Our Heritage

ISSN: 0474-9030

Vol-68-Issue-1-January-2020

Managing Regional Imbalance in Indian Agriculture

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Abstract:

The inter –state variations in agricultural productivity in India is quite high, however, the advanced states are facing stagnation in growth rates of agricultural productivity while the lagging states are keeping pace with the advanced states by adoption and better implementation of market reforms and farm friendly policies. Over the period of time, it has been observed that there is a trend of convergence among states in terms of agricultural productivity.

To mitigate the regional gap in agricultural productivity, the policy prescription would be more and more investment in the lagged region, extension of public and private credit in remote rural areas. Development of research focusing the development of dry land area, development of technology requiring less water ,less fertilizer and cheap farming and finally implementation of watershed development approach are necessary for a more balanced and sustainable agricultural development in the country. There is an acute need to pay special attention to the needs of eastern states and other rain –fed regions.

Key Variables: Agriculture, Productivity, Development, India.

Introduction:

The agricultural sector continues to be the backbone of Indian economy and plays a vital role in overall development of a country. As per the II nd advised estimates by the Central Statistics Office (CSO), the share of agriculture and allied sectors is estimated to be 17.3 %of the Gross Value Added (GVA) during 2016-17 at 2011-12 Prices. Though, with the growth of other sectors, the overall share of agriculture in GDP of the country has decreased, still, it employs nearly half of the working force in the country.

From a net importing country, India is today consistently producing 275.68 million tonnes of food grains, and India is among the top producers of several crops such as wheat, rice, pulses, sugarcane

ISSN: 0474-9030

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and cotton .It is the highest producer of milk and second highest producer of fruits and vegetables .In 2013, India contributed 25% to the worlds pulses production, 22% to the rice production and 13 %to the wheat production. It also accounted for about 25% of the total quantity of cotton produced, besides being the second highest exporter of cotton for the past several years.

Review of literature:

Varun Kumar Das (2017) in his study productivity ,efficiency and technical Change ;An assessment of paddy cultivation in India states that total factor productivity growth of paddy cultivation in 12major paddy producing states in India from 1999 till 2012.Previous studies have applied methods which require price data on inputs. But this study applies a method called Malmquist index method which does not require price information .This allows us to include rainfall as one of the inputs used **in** the production of paddy. Based on cost of cultivation data, the results show that states like Kerala and Madhya Pradesh have the highest TFP growth rate. Bihar in eastern India is also not lagging behind .The entire TPF growth has been contributed by technological change. Efficiency gain is yet to be realised in all states.

Karnataka Budget 2018-19 as per the guidelines of Rashtriya Krishi Vikas Yojana of Central Government, sanction will be accorded for suitable schemes in each district, aimed at increasing productivity of farm produces and introduction of innovative techniques to make value addition by providing supply chain .Under this scheme, special emphasis will be given to provide suitable market for crops such as minor millets, pulses, oil seeds, maize, etc.

J.S.Sandhu (2017) in his article Analysing Varying Crop Productivity in Canal Irrigation states that in the DVC command area it is observed that variations in monsoon paddy productivity not only exist across different segments but this variation also exists in between the plots which are situated before and after lock-gate regions in each segment of the DVC canal networks. In fact monsoon paddy productivity in the before-lock-gate areas of the HR and MR segment of the canal are higher than corresponding productivities in the after –lock gate areas. However, in the TE segment of the canal it is observed role reversal i.e.MPP in the plots of the after-lock-gate (ALG) region is higher than the same in the before –lock-gate (BLG) areas

Objectives:

a) To find out variations in agricultural productivity in India.

b) To identify factors determining Inter-regional productivity Imbalance.

c) To study growth rate of agricultural productivity.

Data sources and methodology:

Twenty three major states have been studied for interstate comparison. Secondary data has been employed in the study -National Account Statistics of the Central Statistical Organisation of the

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Government of India, Agriculture statistics' at a Glance, Directorate of Economics and Statistics, Ministry of Agriculture and National Account Statistics and Programme Implementation, Government of India.

