soil degradation is high and several experiments in arid areas reveal that organic farming may help to combat desertification. India which has areas of semi-arid and arid nature can benefit from the experiment.

The organic agriculture movement in India received inspiration and assistance from IFOAM. All India Federation of Organic Farming is a member of IFOAM and consists of a number of NGOs, organizations of farmers, promotional bodies and institutions. There have been several studies in India which show that the organic farming has better results than the conventional system. The Institute for Cotton Research, Nagpur conducted a study of economics of cotton cultivation in Yavatmal district of Maharashtra. The cost of cultivation of cotton was lower in the organic farming than in the conventional farming. The low costs were due to the non-use of fertilizers and chemical insecticides. The input costs were low with a 20% of premium of prices of output. The appreciation of net income from organic cotton cultivation by the sixth year was 80% over the conventional crop. Results from 150 field demonstration cum trials under the National Project on Development and Use of Bio-fertilizers in different parts of the country show an increase of 4% yield in plantation crops, 7% in fruit crops, 9% in wheat and sugar cane, 10% in millet and vegetables, 11% in fiber, condiments and spice crops, 14% in oil seeds and flowers and 15% in tobacco. A study 100 farmers in Himachal Pradesh during a period three years found that the total cost of production of maize and wheat was lower under organic farming and the net income was 2 to 3 times higher. Both productivity and premium prices contributed to the increased profitability. Another study of 100 farmers in five districts of Karnataka indicated that the cost of organic

farming was lower by 80% than that of the conventional one.

An important event in the history of organic farming in India was the starting of the National Programme for Organic Production (NPOP) on 8[Th] May 2000 and the subsequent Accreditation and Certification Programme on 1[St] October 2001.The logo "India Organic" was released on 26[th] July 2002 in support of NPOP.



Source: Organic Farming : Approaches and Possibilities in the Context of Indian Agriculture, Policy Paper 30, National Academy of Agricultural Sciences, India. Feb,2005.

3.3 Organic Farming in Karnataka:

Karnataka has been one of the pioneer states in India to adopt the organic farming. After Uttaranchal, it is the first state to adopt the Organic Farming Policy. High level empowered committees at government level to plan, implement and monitor the under the policy. A separate Organic Farming Cell is created in the Department of Agriculture. Since 2004-05, the government is encouraging the farmers to adopt the organic farming and gradually give up the use of chemical fertilizers and pesticides. It is even allocating the financial resources in the budget for this purpose.

The Karnataka Organic Farming Policy is a comprehensive policy and has the following objectives: to reduce the debt burden of farmers and to achieve sustenance and self respect, to enhance soil fertility and to create living soil, to increase the food security and achieve sustainability, to prevent migration to urban areas by increasing rural employment opportunities, to equip farmers to effectively mitigate the drought situation, and to make judicious use of precious natural resources. The government is implementing this policy through NGOs, Farmers Associations, Farmers Clubs, Co-operatives and SHGs. It is encouraging the bio-mass production, bio-diversity, mixed farming, and soil and water conservation. It is providing the assistance to procure organic inputs, value addition of organic products, on farm processing, marketing and certification. The emphasis is on for research and development, conducting extension and training activities and providing publicity and propaganda. The government has established two research stations one at Dharwad and another at Shimoga.

The Organic Village/Site Programme was initiated in 2004-05 to create model organic sites in each district. The programme is extended to Taluka level from 2006-07.The implementation of the programme is through the NGOs based on their knowledge and experience in organic farming. This programme aims to educate and popularize organic farming concepts and principles among farming community, to help extension activities and research organizations .The programme facilitates farmers to organize into farmer groups/farmer clubs/farmer companies which help in sharing the common resources like land, water and bio-mass. It also facilitates farmers for on-farm processing, value addition and marketing of the produce generated in the site. The programme is an integrated approach to have 100 hectares of land converted into organic farming for which various line departments are pooled. 28 Model Organic Villages/Sites are established comprising total area of about 3080 hectares in the state.

