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A study on adoption behaviour of Garo farmers towards organic farming in north Garo hills, Meghalaya

¹Nokrikra N Marak and ²Jahanara

¹Researcher, Department of Agricultural Extension and Communication, Sam Higginbottom University of Agriculture, Technology & Sciences, Prayagraj, Uttar Pradesh, India

²Professor, Head of Department, Department of Agricultural Extension and Communication, Sam Higginbottom University of Agriculture, Technology & Sciences, Prayagraj, Uttar Pradesh, India

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Corresponding Author: Nokrikra N Marak

Abstract

Organic farming is an agricultural system which focuses mostly on growing crops without the use of any chemical/synthetic fertilizers, herbicides and pesticides. The present study was conducted in North Garo Hills district of Meghalaya, India. The main objective of the study was to know the adoption level of farmers towards organic farming practices. A total number of 130 respondents were taken randomly from five villages under Bajengdoba Block. The data were collected from the respondents through personal interview method with the help of pre-structured interview schedule. The findings revealed that majority of the respondents had medium level of adoption (50.00%) followed by high level (34.62) and low level (15.38) adoption of organic farming practices.

Keywords: Organic farming, knowledge, adoption, Garo farmers, Meghalaya

Introduction

Organic farming is an ancient art of Indian agricultural practices, which is relevant even in this modern era of chemical dominated agriculture. Organic farming refers to an agricultural approach that avoids the use of synthetic fertilizers and pesticides, instead relying on natural inputs such as manures, compost and animal by products. Organic farming can be described as the use of farming practices that can be sustainable, agro-ecological, using natural nutrients by cycling, excluding pesticide use and regenerating soil quality (Badgley et.al., 2007).

In recent years, Organic farming has been gaining its popularity due to its potential to address major challenges such as climate change, food security and declining soil health. It seeks to reduce environmental harm through sustainable practices such as conservation tillage, energy efficient irrigation and natural pest management. The growing awareness around health and environmental conservation has further contributed to the increasing interest in organic farming among farmers and consumers respectively.

Methodology

Descriptive research design was employed for the present study. North Garo Hills district of Meghalaya was selected purposively by purposive sampling since Garo tribes resides and due to its agrarian-based economy, with approximately 90% of the population being engaged in agricultural sectors. Within the district, Bajengdoba block was selected by random sampling for the study and five villages were

selected randomly by random sampling method for the study. From each village, 26 respondents were selected through random sampling method. Thus, from five villages a total of 130 farmers were selected as primary respondents for the study. The data were collected from the respondents through personal interview method, observation method and survey method with the help of pre structured schedule.

Results and Discussion

The socio-economic profile of the respondents was studied under various characteristics like age, educational level, occupation, annual income, land holding, family type, housing pattern, extension contact, mass media exposure and social participation. The findings are presented in Table 1.

From table 1, it can be seen that majority (73.85%) of the farmers belonged to the middle age group followed by 16.15% in the young category and 10% in the old category. Most respondents had basic education with 37.69% completing primary school and 29.23% attending junior high school, a small fraction 15.38% were illiterate while very few 1.54% had higher education. Nearly half (48.46%) of the farmers were exclusively engaged in agriculture. Others supplemented their income through labour (27.70%), business (12.30%) and service (11.54%). The majority (57.69%) reported an annual income between Rs.1-2Lakhs, while 23.07% earned above Rs.2lakhs and 19.24% earned below Rs.1lakh. More than half (56.93%) owned land between 1-2acres, about 26.15% had land holdings above 2 acres, while small group (16.92%) owned less than 1 acre.

The nuclear family system was predominant with 98.46%. Most of the participants lived in semi-cemented houses (69.24%) followed by cemented (17.69%) and hut type dwelling 13.07%. The majority (66.15%) had a medium level of contact with agricultural extension services, while 18.47% had low and 15.38% had high contact. About

53.84% had moderate exposure to mass media, 26.93% had low exposure and 19.23% had high exposure. Over half of the respondents (56.93%) showed medium levels in social participation or community groups, followed by high (23.07%) and low (20.00%) levels.

