PADDY CULTIVATION IN KERALA
A CASE STUDY IN PALAKKAD DISTRICT

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Abstract

Kerala is an agrarian economy. Agriculture is their main occupation and livelihood. Recent studies have reported that, over the last twenty five years, agricultural production has been decreasing at a frightful rate and consequently its contribution to GSDP also decreasing. (The statistical analysis of Kerala agriculture revealed agricultural sector is under performing and its contribution in GSDP is declining.) Rice is the stable food of Kerala. The declining trend in area, production and productivity of rice has been a cause of food shortage and threats to food security in Kerala. Therefore Kerala is depending on neighboring states or countries for food grains. The study examines the trend in acreage, production and productivity of rice in Kerala with special reference to Palakkad and Alapuzha districts (rice bowls) in Kerala. The study clearly established the declining trend in area, production and productivity of rice and revealed the increasing demand for rice in Kerala in the coming years compared to the existing supply. This will widen the supply demand gap of rice in Kerala in the future years indicating declining stability, self-sufficiency and reliance in agriculture bringing out a need for further increase in rice production in a sustainable way. This paper examines the changing trend in area, production, and productivity of rice cultivation over the years and also analyses the factors leading to shifting of rice cultivation. It also attempts to find out various constraints faced by farmers.

Keywords: *Kerala, Paddy cultivation, trend in area, production and productivity, food security.*

Introduction

India is an agriculture based country. Agriculture was a backbone for Indian Economy. Though the share of agriculture in the aggregate economy is declining rapidly, the contribution of Agriculture sector in Indian economy is much higher than world's average (6.1%).March 21, 2017. Food crops cover nearly three-fourths of total cropped area. Rice is the most important food grain crop in India. Rice is a staple food for a large part of the world's human population. India occupies second position in terms of its rice production, accounting for 20% of global rice production. Rice is grown in more than a hundred countries. Among the rice growing countries in the world, India has the largest area under rice crop and ranks second in production next to China.

Rice is the most prominent crop of India as it is the staple food for most of the people of the country. This crop is the backbone of livelihood for millions of rural households and plays vital role in the country's food security. India occupies an important position both in area and production of rice. Demand for rice is expected to further increase in future as population is continuously increasing, so production of rice also needs to be increased. There is a need to further increase rice productivity because land area under rice cultivation is declining.

Agricultural crops in Kerala are broadly divided into two classes, food crops and non-food crops. Present trend reveals that Kerala is being converted to non-food crop area. The main food crop in Kerala is rice. The major change in agriculture in Kerala occurred in the 1970s when production of rice fell due to increased availability of rice all over India and decreased availability

of labour. Profitability of crops fell due to a shortage of farm labour, the high price of land, and the uneconomic size of operational holdings. Consequently, investment in rice production decreased and a major portion of the land shifted to the cultivation of perennial tree crops and plantation crops.

Paddy cultivation is the State's major food crop. Despite these facts, the area and production of paddy continues to decline over the years. **Rice** forms the staple food of the people of **Kerala** and contributes a major share towards its economy. Even though the food habits of the people of Kerala had remarkably changed over the last few decades, rice still continues to be their staple food. Kerala is producing only one fifth of its total requirements of rice and continue as a deficit state. production is determined by various factors involving climate, irrigation facilities, market demand, availability of land, labour and other inputs. Naturally kerala is blessed with abandoned water resources and vegetations. But the Kerala, the green state of India is poor in agriculture production because of many factors especially dominance of service sector, changes in peoples attitude towards agriculture, influence of literacy rate, gulf migration , real estate and higher land value, etc. rice production in Kerala shows a fluctuation over the years. In general sense rice production is declining. The total rice production of 12.8 lakh tones in 1980-81 had come down to 10.86 lakh tones in 1990-91, declined to 5.70 lakh tones by 2003-04 to 5.49 lakh tones in 2015-16, to 4.36 in 2016-17 and 5.21 lakh tones by 2017-18. During 1991-92 to 2017-18, the state witnessed a decrease in the area, production and productivity under paddy cultivation. In general there is an overall decrease of paddy cultivation in Kerala.

