COMPARATIVE STUDY ON RAINFALL AND AGRICULTURAL PRODUCTION FOR FOOD GRAINS AND NON-FOOD GRAINS IN TAMIL NADU

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Abstract: The atmosphere is one of the principal determinants of horticultural creation. All through the earth, there is critical worry about the impacts of environmental change and its fluctuation on farming generation. Relapse results for models proposed in this investigation demonstrate that for more than half of the sustenance grain crops, Non-nourishment grain crops in amount created for each of soil and as far as the estimation of generation atmosphere variety cause a negative effect. The unfriendly issue of ecological reform on the estimation of rural generation and sustenance grains demonstrates nourishment security danger to little and negligible cultivating family units. In this investigation result for relapse examination, most impacting by the precipitation variable is Rice, beats, nourishment grains, oilseeds, cotton, sugarcane, and coarse oats are not affecting the precipitation in light of its warm season to developing yields design.

Keywords: Agricultural productivity, Agricultural productions, Rainfall.

INTRODUCTION

Environmental change has developed as an important contributing factor, especially in the ongoing past. In India, before financial changes government was giving a ton of sponsorships over the information sources that made the buy of data sources reasonable for the rancher which helps in battling against the environmental change. In any case, after the monetary changes skyscraper in the costs of contributions of agrarian generation has made it troublesome for the ranchers to buy the contributions to perfect sum and powerlessness of farming to environmental change has expanded and it is normal that horticulture area in India will be contrarily influenced. The development rate in the nourishment grains creation and effectiveness has a delay when India flow into the time of globalization. The development rate creation of sustenance grains is 2.80 percent per annum in the pre-change period which declined to 1.98 percent in the post-change period. The circumstance is more compound if there should arise an occurrence of development rate of rice and wheat. The development rate in the profitability of sustenance grains is marginally improved in the post-change period over there-change period however if there should arise an occurrence of rice and wheat efficiency, the outcome is very inverse. In this paper, we made a humble endeavor to examination this outcome by considering the adjustment in the development rate of compost utilization, change in developed territory, change in watered zone and change in atmospheric conditions.

The development rate of farming generation is by and large made a decision by the execution of nourishment grains and non-sustenance grains creation. From these, the two things of a farming generation of sustenance grain are increasingly critical because of two reasons. Right off the bat, it gives the base to subsistence by providing essential sustenance things and also, it is the main gathering of agrarian produce where Green Revolution‖ was presented initially and all the more effectively.

Based on development execution we may have two gatherings in sustenance grains generation. The primary gathering is comprising of wheat and rice and if there should arise an occurrence of the second gathering we are having heartbeats and coarse oats. The things of first gathering have developed more in the pre-change period against the propensity of the second gathering that has developed more in the post-change period. This may have occurred so as a result of the very idea of the produce. For the generation of wheat and ascend, there is a nearly higher necessity of composts, high return assortments of seeds, appropriate water system offices and so on in contrast with the creation of heartbeats and coarse grains.

REVIEW OF LITERATURE:

Asha Latha K. V., Munisamy Gopinath, and A. R. S. Bhat, **(August 2012),** the impact of climate change is studied in many aspects in different locations in the country and it is concluded that there is high impact on agriculture compared to any other sector in the country. The study results revealed that the climatic variables such as the occurrence of drought have a high level of impact on the yield of Rainfed crops. The farmer's perception of the impact of climate change on the crops grown in Rainfed condition, such as yield reduction and reduction in net revenue. The farmers already act to the changes in the climatic changes both by adopting the technological coping mechanisms on the positive side and negatively through shifting to other professions. It is concluded that the small and medium Rainfed farmers were highly vulnerable to climate change and to a larger extent the small and medium Rainfed farmers adopted coping mechanisms for climate change compared to large farmers.

