RE-VISITING AGRICULTURAL POLICIES IN THE LIGHT OF GLOBALISATION EXPERIENCE: THE INDIAN CONTEXT

Edited by
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A Disaggregated Study on Trends in Growth of Agricultural Production and Productivity in West Bengal in Pre and Post Economic Reform Period: Investigating Impact on Economy and Employment

I

INTRODUCTION

India resorted to a policy of comprehensive economic reforms in June 1991. Contemporary researches argue that economic reforms primarily emphasised on price factors and infrastructure, however, institutional aspect of agriculture has grossly been neglected and as a consequence, deceleration in agricultural growth as well as decline in growth of output were accentuated since 1991 (Chadha, 2002 ; Majumdar, 2002; Bhalla, 2002 ; Kumar, 2002). In this regard, West Bengal becomes a point of interest among the researchers, it is more so because in West Bengal, overwhelming agricultural growth took off after the 1980s. It became a leading state in India in terms of performance in foodgrain and rice production.

During the reform era, cost of production has increased because of the withdrawal of subsidy on fertiliser and price determination has been left to the market, and secondly, public investment has declined (Reddy, 2006). For West Bengal, doubts may be raised that rise in the growth of agricultural productivity that was achieved during eighties, if it is not sustained, may have some serious negative impact on agricultural income, employment and economy at large. And, lack of alternative employment and income opportunities outside agricultural may further complicate the situation (Ghosh, 1998: 2988). It may lead to possible marginalisation of rural work force.

Aforementioned scenario has prompted to make an attempt to study the trends in growth of production and productivity of foodgrain in West Bengal, disaggregated at districts level and its likely impact on employment and economy. In this empirical exercise, 1970-71 has been chosen as the starting point and the time series continued till 2011-12. To measure the impact of change in growth of production and productivity on income and employment and to understand the simultaneous interplay of various sectors of economy, contribution of various sectors to Gross State Domestic Product (GSDP at current prices) during 1980-81 to 2013-14 have been analysed. Industrial scenario and employment generation in non-agricultural sector have also been scrutinised.

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The paper is organised as follows: Section II describes the data and methodology used in the paper. Section III starts with a brief exposition of dominance of rice in food grain production in the state and carries on inter-district comparison of growth in production and productivity of foodgrain in West Bengal. Section IV critically analyses the agriculture and economy interface. Concluding remarks have been placed in Section V.

<center>II</center>

<center>DATA AND METHODOLOGY</center>

The study is completely based on secondary data and information collected from various issues of West Bengal Economic Review, District Statistical Handbook, and Census Report etc. The empirical analysis evolved around 15 districts over time.[1]

The study period (1970-71 to 2011-12) has been divided in four sub-periods, 1970-71 to 1979-80, 1980-81 to 1989-90, 1990-91 to 1999-2000 and 2000-2001 to 2011-12. The period between introduction of economic reforms in 1991 and its onward journey was divided in two sub-periods, 1990-91 to 1999-2000 and 2000-2001 to 2011-12 to unearth the initial euphoria or pessimism that the introduction of economic reforms created in India and to capture the impact of second generation reforms.

To calculate sub-periods growth rates 'kink exponential model' has been used. A time series for the period t = 1, 2, …, n can be disaggregated at a single point k and can be expressed in a single equation as follows:

$$\ln Y_t = a_1 D_1 + a_2 D_{2\,+}(b_1\, D_1 + b_2\, D_2)t + u_t \qquad \qquad ....(1)$$

$\ln Y_t$ or log values of food grain production and productivity over time. D_j is a dummy variable which takes the value 1 in the jth sub-period and 0 otherwise.