The other promotional activities include conversion of one farm each of Agriculture, Horticulture, Sericulture Departments UAS Bangalore and Dharwad to model organic farms, documentation of existing organic farming practices to develop package of practices, to provide training to farmers, department officers, and NGOs. The government assisted the Jaivik Krishik Society to facilitate marketing of organic products. The government departments extensively participate in fairs, exhibitions, and other promotional activities at various levels. The government assistance is provided for large scale production of organic inputs and to SHGs (Shtree Shakti Groups) for production of organic inputs. It organizes educational tours to model organic farms, provides organic inputs like green manure seeds, bio-fertilizers, bio-pesticides etc. It is helping the creation of Organic Farming Library at district level.

3.4 Organic Farming in Belagavi District:

The Belagavi District has an area of 13415 sq kms and the population of 4214505 according to 2001 census. It is bounded on the West and North by Maharashtra state, on the north east by Bijapur district, on the by Bagalkote district, on the south east by Gadag district, on the south by Dharwad district, on the south west by Uttar Kannada district and the state of Goa. The district has 10 talukas viz.: Athani, Bailhongal, Belagavi, Chikkodi, Gokak, Hukkeri, Khanapur, Raibag, Ramdurg and Saundatti. The district has a total of 706476 cultivators and 586876 agricultural laborers. The gross sown area is 916217 hectares of

which the net sown area is 746907 hectares. The total numbers of land holdings are 497708 and area is 1005677 hectares. The net irrigated area is 325476 hectares. The major cereal crops are Paddy, Jawar, Maize, Wheat, and Bajra. Ragi is a minor cereal in the district. Gram and Tur are main pulses; groundnut and sunflower are main oilseeds. Fruits and vegetables are grown in all talukas. Sugarcane, cotton and tobacco are main commercial crops in the district.

4. 0 Methodology:

4.1 Study Area:

Belagavi District is the area of study and two talukas are considered of which one from Malnad region i.e. Khanapur Taluka and another from Maidan region i.e. Hukkeri Taluka.

4.2 Data:

Both secondary and primary data are used. The secondary data is collected from various government publications, official websites and office records. The primary data is collected personally by the researcher through structured schedules / questionnaire. Initially the pilot study was undertaken at Gundyanatti village of Khanapur Taluka and final collection of data was undertaken after incorporating the necessary changes required. 10% of the organic farmers' responses are considered for data analysis. The data on conventional farming is collected from the farmers to compare and contrast both conventional and organic farming. The data is processed and analyzed by using the necessary research tools.

4.3 Sample Design:

There are 190 organic farmers in Khanapur taluka and 250 in Hukkeri taluka. 10% of the farmers in each of the talukas are selected as sample for the study purpose.

Table1 : Sample Structure

Taluka	Organic Farmers	Sample Selected
Khanapur	190	20
Hukkeri	250	25
Total	440	45

Source :Primary Data

4.4 Tools of analysis:

The collected data is processed both manually and with the help of computers. The statistical tools like percentage, Correlation Coefficient are obtained from using the SPSS package to draw inferences.

4.5 Objectives:

The study envisages following objectives:

1. To study and compare the cost of production of organic farm products to that of conventional farm products.
2. To study and compare the yield of organic farm products to that of conventional farm products.
3. To suggest the policy measures to the government to make the organic farming more acceptable by the farmers.

4.6 Hypotheses:

Following are the hypotheses of the study:

1. H_0: The cost of production in conventional farms is same in organic farms.
   H_1: The cost of production in conventional farms is more than in organic farms.
2. H_0: The yield in conventional farms is same in organic farms.
   H_1: The yield in conventional farms is more than in organic farms.

5.0 Data Collection and Analysis

5.1 Cost of Cultivation in Khanapur Taluka

The main food crop in the taluka is Paddy. The researcher has considered the cost of cultivation of paddy. The commercial crop considered for the study is sugarcane for the purpose of comparing it to the cost of cultivation in Hukkeri taluka.

