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Area, Production and Productivity Trends of HYV Seeds in Palakkad District, Kerala from 2010-2020

[*1]Dr. Sumathy.M, [2]Dr. Manju Varghese and [3]Dr. Smitha P

[1,2,3]Assistant Professors, Department of Economics, Government College Chittur, Palakkad, Kerala

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[*]Corresponding Author
Email: *sumathyrevathy[at]gmail.com*

ABSTRACT

Palakkad district of Kerala is termed as "the rice bowl of Kerala" is famous for paddy cultivation. Most of the people depend on agriculture for their livelihood. The paddy farmers are more vulnerable because of climate variability. Therefore the paddy also more sensitive to these climatic variables. By using secondary sources area, production and productivity growth rate and trend of paddy during autumn was calculated from 2010 - 2020. The result of the study finds that the growth rate of area and production is more in irrigated land but the productivity is higher in unirrigated land in recent years. The t-test also significant in area and production which indicates that there was a significant mean difference among these variables during autumn in Palakkad district.

1. Introduction

Palakkad is named as the "rice granary" of Kerala, has about 83,000 ha under paddy cultivation, accounting for 40 per cent of the state's total paddy area. The district, along with Kuttanad region in Alappuzha and the coastal areas of Thrissur district, is the main rice producing region. Palakkad has 12 dams constructed exclusively for irrigating paddy fields. The average yield in the district is 4-5 tonnes per ha, higher than the state average of 2.7 tonnes. But rice in Palakkad faces stiff competition from crops like banana, ginger, rubber, coconut and mango.

Land utilisation pattern of the Palakkad district

The land utilisation pattern of the district in 2018-19 depicted that, out of the total gross cropped area of 272195 hec. , the net area under cultivation is 206135 hec. . The detailed explanation is given in below table 1.1.

Table 1.1. Land Utilization of Palakkad in 2018-19

Category	Area (in Hectares)
Gross cropped area	272195
Net cropped area	206139
Cropping intensity	132
Land put to non agricultural uses	48460
Current Fallow (up to 1 yr)	8838
Other fallow land (1 to 5 yrs)	10918
Cultivable waste	19200

Source; Department of Economics and Statistics, Govt of Kerala

2. Significance of the study

Among the states of India, Kerala has been a consumer state. Rice is the staple food for the people in the state .In order to meet the food requirements; the state depends on neighboring states like Andra Pradesh and Tamil Nadu. The land pattern in the state as well as in the district is tropical in nature. Paddy is cultivated both in irrigated and unirrigated area. The production has been affected severely in the context of climate variability in the district which creates serious food insecurity problem. The study is an attempt to find out the trends of area, production and productivity of paddy during autumn.

3. Objectives

1. To examine the growth rate of area ,production and productivity of irrigated and unirrigated paddy land in Palakkad district Kerala during autumn from 2010 to 2020
2. Determine the area , production and productivity trends of paddy in both irrigated and unirrigated land in Palakkad during autumn from 2010 to 2020
3. Compare the mean values of area , production and productivity among irrigated and unirrigated paddy land during autumn from 2010 to 2020

4. Methodology and Materials

The study is based on secondary data regarding paddy crop published by the Department of Economics and Statistics, Govt. of Kerala from 2010 to 2020. Area of paddy cultivation

and its production and productivity for the selected years were collected and by using suitable statistical tools such as compound growth rate, trend analysis and t-test, the objectives has to be analysed.

5. Analysis of the study

Table 2.2. Area, Production and Productivity among the irrigated and unirrigated paddy during Autumn

	Irrigated			Unirrigated		
Years	Area(in hec.)	Production(in tonnes)	Productivity (kg/hec.)	Area(in hec.)	Production(in tonnes)	Productivity (kg/hec.)
2019-20	3245	8587	2646.225	32456.8	73456.89	2453.65
2018-19	3164.9	8705.813	2750.35	31885.5	72918.77	2286.89
2017-18	3756.11	9569.252	2547.65	32097.01	82464.57	2569.229
2016-17	4666	13975		30694	88480	2882.648
2015-16	4359.43	11347.01	2603	31772.3	83630.32	2629
2014-15	4032.49	10834.87	2687	32977.65	83770.39	2540
2013-14	2708	8229	3038.774	32411	88147	2719.663
2012-13	2658	5264	1980.436	2	5	2500
2011-12	3785.18	8709.621	2472	33633.48	83143.89	2455
2011-2010	34624	88655	2560.507	5875	13124	2233.872

Source : Directorate of Economics and Statistics , Govt. of Kerala

The data in the table 2.2 showed mixed trend of area, production and productivity from 2010 to 2020 among the irrigated and unirrigated paddy land during autumn. By using this data, compound growth rate and trend of area, production and productivity of these selected variables were calculated. In addition, the significance of mean values of area, production and productivity also calculated by using t-test.

