



E-ISSN: 2278-4136
P-ISSN: 2349-8234
JPP 2019; 8(6): 475-480
Received: 13-09-2019
Accepted: 15-10-2019

Sowmya TM
Department of Agricultural
Extension, College of
Agriculture, UAS, GKVK,
Bangalore, Karnataka, India

Narasimha N
Department of Agricultural
Extension, College of
Agriculture, UAS, GKVK,
Bangalore, Karnataka, India

A study on transition of rainfed and irrigated farmers towards organic farming

Sowmya TM and Narasimha N

Abstract

An organic farmer behavior (OFB) framework will provide the passion to accelerate wilderness organic farming within the smallholder farmer community, which is a fundamental area in global farmland agriculture. In order to understand the behavioural change of farmers in transition towards organic farming study was conducted in Mandya and Mysore district by selecting irrigated and rainfed farmers who were in transition towards organic farming during 2019. Ninety farmers from irrigated and ninety farmers from rainfed were selected purposively for the study. The results revealed that in both the situations organic transition was moderately influenced by their age, education, land holding, farming experience and livestock possession. Whereas extension contact, extension participation and organizational participation were greatly influenced the transition farmers. Most importantly training on organic farming has a great influence on transition towards organic farming which in turn results in moderate (41.11%) to greater (33.89%) extent of behavioural change towards organic farming.

Keywords: Organic farming, behavioural change, transition, irrigated, rainfed

Introduction

The ill effects of the modern farming system are felt in terms of the unsustainability of agricultural production, environmental degradation and health problems, etc. As a result organic farming is gaining momentum as an alternative method to the intensive farming system. The process of transition from conventional to organic farming is slowly increasing even though critics claim that organic farming is not viable, primarily because it reduces crop yields. Due to the special features of management of productive system, and due to the specific characteristics of cultivation, farmers face different risks in shifting from conventional to organic farming. As the situation in agricultural development warrants to protect the natural resources from intensive cultivation there is an absolute need of study of the behaviour of farmers in different agro-climatic regions to transform from the high input agricultural system to organic input agricultural systems and protect the natural resources available with the farmers to transfer their land safely to their progeny.

An organic farmer behavior (OFB) framework will provide the passion to accelerate wilderness organic farming within the smallholder farmer community, which is a fundamental area in global farmland agriculture. Understanding the critical social and cultural 'triggers' that influence farmers' behaviour is important for fostering change at farm level through extension practice and also for gauging farmers' reactions to policy instruments/programmes.

The aim of the study

1. To understand the Personal, Socio-economic, Psychological and Communication characteristics of irrigated and rainfed farmers transition towards organic farming
2. To study the behavioural change of irrigated and rainfed farmers transition towards organic farming

Methodology

The State Government programmes 'Savayava Bhagya Yojana' beneficiaries were purposively selected for the study. The present study was conducted in Mandya and Mysore district by selecting irrigated and rainfed farmers who were in transition towards organic farming during 2019. Ninety farmers from irrigated and ninety farmers from rainfed were selected.

Result and discussion

Personal characteristics of farmers transition towards organic farming

The personnel characters of organic transition farmers in both irrigated and rainfed area are presented in Table 1.

Corresponding Author:
Sowmya TM
Department of Agricultural
Extension, College of
Agriculture, UAS, GKVK,
Bangalore, Karnataka, India

Age

Age is an important factor as it decides the adulthood of an individual to take the decisions for achieving the needs. As age increases, it enhances the knowledge and skill. Data presented in the Table 1 revealed that half of the (50.00%) respondents in irrigated area found middle aged group followed by young (42.22%) and old (7.78%) aged group. In rainfed area also half of the respondents (58.89%) belong to middle age group and 34.43 per cent under young ages followed by old ages group (6.67%). It confirms that more number of organic transition farmers were in the middle aged group. As they were enthusiastic and have more work efficiency and risk bearer and innovators more interested to transit towards organic farming. The similar findings were also reported by Lavanya (2010)^[6], Ananthnag (2011)^[11] and Chandrakala and Kanchana Devi (2010).