The declining trend in area, production and productivity of rice has been a threat to food security. In this dangerous situation the state cannot conserve the resources to future generation. In this context, an analysis of trends of paddy cultivation in Kerala and the factors leading to shifting of rice cultivation **and also the effects on food** security was attempted in this study. Since Palakkad is known as “the granary and the rice bowl of Kerala state” this work is focused on area, production and productivity of rice in Palakkad district in comparison to other major rice cultivating districts in Kerala.

Methodology

The study used secondary data which was collected from various publications of the Government of Kerala like Economic Review, Statistics for Planning and Agricultural Statistics for estimating changing trends in area, production and productivity of paddy for the period from 1991-92 to 2017-18.

Trends in area, production and productivity of Paddy Cultivation in Kerala

Total geographical area of Kerala is 38,863 sq.km. Kerala occupies only 1.2% of the total area of India. A wide variety of crops cultivate in Kerala due to different geographic, weather and soil conditions. Agricultural crops grown in the state are broadly classified as, food crops, garden crops and plantation crops. Food crops include paddy, other cereals and millets, banana and other plantains, tapioca and pulses. Crops like coconut, cashew nut and pepper are treated as garden crops while tea, coffee, cardamom and rubber are regarded as plantation crops.

Paddy is the State's major food crop and it is the part and parcel of our culture. Rice forms the staple food of the people of Kerala. Even though the food habits of the people of Kerala had remarkably changed over the last few decades, rice still continues to be their staple food. Despite these facts, the area and production of paddy continues to decline over the years. The total rice production of 12.8 lakh tones in 1980-81 had come down to 10.86 lakh tones in 1990-91, to 5.70

lakh tones by 2003-04 to 5.49 lakh tones in 2015-16, to 4.36 in 2016-17 and 5.21 lakh tones by 2017-18. During the span of seventeen years from1991-92 to 2017-18, the state witnessed a decrease in the area, production and productivity under paddy cultivation. In general there is an overall decrease of paddy cultivation in Kerala.

Rice is cultivated in the State in three seasons; autumn, winter and summer. Autumn season is from July 1st to 31st Oct, winter season from 1st Nov to 28th Feb and summer from 1st March to 30th June. The area under rice cultivation increased substantially from 760000 hectares in 1955–56 to 880000 hectares in 1970–71.It shows a decreasing trend from 1991-92 to 2017-18. Out of total 38.86 lakh ha geographical area of Kerala the paddy area during the year 1991-92 was 5.41 lakhs hectares and decreased from 3.22in 2001-02 to 2.13 lakhs hectares in 2010-11. Thereafter the area under rice declined regularly and reached to 196870 hectares in 2015-16 and to 171398 by 2016-17. (Economic Review 2017).

Kerala is producing only one fifth of its total requirements of rice and continue as a deficit state. production is determined by various factors involving climate, irrigation facilities, market demand, availability of land, labour and other inputs. Naturally kerala is blessed with abandoned water resources and vegetations. But the Kerala, the green state of India is poor in agriculture production because of many factors especially dominance of service sector, changes in peoples attitude towards agriculture, influence of literacy rate, gulf migration , real estate and higher land value, etc. rice production in Kerala shows a fluctuation over the years. In general sense rice production is declining. Production of rice during 2004-05 was 6.67 lakh tonnes, reduced to 5.28 during 2007-08. This trend was continued till 2010-11. During 2011-12, rice production was increased unexpectedly, but then declined during 2012-13. Since 2012-13, rice production has been increased. It was 5.49 lakh tonnes in 2015-16, but reduced to 4.36 during 2016-17 and then it was 5.21 lakh tonnes in 2017-18.

