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Socio-economic and cultural attributes of pulse farmers of Nayagarh district of Odisha

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Abstract
A study entitled "Management System of Pulse Farmers in Nayagarh District of Odisha" was conducted by employing ex-post-facto research design during 2020. A total of 256 respondents covering 8 villages from 4 blocks of Nayagarh district were selected as sample respondents. The data were collected by personal interview using a well-structured questionnaire. The data were tabulated and analyzed by using statistical tools *viz*. percentage, mean Scores, Rank order and gap percent. The findings of the study include the majority of the pulse farmers belonged to the old age category (60.16 percent), majority of the pulse farmers had a primary school level (28.13 percent) of education, joint family (55.47 percent) was the major family type, family size was dominated by large family (59.4 percent), majority of the farmers had an annual income within 50000-1 lakh rupees category (88.28 percent), majority of pulse farmers had no saving (56.25 percent), maximum participation in extension activities were found in discussion meetings (2.74), farmer producer organizations (1.73) had maximum participation among social activities, maximum cosmopoliteness was observed in the nearest town (2.79). With understanding the socio-economic attributes of farmers the direction can be provided and policies can be developed to provide necessary technologies and information to the targeted regions with the most effective impact.

Keywords: Farmers, management, participation, pulse and socio-economic

1. Introduction
Pulses are important source of dietary proteins, essential amino acids, and minerals for India's predominantly vegetarian population. Pulses play a vital role in ensuring food and nutritional security in India. However, there is a huge gap in supply and demand of many of the pulse crops. There is a huge potential for substantially enhancing production of pulses in India, primarily by increasing productivity and to some extent increasing area. A large gap exists between the average yields received by farmers and the pulses play a vital role in ensuring the food and nutritional security in India. However, there is a huge gap in supply and demand of many of the pulse crops. There is a huge potential for substantially enhancing production of pulses in India, primarily by increasing productivity and to some extent increasing area. A large gap exists between the average yields received by farmers and the yields obtained in research stations and well managed farmers' fields. The adoption of high yielding cultivars/hybrids and improved crop management practices can increase the yield substantially. There is also a scope of enhancing area in the rice-fallows of eastern India especially in Odisha and possibly other rice-fallow areas where some of the improved extra-short and short-duration varieties can be introduced.

Odisha is one of the important pulse growing states and it accounted for 8.28 percent of the total area under pulses in India and 5.49 percent of the national output in 2013-14. There has been a shift in pulses to more remunerative crops in Nayagarh district, whereas both area and pulse production has increased considerably in the Nayagarh district. There was wide instability in the area, production and output of pulses in the state.

2. Materials and Methods
The study was conducted in Nayagarh district of Odisha during 2020 with a total of 256 (Two hundred fifty six) number of respondents selected for the purpose of the investigation. The study was carried out in Ex post facto survey research design with proportionate random sampling techniques. Proportionate random sampling technique represents the characteristics of major population by sampling a proportional total (Etikan and Bala, 2017) [2]. The district Nayagarh was selected purposively as it was one of the major pulse producer districts. Four major pulse producer blocks were selected out of 6 total blocks purposively. Gram panchayat

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and villages were selected randomly for the study. The data were collected using pretested structured interview schedule. The data were tabulated and analyzed by using statistical tools *viz.* percentage, mean Scores, Rank order and gap percent.

3. Results and Discussion

The socio-economic profile provides a complete picture of their existing situation and gives an idea of their basic socio-economic characteristic at a glance. The major criteria or variables used for presenting the profile were: age, education, family type, family size, housing pattern, landholding size, occupation, annual family income, saving, extension participation, social participation and cosmopoliteness. The findings were presented in the following tables.

3.1 Age

Age is an important social factor that influences individuals working ability. Age is significant in terms of experience, the maturity of judgment, decision making, and the power of understanding. The respondent farmers of the study were categorized into 3 groups as reflected in the table below.

Table 1: Distribution of the respondents according to their age (n = 256)

Age group	LL		MR		SF		MF		LF		Total	
	f	%	f	%	f	%	f	%	f	%	f	%
Young (up to 30 yrs.)	4	1.56	0	0	3	1.17	0	0	5	1.95	12	4.69
Middle aged (above 30 – up to 55 yrs.)	0	0	0	0	12	4.69	31	12.11	47	18.36	90	35.16
Old aged (above 55 yrs.)	3	1.17	37	14.45	36	14.06	62	24.22	16	6.25	154	60.16

LL: Landless, MR: Marginal farmer, SF: Small farmer, MF: Medium farmer, LF: Large farmer

It was observed from table 1 that the population of pulse farmers in the sample area was dominated by old aged people (above 55 yrs.) who were 60.16% of the population and least age group category of the sample area was of young age covering 4.69%. Old aged pulse farmers coming under the medium farmer category were the most in the sample farmers covering 24.22% of the total pulse farmers. The higher old age group dominance was because the young felt services were better over farming and could earn more income. The age old practices were being continued by the old pulse farmers but the young followed different practices rather than age old practices. The practices among pulse farmers changed from generation to generation which indicated the existence of principle of cultural difference among the pulse farmers. Similar result were found by Nouman *et al.* (2013) [3] where 60 percent of farmers were belonging to old age group in a study of socio-economic characteristics of farmers on access to agricultural credit.

