CODEN: IAASCA   **ORIGINAL ARTICLE**

Analysis of Socio-Economic Factors and Constraints Faced by Hybrid Paddy Growers in Udham Singh Nagar Distt. of Uttarakhand.

Shivam Arora[1], Ashutosh Singh[2], Shweta Chaudhary[3] , Chandra Dev[4], Ajay Kumar Tripathi [5].
[2], [1] College of Agri. Business Management
[3,4,5],Department of Agricultural Economics, College of Agriculture
Govind Ballabh Pant University of Agriculture & Technology, Pantnagar

ABSTRACT
A study was conducted to evaluate status and constraints faced by hybrid paddy growers in Udham Singh Nagar district of Uttarakhand. A three stage sampling technique was employed for constructing sampling plan of the study. Probability Proportion to size method technique was followed to select respondent which make a sample size of 60 farmers comprising of 28 small, 17 medium and 15 large farmers selected from 4 villages. The result reveals that medium and large farmers were literate and were more financially viable than the small farmers. Majority of the farmers were paddy growers and had an operational land holding of less than 2 hectares. In hybrids, PA6444 was the most popular on sample farms followed by Pant sanker1, Pant sanker3 in terms of acreage. High cost of hybrid seeds was restricting farmers from adopting hybrid rice technologies. Thus the subsidy should be provisioned on seeds of hybrid rice for its popularization among the rice growers. There is a need to follow a strong extension program in the area regarding improved cultivation practices of hybrid rice. Production constraints are discouraging the growers to augment the production of hybrid rice. There is need to evolve a package of practices of crop operations based on mechanical techniques to reduce unit cost of seed production. Strengthening of input delivery system in the area is urgently required. Also, less expensive and effective measures for the control of serious insect-pests and diseases should be undertaken. Motivation of the dealers and retailers is the need of the hour.
Key Words: Garrett's Ranking Technique, Garrett Score, Multi stage sampling, CACP Concept.

CITATION OF THIS ARTICLE
S Arora, A Singh, S Chaudhary , C Dev, A K Tripathi. Analysis of Socio-Economic Factors and Constraints Faced by Hybrid Paddy Growers in Udham Singh Nagar Distt. of Uttarakhand. . Int. Arch. App. Sci. Technol; Vol 11 [3] September 2020: 132-136

INTRODUCTION
Agriculture in India is the primary occupation and is one of the strong holds of Indian economy and accounts for 17.3 percent of country's GDP in 2016-2017 [1]. Paddy is the staple food for about 50.00 percent of the world's population that resides in Asia, where 90.00 percent of the world's paddy is grown and consumed. Rice is one of the largest traded commodities in the world with a total quantity touching 16.40 million tones. India is the 2nd largest producer of paddy in the world next to China. India ranked first in area under paddy (43.66 million ha) and second in terms of production (93.36 million tons) during 2013-14 and stood next only to China in the world. But the yield levels in India were low, compared to other major rice producing countries, viz., Egypt (9731 kg per ha), China (6556 kg per ha) and India (2239 kg per ha). About 67.00 percent of the area under paddy in India is under high yielding varieties.
Uttarakhand state is consisting of 13 districts and out of 13 districts of the State only Udham Singh Nagar, Haridwar, Dehradun and some area of Nainital district are famous for

food grain production. Out of these districts U S Nagar having largest area under paddy cultivation accounting for 1,06,740 ha with 3,16,652 tones production, and 2967 kg per ha productivity [2]**.**Paddy is one of the major food crops of Uttarakhand and occupies an area of 2.94 lakh ha with production of 5.50 lakh tones. In Uttarakhand, Udham Singh Nagar district occupies highest area 1, 04305 ha area under paddy cultivation with the production of 2, 56729 tones.The scope for expansion of area under paddy has already been exhausted, the only way to increase the production is by increasing the productivity of paddy through frontier technologies. The hybrid rice may be potential technology to increase the average productivity level of rice in the country. Thus the huge untapped potential still exists for raising productivity and income of the farmers by improving factors efficiency [3].But farmers could not be able to realize higher yield of hybrid rice due to poor management practices, incidence of pest and diseases etc. For hybrid paddy technology, resource use efficiency varies from farmer to farmer due to variation in access to inputs and technology. Hybrid paddy production to be a remunerative enterprise farmer should be able to get considerable net profit over cost and thus it is the farmers major concern to ensure satisfactory margin over cost of various inputs and selling price of product. Therefore it becomes essential to have knowledge about the socio economic status of hybrid paddy farmers and various factors need to be identified and addressed properly for achieving a higher production and productivity in hybrid paddy production.

In the light of the above researchable questions the study has been designed with the following specific objectives. To study the socio-economic status of hybrid paddy growers on different size groups farms. To examine the constraints faced by farmers in hybrid paddy production.

