EPRA INTERNATIONAL JOURNAL OF ECONOMIC AND BUSINESS REVIEW

www . epratrust.com Impact Factor : 0.998 p- ISSN : 2349 - 0187
e-ISSN : 2347 - 9671

March 2015 Vol - 3 Issue- 3

REGIONAL VARIATION OF FOOD-GRAIN PRODUCTIVITY IN RAJASTHAN

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ABSTRACT

This study an attempts to measure the Regional Variation of food- grain productivity in Rajasthan over the years between 1995-96 to 2004-05 with the help of composite ranking, equal weight age and deprivation method, correlation and standard deviation. This study is very useful because Rajasthan is a backward region in a backward economy. It is predominantly an agricultural and pastoral state where agriculture is the main occupation of the people. About 75 percent of its population is engaged in agriculture and allied pursuits for their livelihood. Agriculture provides the requisite food grains for population, helps in stability price and keeping wages in industrial sector low, provides raw material for industries. Regional disparity can't be totally remove largely due to equal distribution of resources but through better planning and deliberate strategy, they can be reduce considerably. If the disparity will be finished then the implication of plant would be removed, profit will be scale of resources ,cost of production would be decreased, and the profit of technology would be reached farmers, transformation of population from rural to urban economy and village to metropolises would be down, to make policies , food insecurity would be down. This study will motivate further analysis action and support for reducing the variation. The study uses existing scholarly work in the area as well as conventional data sources in order to show the scope of agriculture in Rajasthan today

KEYWORDS :- *Regional Variation, Food-grain Productivity, Agriculture, Equal Weight age, Composite Ranking, Deprivation Method, Correlation, Standard Deviation*

1. INTRODUCTION

Every country, whether developed or undeveloped has economically advanced and backward region. Regional imbalance is a global phenomena of relatively developed and economically depressed states and even region within each states is known as "Regional Imbalance". Generally speaking, a region is a geographical area, territory. It may be a nation, a state, a district, a block, but the word region does not always apply to a particular place. Regional economic inequalities are generally an outcome of uneven distribution of physical and natural resources. All disparity means uneven growth of primary, secondary, social sector in a country, districts of state..

A comparative analysis of growth rates of various districts reveals that some district have attained rapid development while others remain relatively backward Productivity measure by per hectare. Rajasthan is a developing and agrarian state of India .It is one such state in India, where a lot of variation in physical endowments. Agriculture is an important area of investigation because it is the largest component of Rajasthan economy. 22.5 % of state's GDP comes from agriculture. Eighty percent of the total population resides in rural area and largely depend on agriculture as the sources of their livelihood . Recognized as the largest state of India, Rajasthan has cultivated area of almost 20 million hectares but due to some unavoidable circumstances on 20 % of the total cultivated area is irrigated . This really is a tense situation .The weather is arid and hot . Large portion of terrain is dry .Droughts are common in Rajasthan and state has experienced . Due to unstable weather conditions farmers have to depend on both rain fed and ground water agriculture . With the decreasing ground water level the cropping situations is more terrible.

Rajasthan is a developing state, where mother nature has not been kind there is an existence of regional variation in agriculture productivity and the gap between low and high agriculture productive region may either tend to get accentuated over time . The variation in agriculture productivity over the years indicate patterns of change in agriculture sector as a result of increased investment and the introduction of improved agriculture technology. In the recent years, balance regional development has become the main objective of Rajasthan . The record of agriculture development in Rajasthan reveals marked regional differentiations, which claim to embrace both time and space in agriculture theory and policy. There are many disparities in agriculture as irrigation, land holding, per hectare, in the recent years. Homogenous region, size of farm agriculture, pattern are different in Rajasthan.

2. REVIEW OF LITERATURE

Rajput, M. S. (1985) Emphasizes in his study about , " **Agriculture productivity in India ; A district wise study of Rajasthan ".** This study an attempts to measure inter-district level of Agriculture productivity and factors which explains maximum variation in productivity over the years between 1956-57 to 1976-77. This study concludes that to use regression model that rainfall, fertilizer factors are affecting of agriculture productivity and HYV, cropping intensity are important area for determine productivity.

3. OBJECTIVE

The study would be based on following objectives;

- To identify the role of agriculture in Rajasthan Economy.
- To find out the extent of disparity in food-grain productivity among the districts.
- To device planning strategy for mitigating disparities on the basis of the study.

4. METHODOLOGY

The study would be taken equal weight age method, composite ranking method, deprivation method, Mean, Standard deviation and coefficient variation to know the variation between 1995-96 to 2004-05. In this study include the food-grain productivity of all types cereals and pulses crops.