5.1.1 Paddy Cultivation

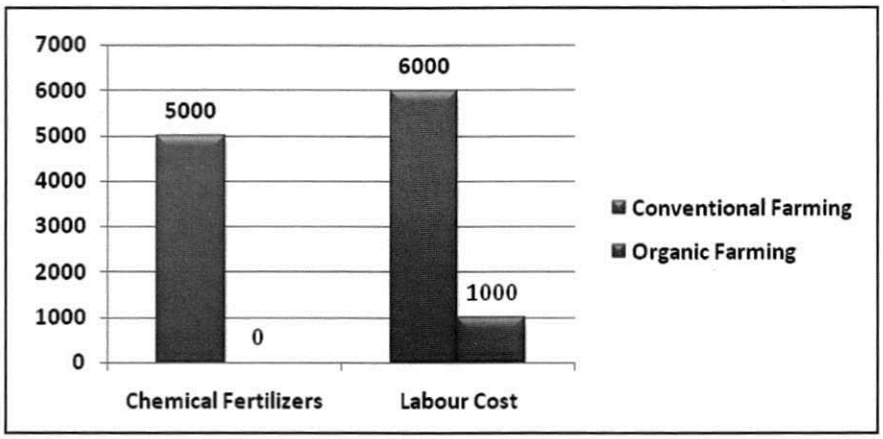
The following table shows the cost of cultivation of paddy crop in Khanapur Taluka under both conventional farming and organic farming.

Table No.2:
Cost of Cultivation of Paddy Crop (₹)

Expenditure	Conventional Farming	Organic Farming
Chemical Fertilizers	5000	--
Labour Cost	6000	1000
Total	11000	1000

Source: Primary Data

Chart No.1: Cost of Cultivation of Paddy Crop (₹)



Source : Table No.2

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Conventional Farms	2	5500.0000	707.10678	500.00000
Organic Farms	1	1000.0000		

One-Sample Test

	Test Value = 11000					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Conventional Farms	-11.000	1	.058	-5500.00000	-11853.1024	853.1024

Under conventional farming the cost of production of paddy is Rs.11000 per acre which includes Rs.5000 for chemical fertilizers and Rs.6000 as labour cost.

Under organic farming the cost of labour is less by Rs.1000 (i.e. cost is Rs.5000) and no expenditure is incurred for the use of chemical fertilizers. Hence, the total cost of paddy cultivation under the organic farming is almost ten times less the cost of cultivation under the conventional farming.

An obtained p-value shows a theoretical risk of Type-I error. Researchers usually want p to be less than 0.05.

The result of One Sample Test table shows that there is a significant difference between the hypothesized mean and the sample mean, since t-statistics is -11.00 and its associated p-value is 0.058 which is greater than 0.05. A Type-I error occurs when the null hypothesis H_0 is rejected and hence H_1 accepted. Therefore the cost of production in Conventional farms is more than in Organic farms.

5.1.2 Sugarcane Cultivation

Under the conventional farming the total cost of cultivation of sugarcane is Rs.22000 per acre which includes Rs.5000 for the use of chemical fertilizers, Rs.3000 for the use of pesticides. Rs.1000 is labour cost and Rs.4000 transport cost.

Under the organic farming for the production of sugarcane labour cost is only Rs.3000 and no

expenditure is incurred as transport cost. The labour cost of less because of reduced weeding out activity. Labour cost is implied cost of hired labour and not the cost of family labour. Under the organic farming the cost of sugarcane cultivation is more than 7 times less than under the conventional farming.