MATERIAL AND METHODS
Both primary and secondary data were collected to accomplish this study.
Study area : The study was conducted in Udham Singh Nagar district of Uttarakhand, which comprises of seven blocks. Out of seven blocks, two were selected on the basis of highest acreage namely Kashipur and Sitarganj.
Sampling Technique: A three stage sampling technique was employed for constructing sampling plan of the study. In the first stage two blocks were selected which were having the maximum area under hybrid paddy cultivation. Two villages from each block (Kunda and Sultanpur from Kolhapur, Kargatha and Nakuliya from Sitarganj) were selected on the basis of maximum acreage of hybrid paddy in second stage. A list of farmers was prepared based on complete enumeration among the selected villages from both the blocks. Then the farmers were classified into three categories and a sample of 60 farmer-respondents were obtained from these four villages on the basis of probability proportion to size method with the restriction that a minimum 15 farmers represent each category.
Analytical Tools
- To study the socio-economic status data is represented in terms of education level, family size, occupational pattern, size of operational holdings, different sources of income through descriptive statistical tools like percentage and mean.
- Production constraints in hybrid paddy were ranked using Garret's ranking technique as follows [4]

$$\text{Per cent position} = \frac{100(Rij\text{-}\ 0.5)}{N\,j}$$

Where,

Rij = Rank given for i^{th} constraints by j^{th} individual,
N j= Number of constraints ranked by j^{th} individual.
Duration of Study: Research was conducted for a span of two months i.e. from 11th March 2017 to 11th May 2017.

RESULTS
Socio-economic status of hybrid paddy growers: These have been presented in the following sub-sections.

Education-Wise distribution of paddy growers

It is evident from the (**Table 1.1**) that out of the total selected farmers, 40 percent farmer attained the school education. However, 45 percent of the medium farmers and around 43 percent of the large farmers were found to attain school education. Whereas, approximately 42 percent of small farmers were literate, 33 percent attained the school education and 27percent had college education. The result reveals that medium and large farmers were literate than the small farmers.

Table 1.1: Education-Wise distribution of family members

Education level	Category of farms			Overall average
	Small	Medium	Large	
Literate (Informal or formal up to class 5)	10 (41.66)	6(30.00)	4(25.00)	6.66(33.33)
School (class 6 - 10)	8(33.34)	9(45.00)	7(42.75)	8(40.00)
College (class 10 & above)	6(25.00)	5(25.00)	5(31.25)	5.33(26.67)
Total	24(100.00)	20(100.00)	16(100.00)	20(100.00)

Note: Figures in parentheses indicate percentage to the respective values.

Age-wise distribution of family members

The age of farmer has a great important part on his ability to take part in economic activities especially in farming and get more benefit from the enterprise. Age-wise distribution of sample farmers is shown in (Table 1.2) It is evident from the table that on overall average basis 48.33 percent of paddy growing farmers were in the age group of 31–50, around 28.33 percent of farmers were in the age group of below 30 years and only 23.34 percent farmers were in the age group of above 50 years. The majority of the small 50.00 percent, medium 40.00 percent and large 56.25 percent farmers were in the age group of 31–50 years. Average age of the small, medium and large farmers was found to be 39.33, 49.90 and 53.87 years, respectively. It can be inferred that paddy growing farmers of the study area were in middle age group.

Table 1.2 Age-wise distribution of family members

Age group (Years)	Category of farms			Overall averag
	Small	Medium	Large	
<30	10 (41.66)	7(35.00)	0 (0.00)	5.66 (28.33)
31 – 50	12(50.00)	8(40.00)	(56.25)	9.66(48.33)
>50	2(8.33)	5(25.00)	(43.75)	4.66(23.34)
Total	24 (100.00)	20(100.00)	(100.00)	20(100.00)
Average age	39.33	49.90	53.87	47.70

Note: Figures in parentheses indicate percentage to the respective values.

1.3: Income-wise distribution of sample farmers

The distribution of the respondent-farmers according to their annual income is given in (Table 1.3). It can be seen from the table that at average level, majority of the farmers 48.34 percent had an annual income more than Rs. 2 lakhs. However, 87.50 percent of the large farmers and 65.00 percent of the medium farmers had an annual income more than Rs. 2 lakhs while 50.00 percent of small farmers had an annual income less than Rs. 1 lakh. About 42.00 percent of small farmers, 35.00 percent of medium farmers and 13.00 percent of large farmers had an annual income between Rs. 1 lakh to Rs. 2 lakhs. The result reveals that medium and large farmers were more financially viable than the small farmers.