Agriculture Productivity Growth and Regional Imbalance:

In order to meet the food grain requirement of the country, the agricultural productivity and its growth needs to be sustained and improved. Virtually majority of land is under cultivation, so increasing productivity per unit of land should be the main engine of agricultural growth. However, there exist wide variations in the agricultural productivity across the states. It has been observed that Arunachal Pradesh has the highest productivity of Rs.326917 per hectare at current prices among the states. Further AndraPradesh ARs.260346 per he. Was closely followed by Tamil naduRs.259921 per ha. Which witnessed higher productivity levels among states? States like Punjab and Haryana have enjoyed a pre-eminent in productivity ratings from many decades, especially in food grains falls in the higher productivity zone. While they had registered low growth rate in productivity 1.73per cent and 3.15 per cent respectively during the study period. States like J and K, Himachal Pradesh, and Kerala etc. Fall in the green zone because of plantation crops and also show low growth rates. On the contrary, states for instance Odessa, M.P. and Gujarat fall in the low productivity zone.

Table 1 .Interstate Agricultural Productivity and Growth of Productivity (2004-05 to2014-15)

State	Productivity	Growth Rate
A.P.	260346	3.44
Arunachal Pradesh	326917	0.72
Assam	134480	1.91
Bihar	146338	4.45
Chhattisgarh	85503	4.89
Goa	266236	1.56
Gujarat	135178	5.54
Haryana	222280	3.15
HimachalPradesh	237135	2.78
Jammu and Kashmir	242725	1.41
Jharkhand	219919	8.40
Karnataka	100319	2.74
Kerala	237843	0.23
M.P.	110609	5.75
Maharashtra	99108	3.77
Manipur	94847	-0.77
Meghalaya	146017	1.28
Mizoram	318132	1.92
Nagaland	136792	4.34

ISSN: 0474-9030

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Odessa	124111	6.12
Punjab	234529	1.73
Rajasthan	88868	3.94
Tamil Nadu	259921	3.94
U.P.	151405	2.23
Uttarkhand	207069	2.69

(Source: Kurukshetra, vol.66 No.4, Feb.2018)

Table 2. Determing factors for Inter-Regional Productivity Imbalance.

State/U.T	Irrigation	Cropping	Fertiliser Use(kg/ha	Credit	Land Holding	Rankin AMFFRI
A.P.	50.5	123.3	226	118883	1.08	7.4
ArunachalPradesh	18.7	132.8	2	7594	3.51	21.1
Assam	9.2	144.4	45	13812	1.1	37.1
Bihar	68.7	145.4	220	76809	0.39	12.4
Chhattisgarh	31.2	122.4	100	1110	1.36	47
Goa	24.6	122.4	49	4467	1.14	52.8
Gujarat	47.1	124.0	12	43257	2.03	70.1
Haryana	89.1	185.6	220	141379	2.2	65
H.P.	21.0	167.0	57	93133	0.99	59.6
Jand K	42.8	155.3	64	36403	0.62	7.4
Jharkhand	14.3	112.2	55	26450	1.17	49.2
Karnataka	34.2	121.9	175	84462	1.55	5.5
Kerala	17.9	128.5	44	212406	0.22	10.8
M.P.	43.3	155.1	84	33941	1.7	64.4
Maharashtra	18.2	135.3	122	36194	1.44	66.4
Manipur	18.0	100.0	42	418	1.14	7.4
Meghalaya	37.1	120.0	0	3774	1.37	14.3
Mizoram	14.5	100.0	18	6842	1.14	37
Nagaland	21.2	130.3	6	3074	6.02	33.3
Odessa	28.7	11.6	63	40793	1.04	27.9
Punjab	98.7	190.8	249	20552	3.77	43.9
Rajasthan	42.0	138.3	62	38597	3.07	69.9
TamilNadu	56.6	124.4	17	218339	0.8	17.7
U.P.	80.2	157.5	156	22490	0.76	45.8
Uttark hand	49.5	156.7	169	90492	0.89	25.2

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Source: Kurukshetravol.66, No.4.Feb.2018.

Analysis and Results

From the table (1) it is observed that the states with higher agricultural productivity levels in agriculture i.e. states fall in the green zone witnessed low growth rates as since in most of the agricultural productivity got very marginal rate or stagnate .As agriculture sector in these states reached at the highest capitalisation situation and with the same set of technologies ,it is difficult to grow further .While the states in red zone with low productivity levels have registered higher growth rates during the study period. The scope for improved productivity in these latter sates is substantial.

These regional variations in agricultural productivity are result of the inter –play of many factors as irrigation coverage ,cropping intensity, use of fertilizers ,credit ,land holding size ,level of policy support ,and institutional factors. In the study, we have also considered Rank in Agricultural Marketing and Farmer Friendly Reforms Index (AMFRI) as one of the major determinant for regional imbalances in agriculture productivity.

