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Growth Analysis of Agriculture, Forestry, Fisheries and Mining of Rajasthan State

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ABSTRACT

Rajasthan is an agrarian state and primary sector contribution is 24.61 per cent in the year 2017-18. The contributions of secondary and service sectors are 30.32 and 45.07 per cent respectively in the gross domestic product of the state. This paper is based on the sector-wise data of gross state domestic of the state from the year 1980-81 to 2016-17. This paper is tried to investigate the growth of the primary sector during the period of study. This paper reveals that all components of the primary sector such as agriculture, forestry, fisheries and mining growths are positive and significant in absolute term. This paper elaborates that the contribution of Rajasthan's GDP to various components of the primary sector is increasing year after year, but agriculture contribution from the primary sector has decreased while the contribution of mining has increased significantly. The paper concludes that this government should make efforts to increase the contribution of agriculture.

Key words: Primary Sector, Agriculture, Forestry, Fisheries, Mining

Rajasthan is a mineral abundant state and the growing state economy based on agriculture, mining and tourism as its main engines of growth. The state mines produce sandstone, limestone, marble, rock phosphate, copper and lignite, etc. There are many statistical pieces of evidence that show that the state rank among Indian states is better in the primary sector such as the state percentage in net area sown to the geographical area in the year 2014-15 was 51.2 and has 10th rank [1]. The Cropping intensity of the state in the year 2014-15 was 138.3 and the state was 13th rank among the Indian States. The percentage of forest cover to the total geographical area in the year 2017 was 4.84 and the state was rank 27th in India. The percentage of tree cover to the total geographical area of the state in the year 2017 was 2.42 and it was 16th rank in the country [2]. Rajasthan state primary sector contribution is good among Indian states. This paper includes components of the primary sector such as agriculture, forestry, fisheries.

MATERIALS AND METHODS

This study based on the time series from the year 1980-81 to 2017-18. The secondary data is collected from the

statistical abstract and statistical yearbook of Rajasthan published by the Directorate of Economics and Statistics, Rajasthan. This paper used a semi-log econometrics model to estimate the growth rate of agricultural production in which this paper includes monetary values of agriculture (Including A.H), forestry and fisheries production. The data is based on the constant price of the year 2011-12.

Growth Model

Semi-Log: The exponential equation is given by:

$\ln Y_i = \alpha + \beta t + U_i$ This is fitted using the OLS method Here,

Y_i = includes monetary values of agriculture (Including A.H), forestry and fisheries production i^{th} year ($i = 1, 2, 3 \dots N$)

α = Intercept,

β = Regression coefficient

U_i = Residual term

The parameters α and β are estimated by the least square method.

RESULTS AND DISCUSSION

Rajasthan state primary sector plays 26.45 percentage of GSDP this sector includes values of agriculture (Including Animal Husbandry), forestry, fisheries and mining [3]. During the period of study, the percentage of agriculture is decreased over the year due to enhancement of mining sector production even the forestry and fisheries percent have been increased over the year but their contribution is not much higher as shown in (Fig 1).

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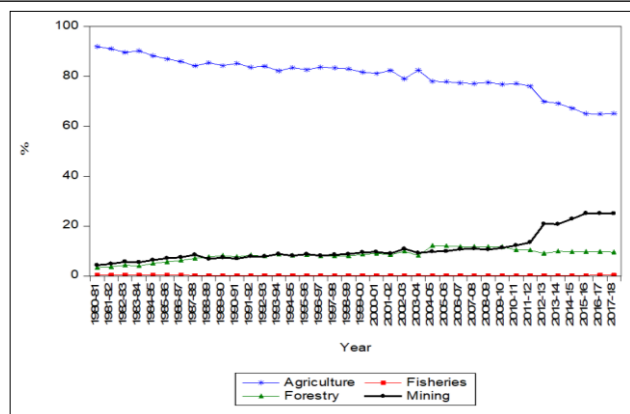


Fig 1 Percentage of different components of primary sector

Rajasthan state is a desert state due to 61 percent area under the desert and the government has done many efforts to improve agriculture and allied activities in the state. (Fig 2) shows the production values of primary sector components such as agriculture, fisheries, forestry and mining are upward sloping significantly. There is agriculture growth upward sloping but volatility here. The fisheries' growth was also positive with less volatility. The forestry growth rate is upward sloping and less volatile [4].