Three kinks (k_1, k_2, and k_3) are introduced to measure the growth rates of four pre-specified sub-periods. The kinked exponential model can also be specified by re-normalizing time such that t = 0 at the break point k_1, t =10 at the second break point k_2 and t =20 at the third break point k_3, then equation can take the following form and which can be used to estimate the growth rates for four sub-periods with a joint intercept:

$$\ln Y_t = a_1 + b_1\, D_1 t + b_2\, D_2 t + b_3\, D_3 t + b_4\, D_4 t + u_t \qquad \qquad ....(2)$$
(Boyce, 1987: 267,268)

where, D_1 = 1 for 1970-1971 to 1979-1980,
                  = 0 elsewhere.
          D_2 = 1 for 1980-81 to 1989-90,
                  = 0 elsewhere.

D_3 = 1 for 1990-91 to 1999-00,
         = 0 elsewhere.
D_4 = 1 for 2000-01 to 2011-12,
         = 0 elsewhere.

Multiplying estimated values of D_1t, D_2t, D_3t, and D_4t, we shall be having growth rates for four sub-periods.

Sectoral shares of GSDP at current prices have been used to capture the changing economic structure of West Bengal between 1980-81 and 2013-14.

III

DOMINANCE OF RICE IN FOOD GRAIN PRODUCTION AND INTER DISTRICT COMPARISON OF
GROWTH IN PRODUCTION AND PRODUCTIVITY OF FOODGRAIN IN WEST BENGAL

West Bengal and the central Gangetic Bengal is the oldest agricultural settlement in India. Except the western region (Birbhum and Bankura) which contained laterite formation, rest of the West Bengal and central Bengal was identified as 'semi-aquatic rice plain' (Bose, 1987: 37-38). In fact, two-thirds of the total geographical area comes under flat alluvial plains created by the river Ganges that makes the region favourable for rice cultivation. It is clear from Graph 1, that production of rice as
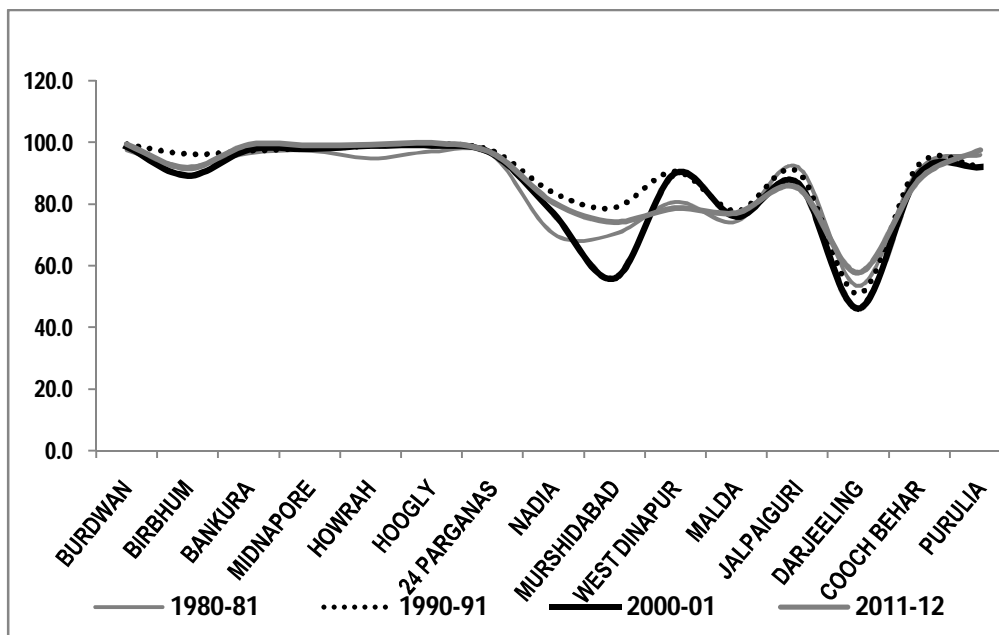
Source: Compiled from the data collected from various volumes of West Bengal Economic Review, Government of West Bengal.

