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STATE BUDGETARY RESOURCES AND AGRICULTURAL DEVELOPMENT IN WEST BENGAL

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PREFACE

The present study entitled "State Budgetary Resources and Agricultural Development" was undertaken at the instance of the Directorate of Economics & Statistics, Ministry of Agriculture, Government of India, New Delhi, as a common study involving all AER Centres in India and the responsibility of coordinating the study was vested on ADRT Centre, Institute for Social & Economic Change, Bangalore.

State budgetary support to agriculture has generated considerable debate and interest. The debate lacks on several counts. One, most of the researchers have been using CSO series on public investment which has inherent limitations due to its restrictive coverage as it consists largely investment in irrigation alone. Two, most of the past studies have focused on specific aspects of falling public investment amidst rising private investment in Indian agriculture. The exhaustive literature and the conclusive evidences are based on the national-level investigations. But it might or might not be the case for most of the states. Thus, it would be more useful to examine the trend and magnitude at the state level.. Third, the past studies are mainly concerned with capital expenditures. There is hardly any study available which deals with revenue expenditure on agriculture at state level. The present study is a modest attempt in this direction. The present study has been carried out to review the trends in state budgetary supports to agriculture under revenue account and its implication for future agricultural growth in West Bengal. The study also analysed different schemes for agriculture sector and their impacts on agricultural development in West Bengal.

The study has been carried out by Dr. Bidhan Chandra Roy, Mr. Vivekananda Datta and Mr. Fazlul Haque Khan. Dr. Bidhan Chandra Roy, external member from PSB, Institute of Agriculture, Visva-Bharati, shouldered the entire responsibility of drafting of the report. I thank and congratulate all of them for their co-ordinating effort in completing this work. Sri Nityananda Maji and Munshi Abdul Khaleque helped in compilation of data at the computer. The secretarial assistance was received from Sarbasre D. Mondal, P. Das, A. R. Patra and P. Hazra. I offer my sincere thanks to all of them.

On behalf of the centre, the undersigned takes the opportunity to thank the officials of the Government of West Bengal for their kind help and cooperation in carrying out the study. I also thank the peer reviewer Dr. G. B. Lokesh for his valuable comments on the draft of the study which were immensely useful in improving the quality of the study. Finally, my thanks are due to the academicians of the co-ordinating centre for their excellent co-ordination in conducting the study.

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CHAPTER I

INTRODUCTION

1.1 Preamble

State budgetary support to agriculture plays an important role in its development. The nature and magnitude of budgetary support influences the technical progress to a large extent. Needless to say, that the higher level of expenditure lays the foundation for higher rate of growth. Thus the importance of capital in the form of public and private investment in agriculture as a vehicle of productivity change has been recognized long back (Lewis 1955; Rostow, 1960; Cairncross, 1966 and Meir, 1984). Given the critical importance of agriculture to the Indian economy, capital assumes added importance. As the potential for further increases in crop area is nearly exhausted, the future growth of Indian agriculture need to be yield based. The latter requires large investment in creating and maintaining productive assets like irrigation and rural infrastructure as well as in promoting growth agents like agricultural research, education and extension.

Public expenditures on agriculture have played an important role in West Bengal's economic development, particularly in rural poverty reduction. The period from the mid 1970s to the end of the 1980s when rural poverty showed a marked reduction was also a decade when public expenditures on agriculture rose phenomenally. This also corresponded to a period when Government introduced several new programmes on agricultural development. There was an increased political commitment towards agricultural development which was backed by an increased allocation of resources and by a set of new pro-poor agricultural policies. Nationalized commercial banks were required to assign 40% of their lending to priority sectors - small farmers, small businesses, and artisans. New employment-creation and asset generation programmes for rural poverty reduction were introduced. Government expenditures appear to have strong "trickle down" characteristics, much more distinctly so than income growth. Practically all states that have succeeded in reducing poverty have made sizable investments in agriculture and rural development programmes. However, though the size of government spending matters, but so does the efficiency of such spending. Leakage, corruption and inefficiency in management are frequently reported. Nevertheless, even with a poor record in programme implementation, states that have invested heavily in agriculture and rural development programmes seem to do distinctly better in poverty reduction. This is

not to suggest that efficiency of government spending does not matter. In fact, it points to the enormous potential that exists for accelerating agricultural growth with improvements in the efficiency of spending. With such improvements, overall government expenditures are likely to have larger multiplier effects and India could witness a more rapid reduction in rural poverty.

