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## Application of garret ranking technique in studying the problems of farmers in paddy cultivation: A case study of Ghazipur district of Uttar Pradesh

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### Abstract

This paper discussed about the problems faced by the farmers in Ghazipur district of Uttar Pradesh. Garrett's ranking technique is used to understand major problems faced by farmer in Paddy cultivation. A total 10 of villages were selected from two blocks of Ghazipur district. Ten per cent from each village were randomly selected and 100 farmers were selected for investigation randomly. On the basis of review, a list of 9 constraints was prepared and data were collected on each one. Finding of the study show that Unavailability of Skilled Labour, Crop damage by stray Animals, High weed Infestation are the major constraints among many problems.

**Keywords:** Problems, Garrett ranking technique, paddy, cultivation, Ghazipur

### Introduction

India is facing challenges to feed its growing population. Paddy is the main crop providing common food for Indian population. It is estimated that about 260 million tonnes of food grains are to be produced annually by the year 2030 to meet the food requirements. Rice is one of the major food grain crops in India occupying 43.79 million hectares with a production of 116.42 million tonnes. (Directorate of Economics & Statistics, DAC&FW) <sup>[1]</sup>. the agricultural economy of Uttar Pradesh is dominated by food grains. Uttar Pradesh have maximum area under Paddy cultivation with 5.75 Million Hectare which is 13.12 per cent of total area under Paddy cultivation (Pathak *et al* 2021) <sup>[2]</sup>. Production of Paddy in UP is on second position of total production with 15.54 Million Tonnes (2704 Kg. /Hectare) which is 13.34 per cent of total Paddy production (Agriculture statistics at a glance 2019) <sup>[3]</sup>. Ghazipur district is situated in eastern part of Uttar Pradesh. The total area of the district is 3377 sq km with total population of 30.37 lakh with density of population as 899 persons per sq km. The district has 16 blocks and 3364 villages and there are three rivers in the district *viz.* Ganga, Gomti and Karmnara. (KVK Ghazipur) <sup>[4]</sup>. with this back drop, the study attempted to assess the problems of Farmers in Paddy cultivation. This information would be essential for future planning by the policy makers to meet the farmer needs.

### Objective

To identify Problems faced by the farmers during production of Paddy in Ghazipur district of Uttar Pradesh.

### Research Methodology

The present study was conducted in Ghazipur district of Uttar Pradesh during 2021-22. Ex-post facto research design was followed for carrying out the study. The simple random sampling was used for selection of block, village, and respondent. Ghazipur district comprises of 16 blocks. Among these blocks, Saidpur and Devkali block is selected purposively for the present study. A total 10 of villages were selected from two blocks of Ghazipur district was randomly selected for the study. Ten per cent from each village were randomly selected so 100 farmers were selected for investigation. List of 9 constraints was prepared and data were collected on each one. The primary data were collected by personal contact method with the help of structured pre-tested interview schedule and collected data were coded, classified, tabulated and analyzed in light of objectives and in order to make the findings meaningful interpretation.

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### Henry Garret’s ranking technique

This technique was used to evaluate the constraints faced by the researchers. The orders of merit given by the respondents were converted in to rank by using the formula. To find out the most significant factor which influences the respondent, Garrett’s ranking technique was used. As per this method, respondents have been asked to assign the rank for all factors and the outcomes of such ranking have been converted into score value with the help of the following formula:

$$\text{Percent position} = \frac{100(\text{Rij} - 0.5)}{N_j}$$

Where

Rij – Rank given for the ith variable by the jth respondents

Nj – Number of variable ranked by jth respondents

With the help of Garrett’s Table, the percent position estimated was converted into scores (Table 1) by referring to the table given by Garret and Woodworth (1969) [5]. Then for each factor, the scores of each individual were added and then total value of scores and mean values of score was calculated (Table 2). The factors having highest mean value was considered to be the most important factor Dhanavandan S. (2016) [6].

### Calculation of Garret Value and Ranking

The calculation of Garret value and ranking of problems faced by Paddy farmers are shown below.

**Table 1:** Percent positions and Garret Values

Sr. No.	100(Rij-0.5)/ Nj	Calculated Value	Garret Value
1	100(1-0.5)/ 9	5.56	81
2	100(2-0.5)/ 9	16.67	69
3	100(3-0.5)/ 9	27.78	62
4	100(4-0.5)/ 9	38.89	56
5	100(5-0.5)/ 9	50.00	50
6	100(6-0.5)/ 9	61.11	44
7	100(7-0.5)/ 9	72.22	38
8	100(8-0.5)/ 9	83.33	31
9	100(9-0.5)/ 9	94.44	19