Graph 1. Districtwise Production of Rice as Percentage of Districtwise Foodgrain
Production.

percentage of foodgrain production has been increased from 82 per cent to 92 per cent between 1970-71 and 2011-12. It has been observed that in West Bengal, in terms of contribution to total foodgrain production in all the districts, rice has absolute dominance in most of the districts. For most of the districts, the production of rice as percentage of foodgrain was varying between 80 percent and closer to 96 percent. But the exceptional districts were Nadia, Murshidabad, Malda and Darjeeling where the production of rice as percentage of foodgrain was varying between 52 per cent and 62 per cent.

IV

INTER-DISTRICT COMPARISON OF GROWTH IN PRODUCTION AND PRODUCTIVITY OF FOODGRAIN IN WEST BENGAL

Over the whole period 1970-71 to 2011-12, the exponential growth of foodgrain production for West Bengal stood at 2.4 per cent per annum and significant at 1 per cent level (Table 1). District-wise exponential growth rates of foodgrain production from 1970-71 to 2011-12, reveal that Burdwan, Midnapore, Nadia and West Dinajpur achieved more than 2.4 per cent growth per annum and are statistically significant at 1 per cent level. Again, foodgrain production grew at an exponential rate between 2 to 2.4 per cent in rest of the districts excepting Jalpaiguri and Darjeeling. While measuring changes in growth rates over different sub-periods for foodgrain production in the districts, it is observed that in sub-period I, the growth rates are negative for most of the districts excepting Howrah and 24 Parganas, Nadia and Darjeeling. This period has unanimously been identified by all the researchers as the period of absolute agricultural stagnation.

A massive turnaround has been observed in the growth rate in foodgrain production since 1980-81. In sub-period II, foodgrain production in West Bengal grew at an exponential rate of 4 per cent per annum. Among the districts, most impressive growth was achieved by Purulia and Howrah where foodgrain production grew at a rate of 5.6 percent. Lowest growth rate was achieved by Jalpaiguri district (less than 2 per cent).

The values of trend break help us to specify the extent of gain or loss in growth rates for a particular sub-period in comparison to previous sub-period. Trend break-I reveals that in sub-period II, highest gain in growth of foodgrain production over sub-period I was achieved by Purulia (8.8 percent). Significant gains in growth rates were also achieved by Bankura and Midnapore. All the districts in West Bengal had experienced positive trend break in sub-period II over sub-period I. For West Bengal a net gain of 3.9 per cent was achieved in sub-period II in comparison to sub-period I. However, in sub-period III and IV, like the state, majority of the districts failed to maintain the high growth rates in foodgrain production as achieved in sub-period II.

TABLE 1. DISTRICTWISE KINKED EXPONENTIAL GROWTH IN PRODUCTION OF FOODGRAIN IN WEST BENGAL FOR (1970-71 TO 2008-09), (1970-71 TO 1979-80), (1980-81 TO 1989-90), (1990-91 TO 1999-2000) AND (2000-01 TO 2011-12)