The available evidence indicates that investments in agricultural sector have accelerated and sustained appreciable growth in agricultural production and made the country self sufficient in food production. The production of foodgrains has increased from 51 million tonnes in 1950/51 to 206 million tonnes at the turn of the century. However, the pattern of growth is uneven across regions and constrained by capital inadequacy, infrastructural support and distortions in the incentive regime for agriculture. It is often argued that agriculture did not been receive due attention it deserved in terms of resource allocation in recent years. Consequently, the growth of agriculture has also tended to slacken during the nineties (GOI, 2000). Besides, Indian agriculture faces a greater challenge in increasing productivity and making agricultural production cost effective in the wake of economic liberalization and free trade regime. At the same time poverty still remains rampant. Agricultural growth in recent years is not sufficient enough to make a dent on poverty, particularly rural poverty.

Turning to subsidies, the issue of agricultural subsidies has become very controversial in recent years. There is a growing criticism against the continuation of agricultural subsidies in India on the ground that they lead to wasteful consumption and crowd out public expenditure in irrigation, research and many other important items of rural infrastructure. However, all the subsidies may not necessarily conflict with investment. Subsidies on agricultural inputs may induce farmers to increase private investment on items like tubewells, pumpsets, and tractors. Moreover, such criticisms are not backed by convincing empirical analysis. Thus it is imperative to analyze the possible impact of agricultural subsidy vis-a-vis agricultural investment on agricultural production and rural poverty.

In one hand the National Agriculture Policy (2000) fixed a target growth rate in excess of four per cent per annum in the agriculture sector in order to meet future demand. On the other hand, it noted that the agriculture sector is starved of capital, public investment is declining, and the incentive regime for agriculture still remains unfavourable. At the same time total number of people living below the poverty line is increasing. In this critical juncture, the

country can ill afford to neglect agriculture. Given the objectives of removal of the incidence of poverty and ensuring food and nutritional security, attaining a high growth rate in agriculture is a must (Planning Commission, 1997). The achievement of such a higher rate of agricultural growth is, however, contingent upon the necessary investments being made. Thus, understanding the underlying relationship between capital, agricultural growth and rural poverty is particularly important at a time when the government is undertaking a series of policy reforms.

Government is making expenditure on revenue account mainly to develop farm technologies and human capital that has very significant impact on agricultural productivity (Pal and Singh, 1997). Thus, there is a need for studying government revenue expenditure that helps in creating capital formation for agriculture. Agriculture being state subject in India, the primary responsibility of funding agricultural investment lies with the concerned states. The Union Government also supports agricultural investments to some extent. For instance, major portion of agricultural research components are initiated and funded by the Union Government. So the case with investment items like special area programme, development of agricultural financial institutions, and investment towards establishment of fertilizer industries. Also the expenditures under various centrally sponsored programmes of agricultural development are funded by the Union Government. Therefore, it is important to analyze agricultural funding at the state level.

The regional pattern of agricultural expenditure and its association with agricultural productivity and rural poverty, hitherto, did not receive much attention. Most of the past studies have focused on specific aspects of falling public investment amidst rising private investment in Indian agriculture. The exhaustive literature and the conclusive evidences are based on the national-level investigations. But it might or might not be the case for most of the states. Thus, it would be more useful to examine the trend and magnitude at the state level. Earlier studies recognized that the non-existence of state-level agricultural investment data was the most significant constraint confronted by them and emphasized the need for compilation of an inventory of agricultural investment at the state level. The construction of a state-level time-series data on private and public sector agricultural investment was a challenging task because much of the data sources were inadequate in scope and coverage, difficult to access, uneven in quality and varied in the degree of documentation. In view of the above facts, it was felt necessary to analyze the status of budgetary support to agriculture

and its impact on agricultural development in West Bengal. The present study is a modest attempt in this direction to address following questions:

(i). What would be the trend and magnitude in state budgetary support to agriculture in West Bengal?,

(ii). What are the different schemes for agricultural development in the state and how they helped in overall development in the State?, and

(iii). What is the impact of agricultural investment on agricultural productivity and rural poverty?

