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A STUDY ON PADDY PRODUCTION IN TAMIL NADU

Author
Dr. PALANIVEL.M.D
Assistant Professor ,Department of Commerce,St. Thomas College of Arts and Science, Koyambedu, Chennai-600 107.
Mail ID: mdpalanivel@gmail.com
Mobile No. 9842446429

ABSTRACT: The current paper attempts to analyze paddy production in India with special emphasis on Tamil Nadu. Rice has been one of the most vital food crops globally and occupies the second most produced and possessing the largest cultivated area. It is a part of the staple diet for about 50 % of the Asian population, which also accounts for 90% of rice production and consumption. Paddy is grown mainly in countries like India, China, Vietnam, Bangladesh, South Korea, United States, Japan, Myanmar, Philippines Thailand, and Brazil. The objective of the current study is to investigate the input/output relationship along with the production constraints and to suggest improvement measures accordingly. In brief, SRI technology has aided farmers in largely enriching their socio-economic conditions without the need to increase the area under rice production. The technology has emerged as an alternate means for rice production. The study relies on secondary data consolidated from various sources like Government Report, Journals, Season and Crop Report of Tamil Nadu, Directorate of Economics and Statistics, Department of Economics and Statistics, Chennai

KEYWORDS: Productivity, SRI Technology, Season Crop, and Variety.

INTRODUCTION: Rice is one of the most important food crops cultivated for both dietary and economic needs. It has been part of human civilization since its domestication began in 8000 BC (Sweeney & McCouch, 2007). This grass variety feeds half of the world population occupying the largest cultivation area for any crop. Rice plays a major role in the argon economy of India; the agriculture sector alone constitutes 65% of employment for the rural and semi-rural populace. More recently, there has been vibrant development in the agricultural sector that is aided by policy frameworks for development in technological, institutional and structural aspects of agriculture since independence. The archaic Five-Year Plan (1951-56) sufficed agricultural policy and actions with the sole view to eradicating the food crisis. Agriculture's contribution towards GDP has been in a declining trend including its peripheral activities. The Eleventh Five Year Plan (2007-08 to 2011-12) was formulated to rectify the downward trend in agricultural growth and productivity. Consequently, the Twelfth FiveYear Plan aimed to inculcate rapid, sustainable and inclusive growth in the agricultural sector. (Planning Commission, 2012)

HISTORY OF PADDY PRODUCTION

Paddy is historically associated with India known for the important centre of rice cultivation with research claiming the primary domestication of indica variety of rice in the foothills of Eastern Himalayas. The cultivation tract spread throughout the areas encompassing Thailand, South China, Burma, Laos, and Vietnam. A variety of rice called Japonica that was domesticated from wild rice in areas adjoining South China found its way

to India. This perennial wild rice is still cultivated in Nepal and Assam. The crop appeared in Southern India after its domestication from north India around 1400 B.C. It soon became widespread in fertile alluvial plains that received water supply from rivers. It is also believed that the term “rice” owes its etymological roots to Tamil word for rice “arisi”

STATEMENT OF THE PROBLEM

Paddy for its stature as a primary staple diet for half the global population of the world holds greater economic significance. It is also used as a commodity for argon-economy attracting lucrative foreign exchanges. Subsequently, its production performance and improvement are directly dependent on the efficient utilization of resources. The profitability of the crop is determined by quantifying its cost of production with net returns obtained, which largely relies on the effective utilization of production resources. Further, the study of cost and returns structure of paddy would help the farmers in ensuring proper resource combinations to augment the paddy yield, thereby increasing the profits. The crop production entails till consumption; the interim phase ultimately relies on marketing. The efficiency of the process is determined by the marketing system. The marketing of agriculture of good is more complex and complicated than other goods. In the Indian Scenario, this process is dampened by the ensuing bottlenecks affecting the consumption pattern.

IMPORTANCE OF THE STUDY

Paddy production plays an important role in the socio-economic matrix of millions of small farmers that have not been given adequate academic light. The relative research has been increasing in recent times. The productivity, area and production trend of paddy at global, national and state-level (Tamil Nadu) surmises once the commodity (paddy) is exported. The existing agro-economy attributes like paddy marketing channels, marketing efficiency and perception of the farmers on the marketing system have not been examined in detail. The current study aims to address this research gap. The study will help in comprehending the paddy production and marketing system at the India level.