Education

It is observed that 46.67 per cent had PUC and above education, 25.56 per cent had high school education and 14.44 percent and 13.33 per cent had middle and primary education, respectively in irrigated situation. In rainfed areas one third of the respondents (38.89 %) had high school education and 26.67 percent had middle school education, 20.00 percent and 14.44 percent had primary and PUC and above education

respectively. The present findings are supported with the findings of Patidar and Patidar (2015)^[10] and Chandrakala and Kanchana Devi (2016)^[3]

Family size

It is observed that 63.33 per cent of irrigated and 75.56 per cent of rainfed organic transition farmers had medium family size followed by large (23.33% and 17.78%) and small family (13.33% and 6.67 %) respectively. The similar findings are also reported by Singh and George (2012)^[13] and Oluwasui (2014)

Family type

It is observed that more than half of the (54.44% and 64.44%) respondents in irrigated and rainfed farmers had nuclear family and 45.56 percent and 35.56 per cent of the farmers had joint family in irrigated and rainfed situation respectively. The present situation in the villages is also has tendency to become nuclear family. The desire to have more freedom in decision making, personnel accomplishment of certain goals way of behaviour and lifestyle and make better economic progress and had quality life might be the possible reason for majority of the respondents to had nuclear family. The findings are in line with the findings of Sidram (2008)^[12], Lavanya (2010)^[6] and Sunitha (2015)^[14].

Table 1: Personnel characteristics of farmers transition towards organic farming

Sl. No.	Characters	Category	Irrigated (n=90)		Rainfed (n=90)	
			No.	%	No.	%
1.	Age (years)	Young (< 35)	38	42.22	31	34.44
		Middle (35-50)	45	50.00	53	58.89
		Old (>50 years)	7	7.78	6	6.67
2.	Education	Up to primary	12	13.33	18	20.00
		Middle	13	14.44	24	26.67
		High school	23	25.56	35	38.89
		PUC & above	42	46.67	13	14.44
3.	Family size	Small family (1-3 members)	12	13.33	6	6.67
		Medium family (4-6members)	57	63.33	68	75.56
		Large family (7and above)	21	23.33	16	17.78
4.	Family type	Nuclear	49	54.44	58	64.44
		Joint	41	45.56	32	35.56

Socio-economic characteristics farmers' transition towards organic farming

Land holding

It is observed that in the irrigated area more or less equal (47.78 % and 46.67%) per cent of the farmers were big and small farmers and only 5.56 per cent were marginal farmers. In rainfed area majority (53.33 %) of the farmers were small farmers followed by big (37.78 %) and marginal (8.89 %) farmers. The land holdings of the present study revealed that the large extent of transition from conventional to organic farming can be seen with small and big farmers as they can sustain with the transition loss from the organic farming.

Organic transition land

It is recorded that 47.78 per cent of the irrigated farmers converted the 2.5 to 5.0 acre of their land from inorganic to organic and 28.89 per cent of the farmers converted more than 5 acres and 23.33 of them converted less than 2.5acres of land into organic farming. Whereas in rainfed situation 53.33 per cent of the farmers converted 2.5 to 5.0 acre of their land from inorganic to organic, 25.56 per cent of them converted more than 5 acres of their land into organic and 21.11 per cent of

them converted less than 2.5 acres of their land into organic farming.

The results reveal that majority of the land conversion is seen with rainfed farmers as they were having little irrigation support and normally under monocropping rarely under double cropping situation, where as in irrigated situation as the farmers were fed up with intensified use of fertilizers and chemicals and also with the excess cost of fertilizers and chemicals and high cost of cultivation leading them to transits their land towards organic farming.

Farming experience

The results present in table 2 depicts that majority (61.11 %) of the respondents in irrigated had medium farming experience followed by low (20.00 %) and high (18.89 %) farming experience respectively. Whereas 40.00 per cent of the rainfed farmers had medium farming experience, 32.22 per cent had low and 27.78 per cent had high farming experience respectively. It has been concluded that the farmers had medium to low farming experience where majority of the farmers were middle and young aged farmers and educated they want changes in their farming in terms of

low intensive and sustainable farming make them to transit towards organic farming. The findings of the study were in

line with the Singh and George (2012)^[13] and Preethi (2015)^[11].