Table 1: Socio-economic profile of the respondents (n=130)

Sl. No.	Socio-economic profile	Characteristics	Frequency	Percentage
1.	Age	Young	21	16.15
		Middle	96	73.85
		Old	13	10.00
2.	Education level	Illiterate	20	15.38
		Primary School	49	37.69
		Junior High School	38	29.23
		High School	9	6.93
		Intermediate	12	9.23
		Graduate and above	2	1.54
3.	Occupation	Agriculture only	63	48.46
		Agriculture+ Labour	36	27.70
		Agriculture+Business	16	12.30
		Agriculture+Service	15	11.54
4.	Annual Income	Up to Rs.1lakhs	25	19.24
		Rs.1-2lakhs	75	57.69
		Rs. 2lakhs above	30	23.07
5.	Land holding	Up to 1 acre	22	16.92
		1-2 acres	74	56.93
		2 acres above	34	26.15
6.	Family type	Nuclear	128	98.46
		Joint	2	1.54
7.	Housing pattern	Hut	17	13.07
		Semi-Cemented	90	69.24
		Cemented	23	17.69
8.	Extension contacts	Low	24	18.47
		Medium	86	66.15
		High	20	15.38
9.	Mass media exposure	Low	35	26.93
		Medium	70	53.84
		High	25	19.23
10.	Social participation	Low	26	20.00
		Medium	74	56.93
		High	30	23.07

It indicates that the adoption of organic farming is largely influenced by middle-aged farmers with moderate education, income and land holding size. The prevalence of nuclear families and semi-permanent housing also reflects the socio-economic structure of the region. The knowledge level of the respondents was studied and presented in Table 2.

Table 2: Knowledge level of the respondents (n=130)

Knowledge level	Frequency	Percentage
Low	16	12.30
Medium	60	46.16
High	54	41.54

From Table 2, the data shows that a substantial portion of the respondents (46.16%) possessed a medium level of knowledge regarding organic farming practices followed by 41.54% of the farmers having high level and small group of 12.30% having low level of knowledge. Most of the farmers

were involved in agriculture from their childhood indicating their farming knowledge and experience base in organic farming.

The adoption level of the respondents was studied and presented in Table 3.

Table 3: Adoption level of the respondents (n=130)

Adoption level	Frequency	Percentage
Low	20	15.38
Medium	65	50.00
High	45	34.62

From Table 3, the data reveals that half of the respondents (50.00%) demonstrated a medium level of adoption of organic farming practices, 34.62% of the respondents showed a high level of adoption reflecting a strong commitment towards organic farming principles, while 15.38% of the respondents were found to have a low level of adoption. The overall trend points towards a positive attitude and growing acceptance of organic farming among

the farming community.

Table 4: Correlation between selected independent variables with knowledge and adoption towards organic farming

Sl. No.	Variables	Correlation coefficient	Adoption
		Knowledge	
1.	Age	0.53303	0.78062
2.	Education	0.96662	0.99723
3.	Occupation	0.42572	0.10608
4.	Annual Income	0.67471	0.87913
5.	Land holdings	0.76552	0.93339
6.	Family type	1	1
7.	Housing pattern	0.66221	0.87099
8.	Extension contacts	0.56099	0.80105
9.	Mass media exposure	0.42272	0.69607
10.	Social participation	0.66300	0.87152

From Table 4, the correlation analysis reveals that several socio-economic variables are positively and significantly associated with both knowledge and adoption of organic farming practices. Education, land holding, annual income showed a strong and positive correlation with both knowledge and adoption. Age was moderately correlated with knowledge ($r=0.53303$) but showed a stronger correlation with adoption ($r=0.78062$) indicating that older or more experienced farmers are more likely to adopt organic methods, while family type reported a perfect correlation with both knowledge and adoption. Other variables such as housing pattern, extension contacts, social participation and mass media exposure showed positive correlation reflecting the influence of infrastructure, information access and social engagement.

Conclusion

It can be concluded that the majority of the respondents fall within the middle age group (36-50years), most of the respondents (37.69) has attained primary school of education, majority of the respondents are engaged in agriculture, with an annual income ranging between 1-2 Lakhs rupees, majority of the respondents have 1-2 acres of land, most of the respondents are of nuclear family and majority of the respondents have semi-cemented house. Regarding extension contact, mass media exposure and social participation, most of the respondents exhibit medium level of engagement. Higher proportion of the respondents have medium level of knowledge (46.16) and adoption (50.00) respectively. Similarly, factors such as age, education, occupation, annual income, land holding, housing pattern, extension contact, mass media contact and social participation had positive and significant relationship with the knowledge and adoption level of the organic farmers among the respondents.

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