



## PROJECTION FOR AREA, PRODUCTION AND PRODUCTIVITY OF RICE CROP IN DIFFERENT AGRO-CLIMATIC ZONE OF CHHATTISGARH STATE

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### Abstract:-

An attempt has been made to Project the area, production and productivity of rice crop for the year 2030,2040 and 2050 in different Agro-Climatic Zone of Chhattisgarh State. The study concludes that Projection for Area Production and Productivity of rice crop for Chhattisgarh State is expected to increase by 3279.19 thousand hectare by 2030 in Chhattisgarh state and this will further increased to 3406.66 and 3599.19 by 2040 and 2050. Due to this production of rice is expected to reach at the level of 6758.41 thousand tons by 2030 and at 7714.33 and 8670.26 thousand tons by 2040 and 2050. Although there will be a marginal increase in productivity of rice is expected by the year at 2030(209kg/ha) which is further expected to increase at 226 kg/ha and 241kg/ha by the year 2040 and 2050

**Keywords:** Projection, Rice, Area, Production, Productivity.

### Introduction

Chhattisgarh is a state in central India; with a geographical area of 137.90 lakh hectares. It is known for rice cultivation and called “rice bowl of India” and is necessary to know the projection of rice crop for area, production and productivity in different Agro-Climatic Zone of Chhattisgarh State for the year 2030,2040 and 2050 In Chhattisgarh, rice occupies average of 3.6 million hectare with the productivity of the state ranging between

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1.2 to 1.6 tonne per hectare depending upon

the rainfall (Status Paper on Rice for Chhattisgarh). With the consideration of importance of rice crop in Chhattisgarh state and its present status, it is very necessary to know the projection of area, production and productivity of Rice crop by the year 2030,2040 and 2050. Projection of rice production based on trend equation of area, production and productivity for the ten years period i.e. from 2009-10 to 2018-19 for the

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different agro-climate zone of rice crop in Chhattisgarh state. On the basis of the trends fitted, projections were made for area, production and productivity of rice under study with reference to three time periods i.e 2030, 2040 and 2050 AD as presented in the **Table 1.1.**

2030(202kg/ha) which is further expected to increase at 215 kg/ha and 227kg/ha by the year 2040 and 2050.

The data in the table showed that the acreage of rice crop is expected to increase by 507.29 thousand hectare by 2030 in Bastar Plateauzone and this will further increased to

<b>Table 1.1 Projections of area, production and productivity of rice under different agro climatic zone of Chhattisgarh state</b>						
<b>Zone</b>	<b>Indication</b>	<b>Intercept</b>	<b>Reg. coffi.</b>	<b>Projection</b>		
				<b>2030</b>	<b>2040</b>	<b>2050</b>
<b>Chhattisgarh plains</b>	Area	3180.57	-95.87	3227.19	3406.66	3599.19
	Production	4939.43	1.21	6516.58	7335.63	8154.67
	Productivity	26.93	0.20	202	215	227
<b>Bastar Plateau</b>	Area	615.40	69.22	507.29	532.09	557.11
	Production	769.40	-15.95	741.35	765.02	788.69
	Productivity	10.13	-347.13	146	144	142
<b>Northern Hills</b>	Area	685.54	19.63	575.68	585.63	594.59
	Production	891.68	-13.72	991.64	1132.85	1274.05
	Productivity	6.99	0.02	172	193	214
<b>Chhattisgarh state</b>	Area	2767.2	35.71	3279.19	3406.66	3599.19
	Production	4105.7	198.92	6758.41	7714.33	8670.26
	Productivity	1.522	0.041	209	226	241