Growth rates of area, production and productivity of irrigated and unirrigated paddy land

Compound growth rates are calculated to find the area, production and productivity of irrigated and unirrigated paddy land from 2010 to 2020. The detailed explanation is given in the table 1.3

Table 1.3 Showing the Compound growth rates of Area , Production and Productivity of irrigated and unirrigated paddy land from 2010 to 2020

Years	Irrigated			Unirrigated		
	area	Production	Productivity	area	Production	Productivity
2010-2015 (phase 1)	-90.21	-89.70	-99.48	-101.03	-95.41	-109.12
2015-2020 (phase 2)	-53.65	-57.39	-103.03	-134.13	-137.66	-103.59

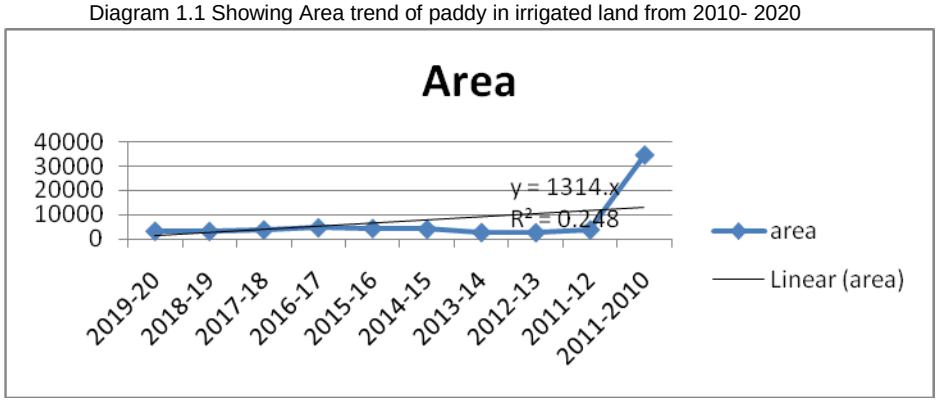
Source:computed

From the table 1.3, it was clear that the compound growth rates of area, production and productivity were showed negative rates. During 1980-81 to 1989-90, districts like Trivandrum, Pathanamthitta, Alappuzha, Kottayam, Ernakulam, Thrissur, Palakkad, Malappuram and Wayanad districts are having declining growth rate in area less than the state average.(M. P. Abraham 2019). When compared 2010 -2015 to 2015-2020, the area and production of paddy were more in phase 2 compared to phase 1 in irrigated land. Productivity is more in phase 1 than compared to phase 2. But reverse is the case of unirrigated land. Area and production were more in phase 1 than compared to phase but the productivity is more in phase 2 than 1.

Area, production and productivity trends of paddy among irrigated land from 2010-2020

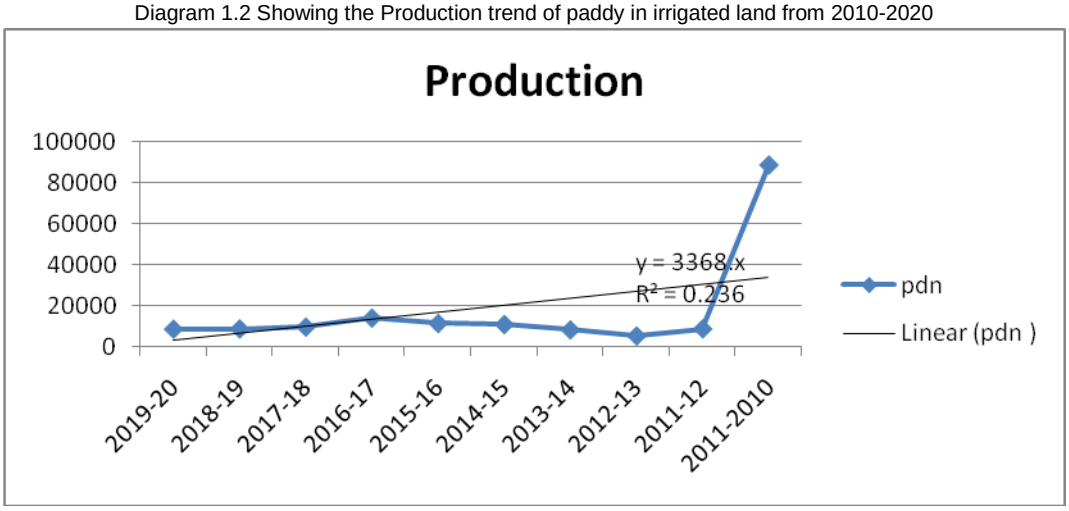
Area showed a declining trend from 2010-2020. It decreases at the rate of 1314 hectors over autumn. For the past 10 years, the paddy area decreases 13140 hectors in irrigated land.