1.2 Profile of the State

West Bengal is on the eastern bottleneck of India, stretching from the Himalayas in the north to the Bay of Bengal in the south. With Bangladesh, which lies on its eastern border, the state forms the ethno-linguistic region of Bengal. To its northeast lie the states of Assam and Sikkim and the country Bhutan, and to its southwest, the state of Orissa. To the west it borders the state of Jharkhand and Bihar, and to the northwest, Nepal. The state has a total area of 88,752 square kilometers (34,267 sq mi). The Darjeeling Himalayan hill region in the northern extreme of the state belongs to the eastern Himalaya. This region contains Sandakfu (3,636 metres/11,929 feet)—the highest peak of the state. The narrow Terai region separates this region from the plains, which in turn transitions into the Ganges delta towards the south. The Rarh region intervenes between the Ganges delta in the east and the western plateau and high lands. A small coastal region is on the extreme south, while the Sundarbans mangrove forests form a remarkable geographical landmark at the Ganges delta.

West Bengal with a population of around 83 million accounts for 7.6 per cent of the country's population. The state's geographical area of 89,000 sq. kms. covers 2.7 per cent of the country's geographical area. The State has 19 districts and Calcutta (Kolkata) is the State's capital. There are 23 towns with a population of over 100,000. With a population density of 904 persons per sq.km. in 2001, the state is currently the most densely populated state in India (CMIE, 2009). The literacy rate is 69.22% and the life expectancy in the state is 63.4 years, higher than the national value of 61.7 years. About 72% of people live in rural areas.

The proportion of people living below the poverty line in 1999–2000 is 27% which is marginally higher than the national average of 26%. Scheduled Castes and Tribes form 28.6% and 5.8% of the population respectively in rural areas, and 19.9% and 1.5% respectively in urban areas.

Agriculture is the mainstay of about 70 per cent population. The land usage in the state is as follows - arable land 62.8 per cent (55,414 sq. kms), forests 13.38 per cent and the rest for other purposes. The state has large reserves of coal in the Raniganj coal belt region. Other minerals include dolomite, limestone and china clay. Rice is the state's principal food crop. Other major crops include wheat, jute, tea, potato, sugarcane, pulses, rapeseed and mustard, and forest produce. Tea is also produced commercially; the region is well known for Darjeeling and other high quality teas.

A significant part of the state is economically backward, namely, large parts of three northern districts of Cooch Behar,, Jalpaiguri and North Dinajpur; three western districts of Purulia, Bankura, Birbhum; and the Sundarbans area. Years after independence, West Bengal was still dependent on the central government for meeting its demands for food; food production remained stagnant and the Indian green revolution bypassed the state. However, there has been a significant spurt in food production since the 1980s, and the state now has a surplus of grains. The state's share of total industrial output in India was 9.8% in 1980–81, declining to 5% by 1997–98. However, the service sector has grown at a rate higher than the national rate.

The state economy is predominantly services economy - 53 per cent of the state GDP comes from the services sector. Agriculture and industry contributes around 21 and 26 per cent, respectively. State industries are localized in the Kolkata region and the mineral-rich western highlands. Durgapur–Asansol colliery belt is home to a number of major steel plants. Manufacturing industries playing an important economic role are engineering products, electronics, electrical equipment, cables, steel, leather, textiles, jewellery, frigates, automobiles, railway coaches, and wagons.

West Bengal has the third largest economy (2003–2004) in India, with a gross state domestic product of Rs. 236,044 crores during 2005-06. The state has promoted foreign direct investment, which has mostly come in the software and electronics fields; Kolkata is

becoming a major hub for the Information technology (IT) industry. Owing to the boom in Kolkata's and the overall state's economy, West Bengal is now the third fastest growing economy in the country and the state domestic product (SDP) grew in 2004 with 12.7 % and in 2005 with 11.0 %. However, the rapid industrialisation process has given rise to debate over land acquisition for industry in this agrarian state. NASSCOM–Gartner ranks West Bengal power infrastructure the best in the country. However, in terms of basic household amenities, the state's performance tends to be lower than the national average with 68% of urban households and only 16% of rural households had pucca houses, compared to 71% and 29% respectively for all-India.

