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Growth rate of Paddy crop in Dharmapuri District of Tamilnadu

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Abstract

India is the world's second-largest producer of rice and the largest exporter of rice in the world. Production increased from 53.6 million tons in 1980 to 120 million tons in 2022-23. Rice is the basic food crop and being a tropical plant, it flourishes comfortably in a hot and humid climate. Rice is mainly grown in rain-fed areas that receive heavy annual rainfall. That is why it is fundamentally a kharif crop in India. In some states like West Bengal, Assam, and Orissa two crops of rice are raised in a year. Almost all parts of India are suitable for raising rice during the summer season provided that water is available. The Objective of the study was to analysis the growth in Area, Production, and Productivity of Paddy Cultivation in Dharmapuri District of Tamil Nadu. The study Concluded That the compound growth rate of area, production and productivity for Tamil Nadu was 0.10%, 1.30% and 1.20% respectively, the compound growth rate of area, production and productivity for Dharmapuri District was -3.68%, -1.30% and 2.20% respectively. The state compound growth rate was positive and increasing for paddy crop, Dharmapuri District has negative trend in area and production Due to drought and unavailability of water resources, but productivity was positive trend 2.20% per cent increasing for paddy cultivation.

Key words : Paddy, Area, Production, Productivity, Trend, Growth Rate.

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hot and humid climate. Rice is mainly grown in rain-fed areas that receive heavy annual rainfall. That is why it is fundamentally a kharif crop in India.

The regions cultivating this crop in India are distinguished as the western coastal strip, the eastern coastal strip, covering all the primary deltas, Assam plains and surrounding low hills, foothills and Terai region- along the Himalayas and states like West Bengal, Bihar, eastern Uttar Pradesh, eastern Madhya Pradesh, northern Andhra Pradesh and Odisha. India, being a land of the eternal growing season and the deltas of the Ganges-Bramhaputra (in West Bengal), Kaveri River, Krishna River, Godavari River, Indravati River and Mahanadi River with a thick set-up of canal irrigation like Hirakud Dam and Indravati Dam, permits farmers to raise two, and in some pockets, even three crops a year.

In some states like West Bengal, Assam, and Orissa two crops of rice are raised in a year. The winter season in north western India is extremely cold for rice. Rice is considered as the master crop of coastal India and in some regions of eastern India, where during the summer and monsoon seasons, both high temperature and heavy rainfall provide ideal conditions for the cultivation of rice. Almost all parts of India are suitable for raising rice during the summer season provided that water is available. Thus, rice is also raised even in those parts of western Uttar Pradesh, Punjab, and Haryana where low-level areas are waterlogged during the summer monsoon rainy season. For the preparation of the manuscript relevant literature[1-8] has been consulted.

Govindharaj & Yoganandham[3] concluded that Paddy growers are facing a lot of problems, during production and marketing. Production problems includes Monsoon failure, lack of water resources, high cost of fertilizers, Non acceptability of bullock, shortage of labour, Lack of Green leaf bio fertilizers. Marketing problems are large number of middleman fluctuation market p Paddy, delay in payment, lack of market information, lack of co-operative market. In this background this research article mainly concentrated on the sustainable sources of Revenue and Monetary status of paddy cultivation labour in selected area of Pernambut area of Pernambut taluk of Vellore District in Tamil Nadu.

Pandian, *et al*.,[6] concluded that the levels of input application were greater for the owner farmer when compared with the tenancy farmers producing paddy. The more intensive use of energy inputs were done by the owner farmers than by the tenancy farmers. The net income earned would be comparatively higher even though the owner farmers and spent more on cultivation of paddy crops. The total cost for the tenancy farmers was found to be less than that of the owner farmers.

Objective

- To study and analyse the growth in area, production and productivity of Paddy cultivation in Dharmapuri District of Tamil Nadu.

The study was carried out to analyse the growth and performance of Paddy crop in Tamil Nadu and Dharmapuri. The secondary data were collected from the Department of

Agriculture, Ministry of Agriculture & Farmers welfare and Government of India. The collected Data were analysed by using the compound growth rate. The compound growth rate was determined using the exponential growth model to investigate the trend and annual growth rate of paddy crop in Tamil Nadu and Dharmapuri.

$$y=a\ b^t$$

$$\log y= \log a+ t \log b$$

$$y= A+B\ t$$

Where,

Y = log y

A = log a

B = log b

Y = Area (ha)/ production (tonnes) and productivity (tonnes/ha)

A = intercept

B = Regression coefficient

Compound Growth rate 'r'= (Antilog of B-1) X 100.

The Compound growth rate of area, production and productivity of paddy cultivation for Dharmapuri District and also for the Tamil Nadu state during the period of 1999- 2023 are summarized in Table-1.

Table-1. Growth rate of area, production and productivity of paddy cultivation in Dharmapuri District of Tamil Nadu

Variable	Indices	Tamil Nadu	Dharmapuri
Area	**Mean (ha)**	1,868.66	25.61
	SD	231.27	14.50
	CV	12.38	56.63
	CAGR (%)	0.10^{NS}	-3.68**
Production	**Mean (ha)**	6,094.65	99.21
	SD	1444.95	52.55
	CV	23.71	52.97
	CAGR (%)	1.30***	-1.63^{NS}
Productivity	**Mean (ha)**	3.23	3.96
	SD	0.57	0.77
	CV	17.74	19.32
	CAGR (%)	1.20**	2.20*

Note: *Significant at 1% level, **Significant at 5% level, ***Significant at 10% level and ^{NS} Non of significant

Source: Department of Agriculture, Tamil Nadu.