3.2 Education

Education has been identified as a major component for the development of an individual. The process of bringing desirable changes in the behavior of human beings, particularly in the development of knowledge, skill and positive attitude. In this study, the respondents were categorized into 5 groups as per their level of education.

Table 2: Distribution of the respondents according to their education (n = 256)

Education level	LL		MR		SF		MF		LF		Total	
	f	%	f	%	F	%	f	%	f	%	f	%
Illiterate	3	1.17	28	10.94	0	0	27	10.55	0	0	58	22.66
Primary School	0	0	4	1.56	36	14.06	30	11.72	2	0.78	72	28.13
Middle School	0	0	5	1.95	4	1.56	9	3.52	5	1.95	23	8.98
High School	4	1.56	0	0	8	3.13	19	7.42	31	12.11	62	24.22
College & above	0	0	0	0	3	1.17	8	3.13	30	11.72	41	16.12

LL: Landless, MR: Marginal farmer, SF: Small farmer, MF: Medium farmer, LF: Large farmer

From table 2 it was enumerated that the population of sample pulse farmers was dominated by the primary school education category accounted for 28.13% of the total sample. The least sample pulse farmers were from the middle school category which was 8.98%. Small farmers with primary school education were dominant in the population with 14.06%. The high proportion of pulse farmers were under primary education was because the people with lower education were converting to agriculture at an early stage of their education due to their requirement at fields by their family. Most people who obtained higher education sought job and business; hence most population had a primary school level of education. Similar result were found by Adesope *et al.* (2012) [1] where highest proportion of farmers had a primary school level of education in his socio-economic study about farmers adopting organic farming practices. A study by Ogunmefun and Achike (2015) [4] reported that 33.8 percent of farmers had primary school level of education which was highest among all education categories.

3.3 Family type

Family type is a derivative variable that classifies family nuclei according to the presence or absence of couples, parents and children**.** Respondents in this study were categorized into 2 groups as per family type.

Table 3: Distribution of the respondents according to their family type (n = 256)

Family type	LL		MR		SF		MF		LF		Total	
	f	%	f	%	f	%	f	%	f	%	f	%
Nuclear	3	1.17	33	12.89	44	17.19	15	5.86	19	7.42	114	44.53
Joint	4	1.56	4	1.56	7	2.73	78	30.47	49	19.14	142	55.47

LL: Landless, MR: Marginal farmer, SF: Small farmer, MF: Medium farmer, LF: Large farmer

It was eluded from table 3 that the population of the sample area was dominated by joint family type farmers with 55.47% and fewer farmers were recorded in nuclear family type with 44.53%. Medium farmers were recorded highest in the joint family category with 30.47%. Farmers in sample areas were mostly living together in a joint family having better understanding and mutual benefit sharing among each other,

hence the joint family type farmers were recorded as the majority.

3.4 Family size
Family size indicates no of members in respondent's family. Respondents in this study were categorized into 2 groups as per family size.

Table 4: Distribution of the respondents according to their family size (n = 256)

Family size	LL		MR		SF		MF		LF		Total	
	f	%	f	%	f	%	F	%	F	%	f	%
Small (up to 4)	0	0	33	12.89	47	18.36	10	3.9	14	5.47	104	40.6
Large (4 +)	7	2.73	4	1.56	4	1.56	83	32.42	54	21.09	152	59.4

LL: Landless, MR: Marginal farmer, SF: Small farmer, MF: Medium farmer, LF: Large farmer

From table 4, it was observed that the large family category recorded highest among the sample pulse farmers with 59.4% and the small size family recorded 40.6% of the sample pulse farmers. Medium farmers were recorded highest in the large family size category with 32.42%. Most of the farmers were belonging to a large family size because much of the rural

population favored living in a joint family.

3.5 Housing pattern
House pattern is an indication of the status and position of an individual in a society. Respondents in this study were categorized into 3 groups as per their housing pattern.