Table 2: Socio-economic characteristics of farmers towards organic farming

Characters	Category	Irrigated (n=90)		Rainfed (n=90)	
		No.	%	No.	%
Land holding	Marginal farmers	5	5.56	8	8.89
	Small farmers	42	46.67	48	53.33
	Big farmers	43	47.78	34	37.78
Organic transition land	<2.5 acre	21	23.33	19	21.11
	2.5-5.00 acre	43	47.78	48	53.33
	>5 acre	26	28.89	23	25.56
Farming experience Mean=15.74 SD= 8.14	Low	18	20.00	29	32.22
	Medium	55	61.11	36	40.00
	High	17	18.89	25	27.78
Annual income Mean=321280.3 SD=155895.8	Low	25	27.78	36	40.00
	Medium	35	38.89	33	36.67
	High	30	33.33	21	23.33
Livestock possession Mean=3.98 SD= 2.16	Low	25	27.78	25	27.78
	Medium	47	52.22	44	48.89
	High	18	20.00	21	23.33

Annual Income

The study reveals that the majority (38.89 %) of the respondents in irrigated area were comes under medium annual income, 33.33 percent had high annual income and 27.78 per cent had low annual income where as in rainfed farmers 40.00 per cent of them were had low annual income followed by medium (36.67 %) and high (23.33 %) annual income. The reason could be attributed for varied income categories of respondents might due to the size of the land holdings and practices of subsidiary occupation in the situation as well as the erratic rainfall and drought in both the situation farmers were varied with annual income. The results were in conforming to the findings of Chandrakala and Kanchana Devi (2016)^[3] and Narayanaswamy (2016)^[8].

Livestock possession

The results revealed that 52.22 per cent and 48.89 per cent of the respondents in irrigated and rainfed area respectively had medium livestock possession where as equal percent (27.78%) of the respondents from both the situation had low livestock possession and 20.00 % and 23.33 per cent of the respondents had high livestock possession in irrigated and rainfed situation respectively.

To improve the organic farming practices in the field livestock rearing is must which are directly or indirectly may be concerned with the quantum of organic matter availability. It is observed that in both dry and irrigated situation farmers had given equal importance for subsidiary enterprises as they were the source for organic manure as well as additional income. The results were in line with the findings of Malathesh (2004)^[7], Ginnoccaro and Berbel (2012)^[4]

Psychological characteristics farmers' transition towards organic farming

Farming commitment

The results in the Table 3 revealed that majority (44.44 % and 40.00 %) of the respondents in both irrigated and rainfed

farmers belong to high farming commitment category followed by medium (32.22% and 31.11%) and low (23.33% and 28.89%) farming commitment respectively. It observed that the farmers in both the irrigation and rainfed situation experienced the adverse effect of the intensive cultivation and climate change made them too strongly commit to transition towards organic farming adoption. The findings were in line with the findings of Chandra Naik (2002) and Preethi (2015)^[11].

Achievement Motivation

The results reveal that majority (46.67 % and 42.22 %) of the respondents in both irrigated and rainfed farmer had medium achievement motivation followed by high (35.56% and 32.22 %) and low (17.78 % and 25.56 %) achievement motivation respectively (Table 2).

Achievement motivation helps to decide and accomplish the goals or task in a certain direction, which inturn helps in achieving the desired results. Farmers had shown medium to high level of achievement motivation which reflects in their extent of adoption to achieve sustainability in the organic farming. The findings were in conformation with the results of the studies conducted by Ananthnag and Bharathi (2014), Gopal (2015) and Sunitha (2015)^[14].

Risk orientation

The results depicts that equal percent (60.00%) of the respondents in both irrigated and rainfed transition farmers shown medium risk orientation followed by high (31.11 and 28.89%) risk orientation and low (8.89 and 11.11%) risk orientation respectively. The reason could be that transitioning from inorganic to organic farming might have made up the farmers mind to achieve sustainability in their farming. Also it could be reason that risk taking is a must for farmers to stabilize economically to lead a better life. The similar results were also reported by Karthik (2009)^[5] and Naryanaswamy (2016).