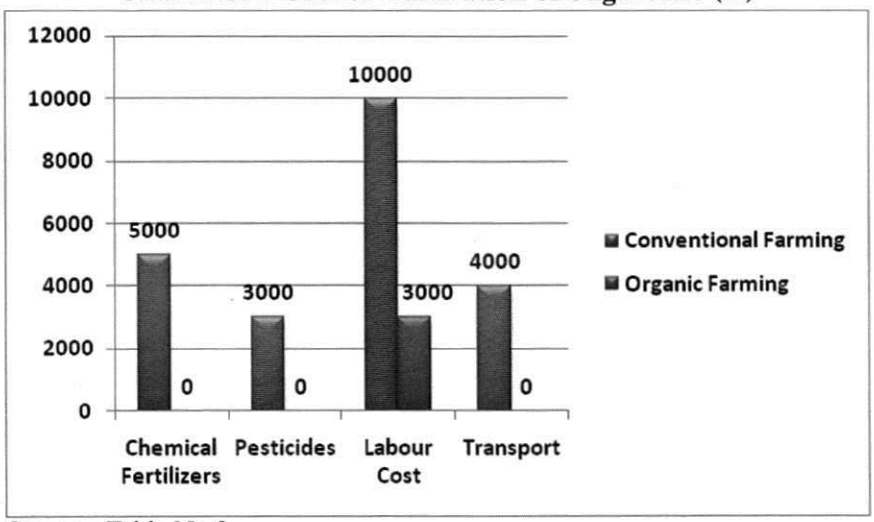
The following table shows the cost of cultivation of sugarcane in Khanapur Taluka under both conventional farming and organic farming.

Table No. 3: Cost of Cultivation of Sugarcane (₹)

Expenditure	Conventional Farming	Organic Farming
Chemical Fertilizers	5000	--
Pesticides	3000	--
Labour Cost	10000	3000
Transport	4000	--
Total	22000	3000

Source: Primary Data

Chart No.2: Cost of Cultivation of Sugarcane (₹)



Source : Table No.3

One- Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Conventional Framing	4	5500.0000	3109.12635	1554.56318
Organic Framing	1	3000.0000		

One-Sample Test

	Test Value = 22000					
	T	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Conventional Farms	-10.614	3	.002	-16500.00000	-21447.3138	-11552.6862

An obtained p-value shows a theoretical risk of Type-I error. Researchers usually want p to be less than 0.05.

The result of One Sample Test table shows that there is a significant difference between the hypothesized mean and the sample mean, since t-statistics is -10.614 and its associated p-value is 0.002 which is less than 0.05. A Type-I error occurs when the null hypothesis H_0 is rejected and hence H_1 is accepted. Therefore, the cost of production in Conventional farms is more than in Organic farms.

5.2 Cost of Cultivation in Hukkeri Taluka

Jawar is the main food crop in Hukkeri taluka and hence, the cost of cultivation of Jawar is considered for study. The commercial crop considered for the study is sugarcane for the purpose of comparing it to the cost of cultivation in Khanapur taluka.

5.2.1 Jawar Cultivation

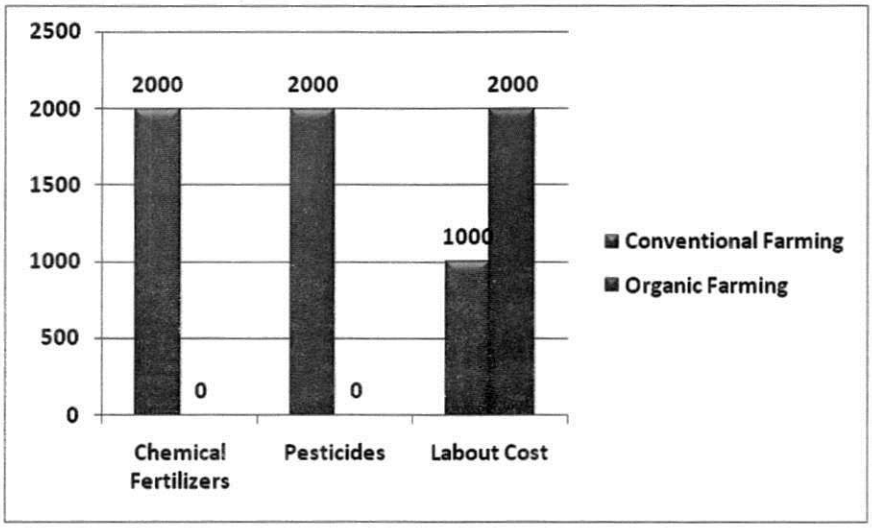
The following table shows the cost of cultivation of Jawar in Hukkeri Taluka under both conventional farming and organic farming.