However, the yield or productivity of rice per hectare increased from 1959 kg/hectare in 1991-92 to 2182 kg/hectare in 2001-02. It was 2425 kg/hectare in 2010-11 and reached to 2547 kg/hectare in 2016-17 and to 2757 kg/hectare in 2017-18. It is interesting to note that rice productivity in the state is increasing over the years. . Increase in productivity of rice during the last few years due to advancement of modern technologies, high yield seeds, and also the assistance and programmes on the part of government at various levels has helped to enhance the growth in agriculture sector. Rice productivity in Kerala is fluctuating significantly from region to region. Table 1& 2 depicts the trend in area, production and productivity of rice in Kerala.

Table 1: Area, production and productivity of rice in Kerala from 1960-61 to 1991-92.

Sl. No	Year	Area (Lakh ha)	Production (lakh tones)	Productivity Kg/hectare
1	1960-6 1	7.78	10.68	1371
2	1965-66	8.02	9.97	1243
3	1970-7 1	8.74	12.92	1483
4	1974-75	8.81	13.33	1513
5	1975-76	8.76	13.31	1520
6	1980-8 1	8.01	12.72	1587
7	1984-85	7.30	12.56	1720
8	1985-86	6.78	11.73	1729
9	1989-90	5.83	11.41	1956
10	1990-9 1	5.59	10.87	1943

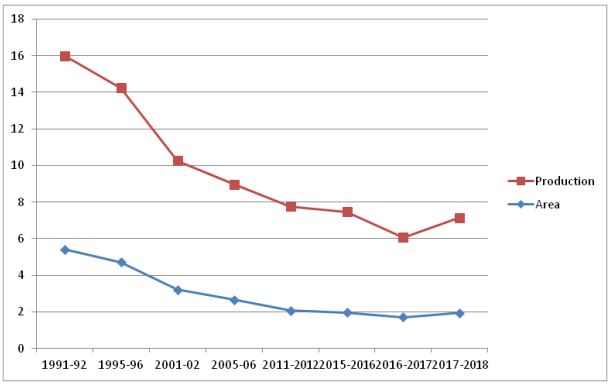
Source: *Basic Statistics on Kerala Economy.*

Table 2: Area, production and productivity of rice in Kerala from 1992 to 2017-18

Sl. No	Year	Area (LakhHectare)	Production (Tonnes)	Productivity (Kg/Ha)
1	1991-92	5.41	10.60	1959
2	1992-93	5.38	10.85	2018
3	1993-94	5.08	10.04	1977
4	1994-95	5.03	9.75	1937
5	1995-96	4.71	9.53	2023
6	1996-97	4.31	8.71	2023
7	1997-98	3.87	7.65	1975
8	1998-99	3.53	7.27	2061
9	1999-00	3.50	7.71	2203
10	2000-01	3.47.	7.51	2162
11	2001-02	3.22	7.04	2182
12	2002-03	3.11	6.89	2218
13	2003-04	2.87	5.70	1984
14	2004-05	2.90	6.67	2301
15	2005-06	2.67	6.30	2285
16	2006-07	2.65	6.42	2435
17	2007-08	2.29	5.28	2308
18	2008-09	2.34	5.90	2520
19	2009-2010	2.34	5.98	2557
20	2010-2011	2.13	5.23	2452
21	2011-2012	2.08	5.69	2733
22	2012-2013	1.97	5.08	2577
23	2013-2014	1.99	5.64	2719
24	2014-2015	1.98	5.62	2837
25	2015-2016	1.97	5.49	2790
26	2016-2017	1.71	4.36	2547
27	2017-2018	1.94	5.21	2,757

The area under paddy cultivation in the state is decreasing regularly. Paddy sown area in Kerala recorded its maximum value in 1974-75 with 8.81lakh hectares and its least value in the history of the State was in 2016-17 and is 1.71 lakh hectares. The production of paddy cultivation also shows a declining trend. Rice production in Kerala is decreasing in accordance with the decreasing area of paddy. It was 8.87 lakh tonnes in 1956–57 and 4.36 tonnes in 2016–17. But it raised to 5.21 tonnes in 2017-18.The productivity of rice recorded its peak value in 2014-15 with 2837 kilogram per hectare and its least value was in 1955-56 with 1144 kilogram per hectare. The following trend chart depicts the trend in paddy area, production and productivity in Kerala since from the agricultural year 1991-92 to 2017-18.