Mining production growth rate is although upward-sloping but there are two phases the first phase is from 1980 and the second phase is from 2010 and after the year 2010 mining growth was growing very fast [5]. If we can include all four sectors altogether then the primary sector growth rate is upward sloping over the period of study.

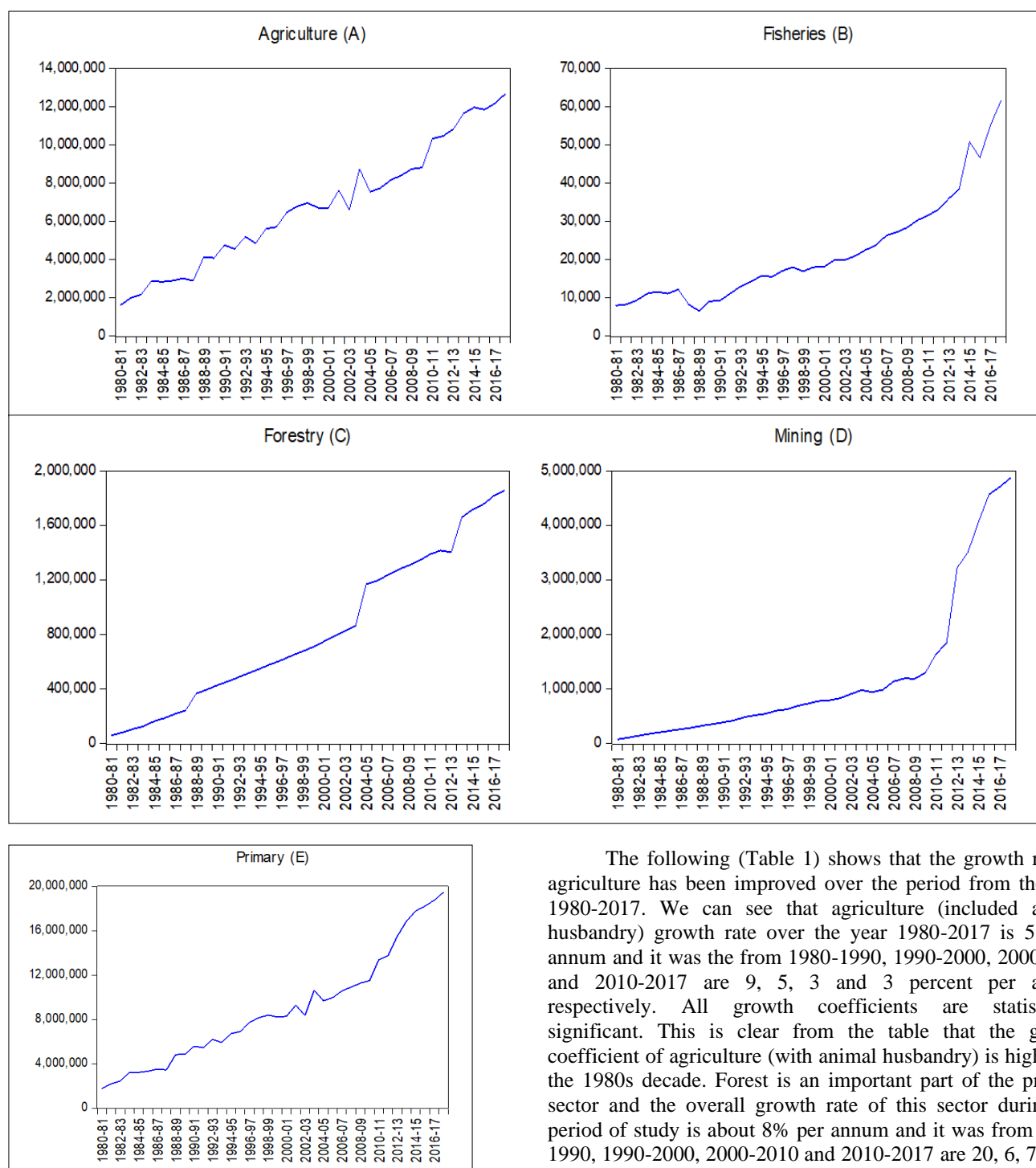


Fig 2 Primary sector components trend (1980-2017)