1.3 Agriculture and Public Finance

Soon after independence, India embarked on the path of planned development of its economy in 1951with the launching of the First five year plan. Currently, the Eleventh five year plan (2007-2012) is in operation in the country. From the beginning, the planners realised the importance of accelerating both public and private investment in the economy for achieving high growth. But the core of planned process being public investment, the main discussion on resource mobilisation for plan expenditure has centred on the issues related with financing of planned expenditure of the public sector. Along with the other sectors of the economy like manufacturing, electricity, construction, transport, communication and services, agricultural planning constitutes a part of the overall plan. But being a major sector of the economy, contributing more than 20 % of the GDP and employing nearly 60 % of the total workforce, agriculture has always attracted a great deal of attention of the planners. While allocating the resources for investments close association between investments in agriculture and other rural developments has been kept in mind. Therefore, both, investments meant for agriculture sector and rural developments, have aimed at developing rural economy.

Agriculture is a state subject in India. Therefore, the respective state governments are financing most of the public expenditures in agriculture. The national agriculture policy serves as the guidelines for state level agricultural policies. The national policy document noted that the agriculture sector has been starved of capital and there has been a decline in the public sector investment in the agriculture sector. The National Agricultural Policy also states that *'... the government will endeavour to create a favourable economic environment for increasing capital formation and farmer's own investments by removal of distortions in the*

incentive regime for agriculture, improving the terms of trade with manufacturing sectors and bringing about external and domestic market reforms, backed by rationalization of domestic tax structure. It will seek to bestow on the agriculture sector in as many respects as possible benefits similar to those obtaining in the manufacturing sector, such as easy availability of credit and other inputs, and infrastructure facilities for development of agri-business industries and development of effective delivery systems and freeing movement of agro produce'.

From the beginning, the planners realised the importance of accelerating both public and private investment in agriculture for achieving high growth. But the core of planned process being public investment, the main discussion has centered on the issues related with financing of planned expenditure of the public sector. Policies related to private investment in agriculture hitherto received little attention. In face of the failure of government policies to address the real problems of agricultural sector, the government policies have now changing and the emphasis now appears to be on encouraging private household and corporate investment in agriculture.

1.4 Brief Review of Agricultural Development of the State

Since, agriculture is the mainstay of 70 per cent of rural households in West Bengal, its growth is vital for the growth of the state economy, and consequently the socio-economic upliftment of the rural masses. From this perspective, it is important to make a critical appraisal of the changing profile of agriculture in West Bengal.

Table 1.1 shows the trend and magnitude in the growth of Gross State Domestic Product (GSDP) and Net State Domestic Product (NSDP) in West Bengal at current price as well as at constant price (1993-94 price). It also shows the annual compound growth rates in GSDP and NSDP for pre-reform period i.e., for the period 1985-86 to 1991-92 (CGR I); post-reform period i.e., for the period 1991-92 to 2005-06 (CGR II) and for the total period i.e. for the period of 1985-86 to 2005-06 (CGR ALL). A perusal of the table shows that in nominal terms, the West Bengal economy grew around 13 per cent per annum. However, between 1985-86 and 1991-92, West Bengal's annual rate of real NSDP growth rate was just 2.77%. The 1990s seemed to change this and as a result it rose to 6.38% during 1991-92 to 2005-06.

Table 1.1: Growth of GSDP & NSDP at Current and Constant Prices

(Rs. In Crores)

Year	At Current Price		At Constant Price	
	GSDP	**NSDP**	**GSDP**	**NSDP**
1985-86	19220	17415	39224	35542
1986-87	20909	18946	43560	39471
1987-88	25396	23012	43787	39676
1988-89	27244	24686	43244	39185
1989-90	30669	27790	45775	41478
1990-91	34764	31500	46352	42000
1991-92	40207	36433	47865	43372
1992-93	42784	38768	45515	41242
1993-94	53424	48398	53424	48398
1994-95	59395	53819	53996	48927
1995-96	74091	67136	61232	55484
1996-97	82132	74422	61753	55957
1997-98	98876	89595	69631	63095
1998-99	117168	106170	73230	66356
1999-00	126834	124808	76406	75186
2000-01	139863	128975	81316	74985
2001-02	153865	143910	85958	80397
2002-03	165419	153578	88459	82127
2003-04	186429	172540	96097	88938
2004-05	206881	188998	102926	94029
2005-06	232556	212453	110741	101168
CGR-I	***11.95***	***11.95***	***2.77***	***2.77***
CGR-II	***12.71***	***12.90***	***6.19***	***6.38***
CGR ALL	***12.98***	***13.12***	***5.19***	***5.33***