Table 3: Psychological characteristics of farmer's transition towards organic farming

Characters	Category	Irrigated (n=90)		Rainfed (n=90)	
		No.	%	No.	%
Farming commitment Mean = 27.23 SD = 8.57	Low	21	23.33	26	28.89
	Medium	29	32.22	28	31.11
	High	40	44.44	36	40.00
Achievement motivation Mean =26.27 SD=6.48	Low	16	17.78	23	25.56
	Medium	42	46.67	38	42.22
	High	32	35.56	29	32.22
Risk orientation Mean = 5.06 SD=0.82	Low	8	8.89	10	11.11
	Medium	54	60.00	54	60.00
	High	28	31.11	26	28.89
Value orientation Mean = 7.18 SD=1.19	Low	8	8.89	7	7.78
	Medium	46	51.11	48	53.33
	High	36	40.00	35	38.89

4.1.3.4. Value orientation

The results depicts that the value orientation of the farmer in both irrigated and rainfed situation more than half (51.11% and 53.33%) of the respondents had medium value orientation followed by high (40.00% and 38.89%) and low (8.89% and 7.78%) value orientation respectively. Value orientation leads the principle of right and wrong that are accepted by an individual or a social group. With the cost of environment degradation and imbalance in the bio-diversity makes the farmers to transit towards organic farming in preserving and conserving the nature as well as mankind. As there is changing in the trends which are desirable rural values system need to be promoted on a wider ongoing developments and requirements of the present day. The findings are in line with the findings of Sunitha (2015) [14].

Communication characteristics of farmers transition towards organic farming

Extension contact

The results depicts that great majority (70.00%) of the respondents in irrigation situation had medium extension contact followed by high (22.22%) and low (7.78%) extension contact. In rainfed situation also half of the (50.00%) respondents had medium extension contact followed by high (26.67%) and low (23.33%) extension contact (Table 4). The reason for respondents belong to medium to high category because many of the farmers were the beneficiary of different programmes of development agencies or department makes the farmers to search for the services influence them to change the attitude towards the adoption of organic farming. The findings of this study were in agreement with the findings of Lavanya (2010) [6] and Narayanaswamy (2016) [8].

Extension participation

The results reveals extension participation in irrigated situation 41.11 per cent of the farmers had medium extension participation while 37.73 percent had high and 21.11 percent had low extension participation. Whereas great majority (60.00 %) of the rainfed farmers had medium extension participation, 26.67% per cent had low extension participation and 13.33 per cent had high extension participation. The

extension activities provides greatest opportunities for contrived experience and as the Governmental programmes regarding organic farming implemented through extension system in both situations and also the respondents eagerness in acquiring the knowledge regarding organic farming medium to high extension participation had been seen. The results of the study are supported by Ananthnag (2011) [1] and Sunitha (2015) [14].

Cosmo politeness

The results revealed that in both the situation majority (43.33%) of the respondents had medium cosmopolitanism followed by high (38.89 and 31.11%) and low (17.28% and 25.56%) cosmopolitanism respectively. Majority of the farmers had frequent contacts with individuals outside the social system and that could provide an opportunity for inter-personal communication with people outside their social system which helps in exchange of information and their experience in transition from conventional to organic farming. The results obtained are supported with the findings of Parvathamma (2006) [9] and Sunitha (2015) [14].

Organizational participation

The results regarding organizational participation reveals that 48.89 percent of the irrigated farmers had high organizational participation, 31.11 percent had medium and 20.00 percent had low organizational participation. With respect to rainfed farmers majority (58.89%) of the farmers had medium organizational and equal per cent of the respondents (21.11 % and 20.00%) had low and medium organizational participation respectively.

The results obtained for organizational participation shown that in both the situation majority of the respondents had participated in all the activities of local organizations and group activities which helps them to familiarize with the production management and marketing of their organic produce. As the transition growers forms a small organization or association to facilitate themselves in production and marketing of their produce medium to high organizational participation were seen. The results were in line with the findings of Lavanya (2010) [6] and Narayanaswamy (2016) [8].