Table 1.3 Annual income-wise distributions of sample farmers

Size of income (Rs.)	Category of farms			Overall
	Small	Medium	Large	average
< 100000	12 (50.00)	0(0.00)	0(0.00)	4(20.00)
100000-200000	10 (41.66)	7(35.00)	2(12.50)	6.33 (31.66)
> 200000	2 (8.33)	13 (65.00)	14(87.50)	9.66(48.34)
	24 (100.00)	20 (100.00)	16 (100.00)	20 (100.00)

Note: Figures in parentheses indicate percentage to the respective values.

1.4: Size and distribution of operational land holdings

The operational land holdings of sample paddy growers were collected from revenue records. The average size of operational holding was found to be 1.23, 2.77and 7.26 hectares at small, medium and large farms respectively. (Table 1.4) presents the distribution of farmers according to the land holding size. Majority of the sampled respondents were found belonging to small and medium category. From the table it can be seen that majority of the sample respondents 46.66 percent had an operational land holding of less than 2 hectares, 28.33 percent had 2-4 hectare and 25.00 percent had more than 4 hectares.

Table 1.4 Distribution of farmers according to the size of operational land holdings

Average operational land	holding size	Number of respondent
Small (<2 ha.)	**28**	(46.66)
Medium (2-4 ha.)	**17**	(28.33)
Large (> 4 ha.)	**15**	(25.00)
Overall	**16**	60 (100.00)

Note: Figures in parentheses indicate percentage to the respective values.

Occupation-wise distribution of family member

It is evident from the table 1.5 that about 83.00 percent of the overall farmers took paddy cultivation as their main occupation. All the large farmers preferred to adopt paddy cultivation as their main occupation. Majority of the small 75.00 percent and medium 80.00 percent farmers were also undertaking paddy cultivation as their main occupation. These findings are indicative of the fact that growing paddy was the main occupation of the sample farmers of the study area.

Table 1.5 Occupation-wise distribution of family member

Occupation	Category of farms			Overall average
	Small	**Medium**	**Large**	
Main	18 (75.00)	16 (80.00)	16(100.00)	16.66 (83.34)
Subsidiary	6 (25.00)	4 (20.00)	0(0.00)	3.33 (16.33)
Total	24(100.00)	20(100.00)	16(100.00)	20.00(100.00)

Note: Figures in parentheses indicate percentage to the respective values.

Constraint faced by farmers in production of hybrid paddy

Major constraints faced by small, medium as well as large farmers in growing hybrid paddy has been presented in Table 2.1. Major constraint faced by medium sized land farmers in growing of hybrid paddy were high cost of seeds (rank I) followed by inadequate availability of fertilizers (rank II) and unavailability of quality pesticides (rank III).In case of large sized land farmer in growing of hybrid paddy, high cost of seeds (rank I) with a score of 74, high incidence of pest and disease (rank II) and high output price fluctuations (rank III) were identified as the major constraints.

Table 2.1: Ranking of various constraints faced by small, medium and large farmers in production of hybrid paddy.

Sl. No.	Constraints	Rank			Overall
		Small	**Medium**	**Large**	
1	Unavailability of quality pesticides	5(48)	3(59)	5(51)	4(53)
2	Inadequate irrigation facilities	9(30)	10(28)	10(27)	10(29)
3	High cost of seeds	1(75)	1(76)	1(74)	1(75)
4	Low output price during harvesting	6(47)	7(43)	6(46)	5(45)
5	Inadequate availability of fertilizers	4(57)	2(62)	4(53)	3(56)
6	Weed infestation	8(37)	9(38)	8(41)	8(39)
7	High output price fluctuations	3(62)	8(41)	3(55)	6(50)
9	Inadequate availability of labour	10(23)	5(50)	9(37)	9(35)
10	Untimely rains	7(46)	6(45)	7(42)	7(43)

Note: Figures in parentheses indicates average score

RECOMMENDATIONS FOR POLICY IMPLICATIONS:

There is a need to follow a strong extension programme in the area regarding improved cultivation practices of hybrid rice. Subsidy should be provisioned on seeds of hybrid rice for its popularization among the rice growers. The required inputs for hybrid paddy seed cultivation need to be supplied to the farmers by a contract firm on credit basis. To make a product available to the final consumer i.e. farmer, a well-structured distribution network has to be followed. Since 30% of the farmers purchase seeds on the advice of the retailers it is important for the hybrid paddy seeds companies to motivate the retailers to push their product into the market.

REFERENCES

1. Economic Survey(2016-17). Govt. of India, Directorate of Economics and Statistics.
2. Sankhyiki patrika, 2012. District U. S. Nagar, Uttarakahnd.
3. Chengappa PG, Janaiah A, Gowda MVS (2003). Profitability of hybrid rice cultivation in Karnataka. Economic and Political Weekly. ;38(25):2531-2534
4. Nirmala, B. and Muthuraman, P. (2009). " Economics and constraint analysis of paddy cultivation in Kaithal District of Haryana", Indian Res. J. Ext. Edu. 9(1) 19-24