Jørgen E. Olesen a,*, Marco Bindi b, (2002), this paper reviews the knowledge on the effects of climate change on agricultural productivity in Europe and the consequences for policy and research. Warming is expected to lead to a northward expansion of suitable cropping areas and a reduction of the growing period of determinate crops (e.g. cereals), but an increase for indeterminate crops (e.g. root crops). Increasing atmospheric CO2 concentrations will directly enhance plant productivity and also increase resource use efficiencies. In northern areas, climate change may produce positive effects on agriculture through the introduction of new crop species and varieties, higher crop production, and the expansion of suitable areas for crop cultivation. Disadvantages may be an increase in the need for plant protection, the risk of nutrient leaching and the turnover of soil organic matter. In southern areas, the disadvantages will predominate. The possible increase in water shortage and extreme weather events may cause lower harvestable yields, higher yield variability and a reduction in suitable areas for traditional crops.

Bhatia VS, Singh Piara, Wani SP, Kesava Rao AVR and Srinivas K. 2006, In India, cultivation of legumes form an integral part of the Rainfed production systems; however, their productivity over the years has remained low and unstable. Soybean and groundnut are the major oilseed crops and pigeon pea and chickpea are the major pulse crops of the country. In the present study, we have: a) characterized the distribution of these legumes in different production zones, agro-ecological zones (AEZs) and states of India; b) estimated the Rainfed (water-limited) potential, achievable and current levels of farmers' yields; c) quantified yield gaps between farmers' yields and Rainfed potential yields; and d) suggested possible ways to bridge the yield gaps.

PRODUCTION OF FOOD GRAINS IN TAMIL NADU:

A Production of Food Grains in Tamil Nadu Agriculture creation in Tamil Nadu is especially portrayed by significant changes in the region, generation, and yield level. Truth be told relying upon the dispersion of rainstorm precipitation, the horticultural generation especially that of grains, has shown pinnacles and troughs and in the middle of exceptionally fluctuating patterns. Such vacillations remain a repetitive marvel on homestead part. Aside from this, the quantum, practicality, and

conveyance of precipitation in a specific year affect the volume of generation in that year. The sustenance grain comprises of the two oats and heartbeats. The oats, for the most part, comprise of rice, and different grains. Heartbeats comprise of farming creation in Tamil Nadu is particularly described by considerable variances in the region, generation and yield level. Actually relying upon the spatial-worldly conveyance of rainstorm precipitation, the agrarian creation especially that of oats, has shown pinnacles and troughs and in the middle of exceedingly fluctuating patterns. Such variances remain a repetitive marvel on homestead area. Aside from this, the quantum, practicality, and circulation of precipitation in a specific year affect the volume of generation in that year. The sustenance grain comprises of the two oats and heartbeats. The grains fundamentally comprise of rice, and different oats.

COARSE CEREALS:

There are a few reasons right off the bat, in spite of their proportionate or better dietary benefits, the coarse oats are viewed as sub-par grains in contrast with rice and wheat. Rising pay of the general population prompted an adjustment in the utilization example and individuals moved to rice, wheat, heartbeats and natural products instead of these grains. Besides, government backing to wheat and rice as MSP gave amid green unrest time drove these better grains to walk ahead with increasingly more territory under their development. Be that as it may, regardless of approach disregard, the coarse grains have created specialty for themselves as animals and fledgling feed, and developing mechanical employments.

PRODUCTION OF NON-FOOD GRAINS:

A few oilseeds are likewise developed in the nation. The real oilseeds developed in the nation comprise of groundnuts and mustard seeds. Vegetable oil is the most widely recognized methods for cooking. Sugarcane is another well-known Tamil Nadu non-nourishment crop. Sugar is considered as a generous element of ordinary nourishment consumption.

RAINFALL AND FOOD AND NON-FOOD GRAINS :

Farmers' dependence on an annual mono-modal rainfall pattern coupled with farm resource constraints makes agriculture very vulnerable to the impacts of climate change. Results of previous studies have revealed a negative correlation between seasonal rainfall and volume of staple crops (i.e., sorghum, millet, and groundnut) produced annually in the Lawra district over the past 20 years [20].