The following (Table 1) shows that the growth rate of agriculture has been improved over the period from the year 1980-2017. We can see that agriculture (included animal husbandry) growth rate over the year 1980-2017 is 5% per annum and it was the from 1980-1990, 1990-2000, 2000-2010 and 2010-2017 are 9, 5, 3 and 3 percent per annum respectively. All growth coefficients are statistically significant. This is clear from the table that the growth coefficient of agriculture (with animal husbandry) is highest in the 1980s decade. Forest is an important part of the primary sector and the overall growth rate of this sector during the period of study is about 8% per annum and it was from 1980-1990, 1990-2000, 2000-2010 and 2010-2017 are 20, 6, 7 and 5 percent per annum respectively. The fisheries sector also plays a role in Indian GDP but on the other hand, it has not sufficient

contribution to GSDP of the state. The overall growth coefficient rate is about 5% per annum and it was 1980-1990, 1990-2000, 2000-2010 and 2010-2017 are -0.01, 7, 6, 10 percent respectively which shows its increasing tendency over the period. When we include the agriculture (with animal husbandry), forestry, fisheries then find agriculture and allied activities in which so that the overall about 5% per annum throughout the study period and growth rates from 1980-1990, 1990-2000, 2000-2010 and 2010-2017 are 10, 5, 3 and 3 percent respectively. Mining is a very important sector in

Rajasthan economy. The growth coefficients from 1980-1990, 1990-2000, 2000-2010 and 2010-2017 are 16, 8, 5 and 14 percent per annum respectively. The overall growth coefficient during the period of study is about 9 percent per annum. The primary sector includes agriculture, forestry, fisheries and mining altogether and the growth rate of the first decade of the primary sector is about 10% second third and fourth decade is about 5, 3, 5 percent respectively the overall growth rate of the during the period of studies about 6% for and this is statistically significant [6].

Table 1 Primary sector's components growth coefficient

Sector	Period	Growth coefficient	t-value	P-value	R ²
Agriculture	1980-1990	0.09	7.63	0.00	0.88
	1990-2000	0.05	8.55	0.00	0.90
	2000-2010	0.03	3.45	0.00	0.58
	2010-2017	0.03	6.84	0.00	90.00
	1980-2017	0.05	23.16	0.00	0.94
Forestry	1980-1990	0.20	23.78	0.00	0.98
	1990-2000	0.06	47.75	0.00	0.99
	2000-2010	0.07	8.25	0.00	0.89
	2010-2017	0.05	5.92	0.00	0.87
	1980-2017	0.08	19.40	0.00	0.91
Fisheries	1980-1990	-0.01	-0.23	0.82	0.00
	1990-2000	0.07	6.70	0.00	0.85
	2000-2010	0.06	25.05	0.00	0.98
	2010-2017	0.10	8.18	0.00	0.93
	1980-2017	0.05	21.22	0.00	0.93
Agricultural	1980-1990	0.10	8.39	0.00	0.90
	1990-2000	0.05	9.51	0.00	0.92
	2000-2010	0.03	4.77	0.00	0.74
	2010-2017	0.03	7.03	0.00	0.91
	1980-2017	0.05	24.11	0.00	0.94
Mining	1980-1990	0.16	12.18	0.00	0.95
	1990-2000	0.08	27.17	0.00	0.98
	2000-2010	0.05	13.43	0.00	0.96
	2010-2017	0.14	4.42	0.00	0.80
	1980-2017	0.09	27.90	0.00	0.96
Primary	1980-1990	0.10	9.06	0.00	0.91
	1990-2000	0.05	10.84	0.00	0.93
	2000-2010	0.03	5.55	0.00	0.79
	2010-2017	0.05	7.17	0.00	0.91
	1980-2017	0.06	28.69	0.00	0.96

CONCLUSION

This paper reveals that the primary sector rate is positive and significant over the years. There are components of the primary sector such as agriculture, fisheries, forestry and mining sector. This paper also reveals that the growth rate of all sectors are more than in the year 1980-1990 is more than the other decade except fisheries. This study also derived that

the mining industry of the state contributes more to the primary sector in recent years than in previous decades. The contribution of the mining sector of the primary sector has enhanced from 4.8 percent in 1980-81 to 25.01 percent in 2017-18. The contribution of forestry and fisheries has improved in absolute numbers but in related number fisheries contribution is not improved and forestry contribution improved to some extent.

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