

ADOPTION BEHAVIOUR OF TRIBAL AND NON-TRIBAL PADDY GROWERS**Pallabi Bora¹, Pallabi Das² and Ranjita Goswami³**

1 & 2 Assistant Professor, College of Agriculture, Assam Agricultural University, Jorhat, Assam-785013

3 P.G Scholar, Depr. of Ext. Edu., College of Agriculture, Assam Agricultural University, Jorhat, Assam-785013

Email: pallabi.das@aaau.ac.in,

ABSTRACT

Baksa district of Assam is bestowed with rich soil and suitable climate that favours the growth of paddy cultivation. Although a sizeable portion of rural community is engaged in paddy farming, yet the production is not satisfactory which might be due to traditional method of cultivation. As the district is tribal dominated, therefore, the study strives to explore the adoption behaviour of both tribal and non-tribal paddy growers. A total of 101 respondents (59 non-tribal and 42 tribal farmers) were considered as the final sample by proportionate random sampling method. The findings revealed that above sixty five percent of total farmers had overall medium adoption level. However, (52.54%) of non-tribal and 69.04 per cent tribal farmers exhibited medium level of adoption. The “t value” was found to be significant. Factors such as annual income and occupational status of the farmers had a positive and significant association with the extent of adoption. Further, these significant and nearly significant variables were taken for Tobit analysis to find the influence of these factors on extent of adoption, where none of the factors showed a positive and significant contribution towards adoption process.

Keywords: adoption behaviour; factors; indigenous paddy; tribal farmers; non-tribal farmers

INTRODUCTION

Almost a billion households in Asia depend on rice (*Oryza sativa L.*) as their main source of livelihood. It is on the frontline in the fight against world hunger and poverty and is also a symbol of cultural identity and global unity. Asia produces 85% of total paddy grains, out of which 50% is contributed only by China and India Wallach, (2022). India witnessed a maximum crop area of 45 million ha under paddy with the production of 130.29 million tons in 2021-22, Statista (2022).

Agriculture occupies a significant place in the economy of Assam that contributes 25% to State's GDP during 2020-21 (MOSPI, 2021). During 2021-22 the production was 52.89 lakh metric tonnes from an area of 23.96-hectare, Government of Assam (2021). Assam is the hub of many Indigenous paddy varieties with three distinct rice seasons, namely, Ahu, Boro, and Sali. The farming community is characterized by both tribal and non-tribal farmers. Tribal farmers are self contained and very much concern in preserving their own traditions. It was found that farmers preferred *Maireng*, a traditional paddy variety over the High Yielding Variety, Hakmosa, (2011). Another study indicated that traditional varieties *Sorujahingiya* and *Solpona* were preferred over High Yielding Variety Ranjit, Baruah,

(2016). With the continuity of indigenous varieties, adoption of recommended paddy production technologies is vital to augment its production. Socio-economic factors greatly influence the process of adoption. Keeping in view of the above facts, the paper attempts to study entitled ‘Adoption Behaviour of Tribal and Non-Tribal Paddy Growers - A Comparative Study in Assam.

OBJECTIVES

- (1) To determine the extent of adoption of indigenous rice by tribal and non-tribal paddy growers
- (2) To explore the associated factors influencing adoption

METHODOLOGY

The present study was conducted purposively in Baksa district of Assam as it is one of the leading districts in paddy production. Also, there is the prevalence of tribal farming community along with non-tribal farmers engaged mostly in indigenous paddy cultivation. Eight villages were taken from Musalpur and Tamulpur sub-divisions. A total of one hundred one respondents (N=101) comprising of 59 nos. non-tribal and 42 nos. tribal rice farmers (*Bodo, Kachari, Rabha* etc) was selected by following proportionate random sampling technique. Primary data were collected during the

year 2018 by personal interview method. The study included one dependent variable i.e. extent of adoption of indigenous rice and a set of thirteen independent variables. A list of 43 recommended package of practices developed by Assam Agricultural University and Department of Agriculture, Govt. of Assam was taken as a measure for extent of adoption. Farmers' practices were documented and compared to A.A.U recommendation. A three-point continuum scale

as 'fully', 'partially' or 'not at all' assigned with a score of 2,1,0 respectively was used and the total score obtained by a respondent was calculated by adding the adoption scores for all the practices followed by the respondents. The data so collected were systematically tabulated and computed by following appropriate statistical procedures such as Frequency, Percentage, Mean, Standard Deviation, Chi-square and tobit analysis.

RESULTS AND DISCUSSION

Extent of adoption of Indigenous rice

Table 1: Distribution of respondents on extent of adoption of indigenous paddy cultivation practices

(n=101)

Sr. No.	Category	Frequency	Percentage	Mean	S.D.
1	Low (Below 15.79)	08	07.92	23.7	7.91
2	Medium (15.79 to 31.62)	66	65.35		
3	High (Above 31.62)	27	26.73		

It is evident from the table 1 that the majority (65.35%) of the respondents had medium level of extent of adoption followed by 26.73 per cent having high level of extent of adoption and only 7.92 per cent belonged to low level of extent of adoption. The study conducted by Jadav

et al. (2018), Chauhan et al. (2019), Paradvva et al. (2019), Pawar et al. (2019), Poshiya et al. (2020) and Salunkhe et al. (2020) also reported similar findings that most of the farmers exhibited medium level of adoption.