Chart 1: Trends in area and production under paddy in Kerala



Paddy cultivation has been reducing year by year even after the Govt have been providing a lot of financial and marketing assistance to paddy farmers through various schemes and programmes. Even though rice is the main food grain of Malayalees, due to high cost of production, attitudinal change, wetland conversion for dwelling and other construction purposes and fast urbanisation, the paddy area and rice production in the State show a decreasing trend. Thus the dependency on other States for this food grain is increasing.

Trend in paddy cultivation in Palakkad District

Palakkad and Alappuzha are known as the rice bowls of Kerala. Palakkad is the chief rice-producing district followed by alapuzha and thrissur. It reflects the general trend in Kerala's rice sector. Hence this paper attempts to study the trends in paddy cultivation in Palakkad district of Kerala in comparison to other major rice cultivating districts;Alapuzha, Thrissur,and Ernakulam , experiencing declining trend in area, production and productivity of rice.

Palakkad district is known as "the granary of Kerala state" .Agriculture is the dominant economic activity and supports nearly 76% of the rural population of the district. Palakkad is one of the backward districts in Kerala state. Agriculture is the dominant activity of Palakkad district. Variety food and non food crops are cultivated in the district. The cropping pattern in Palakkad is food crops oriented. The major crops cultivated in the district include paddy, coconut, rubber, vegetables, fruits and spices. These crops occupy more than 95% of the total cropped area. Other crops such as tuber, fodder, sugarcane, areca nut, groundnut, pulses, cotton etc shares the remaining 5% of the area. Paddy is the major crop and occupies 31% of the total cropped area of the district. It is cultivated largely in mid low land plain areas of the district. Coconut is the second rank crop next to paddy and occupies 21% of the cropping area. Rubber is the third ranking crop of the district. There has been a decrease in the area under food crops and increase in the area under non-food crops.

An analysis of area, production and productivity of paddy in Palakkad District is made by comparing it with other major paddy producing districts of the State, viz., Alappuzha, Ernakulam and Thrissur. The area under paddy in Palakkad District showed a gradual decline from 185182 hectares in 1975-76 to 107467 in 1999-2000 and from 2000 onwards it showed a positive change. This trend was continued till 2008-09 (34143Ha), but then declined to 32060 Ha in 2010-11.It showed an increase from 36251 Ha during 2011-12 to 37403 in 2013-14 and experienced a decline from 2014 onwards. Area under rice has fallen in all the districts of the State in the period 1991-92 to 2016-17. However, the decline has been sharpest for Ernakulam (93%). By analyzing district wise data; Palakkad is the leading producer of rice in kerala followed by Thrissur and Alappuzha.

The least producing districts are Idukki, Kollam and Kozhikode. Palakkad keep its dominance in rice production since the formation of kerala state. Palakkad has produced 266634 tonnes of rice during 2005-06 and then shows a decline in quantity produced. During 2016-17 the production of rice is very low on comparing with the last five years series of data. Drought has intensively affected in the year 2016-17, mainly in Palakkad district. Rice productivity in the state is increasing over the years. During 2005-06, productivity of rice was 2285 Kg/Ha, increased to **2,757** in 2017-18. The rice productivity in palakkad district is increasing; it was 2341 Kg/Ha in 2005-06 and reached to 2872 Kg/Ha in 2013-14 and to 2728 in 2016-17.District wise area under rice cultivation from 2005-06 to 2016-17 is shown in table 3.