Table No. 4 :Cost of Cultivation of Jawar (₹)

Expenditure	Conventional Farming	Organic Farming
Chemical Fertilizers	2000	--
Pesticides	2000	--
Labour Cost	1000	2000
Total	5000	2000

Source: Primary Data

Chart No.3: Cost of Cultivation of Jawar (₹)



Source : Table No.4

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Conventional Framing	3	1666.6667	577.35027	333.33333
Organic Framing	1	2000.0000		

One- Sample Test

	Test Value = 5000					
	t	df	Sig. (2 tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Conventional Farms	-10.000	2	.010	-3333.33333	-4767.5509	-1899.1158

The cost of cultivation of Jawar under conventional farming is Rs.2000 for chemical fertilizers, Rs.2000 for pesticides and Rs.1000 for labour the total cost is Rs.5000 per acre.

Under organic farming labour cost is the only expenditure for the cultivation of Jawar. It is Rs.2000 per acre. Hence, the cost of cultivation of Jawar is more by Rs.3000 per acre i.e. 2½ times more under conventional farming than under organic farming.

An obtained p-value shows a theoretical risk of Type-I error. Researchers usually want p to be less than 0.05.

The result of One Sample Test table shows that there is a significant difference between the hypothesized mean and the sample mean, since t-statistics is -10.00 and its associated p-value is 0.010 which is less than 0.05. A Type-I error occurs when the null hypothesis H_0 is rejected and hence, H_1 is accepted. Therefore the cost of production in Conventional farms is more than in Organic farms.

5.2.2 Sugarcane Cultivation

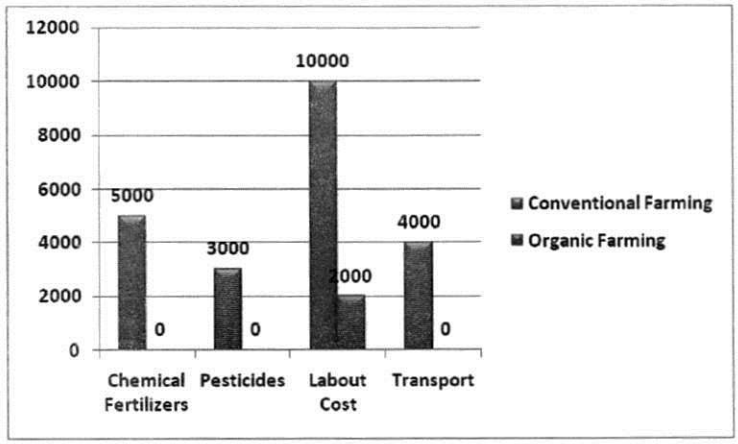
The following table shows the cost of cultivation of sugarcane in Hukkeri Taluka under both conventional farming and organic farming.

Table No.5: Cost of Cultivation of Sugarcane (₹)

Expenditure	Conventional Farming	Organic Farming
Chemical Fertilizers	5000	--
Pesticides	3000	--
Labour Cost	10000	2000
Transport	4000	--
Total	22000	2000

Source: Primary Data

Chart No. 4: Cost of Cultivation of Sugarcane (₹)



Source : Table No.5

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Conventional Framing	4	5500.0000	3109.12635	1554.56318
Organic Framing	1	2000.00		

One-Sample Test

			Test Value = 22000			
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Conventional Farms	-10.614	3	.002	16500.00000	-21447.3138	-11552.6862

An obtained p-value shows a theoretical risk of Type-I error. Researchers usually want p to be less than 0.05.

The result of One Sample Test table shows that there is a significant difference between the hypothesized mean and the sample mean, since t-statistics is -10.614 and its associated p-value is 0.002 which is less than 0.05. A Type-I error occurs when the null hypothesis H_0 is rejected and H_1 is accepted. Therefore the cost of production in Conventional farms is more than in Organic farms.

The cost of cultivation of sugarcane under conventional farming is Rs.20000 per acre. It includes Rs.5000 for chemical fertilizers, Rs.3000 for the use of pesticides, Rs.10000 for labour and Rs.4000 for transport.