Extent of adoption of indigenous rice

Table 2 : Distribution of respondents on overall extent of adoption of indigenous paddy cultivation practices

(n=101)

Non Tribal (n ₁ =59)			Tribal (n ₂ =42)		
Category	Frequency	Percentage	Category	Frequency	Percentage
Low (Below 16.25)	14	23.73	Low (Below 15.31)	2	4.76
Medium (16.25 to 33.06)	31	52.54	Medium (15.31 to 29.40)	29	69.04
High (Above 33.06)	14	23.73	High (Above 29.40)	11	26.19
Mean	24.66		Mean	22.35	
S. D	8.40		S. D	7.04	
t value	2.06*				

Further, it was found from Table 2 that amongst the non-tribal group, 52.54 per cent of the respondents had medium level of extent of adoption followed by 23.73 per cent each having low and high level of extent of adoption. In case of tribal respondents 69.04 per cent of the tribal respondents had medium level of extent of adoption followed by 28.60 per cent having high level of extent of adoption and only 4.76 per cent having low level of extent of adoption.

had been found in medium level of extent of adoption. The data above indicate that tribal, non-tribal and total farmer had been found in medium level of extent of adoption of recommended technologies in Indigenous rice. But the findings also indicated that there exist differences in the average adoption scores between tribal and non-tribal farmer. This might be due to the fact that though non-tribal farmers are adopting recommended practices, but the total practices adopted are probably less than the number of practices

All the tribal, non-tribal and total farmers' groups

adopted by the tribal farmers. This implies that tribal farmers are more interested in indigenous rice rather than in some other improved paddy varieties. The difference in mean

adoption scores (24.66 for non-tribal and 22.35 for tribal farmers) was found to be significant (t value =2.06*).

Association of extent of adoption and socio, psychological and situational variables of the farmer

Table 3 : Association of extent of adoption of Indigenous varieties and socio, psychological and situational variables of the farmers (n=101)

Sr. No.	Category	χ ² Value		
		Non-tribal	Tribal	Total farmer
1	Age	1.47	1.41	0.17
2	Education level	1.05	0.55	2.03
3	Types of family	1.84	2.22	0.86
4	Size of family	1.85	3.36	2.12
5	Operational land holding	0.93	0.84	1.22
6	Annual income	1.73	0.52	11.58*
7	Occupational status	4.22*	0.35	1.88
8	Training exposure	0.69	3.37	0.13
9	Mass media exposure	1.60	0.61	2.34
10	Extension contact	1.65	0.84	0.55
11	Social Participation	1.52	0.04	1.33
12	Economic motivation	0.09	1.57	1.56
13	Scientific orientation	1.28	0.06	0.49

*Shows level of significance at 0.05 probability

In case of Indigenous varieties, the χ² value between occupational status of non-tribal farmers with extent of adoption was significant (Table 3) at p=0.05 signifying that occupation of non-tribal farmers was associated with adoption. None of the other independent variables were found to have any association with Indigenous paddy adoption of tribal farmers. In case of the total sample (tribal and non-tribal farmers together) only annual income was found to have significant (χ²= 11.58*) value. Thus, it can be concluded that occupational status of non-tribal farmers and annual income of the farmers are associated with the adoption of Indigenous rice. The finding is in line with the findings of Tiwari *et al.* (2007), Singh *et al.* (2010), Umeh and Chukwu (2013), Soni *et al.* (2018) that annual income could explain probable significant influence in the probability of adoption. Similar finding was also reported by Chinchmalatpure (2022) as annual income was found to be correlated with the adoption of farmers.

Table 4 : Influence of socio-economic status on extent of adoption of Indigenous varieties using Tobit analysis. (Total farmers) (n=101)

Sr. No.	Category	Coefficient	t value
1	Annual income	1.271E-006	.163

The Table 4 depicts that annual income is having very negligible contribution towards extent of adoption of Indigenous varieties which is also non-significant in case of total farmers.

Table 5 : Influence of socio-economic status on extent of adoption of Indigenous varieties using Tobit analysis (Non-tribal farmers) (n=101)

Sr. No.	Category	Coefficient	t value
1	Occupational status	-.150	-.269

The Table 5 depicts that occupational status has negative contribution on extent of adoption of Indigenous varieties but non-significant in case of non-tribal farmers.

CONCLUSION

Assam is home to many Indigenous varieties of paddy which are cultivated by traditional method and does not have any proper package of practice. This led to low production and productivity of paddy. The best possible route to enhance the production is to adopt the recommended practices irrespective of indigenous or HYV rice. The findings of the study showed that majority of the paddy growers had medium extent of adoption. However, the differences in adoption behaviour were noticed between tribal and non-tribal farmers as the adoption level was less in non-tribal farmers, implying that tribal farmers are more oriented towards indigenous rice. A few socio-economic

factors namely annual income and occupational status were found to be associated in influencing the adoption behaviour of paddy growers.

POLICY IMPLICATIONS

Government and concerned departments should take initiatives to aware the farming community about the benefits of improved production technology. Effort should be made to develop the capacity of farmers by organising relevant trainings and demonstrations and necessary arrangement should be made to make timely availability of requisite inputs. Peer influence can expedite the adoption process that can be done by organising the farmers into groups. Research and development wing should focus to develop technologies that may best suit to the socio-economic characteristics of the farmers.

CONFLICT OF INTEREST

The authors of the paper declare no conflicts of interest.

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