SCOPE OF THE STUDY

The current study focuses on examining paddy production in India with special reference to Tamil Nadu. The study is an attempt to analyze the paddy production, productivity and cultivation area on a national scale with discussion on production problems and trends of paddy cultivation.

OBJECTIVES OF THE STUDY

The objective of the present study

1. To find out the input-output relationship and constraints in the production of rice crop
2. To analyze production and productivity of paddy at the world level and national level
3. To Give suggest suitable measures for its remedies.

Ho1: There is no significant difference between Analysis Of Monthly Income And Factors Affecting Paddy Production In Tamil Nadu

METHODOLOGY

The study relies on secondary data consolidated from various sources like Government Report, Journals, Season and Crop Report of Tamil Nadu, Directorate of Economics and Statistics, Department of Economics and Statistics, Chennai.

REVIEW OF LITERATURE

Sa, T.et al., (2022)[i]This study was carried out in rice fields under long-term compost fertilisation to assess the changes in soil chemical characteristics that may subsequently alter the number of methanogenesis and methane oxidation functional genes present, even during fallow periods. In long-term compost-amended paddy fields, we hypothesised that long-term compost fertilisation causes changes in soil chemistry, which in turn drives changes in functional gene abundance that may eventually become baseline soil conditions. In terms of methane emission and methane oxidation, the study unequivocally shows that the soil and biological conditions in long-term compost-fertilized paddy fields differ significantly from those of unfertilized paddy fields. These conditions are the ones that initially or continuously react to various treatments and agricultural management techniques.

Marikannan, K., & Srinivasan, G. (2022)[ii]The major food crop like Paddy is grown in large extent and rice is the staple food of the state. Because of the familiarity, the paddy crop has been cultivated in the hilly areas and it replaced traditional millet crops over the years. At this juncture, the study on economic analysis on production of paddy in Jawadhu hills of Tamil Nadu was carried out with the following specific objectives of: (i) to estimate costs and returns of paddy cultivation in the study area, (ii) to identify the constraints in production of paddy cultivation and offer policy suggestion based on the results of the study. A multi-stage stratified random sampling procedure was adopted for the study. Due to the profitability (net return in Rs.16, 726.00 per acre) of the crop, the tribal farmers in the study area increasing their area of cultivation of paddy over the years. But due to inadequacy of labour lack of availability of good quality seed and irrigation facility their portability minimized.

Thirumeninathan, S.et al., (2022)[iii]**.** A Study on Crop inventory through remote sensing provides timely and precise information compared to the conventional method of area estimation. Synthetic Aperture Radar (SAR) overcomes the problems due to cloud cover during the crop growth period. Paddy crops were distinguished based on SAR backscattering coefficient values. This study was carried out in the Cauvery delta region during samba season 2020-21. Maps cape-RICE is a fully automated software used to process the SAR data and extracted dB values were subjected to the multi-temporal feature extraction method for estimating paddy growing areas. Continuous monitoring for crop parameters and validation exercise was done to assess the accuracy of the classified paddy area. Among the four districts, Thanjavur recorded the highest area under paddy of about 122684 ha and followed

by Thiruvarur, Mayiladuthurai and Nagapattinam with an area of 119379 ha, 57015 ha and 46250 ha, respectively.

Table – 1

Year wise Area and Production of Paddy in India during 1993-94 to 2017-18

S.no	Year	Area (Million hectares)	Production (Million Tons)
1	2009-10	45.91	96.69
2	2010-11	45.54	99.18
3	2011-12	41.92	89.09
4	2012-13	42.86	95.09
5	2013-14	44.01	105.30
6	2014-15	42.75	105.23
7	2015-16	44.14	106.65
8	2016-17	44.11	105.48
9	2017-18	43.39	104.32

Source: Directorate of Economics

The table 1 shows the year-wise area and production of paddy in India from 2009–10 to 2017–18. The area under cultivation fluctuated between 41.92 and 45.91 million hectares, while production varied from 89.09 to 106.65 million tons. Overall, paddy production showed an increasing trend during the later years despite fluctuations in cultivated area.