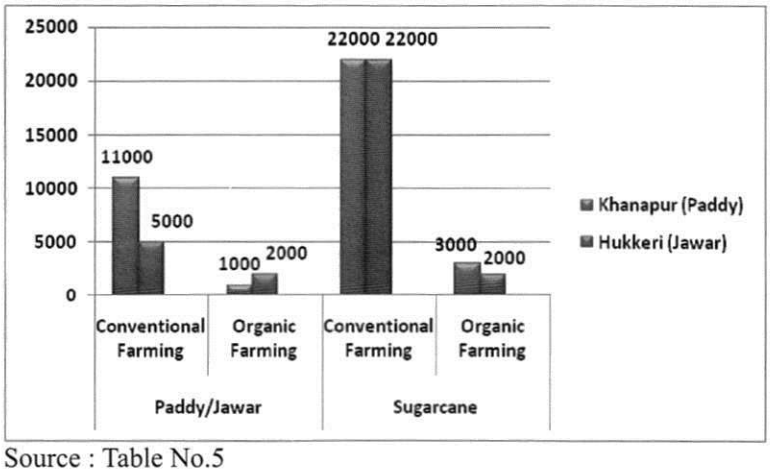
Under organic farming the cost of cultivation of sugarcane is mainly the labour cost. It is Rs.2000 per acre. Hence, the cost of producing sugarcane under organic farming is less by Rs.18000 per acre than under conventional farming.

Table No. 6: Cost of Cultivation of food crop : A Comparative Study

Taluka	Paddy/Jawar		Sugarcane	
	Conventional Farming	Organic Farming	Conventional Farming	Organic Farming
Khanapur (Paddy)	11000	1000	22000	3000
Hukkeri (Jawar)	5000	2000	22000	2000

Source: Primary Data

Chart No.5: Cost of Cultivation of food crop : A Comparative Study



Source : Table No.5

Paddy/Jawar

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Conventional Framing	2	8000.0000	4242.64069	3000.00000
Organic Framing	2	1500.0000	707.10678	500.00000

One-Sample Test

	Test Value = 16000					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Conventional Farms	-2.667	1	.228	-8000.00000	-46118.6142	30118.6142
Organic Farms	-29.000	1	.022	-14500.00000	-20853.1024	-8146.8976

An obtained p-value shows a theoretical risk of Type-I error. Researchers usually want p to be less than 0.05. A Type-I error occurs when the null hypothesis H_0 is reject it.

The result of One Sample Test table shows that there is a significant difference between the hypothesized mean and the sample mean, since t-statistics is -2.667 and -29.00 and its associated p-value is 0.228 and 0.022 which is greater than 0.05. A Type-I error occurs when the null hypothesis H_0 is reject and H_1 accept it. Therefore the Cost of production in conventional farms is more than in Organic farms.

Sugarcane

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Conventional Framing	2	22000.0000	.00000[a]	.00000
Organic Framing	2	2500.0000	707.10678	500.00000

One-Sample Test

	Test Value = 44000					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Organic Farms	-83.000	1	.008	-41500.00000	-47853.1024	-35146.8976

An obtained p-value shows a theoretical risk of Type-I error. Researchers usually want p to be less than 0.05.

The result of One Sample Test table shows that there is a significant difference between the hypothesized mean and the sample mean, since t-statistics is -83.00 and its associated p-value is 0.008 which is less than 0.05. A Type-I error occurs when the null hypothesis H_0 is rejected and hence H_1 is accepted. Therefore the Cost of production in conventional farms is more than in Organic farms.

6.0 Findings

The study looks into the economics of organic farming and its impact on agriculture. The study brings out the principles of organic farming as stated by International Federation of Organic Agricultural Movement (IFOAM). These principles emphasis the production of high quality food grains, encouraging the biological cycles within the farming system involving micro organisms, soil, flora and fauna, to increase the long term fertility of soils,

to maintain the genetic diversity of the production system and its surroundings, conservation of renewable resources like water, to co-ordinate crop cultivation and animal husbandry, etc.