Data Source: Statistical Abstracts (Several Volumes), Bureau of Applied Economics and Research, Government of West Bengal

Note: GSDP figures for few years are derived from NSDP figures

Sector-wise share in GSDP (at constant price) and workforce has been presented in Table 1.2. The table points to a significant structural transformation in West Bengal economy. The share of primary sector (agriculture, forestry, fishing, mining and quarrying, etc.) in state's GSDP was more or less stagnant or fluctuating above and around 35 percent till the year 1998-99. But there after a steady decline is observed. By the year 2005-06, the share of primary sector was less than 25 percent which further reduced to less than 20 per cent in recent years. Accordingly, there was corresponding decline in the dependence on agriculture too during the said period from 54.18 percent in 1985-86 to 40.51 per cent in 2005-06. So far as secondary sector (manufacturing, construction, electricity, gas and water supply, etc) is concerned, its share in the GSDP has reduced from 29 percent in 1987-88 to 18 percent in 1999-2000. Then it again increased to around 19 percent by 2005-06. However, one interesting observation is

that though the contribution of secondary sector on state GSDP has reduced from 29 per cent to 19 percent, the dependence of work-force on this sector increased from 3.67 per cent in 1985-86 to 9.37 per cent in 2005-06. The share of tertiary sector (transport, storage, finance, communication, trade, etc) both in GSDP as well as Work-force dependence, has increased throughout.

The above findings points to the fact that the West Bengal economy is shifting away from primary sector to tertiary sector and of late the dependence on agriculture is reducing. In fact, thanks to growth in information technology and marketing services, West Bengal economy is now dominated by tertiary sector as more than half of the GSDP is now coming from this sector and it is providing employment to equal proportion of work-force.

Table 1.2: Sector-wise share of GSDP (at constant price) and Work-force

(Total GSDP in rupees crores & Work-force in number)

Year	Primary sector (%)		Secondary sector (%)		Tertiary sector (%)		Total	
	GSDP	Work-force	GSDP	Work-force	GSDP	Work-force	GSDP	Work-force
1985-86	35.36	54.18	26.11	3.67	38.53	42.15	39224	17306870
1986-87	34.07	53.98	26.10	3.71	39.83	42.31	43560	17813136
1987-88	33.19	53.78	28.93	3.75	37.88	42.47	43787	18334543
1988-89	35.46	53.57	25.28	3.79	39.26	42.64	43244	18871552
1989-90	35.27	53.37	25.16	3.83	39.57	42.80	45775	19424642
1990-91	33.15	53.17	26.19	3.86	40.66	42.97	46352	19994305
1991-92	37.69	52.96	21.78	3.90	40.53	43.13	47865	20581048
1992-93	36.15	52.11	22.13	4.17	41.72	43.72	45515	21293243
1993-94	35.33	51.25	21.59	4.45	43.08	44.30	53424	22038837
1994-95	36.78	50.38	21.52	4.75	41.70	44.88	53996	22819844
1995-96	35.23	49.51	21.45	5.06	43.32	45.43	61232	23638420
1996-97	36.11	48.63	20.10	5.39	43.79	45.98	61753	24496884
1997-98	37.22	47.74	19.13	5.75	43.65	46.51	69631	25397727
1998-99	36.00	46.85	18.78	6.12	45.22	47.03	73230	26343632
1999-00	33.53	45.96	18.36	6.51	48.12	47.53	76406	27337481
2000-01	31.37	45.06	18.90	6.93	49.73	48.02	81316	28382384
2001-02	30.82	44.15	18.56	7.37	50.62	48.48	85958	29481690
2002-03	28.18	43.25	18.48	7.83	53.34	48.92	88459	30639014
2003-04	27.46	42.33	19.16	8.32	53.38	49.35	96097	31858258
2004-05	25.49	41.42	19.62	8.83	54.89	49.75	102926	33143637
2005-06	24.79	40.51	19.43	9.37	55.78	50.12	110741	34499707
CGR-I	***-0.44***	***-0.38***	***-0.65***	***1.04***	***0.81***	***0.39***	***2.77***	***2.89***
CGR-II	***-2.91***	***-1.91***	***-1.19***	***6.26***	***2.41***	***1.08***	***6.19***	***3.69***
CGR ALL	***-1.40***	***-1.52***	***-2.07***	***5.11***	***1.94***	***0.96***	***5.19***	***3.47***

Data Source: Statistical Abstracts (Several Volumes), Bureau of Applied Economics and Statistics, Government of West Bengal

Note: Workforce relates to 1981, 1991 and 2001 population census.