Dist/sub-period growth (1)	Whole period (1970-71 to 2011-12) (2)	Sub-period I (1970-71 to 1979-80) (3)	Sub-period II (1980-81 to 1989-90) (4)	Sub-period III (1990-91 to 1999-2000) (5)	Sub-period IV (2000-01 to 2012-13) (6)	Trend break I (7)	Trend break II (8)	Trend break III (9)	DW (10)	R^2 (11)
Burdwan	2.5 (13.9)*	0.8 -0.7	3.5 (3.8)*	3.9 (9.9)*	2.6 (11.6)*	2.8	0.4	-1.3	1.3	0.9
Birbhum	2.2 (7.4)*	-1.7 (-1.0)	3.2 (2.3)**	3.2 (5.5)*	2.6 (7.9)*	4.9	0.0	-0.6	1.4	0.7
Bankura	2.1 (9.0)*	-1.2 (-0.64)	4.8 (2.8)*	4.5 (6.4)*	2.6 (6.4)*	6.0	-0.3	-1.9	1.8	0.7
Midnapore	2.9 (15.2)*	-0.9 (-0.7)	5.1 (5.0)*	4.3 (9.9)*	3.4 (13.6)*	6.0	-0.8	-0.9	1.6	0.9
Howrah	2.3 (8.3)*	1.3 (-0.7)	5.6 (3.6)*	3.7 (5.7)*	2.4 (6.4)*	4.3	-1.9	-1.3	1.3	0.7
Hoogly	2.1 (12.6)*	-0.4 (-0.4)	2.6 (2.7)*	3.2 (7.9)*	2.4 (10.6)*	3.1	0.6	-0.7	2.1	0.8
24 Parganas	2.3 (11.5)*	2.1 (-1.6)	3.2 (2.6)*	3.3 (6.6)*	2.3 (7.9)*	1.0	0.1	-1.0	1.3	0.8
Nadia	2.6 (11.4)*	1.7 (-1.3)	5.3 (4.6)*	4.3 (8.8)*	2.7 (9.5)*	3.7	-1.0	-1.6	0.9	0.9
Murshidabad	2.4 (13.2)*	0.0 (-0.0)	2.6 (2.5)*	3.3 (7.4)*	2.7 (10.5)*	2.7	0.7	-0.6	1.4	0.8
West Dinajpur	2.9 (19.9)*	-0.8 (-0.1)	3.5 (4.9)*	3.8 (12.8)*	3.4 (19.9)*	4.3	0.3	-0.4	1.9	0.9
Malda	2.4 (17.5)*	1.0 (-1.2)	3.4 (4.6)*	3.4 (11.0)*	2.5 (14.0)*	2.4	0.0	-0.9	1.5	0.9
Jalpaiguri	1.5 (8.0)*	-1.3 (-1.1)	1.4 (-1.4)	1.3 (3.1)*	2.0 (8.2)*	2.7	-0.1	0.6	1.9	0.7
Darjeeling	1.0 (3.5)*	2.8 (1.7)***	2.7 (1.9)**	2.5 (4.2)*	0.6 (1.7)***	0.0	-0.2	-1.9	1.2	0.6
Cooch Behar	2.1 (15.3)*	0.5 (-0.6)	3.1 (3.8)*	2.1 (6.0)*	2.4 (12.2)*	2.6	-1.0	0.3	1.4	0.9
Purulia	2.3 (6.6)*	-3.1 (-1.3)	5.6 (2.6)*	3.9 (4.3)*	3.2 (6.2)*	8.8	-1.8	-0.7	2.1	0.6
West Bengal	2.4 (16.0)*	-0.1 (-0.1)	3.8 (4.5)*	3.6 (10.4)*	2.7 (13.6)*	3.9	-0.2	-0.9	1.2	0.9

Source: Calculation based on data collected from various volumes of West Bengal Economic Review, Government of West Bengal.

Note: T stats are shown in parenthesis.

*, ** and ***Significant at 1, 5 and 10 per cent level.

During 1970-71 to 2011-12, foodgrain productivity (Table 2) in West Bengal grew at an exponential rate of 2.3 per cent per annum and found statistically significant. However, in first sub-period only the districts, Burdwan, 24 Parganas, Nadia and Malda achieved positive and significant growth rates of productivity. For the state, as a whole, the growth rate in productivity was only 0.3 per cent and insignificant. Major breakthrough in growth in foodgrain productivity was observed for sub-period II Midnapore, Howrah and Nadia experienced significant exponential growth rate which was more than 5 per cent per annum. Darjeeling achieved lowest

growth rate of 1.8 per cent among all the districts of West Bengal. In West Bengal, the growth of productivity increased from 0.3 per cent to 3.7 per cent from sub-period I to sub-period II. Significant rise in growth of foodgrain was observed during this period and increase in productivity thus a natural corollary.