The study area covers two talukas viz.; Khanapur and Hukkeri of Belagavi district. The Khanapur taluka receives more rainfall as it is in the malnad region. Hukkeri taluka has mainly rainfed agriculture and area irrigated by borewells. Both talukas have sugarcane as the common commercial crop. The most distinct feature of these two talukas is that there are renowned organic farmers who work as resource persons, received several awards by the Government and the National and International Institutions. Each taluka in the district has 300 farmers identified for organic cultivation under the Savayava Krishi Mission. Of these farmers 2/3rd are active and remaining are passive. The study shows that the literate farmers are more inclined towards the organic farming with certification.

The study observed that the cost of cultivation of both commercial crop and food crop in both the taluka under organic cultivation is significantly less compared to conventional farming in which chemical fertilizers and pesticides are used. In the initial 3 to 4 years of organic cultivation the yield per acre is considerably less. However, this yield loss is compensated by 20-25% more premium price for organic products than under conventional farming.

Regarding the cost of production the study rejects the null hypothesis and the alternate hypothesis is accepted. As far as the yield is concerned the study rejects the null hypothesis and the alternate hypothesis is accepted

The organic farming policy was declared by Government of India in 2005. It was the result of the realization of the indiscriminate and excessive use of chemicals during the periods of Green Revolution and also the Post Green Revolution. The sustainability of the Indian agriculture was in question and hence it called for long run attention for sustainable production which shall also address social, ecological and economical issues together. In fact it was a realization for integrated management system for the Indian agriculture to take care of the soil health, human health and environment health. The Organic Policy of the government aimed at promoting technically sound, economically viable, environmentally non-degrading and socially acceptable use of natural resources. The policy aimed at to actualize the area and crop potential for organic farming, sustaining soil fertility, conserving bio-resources, strengthening rural economy, promoting value addition, accelerating the growth of agro-business and securing a fair standard of living for the farmers and agriculture workers and their families.

The organic farming policy was declared by Karnataka in 2004. The state policy on organic farming has a principal aims of food self reliance, rural development and nature conservation. Organic Farming emphasizes agriculture's contribution to bio-diversity and biodiversity and bio diversity's contribution to agriculture.

7.0 Policy Suggestions

After making the study of organic farming in Karnataka and in particular in the study area i.e. Khanapur and Hukkeri talukas of Belagavi districts, the following suggestions are made:

i. The programmes which are identified in policy statement but not implemented, needs to be implemented on priority.
ii. It is observed that the Government departments lack interest in the implementation of organic farming projects. Hence, the present agriculture and horticulture departments should be totally devoted to organic farming.
iii. Farmers have to undertake multiple cropping pattern rather than single cropping pattern.
iv. Farmers should take interest in income generating allied activities like animal husbandry etc. along with the crop cultivation.
v. Government should involve in Primary Agricultural Co-operative Credit Societies in the promotion of organic

farming in the State.

vi. Government should stop providing seeds and instead help the farmers to have indigenous Seed Bank in every village.

vii. Farmers should have 'Soil Health Passbook' in which the entries are to be made by a joint group consisting of farmers, government departments and accreditation agencies.

viii. Each Consumer Co-operative Society in the State should have an outlet to sell the organic produce.

ix. The accreditation fees should be affordable by the farmers.

x. Organic cultivation and products, importance to the human health and maintaining the bio-diversity and other related topics should be included in the school curriculum. Every school should have a Organic Club to educate students about the benefits of organic food and arrange students visit to organic farm as an essential extension activity.

xi. Print and e-media should be extensively used for propagating the organic farming.

xii. Organic cultivation is to be considered as farm business. Hence, every farmer should be taught the principles of farm planning like farm enterprise budget.

xiii. The farmers should be taught the proper methods of keeping the farm records which includes cost, yield, income, data on livestock, etc. This would convert the farmer into an Agri-businessman.

8.0 Conclusion

Having more concern with the farmers in Belagavi district the research would like to suggest the Organic Food Club of Yamakanmardi to start a monthly bulletin on the lines of 'Adike Patrike' of Dakshin Kannada district.