Diagram 1.1 Showing Area trend of paddy in irrigated land from 2010- 2020



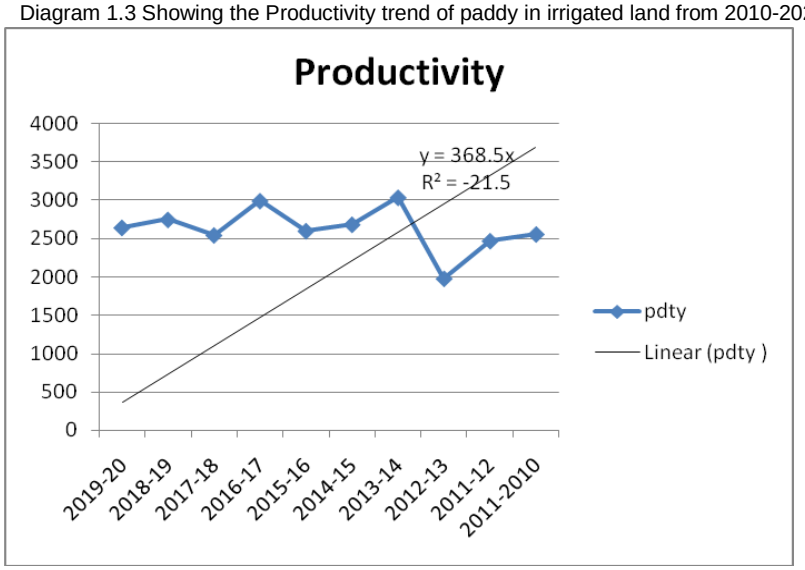
Production also showed a declining trend from 2010-2020. It decreases at the rate of 3368 tonnes over autumn. For the past 10 years, the paddy area decreases 33680 tonnes in irrigated land.

Diagram 1.2 Showing the Production trend of paddy in irrigated land from 2010-2020



Productivity showed a mixed trend from 2010-2020. It decrease at the early phase then tend to increase in the last stage . it increases at the rate of 368.5 kg/hec. In autumn and over 10 years it increases at the rate of 3685 kg/hec among irrigated land

Diagram 1.3 Showing the Productivity trend of paddy in irrigated land from 2010-2020



Area, production and productivity trends of paddy in unirrigated land from 2010-2020

Area of paddy cultivation increases among the unirrigated area continuously over the years. It increases at the rate of 3496 hec. in autumn season and over 10 years increases 34960 hec. among unirrigated area.

Diagram 1.4 Showing the Area trend of paddy among unirrigated land from 2010-2020