TABLE 2. DISTRICTWISE KINKED EXPONENTIAL GROWTH IN PRODUCTIVITY OF FOODGRAIN IN WEST BENGAL FOR (1970-71 TO 2008-09), (1970-71 TO 1979-80), (1980-81 TO 1989-90), (1990-91 TO 1999-2000) AND (2000-01 TO 2011-12)

Dist/sub-period growth (1)	Whole period (1970-71 to 2011-12) (2)	Sub-period I (1970-71 to 1979-80) (3)	Sub-period II (1980-81 to 1989-90) (4)	Sub-period III (1990-91 to 1999-2000) (5)	Sub-period IV (2000-01 to 2012-13) (6)	Trend break I (7)	Trend break II (8)	Trend break III (9)	DW (10)	R^2 (11)
Burdwan	2.0 (14.8)*	1.7 (2.1)**	3.0 (4.2)*	2.9 (9.7)*	2.0 (11.5.)*	1.3	-0.1	-0.9	1.2	0.9
Birbhum	2.2 (13.1)*	-0.5 (-0.43)	4.2 (4.4)*	3.3 (8.3)*	2.6 (11.1)*	4.6	-0.9	-0.8	1.3	0.9
Bankura	2.5 (13.5)*	-0.7 (-0.6)	4.8 (4.7)*	3.9 (9.3)*	2.9 (12.0)*	5.5	-0.8	-1.0	1.7	0.9
Midnapore	2.5 (15.3)*	-0.5 (-0.5)	5.0 (5.6)*	3.6 9.6*	2.9 13.5*	5.6	-1.4	-0.7	1.5	0.9
Howrah	1.8 (8.7)*	-0.1 (-0.0)	5.1 (4.3)*	2.9 (5.7)*	2.1 (7.4)*	5.2	-2.3	-0.7	1.7	0.7
Hoogly	1.8 (15.7)*	0.3 (-0.4)	2.8 (4.2)*	2.5 (9.1)*	2.0 (12.3)*	2.5	-0.2	-0.6	2.2	0.9
24 Parganas	2.3 (14.5)*	1.8 -1.6	3.1 (3.2)*	2.9 (6.9)*	2.4 (9.9)*	1.3	-0.3	-0.5	1.6	0.9
Nadia	2.7 (16.5)*	2.4 (2.7)*	5.0 (6.6)*	3.8 (12.0)*	2.7 (14.6)*	2.6	-1.2	-1.2	1.4	0.9
Murshidabad	2.3 (17.1)*	0.6 -0.7	3.1 (4.2)*	3.4 (11.3)*	2.5 (14.3)*	2.5	0.4	-0.9	1.6	0.9
West Dinajpur	3.0 (21.2)*	-0.8 (-1.1)	3.9 (5.9)*	4.0 (14.5)*	3.5 (21.9)*	4.8	0.1	-0.5	2.1	1.0
Malda	3.2 (33.7)*	2.8 (4.3)*	3.5 (6.0)*	3.5 (14.6)*	3.2 (22.8)*	0.6	0.1	-0.4	1.5	1.0
Jalpaiguri	1.8 (9.3)*	-2.6 (-2.6)*	2.1 (2.4)*	2.0 (5.5)*	2.5 (11.6)*	4.7	-0.1	0.4	2.3	0.8
Darjeeling	1.7 (8.0)*	1.6 (-1.1)	1.8 (-1.5)	2.9 (5.8)*	1.6 (5.5)*	0.1	1.2	-1.3	1.6	0.7
Cooch Behar	2.2 (15.9)*	-0.8 (-1.1)	2.7 (4.3)*	2.2 (8.3)*	2.7 (17.4)*	3.5	-0.5	0.5	1.7	0.9
Purulia	2.3 (9.7)*	-1.7 (-1.1)	4.4 (3.2)*	2.9 (4.9)*	3.0 (8.9)*	6.1	-1.6	0.1	2.3	0.8
West Bengal	2.3 (19.7)*	0.3 (-0.4)	3.7 (5.7)*	3.3 (11.9)*	2.6 (16.5)*	3.4	-0.5	-0.7	1.4	0.9

Source: Calculation based on data collected from various volumes of West Bengal Economic Review, Government of West Bengal.

Note: T stats are shown in parenthesis.

*, ** and ***Significant at 1, 5 and 10 per cent level.