Amartya Sen opines that 'Policy is a function of political organization and depends on a variety of factors including the nature of the government; the sources of its power, and the forces exerted by other organizations'. This opinion emphasizes the role and responsibility of leaders of the government to have necessary political will for the successful implementation of any policy of the government for which organic farming policy is not an exception.

Before concluding it is essential to alley the unfound criticism /apprehension about the organic farming in India. This apprehension is about the food security. Critics say that too much and hurried importance to organic cultivation in India would once again push the economy to dependence on food imports because of the low productivity under organic cultivation it the initial years. But, critics have not considered the fact that despite repeated floods and famines in different parts of the country every year, Indian economy has the capacity to withstand any such crises and provide the food grains to the people of India for a minimum of two years. After the initial years under the organic cultivation the soil fertility is not only maintained but enhanced and hence, there will be increased yield.

Hence, the importance of agriculture in the Indian economy as Rangarajan says, 'a 1% increase in agriculture output tends to raise industrial production by 0.5% and augment national income by 0.7%'.

REFERENCES :

Anon (1996): "The Organic Source Book", The Other India Press Book, Mapusa, Goa.

Babalad H.B., Patil R.K., et al (2010): "Savayava Krishi", UAS, Dharwad.

Government of Karnataka (2004): "Karnataka State Policy on Organic Farming", Commissioner of Agriculture, Bengaluru.

Government of Karnataka (2014): "Organic Farming Directory of Karnataka" Ed. by Dr. N. Devakumar and Dr. M.A. Shankar, Karnataka State Department of Agriculture and University of Agricultural Sciences, Bengaluru.

Howard, Sir Albert (1940): "An Agricultural Testament", Research Foundation for Science, Technology and Ecology. New Delhi.

Kaushik K K (1997): "Sustainable Agriculture: Issues and Policy Implications," Productivity. 37(4) Jan-Mar, Foundation for Science, Technology, and Ecology.

Kiran Pandya, Smruti Bulsari, Sanjoy Sinha and Kogent Learning Solutions Inc.(2012): ' SPSS in Simple Steps', Dreamtech Press, Delhi

Korah Mathen (1992): Proceedings of National Seminar on Natural Farming, Somani and Others (Ed). Rajasthan College of Agriculture, Udaipur

Narayanan D.S. (2006): "Organic Farming in India: Relevance, Problems and Constrains", Occasional Papers-38, Department of Economic Analysis and Research, National Bank for Agriculture and Rural Development, Mumbai.

Organic Farming: Approaches and Possibilities in the Context of Indian Agriculture. Policy Paper 30. National Academy of Agricultural Sciences, India. Feb, 2005.

Rahudkar. W. B and Phate. P.B. (1992): "Organic Farming-Experiences of Farmers in Maharashtra" in Proceedings of National Seminar on Natural Farming, Rajasthan College of Agriculture, Udaipur.

Rangarajan (1982): "Developments in Indian Agriculture-Major Issues in Indian Economics since Independence", 5th Ed. by Uma Kapila 2003-04, Academic Foundation, New Delhi, p.202.

S. Subba Reddy, P. Raghu Ram, et al (2004): "Agricultural Economics", Oxford and IBH Publishing Co. Pvt. Ltd., New Delhi.

Sankaram. Ayala (2001): "Eco-Technological Focus for Stability and Sustainability", Indian Farming, June, pp.7-11.

Sharma. Arun K. (2001): "Hand book of Farming", Agro bios (India), Jodhpur

Singh G R (2001): "Organic Farming for Sustainable Agriculture", Indian Farming, June, pp 12-14.

Save Bhaskar H and Sanghavi Ashok V (1991): "Economic Viability of Sustainable Agriculture". Spice India, October, p.4.

Save B (1992): "Natural Farming-An Experience" in Somani and Others (Ed), Proceedings of the 'National Seminar on Natural Farming', Rajasthan College of Agriculture, Udaipur.

Sen Amartya (1981): "Poverty and Famines", Oxford University Press, New Delhi, p.19.

Veeresh G.K. (1999):" Organic Farming-Ecologically Sound and Economically Sustainable. Plant Horti Tech. 1(3) Nov-Dec.

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