

### A critical analysis on economics and constraints in adoption of organic vegetable cultivation in Belgaum district\*

In India vegetables are grown in an area of 7.05 m ha with the annual production of 108.20 m t (Anon., 2008). Karnataka is one of the leading states with the production of 4.58 m t grown in an area of 0.38 m ha. With the increasing awareness on adverse effect of chemical farming at present both consumers and producers are gradually shifting to organic farming. In this direction, an increasing number of NGO's, farmers organization and government agencies have been involved in promoting organic method of cultivation. But, majority of farmers are not showing interest in taking up organic farming due to low productivity and other hidden constraints.

In view of this, it would be a vital step to highlight some of those distinct characters, which inturn help the organizations involved in organic agriculture to take decisions towards promoting it. Keeping this in view the present study was undertaken with the objective of a critical analysis of economics and constraints in adoption of organic vegetable cultivation.

The present study was conducted during 2007-08 in Belgaum district of Karnataka. The district was purposively selected as the district stands first in cultivable area and production in North Karnataka. The ex-post-facto research design was employed for the study. Four taluks viz., Athani, Chikkodi, Gokak and Hukkeri having maximum area under organic vegetable production were selected, from which 34 villages were purposively selected. Thus, sample constituted 140 respondents. The required data from the respondents were collected in an informal atmosphere using pre-tested interview schedule. The information was tabulated and analyzed by using frequency and percentages. The benefit cost ratio was calculated by using the formula

$$\text{Benefit Cost Ratio} = \frac{\text{Gross returns}}{\text{Cost of cultivation}}$$

The detailed economic analysis of organic cultivation of chilli and tomato in comparison to inorganic cultivation is depicted in Table 1. It was observed that, the respondents were able to harvest an average chilli yield of 5.31 t/acre in organic cultivation as compared to yield level of 6.90 t/acre in inorganic method. But, the average cost of cultivation was found to be less in case of organic method (₹ 10305/acre) as compared to inorganic method (₹ 14897/acre). Thus, the organic method resulted in higher B C ratio of 2.11 over inorganic method (1.90) when the market price for both the produce remained same.

Similarly, the comparative economics of organic and inorganic cultivation in tomato (Table 1) reveals that the respondents were able to harvest an average yield of 8.28 t/acre through organic cultivation as compared to the yield level of 10.12 t/acre obtained in inorganic method. However, the average cost of cultivation in organic method was found to be less (₹ 11263/acre) as compared to inorganic method (₹ 15330/acre). Thus, the organic method showed the higher B C ratio of 1.98 over inorganic method (1.78)

Table 1. Economics of organic vegetable cultivation (n=140)

Particulars	Green chilli crop		Tomato crop	
	Organic	Inorganic	Organic	Inorganic
Average yield (t/acre)	5.31	6.90	8.28	10.12
Average cost of cultivation (₹/acre)	10305	14897	11263	15330
Average price for product (₹/kg)	4.10	4.10	2.70	2.70
Average gross return (₹/acre)	21771	28290	22356	27324
Average net return (₹/acre)	11466	13393	11093	11994
Benefit cost ratio	2.11	1.90	1.98	1.78

when the market price for both the produce remained same. Similar findings were also reported in the study conducted by Suresh (2001).

The constraints in adoption of organic farming (Table 2) revealed that, under production related constraints all the respondents expressed the problem of lack of research support in providing scientific rationality of practices and non-availability of labourers to carryout organic farm practices. This was due to non-availability of recommended package of practices and laborious process involved in application of organic practices, coupled with big land holdings and migration of agricultural labourers. The problem of limited and irregular power supply (97.86%) and no documentation of organic farming practices (95.71%) and lack of organic practices to control pest and diseases (95.71%) were also highlighted by more than 90 per cent of farmers. Similarly, majority of the respondents expressed the problems of non-availability of organic manures (85.00%) and lack of awareness about biofertilizers and biopesticides use (80.71%), respectively. The probable reasons were that, as such farmers were unable to get the detailed organic recommendation and limited message spread of knowledge through other organic farmers which thereby resulted in the present situation.