OBJECTIVES:

The present study takes the following as its objectives:

1. To analyze the trend and Annual growth rate of Rainfall and Agricultural production for food grain and Non-Food grain

2. To compare rainfall and agricultural productivity of food grains and Non-Food grains in Tamil Nadu.

METHODOLOGY:

The present analysis was based on secondary source data relating to the agricultural production for food and non-food grain. The data were obtained from secondary sources such as RBI Data Base. For the purpose of the analysis, the entire study period is 2001-2017 Annual growth rate and tools for the regression analysis.

ANALYSIS AND TABLE:

Objective: 1. to analyze the trend and Annual growth rate of Rainfall and Agricultural production for food grain and Non-Food grain

Table: 1

The annual growth rate of rainfall and Agricultural production for food and Non-food grains during the period 2000-2017

year	Agricultural production	AGR	Rainfall	AGR
2001-02	52179.9	-4.7	379.4	7.3
2002-03	49722.9	-31.8	407.1	-0.9
2003-04	33893.1	-18.6	403.1	17.1
2004-05	27555.5	34.2	472.1	75.5
2005-06	37003.5	31.6	828.8	-39.9
2006-07	48727.1	20.9	497.5	3.5
2007-08	58954.4	-10.8	515.4	7.2
2008-09	52583.0	-8.2	552.7	-12.6
2010-10	48239.7	-4.7	482.6	25.4
2010-11	45932.9	10.6	605.2	-10.6
2011-12	50824.7	18.9	540.8	-31.4
2012-13	60443.0	-23.1	370.5	-20.5
2013-14	46421.7	10.7	294.3	46.2
2014-15	51392.8	-12.1	430.3	61.7
2015-16	45130.3	10.2	695.8	-36.4
2016-17	49752.3	-38.4	442	7.3

Source: RBI and India Metrological

The table no. 1 revealed that the agricultural production trend and growth rate of rainfall during the period of 2000-2017. In the year 2004-05 positive and high rate of food and non-food grains, the annual growth rate is 34.2 per cent because the catchment area getting sufficient level of rainfall in this year. negative and low level of annual growth rate is -38.4 in the year 2016-17 because total rainfall has been declined which affect the agricultural yield all over Tamil Nadu. The table conclude that moderate seasonal rainfall was not in time. Hence irregular, insufficient annual rainfall is affected the agricultural productivity.

Objective: 2 To compare rainfall and agricultural productivity of food grains and Non-Food grains in Tamil Nadu.

Table: 2

Rainfall and Agricultural productivity of food grains and non-food grains during the study period 2000-2017

S.No	Variable	A	B	Std.E(B)	R	R^2	t(B)	Sig.
1	Rice	3626.01	3561	2.374	.372	.138	1.500	.010*
2	Coarse cereals	1576.21	.146	1.686	.023	.001	.086	.089
3	Pulses	435.97	-.244	.323	-.757	.198	039	.019*
4	Food grains	5638.16	3.463	3.843	.263	.055	.901	.012*
5	Oilseeds	834.56	.309	.328	.245	.060	.944	.000*
6	Cotton	403.43	-.173	.353	.130	.017	-.489	.042*
7	Sugarcane	2334.2	13.587	.14.170	.248	.062	.959	.006*

Source: RBI and India Metrological

The above table shows that the rainfall and Agricultural production for food and non-food grains during the period 2000-2017. Less than 0.05 that is significant value is .000, .006, 010 .012, .019 and .042 Rejecting the null hypothesis. There is influencing the rainfall into the Agricultural production for Non-food grains highly influencing into the Oilseeds, Sugarcane, and Foodgrains rice, pulses, cotton, this food, and non-food grains are influencing the rainfall.

The variable of production for food grain coarse cereals is not significant .089 because the significant value is more than the 0.05 that is accepting the null hypothesis so there is no influencing the rainfall into the coarse cereals because these type of coarse cereals is growing to warm season so it's not influencing coarse cereals.

CONCLUSION:

The agricultural production and productivity is determined by irrigation facilities and climate conditions for all the food grains and non food grains. This research article findout the agricultural production is not homogeneous during the study period ,the heterogeneous agricultural productivity impled that the mansoon fluctuations. Whenever is get more sufficient rainfall may induce positive growth rate of agricultural production. When there is lack of rainfall may affect agricultural production and productivity become negative growth rate in the primary sector.

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