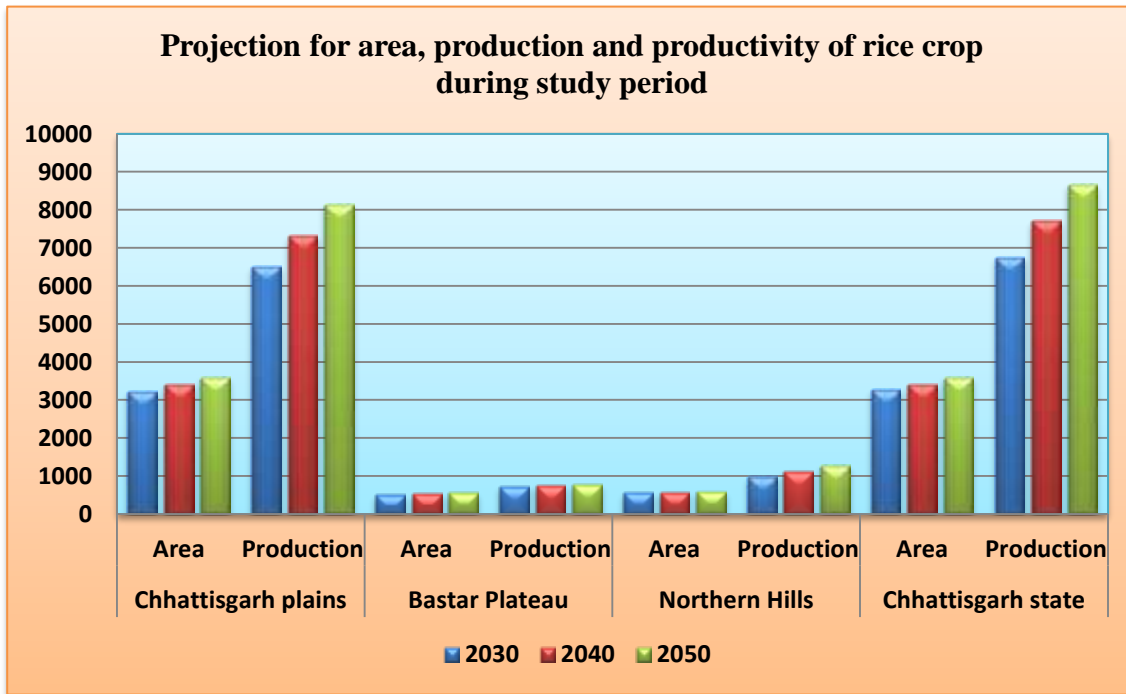
The data in table showed that the acreage of rice crop is expected to increase by 3227.19 thousand hectare by 2030 in Chhattisgarh plain and this will further increased to 3406.66 and 3599.19 by 2040 and 2050. Due to this production of rice is expected to reach at the level of 6516.58 thousand tonnes by 2030 and at 7335.63 and 8154.67 thousand tonnes by 2040 and 2050. Although there will be a marginal increase in productivity of rice is expected by the year at

532.09 and 557.11 by 2040 and 2050. Due to this production of rice is expected to reach at the level of 741.35 thousand tonnes by 2030 and at 765.02and 788.69 thousand tonnes by 2040 and 2050. Although there will be a marginal increase in productivity of rice is expected by the year at 2030(146kg/ha) which is further expected to increase at 144 kg/ha and 142kg/ha by the year 2040 and 2050.

The acreage of rice crop is expected to increase by 557.68 thousand hectare by 2030

in Northern hills zone and this will further increased to 585.63 and 594.59 by 2040 and 2050. Due to this production of rice is expected to reach at the level of 991.64 thousand tonnes by 2030 and at 1132.85 and 1274.05 thousand tonnes by 2040 and 2050. Although there will be a marginal increase in productivity of rice is expected by the year at 2030(172kg/ha) which is further expected to increase at 193 kg/ha and 214kg/ha by the year 2040 and 2050.

507.29 thousand hectare by 2030 and 532.09 and 557.11 thousand hectare by 2040 and 2050 and for Northern hills zone area will increase by 557.68 thousand hectare by 2030 and this will further increased to 585.63 and 594.59 by 2040 and 2050. Due to this production of rice is expected to reach at the level of 6516.58 thousand tonnes by 2030 and at 7335.63 and 8154.67 thousand tonnes by 2040 and 2050 in Chhattisgarh plain zone. For Baster Plateau zone it is expected to reach at the level of



**Fig.1.1 Projection for area, production and productivity of rice crop during study period**

### Conclusions

In Chhattisgarh plain area is expected to increase by 3227.19 thousand hectare by 2030 and this will further increased to 3406.66 and 3599.19 by 2040 and 2050. For Bastar Plateau zone it is expected to increase by

741.35 thousand tonnes by 2030 and at 765.02 and 788.69 thousand tonnes by 2040 and 2050. And for Northern hills zone production of rice will reach the level of 991.64 thousand tonnes by 2030 and 1132.85

and 1274.05 thousand tonnes by 2040 and 2050.

technique. *Finance & Economics Review*, 3(1), 63-87.

## References:

- 1) Verma, P. K., Bhelawe, S., Chaudhary, J. L., & Patel, S. R. (2014). Estimating productivity of rice (*Oryza sativa*) in Chhattisgarh plain zone for the future climate condition using DSSAT v. 4.5-rice model. *Int. J. Agricult. Stat. Sci*, 10(1), 217-220.
- 2) Saxena, R., & Kumar, S. N. (2014). Simulating the impact of projected climate change on rice (*Oryza sativa* L.) yield and adaptation strategies in major rice growing regions of India. *Journal of Agrometeorology*, 16(1), 18-25.
- 3) Biswas, R., & Bhattacharyya, B. (2013). ARIMA modeling to forecast area and production of rice in West Bengal. *Journal of crop and weed*, 9(2), 26-31.
- 4) Mishra, P., Sahu, P. K., Devi, M., Fatih, C., & Williams, A. J. (2021). Forecasting of rice production using the meteorological factor in major states in India and its role in food security.
- 5) Singh, A. K., & Jyoti, B. (2021). Projected productivity of cash crops in different climate change scenarios in India: Use of marginal impact analysis