1.5 Agricultural Productivity Growth and Stagnation Across Crops

The contrast between the pre-reform and the post-reform periods in respect of the performance of agriculture in West Bengal is quite stark. Except for wheat and sugarcane, the yield performance of all the major crops was worse in the post reform period. The total foodgrain production which grew as high as 11.79 per cent per annum during pre-reform period, reduced to just 1.92 per cent during post-reform period. Table 1.3a and 1.3b shows that yield for major agricultural crops grew much faster in the 1980s than in the post reform period. The performance of some individual crops like few pulses and sugarcane has, however, been better in the post reform period. However, as shown in Table 1.3b the performance of all non-foodgrains as a whole remains lackluster. The performance in respect of wheat and sugarcane is not surprising since both these crops are grown under irrigated environments and mostly by the relatively rich farmers.

The appreciable growth in agriculture that have taken the state towards self-sufficiency in food production during 1980s can be traced to developments in a number of directions, most importantly to the massive expansion of irrigation base, development of rural infrastructure, institutional support and technological change due to larger public expenditure on agriculture. But the magnitude of government expenditure on agriculture and the associated growth in agricultural production slowed down significantly during post-Reform period significantly.

The land use statistics in West Bengal is shown in Table 1.4. Land use statistics are not available for the period 1987-88 to 1993-94 in West Bengal because of disputes in the change in classification methods. Thus growth rates are calculated for the period 1994-95 to 2005-06 only. A perusal of the table shows that the area under forest, pastures as well as the net sown area has declined considerably. But there is significant increase in gross cropped area and thus in the cropping intensity.

The change in cropping pattern is shown in table 1.5. The main findings show a trend for diversification towards potato, sugarcane and oilseed crops and a reduction in area under cereals and pulses.

Table 1.3a: Growth in Production and Productivity, Crop-wise

(Production in ’000 tones & Yield in Kg/ha)

Year	Rice		Wheat		Maize		Ragi		Gram		Tur		Potatoes	
	Prodn.	**Yield**	**Prodn.**	**Yield**	**Prodn.**	**Yield**	**Prodn**	**Yield**	**Prodn**	**Yield**	**Prodn.**	**Yield**	**Prodn.**	**Yield**
1985-86	7991	1573	739	2421	103	1837	10	688	60	871	14	905	2759	19930
1986-87	8463	1574	683	1717	231	3076	12	747	50	716	10	1264	3543	20469
1987-88	9272	1693	674	1801	102	1849	11	714	41	615	5	892	3787	21048
1988-89	10560	1878	625	2082	93	1777	13	867	27	869	7	1012	4348	23033
1989-90	10924	1946	569	1742	117	2089	12	889	18	578	5	966	4532	21974
1990-91	10437	1795	530	1970	82	1269	11	827	15	584	3	498	4482	23046
1991-92	11954	2090	558	2247	144	3004	12	925	17	959	2	521	4943	21586
1992-93	11445	2010	587	2158	135	2517	12	934	19	911	5	967	4779	21649
1993-94	12111	2061	632	2060	165	3156	12	938	14	763	5	855	5172	22533
1994-95	12236	2120	745	2286	143	3236	13	1069	22	886	2	632	5559	23925
1995-96	11887	1997	725	2147	107	2374	14	1054	34	1093	3	398	6258	24456
1996-97	12637	2179	839	2390	84	2422	14	1118	25	863	3	776	8472	26956
1997-98	13237	2243	811	2206	130	3000	15	1216	17	667	2	630	5949	20947
1998-99	13316	2255	778	2117	121	3145	16	1213	19	815	2	429	6690	21023
1999-00	13760	2237	851	2336	70	1983	15	1205	22	825	2	588	7482	23689
2000-01	12428	2287	1059	2485	88	2503	15	1205	50	917	6	669	7673	25606
2001-02	15257	2514	962	2215	86	2596	15	1144	43	851	3	830	7822	26090
2002-03	14389	2463	888	2189	55	1995	16	1157	27	780	3	913	6903	19761
2003-04	14662	2504	986	2315	126	2270	16	1151	48	1026	3	1006	7622	24711
2004-05	14885	2574	815	2103	191	2948	16	1200	39	1024	1	710	7107	22170
2005-06	14511	2509	774	2109	207	2888	16	1213	37	911	2	866	7463	21053
CGR I	***6.37***	***4.00***	***-6.53***	***-2.41***	***-9.35***	***-8.71***	***1.84***	***4.68***	***-29.75***	***-6.56***	***-26.99***	***-10.48***	***9.44***	***2.94***
CGR II	***1.89***	***1.83***	***3.05***	***0.01***	***-0.62***	***-1.07***	***2.27***	***1.83***	***6.82***	***0.32***	***-3.29***	***2.08***	***3.13***	***-0.04***
CGR ALL	***2.73***	***2.30***	***2.25***	***0.74***	***-0.32***	***1.29***	***2.20***	***2.80***	***0.91***	***1.34***	***-7.01***	***-0.93***	***4.46***	***0.43***