Therefore, the empirical results as depicted above reaffirmed three major observations on agriculture in West Bengal. First, the persistence of stagnation due to negligible growth in agricultural production and productivity from 1970-71 to 1980-

81; second, an overwhelming turnaround from stagnation in agricultural production and productivity in West Bengal since late-eighties. Third, during post-1990 period, the state as well as for the districts growth rates in production and productivity have been declining.

V

AGRICULTURE AND ECONOMY INTERFACE: A FEW CRITICAL ISSUES

For West Bengal, the rise in the growth of agricultural productivity in the eighties, subsequent fall in the nineties and rise in cost of production in post-reform period may have some negative impact on agricultural income, employment and economy at large. And, lack of alternative employment and income opportunities outside agriculture may further complicate the situation. It may lead to possible marginalisation of rural work force.

Taking sectoral share into consideration (Table 3), it is observed that from 1980-81 to 1995-1996, the share of agriculture to GSDP experienced a gradual increase and thereafter it started declining in subsequent years. The decline became sharp since 2000-01. However, contribution of the secondary sector to GSDP failed to surpass the share of primary sector from 1980-81 to 2013-2014 and decline in share

TABLE 3. SHARE OF VARIOUS SECTORS (IN PERCENTAGE) IN GSDP (AT CURRENT PRICES) FROM 1980-81 TO 2013-14

Year/sectors	1980-81	1985-86	1990-91	1995-96	2000-01	2005-06	2009-10	2013-14
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Agriculture	26.0	27.2	26.1	30.1	25.0	19.3	18.9	16.90
Forestry and logging	1.1	1.1	1.0	0.9	0.8	1.1	1.1	1.26
Fishing	3.0	3.5	3.4	3.7	3.8	3.6	3.5	3.54
Mining and quarrying	1.2	1.3	1.2	0.8	1.4	1.3	0.8	1.28
Sub total of primary	31.2	33.1	31.8	35.5	30.9	25.3	24.3	22.98
Manufacturing	21.7	17.9	18.6	15.4	12.7	10.2	9.6	8.28
Registered	12.9	9.9	10.6	8.3	4.9	5.1	4.8	4.45
Unregistered	8.8	7.9	8.0	7.1	7.7	5.1	4.8	3.83
Construction	7.3	7.6	7.0	5.4	5.1	7.5	6.1	5.30
Electricity, gas and water supply	1.0	1.9	1.6	2.0	1.9	2.0	1.9	2.35
Sub total of secondary	30.0	27.3	27.2	22.8	19.6	19.8	17.7	15.93
Transport, storage and communication	4.8	5.9	7.2	7.3	6.5	8.5	8.9	8.91
Trade, hotels and restaurants	11.7	12.4	11.6	13.1	10.8	16.1	15.1	14.87
Banking and insurance	5.0	5.2	5.4	7.4	11.0	6.0	5.7	6.09
Real estate and etc.	8.1	6.7	5.1	4.1	7.6	8.0	9.3	9.83
Public administration	3.0	3.7	4.8	4.2	5.6	5.5	6.0	4.62
Other services	6.1	5.7	6.9	5.6	8.0	10.9	13.2	16.77
Sub total of tertiary	38.7	39.6	41.0	41.6	49.5	55.0	58.1	61.09
Gross state domestic product (gsdp)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100

Source: Calculation based on GSDP data collected from Ministry of Statistics and Programme Implementation, Government of India [www.mospi.nic.in] and Department of Planning, Government of West Bengal [www.wbplan.gov.in].

became faster since 1990-91. Within the secondary sector, the secular fall in share of contribution of both registered and unregistered manufacturing sectors has also been observed. It became sluggish during the eighties and picked up during nineties and onwards. Share of registered industries started declining since 2000-01 and from 2005-06 and the share of unregistered industries was also declining sharply. This indicates that the number of units in operation must have declined or closed down during this period.