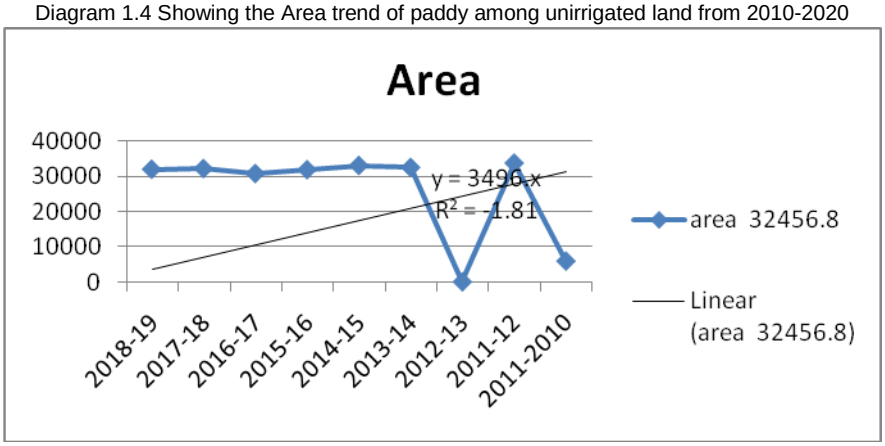
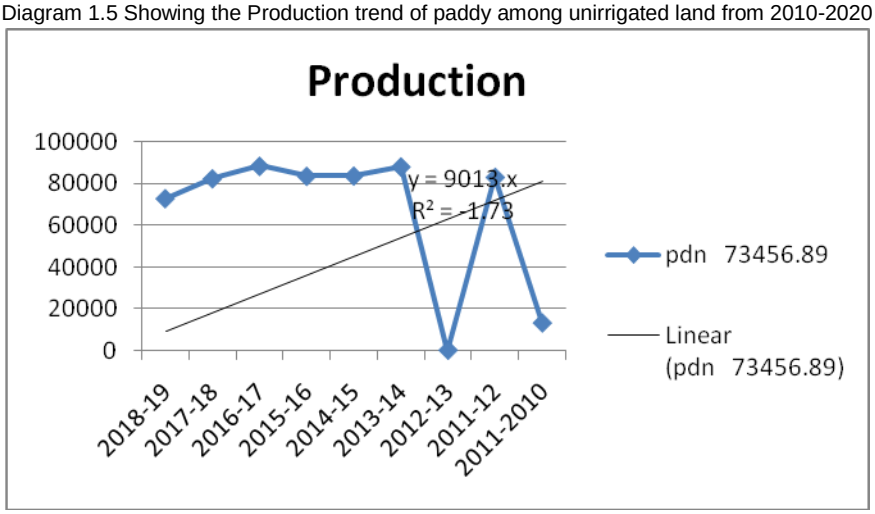
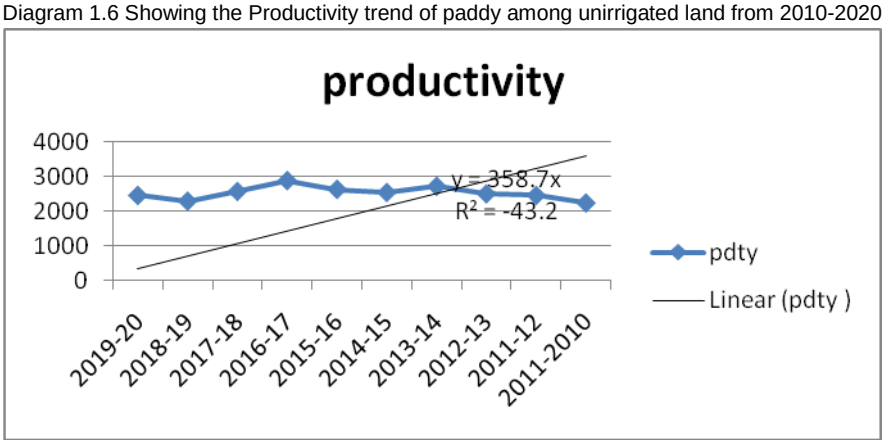


Diagram 1.5 Showing the Production trend of paddy among unirrigated land from 2010-2020



Production of paddy cultivation also increases at the rate of 9013 tonnes in autumn among the unirrigated area. It increases at the rate of 90130 tonnes over ten years in autumn among unirrigated area.

Diagram 1.6 Showing the Productivity trend of paddy among unirrigated land from 2010-2020



Productivity also increases among the unirrigated land during autumn. Productivity increases at the rate of 359 kg/hec. in a season and over 10 years increases at 3587 kg/hec .

To know the mean significance of area , production and productivity of paddy t-test also calculated. The result of the analysis was given in the table 1.4 and 1.5

Table 1.4 Showing the mean and std. Deviation of area , production and productivity of irrigated and unirrigated land from 2010-2020

	Nature of land	N	Mean	Std. Deviation	Std.Error Mean
AREA	Irrigated	10	6.69	9833.91	3109.75
	Unirrigated	10	2.64	12456.01	3938.94
PRODUCTION	Irrigated	10	1.74	25144.55	7951.40
	Unirrigated	10	6.69	32375.88	10238.15
PRODUCTIVITY	Irrigated	10	2.63	293.933	92.95
	Unirrigated	10	2.53	191.73	60.63