Table 5: Distribution of the respondents according to their housing pattern (n = 256)

House pattern	LL		MR		SF		MF		LF		Total	
	f	%	f	%	f	%	f	%	f	%	f	%
Kaccha	0	0	0	0	4	1.56	0	0	0	0	4	1.56
Semi-pucca	3	1.17	0	0	4	1.56	24	9.38	0	0	31	12.11
Pucca	4	1.56	37	14.45	43	16.8	69	26.95	68	26.56	221	86.33

LL: Landless, MR: Marginal farmer, SF: Small farmer, MF: Medium farmer, LF: Large farmer

As recorded in table 5 the pucca housing pattern was preferred by 86.33% among all the pulse farmers which was the highest. Kaccha housing pattern was recorded for 1.56% of the pulse farmers. Among the marginal farmers, 26.95% preferred the pucca housing pattern which was the most preferred pattern of housing among the pulse farmers. Most of the respondents were having a pucca house in the sample area as the pucca houses were the best providing shelter which the financially stronger farmers could afford. Few pulse farmers were financially poorer which the reason was for them who had kaccha house pattern.

3.6 Landholding size
It is referred to the number of acres of land possessed by a family of the respondent. In this study, the respondents were categorized into 5 groups as per their landholding size.

Table 6: Distribution of the respondents according to their landholding (n = 256)

Sl. No.	Land holdings	Frequency	Percentage	Rank
1	Landless	7	2.73	5
2	Marginal Farmer	37	14.45	4
3	Small Farmer	51	19.92	3
4	Medium Farmer	93	36.33	1
5	Large Farmer	68	26.56	2

The table 6 revealed that most of the farmers of the sample area were belonging to the medium farmer category with 36.33% and the least farmers were belonging to the landless category with 2.73% of the sample area of farmers. Similar results were found by Roy et al. (2013) [5] where the medium farmers were observed as 66.67 percent which was highest from sample farmers selected in a study of socio-economic

characteristics of hill farmers.

3.7 Source of income (Occupation)
It is referred to the various sources from where the respondents derived income. In this study, the respondents were categorized into two categories as per their source of income.

Table 7: Distribution of the respondents according to their source of income (n = 256)

Sl. No.	Source of income	Primary income		Secondary income	
		f	%	f	%
1	Farming	226	88.28	30	11.72
2	Business	30	11.72	0	0
3	Wage earning	0	0	59	23.05

Table 7 eluded that the primary source of income of most of the respondents was farming which recorded 88.28% followed by the business which was 11.72%. The secondary source of income was dominated by wage earning which recorded 23.05% followed by farming which was recorded to be 11.72%. Most of the respondents of the sample area were involved in farming as their source of income as the main occupation of the rural people was in agriculture and they earned their livelihood from it. Some of the farmers are also involved in the business as their primary occupation putting farming second to it and some farmers who were landless and marginal took up wage earning during their spare times from farming for their source of income. Similar result was found by Ugwuja et al. (2011) [1] in a socio-economic study where highest proportion of sample farmers i.e. 49.2 percent belonged to farming occupation.

3.8 Annual family income

Annual family income is the sign of social status and level of maintenance of life, which is directly related to the knowledge and adoption level of the farmers. In this study, the respondents were categorized into 4 groups as per their annual family income.

Table 8: Distribution of the respondents according to their annual family income (n = 256)

Sl. No.	Income category (in Rupees)	Frequency	Percentage
1	Up to 10, 000	5	1.95
2	10, 000 - 50, 000	82	32.03
3	50, 000 – 1, 00, 000	93	36.33
4	Above 1 lakh	76	29.69

Table 8 revealed that most of the respondents of the sample area were having family income in the category 50000-100000 rupees category which recorded 36.33%. Respondents having income less than 10000 rupees were the least in the categories which were 1.95% of the sample.

3.9 Saving

Saving is income not spent or deferred consumption. Methods of saving include putting money aside in, for example, a deposit account, a pension account, an investment fund, or cash. Saving also involves reducing expenditures, such as recurring costs. The saving of the farmers was recorded on two categories according to yes or no basis.

Table 9: Distribution of the respondents according to their saving (n = 256)

Sl. No.	Savings	Frequency	Percentage
1	Yes	112	43.75
2	No	144	56.25

From table 9. it was observed that the majority of the farmers from the sample area could not have any savings from their income which accounted for 56.25% of the respondents. The other 43.75% of the sample could save money for any future use.

3.10 Extension participation

The extent of participation refers to the nature and extent of a person's involvement in life situations like extension activities, social activities, etc. In a study by Suvedi et al. (2017) [6], he reported that adoption decisions were mainly affected by extension-related variables – training, membership in a farmers' group, and off-farm employment. Extension participation was found to be influenced by socioeconomic variables – age, education, household size, and distance to the extension office. The participation of the respondents in extension activities like training, meetings, demonstrations, etc. was recorded by giving them scores from 1-3 according to their frequency of participation in the activities.