It is clearly evident from Figure 3, that concentration of registered factories remained high in the districts of Howrah, Hoogly and 24 Parganas. Moderate concentration was observed in Burdwan, Darjeeling and Jalpaiguri. But since 1990, barring the district of Howrah, number of small-scale units registered with Directorate of Micro and Small-Scale Enterprises of the state have declined for all the other districts (Figure 4). Though the number of registered factories per thousand sq-km increased for all the districts of West Bengal, it however remains low in the districts e.g. Cooch Behar, Purulia, Murshidabad, Malda, Nadia, West Dinajpur, Bankura and Birbhum between 1980 and 2012.
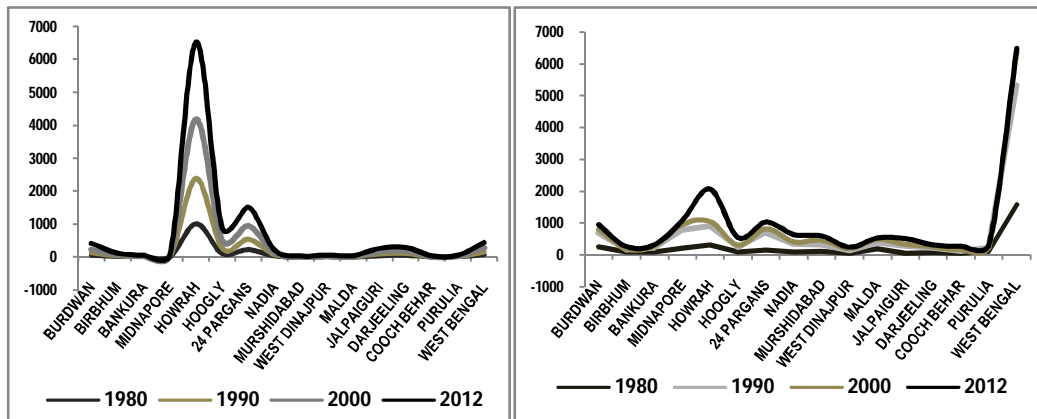
Source: Calculation based on data collected from various volumes of District Statistical handbook, Bureau of Applied Economics and Statistics, Government of West Bengal.

| Graph 2. District-Wise No. of Registered Factories in Per '000 Sq-Km Area | Graph 3. District-Wise No. of Small Scale Units in Per '000 Sq-Km Area |

Simultaneously, contribution of manufacturing sector to GSDP declined sharply. Hence, scope of workforce to move from agricultural to industry remained a contentious issue. The major contribution to GSDP is thus coming from the tertiary sector. Within tertiary sector, trade, hotels and restaurant, real estate and other services contributed significantly.

Increase in incidence of land alienation of *pattadars* and eviction of *bargadars* has also been observed in various districts of West Bengal. A study conducted by the State Institute of *Panchayat* and Rural Development observed that by 2001, on an

average, almost 13 per cent of the *pattadars* had lost their land and around 14 per cent of *bargadars* were evicted from their land.

The extent of dispossession widely varied across the districts. More than 30 per cent of the *bargadars* lost possession of their land in relatively backward districts like Cooch Behar, Dinajpur and Jalpaiguri. Land alienation remained high in Dinajpur and South 24 Parganas. Extension of tea estates in North Dinajpur and proliferation of brackish water fish cultivation and appropriation of arable land for such purposes in Sundarban regions of south 24 Parganas were identified as few possible causes, among many, for high incidence of land alienation (West Bengal Human Development Report, 2004: 41).