### Results and Discussion

#### Problems faced by Farmers in Paddy cultivation

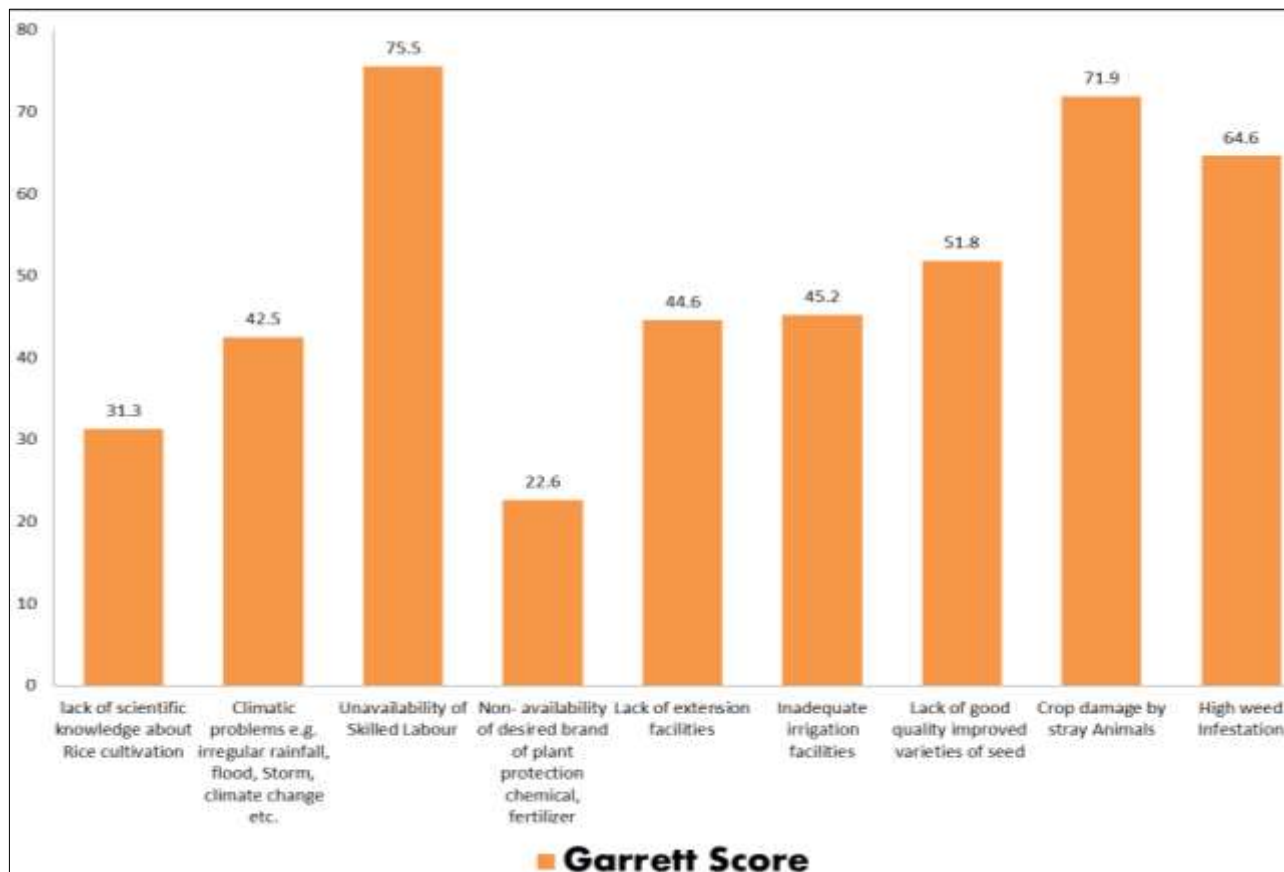
The problems faced by sample farmers in the Paddy cultivation are given in table 2 and figure 1. It was indicated that out of ninth constraints, Unavailability of Skilled Labour was rank I<sup>st</sup> problem expressed by the sample farmers with the total mean score of 75.5. The results are in consonance with the findings of Zalkuwi *et al.* (2015) [7] and Ginigaddara and Lankapura (2018) [8]. Crop damage by stray Animals was got II<sup>nd</sup> rank with 71.9 mean score and High weed Infestation was III<sup>rd</sup> rank with 64.6 mean score among major constrains in

paddy cultivation in study area. Other major problems are Lack of good quality improved varieties of seed (mean score of 51.8), Inadequate irrigation facilities (mean score of 45.2), Lack of extension facilities (mean score of 44.6), Climatic problems e.g. irregular rainfall, flood, Storm, climate change etc. (Mean score of 42.5), Lack of scientific knowledge about Rice cultivation (mean score of 31.3), and Non- availability of desired brand of plant protection chemical, fertilizer (mean score of 22.6) have got IV<sup>th</sup>, V<sup>th</sup>, VI<sup>th</sup>, VII<sup>th</sup>, VIII<sup>th</sup>, and IX<sup>th</sup> rank respectively.

**Table 2:** Problems faced by Farmers in Paddy cultivation in study area

Sr. No.	Problems	Total Score	Garrett Mean Score	Rank
1	Lack of scientific knowledge about Rice cultivation	3130	31.3	VIII
2	Climatic problems e.g. irregular rainfall, flood, Storm, climate change etc.	4250	42.5	VII
3	Unavailability of Skilled Labour	7550	75.5	I
4	Non- availability of desired brand of plant protection chemical, fertilizer	2260	22.6	IX
5	Lack of extension facilities	4460	44.6	VI
6	Inadequate irrigation facilities	4520	45.2	V
7	Lack of good quality improved varieties of seed	5180	51.8	IV
8	Crop damage by stray Animals	7190	71.9	II
9	High weed Infestation	6460	64.6	III

(Data: Field Survey)



**Fig 1:** Problems faced by sample farmers in the Paddy production

### Conclusion

It can be concluded from the study that the major important constraints faced by farmers were analysed through Garrett Ranking. As per this method, respondents have been asked to assign the rank for all factors and the outcomes of such ranking have been converted into score value. The problems were outlined during the interviews with farmers. The ranking on preferential order indicate the primary concerns of the farmers. It's clear from study that farmers are facing problems with their day to day agricultural activity. Finding of the study show that Unavailability of Skilled Labour was main problem expressed by the sample farmers. Crop damage by stray Animals was the second major constrains in paddy cultivation and High weed Infestation was third constrains in the study area. The study can be used by policy makers in enhancing the productivity of Paddy cultivation and the possibilities of adding commercial values to it to help the farmers.

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