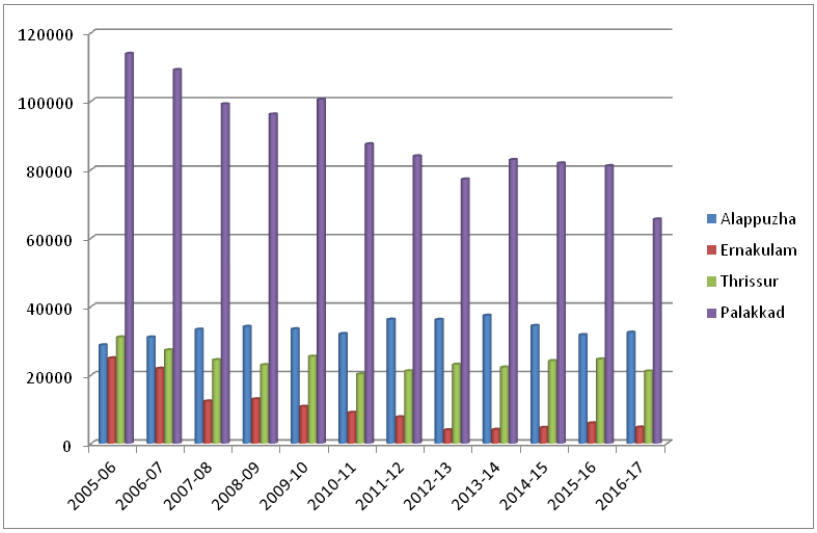
Table 3 Area, Production and productivity under Paddy (2005-06 to 2016-17)

Year		Alappuzha	Ernakulam	Thrissur	Palakkad
2005-06	Area (Ha) Production (Tonnes) Productivity (Ha)	28768 71748 2294	24934 48033 1926	31074 72951 2348	113919 266634 2341
2006-07	Area Production Productivity	31060 90160 2903	21895 44007 2010	27311 65036 2381	109208 220103 2473
2007-08	Area Production Productivity	33335 62270 1868	12343 24407 1977	24422 59381 2431	99173 244244 2463
2008-09	Area Production Productivity	34143 104280 3054	12966 25907 1998	22958 71909 2575	96190 240143 2497
2009-10	Area Production Productivity	33440 97976 2930	10787 21024 1949	25439 63854 2510	100522 266231 2648
2010-11	Area Production Productivity	32060 91325 2464	9016 17823 1977	20259 53079 2620	87511 218155 2493
2011-12	Area Production Productivity	11- 111979 3089	7731 16573 2144	21172 62318 2943	83,998 224410 2672
2012-13	Area Production Productivity	36195 104593 2890	3940 8533 2166	23098 67569 2925	77201 189229 2389
2013-14	Area Production Productivity	37403 106866 2857	4052 9056 2235	22274 66653 2992	82896 238065 2872
2014-15	Area Production Productivity	34415 103095 2996	4644 9974 2148	24151 76016 3148	81912 236398 2851
2015-16	Area Production Productivity	31724 89335 2816	5950 12652 2126	24625 78886 3203	81120 228459 2816
2016-17	Area Production Productivity	32,453 102439	4730 10695	21,100 57478	65513 144275 2728

Source: Various issues of Economic Review

The area and production of rice increased during the initial years after the formation of the State. A study revealed for all districts and for all-Kerala, the area and production of rice has declined in past three decades which has continued up to 2016–17. From 1956–57 to 2016–17, Palakkad remained the composite district with the highest extent of area under rice cultivation and the highest level of production. But even in Palakkad, there have been a decline in area under cultivation and in production of rice. During 2016-17 the production of rice is very low on comparing with last five years series of data. Drought has intensively affected in the year 2016-17, mainly in Palakkad district. Today, the production of rice is concentrated in Palakkad and Alappuzha districts, which accounted for 34 per cent and 24 per cent, respectively, of total rice production in Kerala in 2016–17.

Chart 2: Area under paddy cultivation in Palakkad and other major districts



The paddy area in Palakkad District showed a gradual decline. Another notable feature is the sharp decline in other three districts, viz., Alappuzha, Trichur and Ernakulam. The analysis of area under paddy in the four rice producing districts of Alappuzha, Ernakulam, Palakkad and Trissur shows the significance and dominance of Palakkad District over other three. Out of the total production of paddy in the State, one third is contributed by Palakkad District alone and it is called the granary of Kerala State.