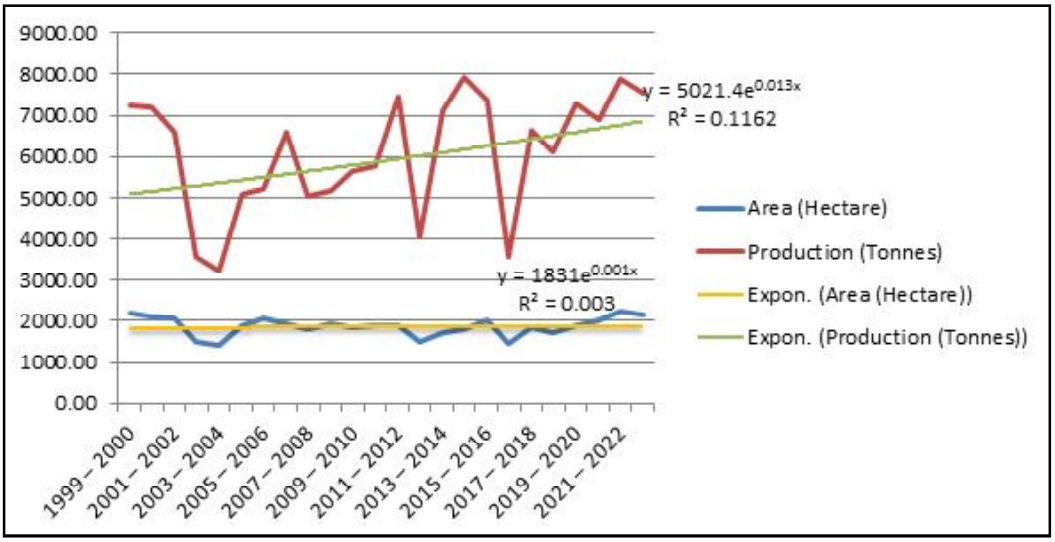

Figure 1. Trend line in Paddy crop of Tamil Nadu

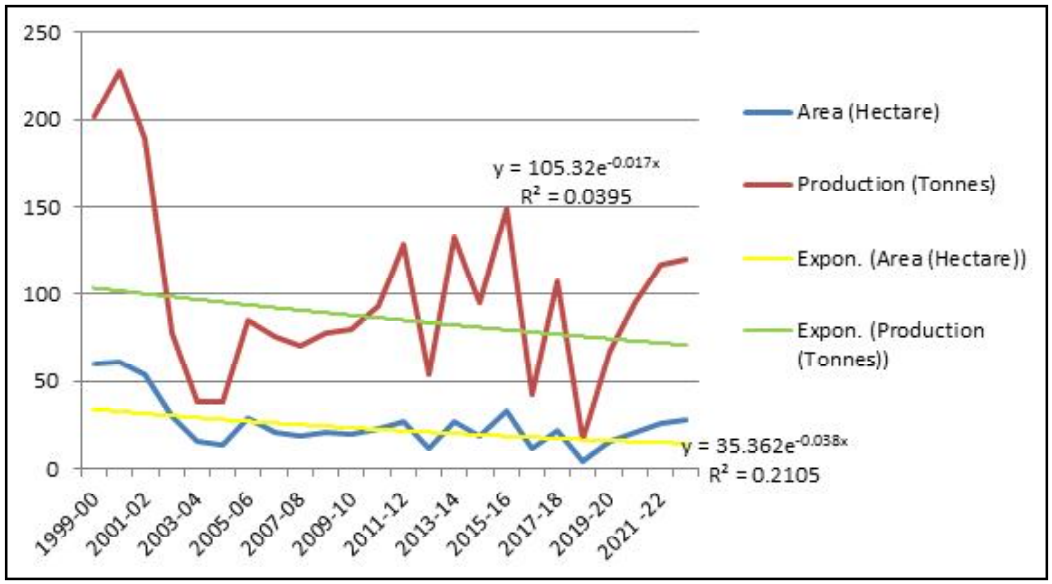

Figure-2 Trend line in Paddy crop of Dharmapuri

From the Table-1 there is significant increasing trend in area, production and productivity of paddy in Tamil Nadu the Compound growth rate observed was 0.10% per cent in area, 1.30% per cent production and productivity per hectare had a compound growth rate 1.20% per cent. The compound growth rate for the area was at non significant, production was at 10% level and productivity was at 1% level of significance.

It is revealed from the table the compound growth rate for area, production and productivity during 1999- 2023 in Dharmapuri District the Compound growth rate observed was -3.68 per cent in area, -1.63% per cent production and productivity per hectare had a compound growth rate 2.20% per cent. The compound growth rate for the area at 5% level, production was non significant and productivity was found to be significant at 1% level of significance.

The compound growth rate of area, production and productivity for Tamil Nadu was 0.10%, 1.30% and 1.20% respectively, the compound growth rate of area, production and productivity for Dharmapuri District was -3.68%, -1.30% and 2.20% respectively. The state compound growth rate was positive and increasing for paddy crop, Dharmapuri District has negative trend in area and production Due to drought and unavailability of water resources, but productivity was positive trend 2.20% per cent increasing for paddy cultivation.

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