Table 2 states these determining factors for inter-regional productivity imbalances and their status in major states of India. The regional variation in agricultural inputs in India is quite high. Punjub

998.7%, Haryana 89.1%, and U.P. 80.2% has highest irrigation coverage and similarly noticed greatest cropping intercity. Other factors as fertilizer use (kg/ha) credit (Rs/ha) and larger land holding sizes are on higher side for the states with higher productivity levels across India. Thus, the states that are able to channelize these factors efficiently into their agricultural sector resulted into better productivity and yield rate. Further, in AMFFRI, the state of Maharashtra achieved first rank in implementation of various reforms. The state has implemented most of the marketing reforms and it offers best environment for doing agri-business among all the states and UTs. Gujarat ranks second with a score of 71.5 out of 100, closely followed by Rajasthan and MadhyaPradesh.Agriculturally developed state of Punjab ranks 14 th with a score of 43.9 .This is because of poor implementation of market reforms in the state/UTs could not reach even halfway mark of reforms score. Major states like U.P, Punjab, West Bengal, Assam, Jharkhand, Tamil Nadu and J and K are in this group. It is observed from the table that ht estate with higher productivity levels has better utilisation of agricultural inputs.

However, where performance of various states is good in terms of adoption of market reforms and farm friendly policies i.e. with higher rank in AMFFRI has higher growth rates in agricultural productivity and approaching the advanced states.

The highest rate of seed replenishment was in Madhya Pradesh at around 4.7 percent. The lowest was for Andhra Pradesh at 1.5 percent .Since Punjab and Haryana are agriculturally advanced states with high use of HYVs. During 1999-2012, the highest annual growth rate of paddy yield were found to be 3.7 percent in Madhya Pradesh followed by Orissa at 2.3 percent. In fact Madhya Pradesh had the highest growth rates in all the three modern technological inputs of farming like fertilize, tractor

ISSN: 0474-9030

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use, and irrigation .Fertilizer use in paddy farming grew by around 7 percent in Madhya Pradesh, where as machine labour and irrigation showed an impressive growth of 16.3 and 25.8 percent annually. From this we can guess that Madhya Pradesh is making technological investments in paddy cultivation .Karnataka, on the other hand, shows a negative yield growth during this period. Orissa has the highest seed growth rate per hectare at 2 percent annually.

The state with highest TFP growth rate is Kerala during 1999-2012.Annual TFP growth rate is around 9.6 percent in Kerala. Madhya Pradesh closely follows Kerala, with TFP growing by 9.3 percent .These two states are unconventional states since Punjab and Haryana are presumed to be the most productivity.

Suggestions:

To mitigate the regional gap in agricultural productivity, the policy prescription would be more and more investment in the lagged region, extension of public and private credit in remote rural areas. Development of research focusing the development of dry land area, development of technology requiring less water ,less fertilizer and cheap farming and finally implementation of water shed development approach are necessary for a more balanced and sustainable agricultural development in the country. There is an acute need to pay special attention to the needs of eastern states and other rain-fed regions.

South Asian Regional Centre (ISARC):

The Union Cabinet chaired by Prime Minister has approved the establishment of the International Rice Research Institute (IRRI), South Asia Regional Centre (ISARC) at campus of National Seed Research and Training Centre (NSRTC) in Varanasi.

Under the Proposal Centre of Excellence in Rice Value Addition (CERVA) will set up in Varanasi. This will include a modern and sophisticated laboratory with capacity to determine quality and status of heavy metals in grain and straw. The Centre will also undertake capacity building exercise for stakeholders across the Rice value chain.

This Centre will be the first International Centre in the eastern India and it will play a major role in harnessing and sustaining rice production in the region. It is expected to be a boon for food production and skill development in the eastern India and similar ecologies in other South Asian and African countries.

Conclusion:

This study makes an attempt to examine the growth performances of agricultural production and productivity of major states of India and the nature and extent of disparity in the performance of agriculture. The growth performance have been analysed, it has been found that

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The states in central zone of India with low productivity levels in agriculture should strengthen the determining factors of increase in agricultural productivity i.e. the use of inputs like fertilizers; improved seeds, irrigation, machinery, credit and technology back up. While it is observed that the states in high agricultural productivity zone are experiencing stagnation in growth of agricultural productivity.

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