5. SCOPE OF THE STUDY

In this study will be classification of state according the weight of equal weight(E.W), composite ranking(C.R.) and deprivation method (D.R.)–

Table-1, Classification of State

weight	E.W. and C.R.	weight	D.M
0> 30	**Extremely Backward(E.B.)**	**0> .30**	**Extremely Backward**
30 0r 30>50	Backward (B)	.30 0r .30>.50	Backward
50 or 50>70	Developed (D)	.50 or .50>.70	Developed
70 or above	High Developed (HD)	.70 or above	High Developed

6. REGIONAL VARIATION IN FOOD- GRAIN PRODUCTIVITY

Table-2, Comparative Analysis of the Statistical Tolls for Calculating Inter- District Variation in Food- grain Productivity

District	1995-96 to 1999-2000				2000-01 to 2004-05			
	E.W.	C.R.	D.M	Rank	E.W.	C.R.	D.M	Rank
Barmer	10.00	30.00	0.00	EB	10.00	23.33	0.00	EB
Bikaner	20.00	23.33	0.08	EB	20.00	23.33	10.00	EB
Churu	20..00	43.33	0.09	EB	10.00	30.00	0.06	EB
G.Nagar	80.00	66.67	0.84	HD	90.00	80.00	0.96	HD
Hanumangarh	60.00	60.00	0.61	D	70.00	50.00	0.61	D
Jaisalmer	10.00	40.00	0.01	EB	10.00	43.33	0.09	EB
Jalore	20.00	16.67	0.10	EB	20.00	13.33	0.14	EB
Jhunjhunu	40.00	53.33	0.29	B	50.00	66.67	0.39	D
Jodhpou	10.00	20.00	0.01	EB	20	26.67	0.14	EB
Nagaur	30.00	23.33	0.11	EB	30.00	46.67	0.20	B
Pali	30.00	26.67	0.21	EB	30.00	23.33	0.15	EB
Sikar	40.00	53.33	0.35	B	50.00	63.33	0.42	D
Ajmer	30.00	30.00	0.23	B	30.00	33.33	0.25	B
Alwar	90.00	76.67	0.99	HD	90.00	73.33	0.91	HD
Bharatpur	90.00	86.67	0.99	HD	90.00	90.00	0.88	HD
Bhilwara	50.00	56.67	0.54	D	60.00	50.00	0.44	D
Bundi	90.00	70.00	0.96	HD	80.00	63.33	0.74	HD
Chittore	70.00	73.33	0.67	HD	70.00	70.00	0.87	HD
Dausa	80.00	73.33	0.90	HD	80.00	66.67	0.88	HD
Dholpur	80.00	83.33	0.91	HD	90.00	86.67	1.00	HD
Dungarpur	50.00	46.67	0.41	B	40	33.33	0.34	B
Jaipur	60.00	66.67	0.57	D	60.00	73.33	0.60	D
Karoli	80.00	90.00	0.92	HD	70.00	83.33	0.72	HD
Rajsamand	60.00	50.00	0.55	D	50.00	46.67	0.42	B
Sawaimadhopur	70.00	70.00	0.70	HD	60.00	60.00	0.52	D
Sirohi	50.00	40.00	0.42	B	40.00	40.00	0.36	B
Tonk	40.00	40.00	0.36	B	40.00	33.33	0.27	B
Udaipur	70.00	66.67	0.68	D	60.00	63.33	0.60	D
Banswara	50.00	50.00	0.45	D	50.00	43.33	0.42	B
Baran	70.00	70.00	0.74	HD	80.00	73.33	0.77	HD
Jhalawar	60.00	70.00	0.57	D	70.00	70.00	0.61	HD
Kota	90.00	70.00	1.00	HD	90.00	66.67	0.89	HD

Source : Vital Agriculture Statistics, Director Agriculture Statistics, Pant Karishi Bhawan,
Statistical Abstract – Rajasthan (various issues), DES, Jaipur
Agriculture Statistics – Rajasthan (various issues), DES, Jaipur

Above the table given the rank of each district according two method. The condition of Jhunjhunu, Nagaur, Sikar, Jhalawar improved and Rajsamand and Sawaimadhopur worsed.

Table-3, Inter- District Food- grain Productivity Variation in Rajasthan

year	Extremely Backward		Backward		Developed		High Developed		All Rajasthan	
	1995-96 to 1999-2000	2000-01to 2004-05	1995-96 to 1999-2000	2000-01to 2004-05	1995-96 to 1999-2000	2000-01to 2004-05	1995-96 to 1999-2000	2000-01to 2004-05	1995-96 to 1999-2000	2000-01 to 2004-05
Range	196.5-585.0	268.0 -588.2	622.3 -990.6	684.1 - 1149.1	1048 - 1265.9	1067.3154 3.9	1454.9-2073.2	1536.8-2343.7	196.5-2078.2	268.0-2343.7
Mean	340.8	470.6	841.9	933.1	1249.4	1838	1859.6	1903.5	1158.8	1256.3
Standard Deviation	128.51	111.28	139.23	180.16	140.09	200.76	229.79	243.02	629.49	607.57
Coefficient variation	34.93	21.27	11.11	23.01	8.17	15.07	12.36	13.94	55.65	40.89
total District	8	7	6	7	7	7	11	11	32	32
above Mean	5	4	4	4	3	4	8	6	14	12
Maximum	Pali	Pali	Sirohi	Rajsamand	Jaipur	H.garh	kota	Dholpur	kota	kota
below Mean	3	3	2	3	4	3	3	5	18	20
Minimum	Barmer	Barmer	Ajmer	Nagaur	Banswara	Jhunjhunu	Dausa	Jhalawar	Barmer	Barmer