It has been observed that the number of registered factories increased over the years but average daily employment per factory has substantially declined between 1990 and 2012 for most of the districts (Graph 4). Situation is becoming more complicated with the introduction of economic reform in 1991 that altogether altered the basis of the input supply system facing a farmer. Since, majority of the districts overwhelmingly produces rice (mostly aman as winter crop and boro as summer crop), the rise in input cost bound to affect adversely the small and marginal farmers of the state. Further, the rise in cost of inputs like seeds, fertiliser, irrigation charges have become much sharp in post-economic reform periods (Table 4). Therefore, poor tenants, small and marginal farmers are facing a difficult situation not only in procuring the complementary inputs at affordable prices but also realizing the optimum value for the output produced.
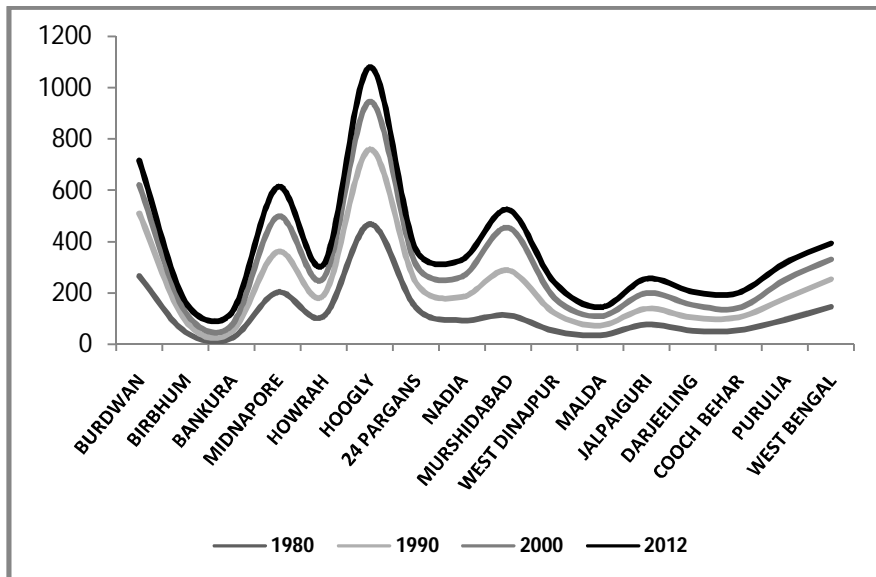
Source: Calculation based on data collected from various issues of West Bengal Economic Review, Government of West Bengal

Graph 4. Per-Factory (Registered) Average Daily Employment.

TABLE 4. AVERAGE INCREASE OF COST FOR RICE PRODUCTION

(1)	CAGR of cost of seed (2)	CAGR of cost of fertiliser (3)	CAGR of irrigation charges (4)	CAGR of cost per acre production (5)
Aman Rice				
1980-81 TO 1989-90	8.04	6.25	6.24	8.01
1990-91 TO 2011-12	14.6	13.18	7.8	15.3
Boro Rice				
1980-81 TO 1989-90	7.25	7.00	8.78	9.98
1990-91 TO 2011-12	18.2	16.6	16.0	15.8

Source: Data on Farm Management, Various Issues, Govt. of West Bengal.

VI

CONCLUSION

In relation to trends in agricultural production and productivity in West Bengal and in her districts, couple of important issues have emerged.

Growth of production and productivity of food grain was primarily driven by rice and increase in yield contributed most to the growth of productivity and production.

As expansion of area in the lower Gangetic region is not virtually possible; therefore, yield expansion is the only alternative to augment production. Failure to do so would make the state vulnerable not only in foodgrain production, but also the economic status of the population.

Absence of large-scale manufacturing sector has elongated industrial backwardness of the state and a secular fall in share of contribution to GSDP of both registered and unregistered manufacturing sectors became a matter of concern. These have reduced the employment opportunities outside agriculture.

Increase of incidence of land alienation of pattadars and increasing eviction of bargardars in the state and her districts has further complicated the agrarian situation. The corroborative inadequacies in thriving for alternative employment avenues in a large extent crippled the economic status of agrarian community of Bengal in post-economic reform.

NOTE

1. To maintain temporal continuity of data, the districts of 24 Parganas, West Dinajpur and Midnapore have been taken as an undivided unit and Kolkata has been excluded in this study because of its non availability of agricultural areas. The erstwhile district of 24 Parganas was split into two districts- South and North 24 Parganas in 1986, West Dianjpur was divided into North and South Dinajpur in 1992 and the district of Midnapore was divided into West and East Midnapore in 2002.

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