Table 4: Communication characteristics of farmer's transition towards organic farming

Characters	Category	Irrigated (n=90)		Rainfed (n=90)	
		No.	%	No.	%
Extension Contact Mean = 3.51 SD=1.38	Low	7	7.78	21	23.33
	Medium	63	70.00	45	50.00
	High	20	22.22	24	26.67
Extension Participation Mean=9.26 SD=3.12	Low	19	21.11	24	26.67
	Medium	37	41.11	54	60.00
	High	34	37.78	12	13.33
Cosmo politeness Mean= 6.69 SD= 1.46	Low	16	17.78	23	25.56
	Medium	39	43.33	39	43.33
	High	35	38.89	28	31.11
Organizational Participation Mean =6.32 SD=3.33	Low	18	20.00	19	21.11
	Medium	28	31.11	53	58.89
	High	44	48.89	18	20.00
Mass Media use Mean = 9.25 SD = 2.54	Low	14	15.56	22	24.44
	Medium	59	65.56	39	43.33
	High	17	18.88	29	32.22
Training Received	Trained	70	77.78	75	83.33
	Untrained	20	22.22	15	16.67

Mass media use

The study reveals that in irrigated situation great majority (65.56%) of the respondents had medium mass media use whereas 18.88 percent had high and 15.56 percent had low mass media use. In case of rainfed situation 43.33 percent had medium mass media use, 32.33 percent had high and 24.44 percent had low mass media use.

The present era is electronic era and the farmers in both the situation were educated and more accessible to the mass media. They have the habit of reading newspaper and magazines and watching television for agricultural programmes. Mass media provides information on success stories of organic farmers through various channels like television, radio and newspaper which reinforce confidence of the organic transition farmers to improve their knowledge and adopt the organic practices extensively. The study results are supported by the findings of Sunitha (2015) [14] and Narayanaswamy (2016) [8].

Training received

The study reveals that great majority (77.78%) of the irrigated farmers had undergone training and 22.22 per cent were not undergone any training program. The 83.33 per cent of the rainfed farmers had under gone training and only 16.67 per cent were untrained. It is common fact that the training plays a key role in moulding and bringing desirable changes. All the respondents were relatively educated that visualize the problems of inorganic farming and progress in practicing

organic farming with greater extent. The results of the study are in line with Azam (2015) [2] and Chandrakala and Kanchana Devi (2016) [3].

Overall Behavioural change of farmers towards organic farming

The results in Table 6 showed the behavioural change of irrigated and rainfed farmers towards organic farming.

With respect to irrigated farmers it was found that 36.67 per cent of them shown moderate extent of behavioral change towards organic farming where as 32.22 per cent had shown greater extent of behavioural change and 31.11 per cent had lower extent of behavioural change towards organic farming. Whereas 45.56 per cent of rainfed farmers had shown moderate extent of behavioural change and 35.56 per cent had shown greater extent and 18.89 per cent had shown lower extent of behavioral change towards organic farming. The moderate to greater extent of behavioural change towards organic farming in both the situation may be due to the institutional influence in terms of subsidies for construction of vermicompost pit, bio-digester and etc as well as technical information through training and situational influence like effect of climate change in terms of erratic rainfall in both the situation, shortage of irrigation water for the crops, increased in input cost, as well as environment and health concern and consumer preference for organic products and market demand made them to change their behavioral beliefs towards organic farming.

Table 6: Overall Behavioural change of farmers towards organic farming

Sl. No.	Category	Irrigated (n=90)		Rainfed (n=90)		Pooled (n=180)	
		No.	%	No.	%	No.	%
1.	Lower extent (<264.62)	28	31.11	17	18.89	45	25.00
2.	Moderate extent (264.62-274.97)	33	36.67	41	45.56	74	41.11
3.	Greater extent >274.97	29	32.22	32	35.56	61	33.89
Total		90	100.00	90	100.00	180	100.00
		Mean =267.73 SD=11.01		Mean =270.97 SD=9.66		Mean = 269.8 SD=10.34	

Mean response of Behavioural change of farmers towards organic farming

The result in the table 7 depicts the mean response of behavioral change towards organic farming by irrigated and rainfed farmers. The mean response of behavioral change of

rainfed farmers was 270.97; while it was 267.73 with irrigated farmers. The 't' test was applied to compare the both means and 't' value obtained was 2.08 which is significant at 5 per cent level shows the difference in the view of organic farming adoption by irrigated and rainfed farmers.