With regard to marketing constraints the problems of fluctuation in the prices of commodities, lack of minimum support price for the organic products and inaccurate weighing instruments were expressed by all the respondents in the study area. Similarly, a majority of respondents expressed the problem of high commission charges while marketing of the product (97.86%), and non-availability of market related information and market place exclusively for organic produce (95.71%). Similar type of results were also obtained in the studies conducted by Sadaphal *et al.* (2001) and Thimmareddy (2001).

The elicited suggestions for strengthening organic vegetable cultivation are presented in Table 3. It is highlighted that, the majority of the respondents suggested intervention by the Government for fixing minimum support price for organic

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Table 2. Constraints in adoption of organic vegetable cultivation practices (n=140)

Problems faced	Frequency	%
<b>Production problems</b>		
Lack of research support in providing scientific rationality of practices	140	100.00
Non availability of labourers	140	100.00
Limited and irregular power supply	137	97.86
Lack of organic practices to control pest and disease	134	95.71
No documentation on organic farming practices	134	95.71
Non availability of organic manures	119	85.00
Lack of awareness in using Biofertilizers and biopesticide	113	80.71
Non availability of local seed materials	24	17.14
Non availability of water for irrigation	10	7.14
<b>Marketing problems</b>		
Fluctuation in the prices of commodities	140	100.00
Lack of minimum support price for the organic products	140	100.00
Exploitation by the middlemen		
In accurate weighing instruments	140	100.00
High Commission charges	137	97.86
Non availability of Market related information	134	95.71
Non availability of Market place exclusively for organic produce	134	95.71
Poor transport facilities	4	2.86

produce (77.14%). Around seventy per cent of respondents suggested establishment of separate market facility for the sale of organic produce (72.14%) and strengthening of transfer of technology centers, agricultural Universities and other concerned institutions (70.71%). The need for strengthening information support from concerned departments (65.00%). Awareness creation among the people about the advantages of organic farming (62.14%) and marketing support for farmers (60.71%) were the other expressed suggestions. Arrangements for supply of inputs, loan and other needed information (58.57%), arrangement for certification of produce for getting better price (55.71%) and establishment of model farms (54.29%) were also highlighted by more than fifty per cent of farmers. Lastly, need for identification and multiplication of indigenous seed material and facility for value addition were suggested by

Table 3. Suggestions for popularising and strengthening the organic vegetable farming (n=140)

Suggestions	Frequency	%
Fixation of minimum support price for organic produce	108	77.14
Establishment of separate market facility for sale of organic produce	101	72.14
Strengthening of transfer of technology centers, agricultural Universities and other concerned institutions	99	70.71
Strengthening information support from the concerned departments	91	65.00
Awareness creation among the producers about the advantages of organic farming	87	62.14
Marketing support for the farmers	85	60.71
Arrangements for supply of inputs, loans and information about organic farming practices	82	58.57
Arrangement for certification of produce for getting better price	78	55.71
Establishment of Model farms	76	54.29
Identification and multiplication of indigenous seed material	68	48.57
Infrastructure development for processing and value addition	59	42.14

48.57 and 42.14 per cent of the respondents, respectively. This shows that, the farmers were highly motivated and had better inclination to practice organic farming. Thus, there is a dire need for providing good prices for the organic commodities. Strengthening of transfer of technology centers, provision of required data and information about organic farming, production of organic inputs, export of certified organic produce, establishment of model farms can motivate the other farmers to practice organic farming. Further, promotion of indigenous seed materials suitable for organic farming and value added products helps the farmers to derive maximum benefits for organic farming. These findings are in line with the studies reported by Thimmareddy (2001) and Shashidhara (2006).

The increasing demand for organic products and scope for export opportunity has opened the eyes of farmers for practicing organic production practices. In this direction, the results of the present study on economics of organic vegetable cultivation and the critical analysis of constraints in adoption of organic cultivation provided strong base for popularization of organic cultivation. Hence, an integrated approach by the concerned research institutes, development departments, government agencies and others plays a vital role for encouraging the farmers to accept organic farming.

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