Conclusion

Paddy cultivation has been reducing year by year even after the Government has been providing a lot of financial and marketing assistance to paddy farmers through various schemes and programmes. Even though rice is the main food grain of Malaya lees, due to high cost of production, attitudinal change, dominance of service sector, gulf migration, variations in the climatic conditions, soil fertility, irrigation facilities, labour availability, wetland conversion for dwelling and other construction purposes, and fast urbanization, the paddy area and rice production in the State show a decreasing trend. The change has taken place largely in favour of non-food crops and recently it is towards rubber. Any decline of the area under rice will therefore weaken the agriculture sector. Thus, the dependency on other States for this food grain is increasing.

Food security, especially rice security is the serious problem for Kerala today. The study clearly revealed the increasing demand for rice in Kerala in the coming years compared to the existing supply. This will widen the supply demand gap of rice in Kerala in the future years pointing a threat to food security and arising a need for sustainable increase in rice production during 1960-61, the shortage of rice was only 40.12 percent of the total demand increased to 83.45 percent in 2009-10. In the coming years, the total demand for rice will again increase and it is estimated that in 2026 AD it will cover 10600 thousand tonnes in Kerala. So there is a need to increase rice production through increase in yield. It can be increased by proper planning of cultivation at the village level, avoid the shortage of inputs, develop and disseminate less costly inputs and its effective use, and appropriate small farm techniques, provide low interest loans with insurance coverage to the farmers, promote mechanization and water management technique depending on the case. The revenue authorities should be implementing new laws and strictly executed various existing laws relating to land use pattern.

References

1. H. Athira and N. Kishore Kumar - Scenario Analysis of Rice Cultivation in Kerala, Journal of Extension Education, Vol. 28 No. 4, 2016, DOI:https://doi.org/10.26725/JEE.2016.4.28. 5760-5763
2. Rajalakshmy. P. "Shifting of paddy cultivation in Palakkad district – An economic analysis" Thesis. Department of Economics, Dr. John Mathai Centre, Thrissur, University of Calicut, 2006
3. Jayan Jose Thomas- Paddy Cultivation in Kerala, ArchiveVol. 1, No. 2 ,July-December, 2011
4. Area, Production and Productivity Trend of Important Crops in Kerala (from 1985-86 to 2004-05) Department of Economics & Statistics Thiruvananthapuram.16. Pillai, P.P., 1982. Agricultural development in Kerala, New Delhi.
5. Ms. Sheeba Abraham, Impact of Paddy Land Conversion in Kerala
6. N Karunakaran - Paddy Cultivation in Kerala – Trends, Determinants and Effects on Food Security. Artha *J Soc Sci,* 13, 4 (2014), 21-35 ISSN 0975-329X|doi.org/10.12724/ajss.31.2
7. Maneesh P, and Deepa N.R - Trend Analysis of Area, Production and Productivity of Rice in Kerala in the Context of Food Security, International Journal of Agricultural Research and Review: ISSN-2360-7971, Vol. 4(8): pp 538-546, November, 2016.
8. Copyright © 2016 Spring Journals.
9. Premakumar K, Anandan. R, Nagarathinam S.R -A study on crop combination regions in Palakkad district, Kerala International Journal ofGeomatics and Geosciences, Volume 6, No 2, 2015.
10. *KVK Palakkad, Kerala* Agricultural Statistics, Departmentof Economics & Statistics,Thiruvananthapuram.(various periods)
11. Agricultural Statistics (from 2011-2012, to 2016-17) Department of Economics and Statistics, Kerala.
12. Economic Review (2011 and succeeding years), State Planning Board, Thiruvananthapuram.
13. Government of India (2010 & succeeding periods
14. P.M.Thomas "Decline of paddy cultivation in Kerala a study of economic causes" Thesis. Department of Economics, Dr. John Matthai Centre, Universityof Calicut, 1996
15. Shiji.O - Shrinking Rice Cultivation In Kerala, Imperial Journal of Interdisciplinary Research (IJIR) Vol-2, Issue-2, 2016 ISSN : 2454-1362, http://www.onlinejournal.in