Table 10: Distribution of the respondents according to their extension participation (n = 256)

Sl. No.	Activities	Mean score	Maximum score	Score gap percentage
1	Training	2.11	3	29.67
2	Demonstration	2.05	3	31.67
3	Kisan mela	1.85	3	38.33
4	Field visit	1.37	3	54.33
5	Discussion meetings	2.74	3	8.67
6	Farmers tours	1.22	3	59.33
7	Exhibition	1.67	3	44.33

It was eluded from table 10 that among the extension activities participation of the farmers 2.74 was the highest mean score for discussion meetings. The highest gap percentage was recorded for farmer tour which was 59.33%. The farmers find discussion meetings easy to attend and they could attend them frequently because the meeting was conducted near their village in their proximity which was easily accessible by them. The sample farmers were not much exposed to farmer tours and field visits as they were to be taken to a different place for attending the events and they were conducted in few and the farmers were engaged in their activities during the events.

3.11 Social participation

The participation of respondents in social activities like panchayat, cultural organizations, religious organizations, etc. was recorded by giving them scores from 1-3 according to respondent's membership and in depth participation in the institutions.

Table 11: Distribution of the respondents according to their social participation (n = 256)

Sl. No.	Sources	Mean score	Maximum score	Score gap percentage
1	Panchayat	1.09	3	63.67
2	Youth club	1.27	3	57.67
3	FPO	1.73	3	42.33
4	Cultural organisations	1.14	3	62
5	Religious organisations	1.27	3	57.67
6	Financial organisations	1.02	3	66
7	SHG	1.05	3	65

As presented in table 11 the participation of the respondents in social activities was observed highest in Farmer Producer Organisations (FPO) with a mean score of 1.73. There was very less participation of the participants in the financial organizations which had the highest gap percentage as 66%. The higher social participation of respondents was observed in FPO as they were farmers who formed their organization to work together, discussing farm activities, problem solving

which were very necessary activities for farmers. There was very little participation in financial organizations as they have minimal contact with financial organizations as per their social requirements in the day-to-day life of farmers.

3.12 Cosmopoliteness

It is defined as the degree to which an individual is orientated outside his social system. According to the frequency of visits to the institutions of the respondents, scores were given from 1 to 4.

Table 12: Distribution of the respondents according to their cosmopoliteness (n = 256)

Sl. No.	Activities	Mean score	Maximum score	Score gap percentage
1	Panchayat	1.43	4	64.25
2	Block office	1.57	4	60.75
3	District headquarter	2.31	4	42.25
4	Credit institution	1.77	4	55.75
5	Nearest town	2.79	4	30.25
6	PHC	1.09	4	72.75
7	KVK/OUAT/ICAR/ag offices	1.02	4	74.5

As illustrated in table 12 the nearest town was the place most accessed by the people with a mean score of 2.79. The highest gap percentage was observed in KVK/OUAT/ICAR/agricultural offices with a score of 74.5% as the places were least accessed by the people. The farmers use the facilities in the nearest town for all the resources they need for farming and also went to sell their produce of their farm, hence it was scored highest in cosmopoliteness. Agricultural office visits were scored lowest in cosmopoliteness because the farmers didn't have direct contact with the institutions but some lay leaders and dealers had direct contact with institutions and the farmers mostly contacted them regarding any problems or technology.

4. Conclusion

It was concluded from the study that most of the pulse farmers belonged to the group of old age with 60.16 percent in the sample of Nayagarh district. The highest education level of the pulse farmers was found to be primary school with 28.13 percent. Family type of the pulse farmers in Nayagarh district was dominated by joint family with 55.47 percent and family size of the sample pulse farmers was dominated by large family with 59.4 percent. Most of the pulse farmers were having pucca house patterns accounting for 86.33 percent. Medium farmers were recorded to be highest in the sample pulse farmers with 36.33 percent. Majority of the pulse farmers were having farming (88.28 percent) as their primary occupation and source of income. Majority of the pulse farmers belonged to annual family income of 50, 000 to 1 lakh rupees category with 36.33 percent and most of the pulse farmers didn't have saving (56.25 percent). The participation of the pulse farmers was highest in discussion meetings and lowest in farmer's tour among extension participation with gap percent of 8.67 percent and 59.33 percent respectively. Highest gap in social participation was found in financial organisations with 66 percent and in cosmopoliteness highest gap was 74.5 percent for agricultural offices. With understanding the socio-economic attributes of farmers the direction can be provided and policies can be developed to provide necessary technologies and information to the targeted regions with the most effective impact.

5. References

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