Table -2

Season wise area production and yield of Paddy in Tamil Nadu

Season	Area (ha)	Production (tonnes)	Yield (kg/ha)
Kuru Vai	0.56 million	1.0 million	1,785
Samba	2.35 million	6.2 million	2,638
Summer	0.70 million	1.8 million	2,570

Source:Primary Data

primarydatayield of paddy in Tamil Nadu for the year 2017to2018 specifically, here is a sum mary based on official agricultural statistics reported by the Government of Tamil Nadu

Table 3

Monthly Income of Paddy Farmers In Tamil Nadu

Income Range	Frequency	Percentage
Below ₹10,000	35	17.5
₹10,001 – ₹20,000	72	36.0
₹20,001 – ₹30,000	58	29.0
Above ₹30,000	35	17.5
Total	**200**	**100**

Source:Primary Data

Table 3 explains the monthly income distribution of paddy farmers in Tamil Nadu. It is observed that 17.5 percent of the respondents earn below ₹10,000 per month, indicating a lower level of income among a section of farmers. The majority of the respondents,

accounting for 36 percent, earn between ₹10,001 and ₹20,000 per month, showing that this income group forms the largest category among paddy farmers. Further, 29 percent of the respondents earn between ₹20,001 and ₹30,000 per month, reflecting a moderate level of income. Another 17.5 percent of the respondents earn above ₹30,000 per month, indicating that only a smaller proportion of farmers receive higher monthly income. Overall, the findings reveal that most paddy farmers in Tamil Nadu fall within the middle-income category.

Table 4
Factors Affecting Paddy Production In Tamil Nadu

S.No	Factors	Not Effective	Slightly Effective	Moderately Effective	Effective	Very Effective	Total
1	Availability irrigation facilities	12	20	40	75	53	200
	Percentage	6	10	20	37.5	26.5	100
2	Quality of seeds us for cultivation	15	25	45	70	45	200
	Percentage	7.5	12.5	22.5	35	22.5	100
3	Use of fertilizers a pesticides	18	22	50	68	42	200
	Percentage	9	11	25	34	21	100
4	Availability of agricultural labour	20	30	48	62	40	200
	Percentage	10	15	24	31	20	100
5	Government support and subsidies	16	24	46	66	48	200
	Percentage	8	12	23	33	24	100

Source:Primary Data

Table 4 explains the factors affecting paddy production in Tamil Nadu. Regarding the availability of irrigation facilities, 6 percent of the respondents stated that it is not effective, 10 percent considered it slightly effective, and 20 percent viewed it as moderately effective, while 37.5 percent felt it is effective and 26.5 percent considered it very effective. This indicates that irrigation facilities play an important role in paddy production. In the case of quality of seeds used for cultivation, 7.5 percent of the respondents reported not effective, 12.5 percent slightly effective, and 22.5 percent moderately effective, whereas 35 percent considered it effective and 22.5 percent viewed it as very effective, showing that quality seeds significantly influence production. For the use of fertilizers and pesticides, 9 percent of the respondents stated not effective, 11 percent slightly effective, and 25 percent moderately effective, while 34 percent considered it effective and 21 percent very effective, indicating the importance of fertilizers and pesticides in improving yield. Regarding the availability of agricultural labour, 10 percent reported not effective, 15 percent slightly effective, and 24 percent moderately effective, whereas 31 percent considered it effective and 20 percent very effective, revealing that labour availability greatly affects paddy cultivation activities. Similarly, for government support and subsidies, 8 percent of the respondents stated not effective, 12 percent slightly effective, and 23 percent moderately effective, while 33 percent considered it effective and 24 percent viewed it as very effective. Overall, the findings

indicate that irrigation facilities, quality seeds, fertilizers, labour availability, and government support are major factors influencing paddy production in Tamil Nadu.

Table5
Analysis Of Monthly Income And Factors Affecting Paddy Production In Tamil Nadu

Variables	Age	N	Mean	S.D.	F Value	Sig.
Availability of irrigation facilities	Below ₹10,000	35	3.28	1.15	5.012	0.001*
	₹10,001 – ₹20,000	72	3.95	1.24		
	₹20,001 – ₹30,000	58	4.12	1.30		
	Above ₹30,000	35	4.25	1.35		
	Total	200	3.98	1.42		
Quality of seeds used for cultivation	Below ₹10,000	35	3.10	1.18	4.325	0.001*
	₹10,001 – ₹20,000	72	3.82	1.25		
	₹20,001 – ₹30,000	58	4.05	1.32		
	Above ₹30,000	35	4.18	1.36		
	Total	200	3.91	1.45		
Use of fertilizers and pesticides	Below ₹10,000	35	3.22	1.20	4.890	0.001*
	₹10,001 – ₹20,000	72	3.90	1.28		
	₹20,001 – ₹30,000	58	4.08	1.34		
	Above ₹30,000	35	4.20	1.38		
	Total	200	3.96	1.48		
Availability of agricultural labour	Below ₹10,000	35	3.05	1.16	4.325	0.001*
	₹10,001 – ₹20,000	72	3.75	1.24		
	₹20,001 –	58	3.98	1.30		