Table 1.5 showing the Independent Samples Test among irrigated and unirrigated paddy land from 2010-2020

		t-test for Equality of Means						
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
AREA	Equal variances assumed	-3.922	18	.001	-19680.48	5018.54	-30224.05	-9136.91
Production	Equal variances assumed	-3.821	18	.001	-49526.41	12963.20	-76761.09	-22291.74
Productivity	Equal variances assumed	.911	18	.374	101.11	110.98	-132.04	334.26

From the table 1.5 it was clear that a significant mean difference in the area and production of paddy among irrigated and unirrigated land. Area of cultivation in irrigated is more than unirriagted because the mean value is higher. In case of production unirrigated land produce more than irrigated during Autum . No significant difference in the productivity of irrigated and unirrigated land

6. Findings of the study

When compared 2010 -2015 to 2015-2020, the area and production of paddy were more in phase 2 compared to phase 1 in irrigated land. Productivity is more in phase 1 than compared to phase 2. But reverse is the case of unirrigated land. Area showed a declining trend from 2010-2020. For the past 10 years, the paddy area decreases 13140 hectors in irrigated land

Production also showed a declining trend from 2010-2020. For the past 10 years, the paddy area decreases 33680 tonnes in irrigated land. Productivity showed a mixed trend from 2010-2020. In autumn and over 10 years it increases at the rate of 3685 kg/hec among irrigated land

Area of paddy cultivation increases among the unirrigated area continuously over the years. In autumn season and over 10 years increases 34960 hec. among unirrigated area. Production of paddy cultivation also increases . It increases at the rate of 90130 tonnes over ten years in autumn among unirrigated area. Productivity also increases among the unirrigated land during autumn, over 10 years increases at 3587 kg/hec .

It has been find that a significant mean difference in the area and production of paddy among irrigated and unirrigated land. Area of cultivation in irrigated is more than unirriagted because the mean value is higher. In case of production unirrigated land produces more than irrigated during autumn. No significant difference in the productivity of irrigated and unirrigated land

7. Conclusion

"With the growing pressure of population and development of the secondary and tertiary sectors, agricultural land throughout the state is being converted for the construction of residential buildings, commercial establishments, roads, health and educational institutions etc., which in turn reduces the net area sown in the state" (Thomas, 2004). The declining profitability from paddy crop, shortage of farm labourers and the rapid increase in their wages, conversion of paddy lands for other purposes etc. are the major reasons for the decline in paddy cultivation in Kerala.

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Health Impact of Solid Waste Management on Sanitary Workers: with Special Reference to Palakkad Municipality

Dr. Baby K

Associate Professor Economics

Govt College Chittur, Palakkad, Kerala 678104

Introduction

The major environmental problem that pose serious threat today includes solid waste disposal, waste water management, corrosion, fouling, deforestation, pollution due to xenobiotic, heavy metals, toxic chemicals, industrial emission, automobile emission, oil spills, faucal coli forms, viruses and other contagious micro organisms. These problems deny a clean and healthy environment for living. Rapid industrialization, population growth and urbanization, sophistication in life style and unlimited use of synthetic chemicals are of specific concerns among others in contributing to overall environmental problems. We are at a critical juncture, compelled to devise and adopt suitable remedial measures to solve these issues for having a healthy environment through a total sanitation drive related to solid waste management, liquid waste management, safe disposal of human excreta, and provision of safe drinking water, personal hygiene, home sanitation and community sanitation In earlier days waste did not create many problems to the community as the quantity of waste generated was within the assimilative capacity of nature. Today the scenario is quite different and the urban environment all over the world posses serious threat that from excessive generation on solid waste.. A major chunk of solid waste generated in cities and townships remain unattended, causing health hazards or nuisance to the inhabitants. Sanitation workers provide an essential public service but often at the cost of their dignity, safety, health, and living conditions. They are some of the most vulnerable workers. They are far too often invisible, unquantified, and ostracized, and many of the challenges they face stem from this fundamental lack of acknowledgment. Sanitation workers are exposed to serious occupational and environmental health hazards risking illness, injury, and death. (World Bank Report 2019)

Health Impact of Solid Waste Management on Sanitary Workers

This paper made an attempt to present an overview of the health and the environmental problems due to the generation of solid wastes and handling on sanitary workers on the event of Covid 19 in Palakkad municipality. This study attempted to analyse the impact of solid waste on the health of sanitary workers, and the socio-economic, health and environmental problems that arise at the waste disposal activities in the study area.