Table 7: Mean response of Behavioural change of farmers towards organic farming

Situation	Samples (n)	Behavioural change		t-value
		Mean	SD	
Rainfed area	90	270.97	9.66	2.08*
Irrigated area	90	267.73	11.01	

*Significant at 5% level

Conclusion

In both irrigated and rainfed situation farmers shown greater extent of behavioural change towards organic farming adoption. Due to watching of ill effects of conventional agriculture on soil, environment, natural resources and food has led the farmers to think and as they have a great social responsibility to conserve the environment and human health. These favourable behavioural changes were formed through direct and indirect life experiences and observation. These experiences are 'behavioural beliefs' they have been accumulated over a period of time through their personal, socio-economic, psychological and communication experience and form the basis of favourable to more favourable attitude towards organic farming adoption.

References

1. Ananthnag K. A Study on Socio-economic status and Achievement motivation of farmers practicing organic farming in Eastern dry zone of Karnataka. M.Sc. (Agri.) Thesis (Unpub.), Univ. Agric. Sci., Bangalore, Karnataka, 2011.
2. AZAM MS, The Influence of Socio-Demographic Factors in adopting Organic Farming, International Journal of Interdisciplinary and Multidisciplinary Studies. 2015; 2((5):8-17.
3. Chandrakala N, Kanchana Devi P. The study on the attitude of the organic farmers with special reference to the Coimbatore District, Int. J Appl. Adv. Sci. Res. 2016; 1(1):186-191.
4. Giannoccaro G, Berbel J. The determinants of farmer's intended behaviour towards the adoption of energy crops in Southern Spain: An application of the classification tree-method, Bio-based and Applied Economics. 2012; 1(2):199-212.
5. Karthik KB. A study on diffusion of hybrid paddy seed production technologies in Mandya district, M. Sc. (Agri.) Thesis (Unpub.), Univ. Agric. Sci., Bangalore, 2009.
6. Lavanya S. Assessment of farming systems efficiency in Theni district of Tamil Nadu. M. Sc. (Agri.) Thesis (Unpub.), Univ. Agric. Sci., Bangalore, 2010.
7. Malathesh GB. An analysis of selected farming systems in eastern dry zone of Karnataka, M. Sc. (Agri.) Thesis (Unpub.), Univ. Agric. Sci., Bangalore, 2004.
8. Narayanaswamy C. Behavioural dimensions of farmers regarding IPM practices in tomato cultivation: A study in Kolar and Chickaballapur district, Ph. D. Thesis (unpub.), Uni. Agric. Sci., Bangalore, 2016.
9. Parvathamma T. An exploratory study on organic farming practices and their adoption by farmers, M.sc (Agri) Thesis, University of Agricultural sciences, Bangalore, 2006.
10. Patidar S, Patidar H. A study of perception of farmers towards organic farming, Int. J of Application or Innovation in Engineering and Management. 2015; 4(3):269-277.
11. Preethi A. Study on perception, aspiration and participation of farm youth towards agriculture, Ph.D (Agri). Thesis (Unpub.), Univ. of Agric. Sci., Bangalore, 2015.
12. Sidram. Analysis of organic farming practices in pigeon pea in Gulbarga district of Karnataka state. M.Sc. (Agri) Thesis (unpub.), University of Agricultural Sciences, Dharwad, 2008.
13. Singh S, George R. Organic farming: awareness and beliefs of farmers in Uttarakhand, India, J. Hum. Ecol. 2012; 37(2):139-149.
14. Sunitha AB. Sustainability of farming systems in selected agro-climatic zones of Karnataka, Ph.D (Agri). Thesis (Unpub.), Univ. of Agric. Sci., Bangalore, 2015.
15. Oluwasusi JO. Vegetable farmers' attitude towards organic agriculture practices in selected states of south west Nigeria, J. of Agri. Extn., and Rural Development. 2014; 6(7):303-310.