Source: Vital Agriculture Statistics, Director Agriculture Statistics, Pant Krishi Bhawan,

Statistical Abstract – Rajasthan (various issues), DES, Jaipur

Agriculture Statistics – Rajasthan (various issues), DES, Jaipur

25 years of Agriculture Development – Rajasthan, Pant krishi Bhawan Jaipur

6. STRATEGY

Integrated Farming System's Approach especially for Dry land Agriculture: Since the vast rain fed areas in the State come across droughts and crop failures in most years, integration of crop farming with horticulture, animal husbandry, back-yard poultry, agro-forestry and pasture development is often necessary for generating farm income and sustaining livelihood of the small and marginal farmers in the State.

Optimum use of resources: Reclamation of degraded soils, soil conservation, soil testing, soil fertility mapping, crop residue management, promotion of organic farming and optimal land use need to be promoted. Modern tools of remote sensing and GIS will be deployed for land use planning and sound management options for profitable use of the vast land resource available in the State. Rajasthan has no other recourse but to take the path of more crop and income per drop of water. Micro irrigation is the only option and hence shall be popularized along with water budgeting in command/canal areas with reduced conveyance losses.

Enhanced availability of quality Seed: Production of breeder, foundation and certified seed and their availability need to be enhanced with special emphasis on new high yielding varieties/ hybrids that require less water and are short duration in nature. Seed Replacement Rate (SRR) will have to be increased particularly in case of pulses and oilseeds. A rolling plan for each 5 year cycle will be prepared and monitored for implementing.

Nutrient Management: Integrated nutrient management practices will be promoted, especially to address micro nutrient deficiencies.. To improve efficiency of fertilizer use, enhanced location-specific research on efficient fertilizer practices will be promoted. Soil health cards for every farmer shall be provided.

Farm Mechanization: Seed-cum-fertilizer drill, zero till drill, lazer levelers and various farm implements and tools need to be popularized along with bullock drawn implements for small and marginal farmers. Seed dressers, sprayers, weeding implements, and other drudgery reduction implements will be popularized.

To ensure the quality of inputs like fertilizer, Insecticides and seeds: Private intervention in agricultural services will be promoted. Unemployed agriculture school pass outs and graduates would be trained and attracted towards custom hire services and input delivery systems by providing necessary incentives/financial support to start Agro service centers/Agri-clinics etc.

Infrastructure facilities: Needed infrastructure facilities particularly those pertaining to marketing, cool chain, storage rural based agro-

processing and facilities for exports will be created through Government and Private Sector initiatives.

Support for Agricultural Research and Education: Adequate support to State Agricultural Universities (SAUs) will be provided by doubling their resource allocations significantly in order to have adequate and competent. Faculty, a pre-requisite to build trained man power, generate need based technologies and their up-scaling. Precision farming, organic farming, use of biotechnology for required breakthrough/genetic improvement against biotic and a biotic stresses etc. will be given high priority for future research. Major research thrust will be on crops that are unique to the State.

Alternate energy sources: Utilization of renewable energy in agriculture and promotion of energy plantation on waste land, using appropriate, cost effective and efficient technologies will be a priority area under this policy.

Improving the Livelihoods of Farmers: Crop-livestock integrated farming systems and creating better livelihood options through agro processing and value addition will be promoted.

Credit Support: Credit at lower interest rates (around 3-4 percent) will be ensured to all smallholder farmers in the State.

Capital formation and investment in agriculture for needed diversification: The strategy of this policy emphasizes major efforts towards diversification of agriculture. But diversification is not to be viewed parochially only in terms of crops alone but would encompass composite agriculture having crops, horticulture, livestock, fisheries and secondary agriculture related to these. This would require substantial increase in investment on research for development in agriculture. To ensure speedy growth, capital investment in agriculture will be doubled in next five years.

7. CONCLUSIONS

The analysis shows that regional variation of food-grain productivity status is a challenge for the state as a whole. Various schemes and initiatives in recent years show commitment of the govt. toimprove the situation. Through this paper we have endeavored to bring out the performance of districts in food-grain productivity. Clearly indicating the backward and developed performing districts. Now it is very necessary to reduce the agriculture disparity in Rajasthan because Agriculture provides the requisite food grains for population, helps in stability price and keeping wages in industrial sector low, provides raw material for industries . Regional disparity can't be totally remove largely due to unequal distribution of resources but through better planning and deliberate policies, they can be reduce considerably. If the disparity will be finished then the implication of plant would be removed, profit will be scale of resources ,cost of production would be decreased, and the profit of technology would be reached farmers, transformation of population from rural to urban economy and village to metropolises would be down, living standard of farmers would be increased, government would not faced problems to make policies , food insecurity would be down.

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