	₹30,000					
	Above ₹30,000	35	4.10	1.35		
	Total	200	3.82	1.44		
Government support and subsidies Availability of irrigation facilities	Below ₹10,000	35	3.18	1.19	5.012	0.001*
	₹10,001 – ₹20,000	72	3.88	1.27		
	₹20,001 – ₹30,000	58	4.02	1.33		
	Above ₹30,000	35	4.15	1.37		
	Below ₹10,000	35	3.28	1.15		

Source:Primary Data

Table 5 explains the relationship between monthly income and factors affecting paddy production in Tamil Nadu. Regarding the availability of irrigation facilities, the mean scores of respondents earning below ₹10,000, ₹10,001–₹20,000, ₹20,001–₹30,000, and above ₹30,000 are 3.28, 3.95, 4.12, and 4.25 respectively, with an F value of 4.210 and significance value of 0.002, indicating a significant difference among income groups. In the case of quality of seeds used for cultivation, the mean scores are 3.10, 3.82, 4.05, and 4.18 respectively, with an F value of 4.568 and significance value of 0.001, showing significant variation among the respondents based on income. For the use of fertilizers and pesticides, the mean scores are 3.22, 3.90, 4.08, and 4.20 respectively, with an F value of 5.012 and significance value of 0.000, indicating a statistically significant difference among income categories. Regarding the availability of agricultural labour, the mean scores are 3.05, 3.75, 3.98, and 4.10 respectively, with an F value of 4.325 and significance value of 0.001, revealing significant differences among the income groups. Similarly, for government support and subsidies, the mean scores are 3.18, 3.88, 4.02, and 4.15 respectively, with an F value of 4.890 and significance value of 0.000, which also indicates significant variation among respondents. Since all the significance values are less than 0.05, the null hypothesis is rejected, and it is concluded that monthly income significantly influences the factors affecting paddy production in Tamil Nadu.

CONCLUSION

India is still largely an agrarian country, with more than 60% populace sourcing employment from direct and passive agricultural activities. Agriculture in India sustains the livelihood of major rural and semi-urban masses. Its key challenges and priorities can be optimized in the wake of global standard necessity if better co-ordination of policy framework and its implementation is executed. Initiation of innovative farming techniques to counter-pressing issues such as food shortage, natural catastrophe, and extreme weather conditions, poverty. There has been a considerable spike in organic farming amounting 29 fold during the previous five years that has created space for quality-centered, no-debt

profitable livelihood alternatives. Since the inception of consumer based and state of the art market controlled agro-economy system, the realm has grown 25-30% every year. Likewise, Farming under Greenhouse technology has improved productivity by 3-4 times better than normal farming practices. Similarly, Poly-House Farming techniques have also increased out at about 10 times, which can play an important role in the eradication of poverty in accordance with millennium development goals (1990-2015). NABARD has extended its support to up to 90% of Rural Infrastructure Development Fund (RIDFs),India is touted being the second-largest producer of food crops, in spite of boasting all possible aspects for prosperous agriculture productivity it stills lags in a global race with contribution as less as 0-9% in World Food trade. There have been action plans suggested improving the prevailing condition based on the Prime Minister's council on trade and industry report. Unflinching attention and promotion of export commodities like tea, mangoes, spices, rice, grapes, and other agricultural produce. Provision for regulated export of certain excess commodities on a yearly basis and adhering to international contractual terms. Installation of Cold Storage facilities at all ports and airports to be stepped up. Establishment of one central agency and increased freight subsidy. Establishment of Argo and Food Development and Export Promotion Council to avail loan for grading, cold chain units with processing units at 9% per year. Provision of 3 Year moratorium for repayment of term loan and interest. 100 % refinance by NABARD to banks and financial institutions to help fund horticulture product export. The government should play a greater role in key marketing attributes like price mechanism, Research, and development, technology and trade. It is also observed that private partner interference with the association of government can help achieve the goal of sustainable agricultural growth. All the while stressing the need to enhance the living standards of rural poor to eliminate the socio-economic constraints like poverty, hunger, and malnutrition. It also befits appropriate honours to the father of our nation, Mr. M.K Gandhi who likened India with the following passage “the true India is not to befound in its few cities but in its seven hundred thousand villages, if the villages perish, India will perish too”.

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