Data Source: Statistical Abstracts (Several Volumes), Bureau of Applied Economics and Statistics, Government of West Bengal

Table 1.3b: Growth in Production and Productivity, Crop-wise

(Production in ’000 tones & Yield in Kg/ha)

Year	Sugarcane		Jute		Rape & Mustard		Small Millets		Total Cereals		Total Pulses		Total Foodgrains		Total Oil Seeds	
	Prdn.	Yield	Prdn.	Yield	Prdn	Yield	Prdn	Yield	Prdn.	Yield	Prdn.	Yield	Prdn.	Yield	Prdn.	Yield
1985-86	81	6312	7390	1820	163	706	5	496	8864	1617	263	628	9128	1546	234	630
1986-87	76	6069	4950	1723	177	600	6	665	9411	1597	200	564	9611	1539	264	623
1987-88	69	6281	3638	1544	334	879	6	560	10079	1696	227	626	1031	1634	506	857
1988-89	116	7095	4531	1964	327	864	7	545	11307	1880	208	675	11515	1821	404	819
1989-90	103	6842	5003	2111	325	894	7	528	11644	1929	212	627	11857	1821	418	856
1990-91	86	7069	5496	1978	336	889	5	494	11077	1792	193	616	11270	1735	454	884
1991-92	97	5701	6373	2000	307	745	5	587	12681	2098	175	648	12856	2036	451	786
1992-93	89	5789	5347	1951	291	740	4	575	12190	2016	199	721	12389	1959	411	787
1993-94	54	5274	5569	2110	293	769	5	532	12930	2065	171	635	13101	2006	416	780
1994-95	65	61293	5934	2110	299	790	4	459	13144	2132	135	593	13279	2077	414	780
1995-96	131	76436	5671	1978	229	700	3	549	12744	2003	143	670	12886	1960	371	747
1996-97	181	72756	7506	2178	285	891	6	849	13585	2187	173	737	13738	2134	428	841
1997-98	1826	70772	7550	2119	251	767	3	639	14236	2241	153	688	14354	2189	387	761
1998-99	2002	74285	7374	2169	252	731	3	656	14241	2248	127	621	14368	2197	379	769
1999-00	1763	77036	7594	2227	279	805	4	665	14764	2237	142	661	14846	2187	406	808
2000-01	1466	67821	7428	2182	417	956	3	675	13596	2297	220	800	13815	2231	571	953
2001-02	1983	85138	8836	2440	337	766	3	678	16326	2490	175	703	16501	2424	493	816
2002-03	1281	65842	8506	2407	329	805	3	776	15355	2430	168	694	15523	2374	476	837
2003-04	1253	74107	8367	2428	419	928	3	791	15798	2484	212	840	16009	2421	652	951
2004-05	1033	66034	7853	2484	343	749	3	887	15940	2543	167	739	16107	2480	557	827
2005-06	1248	83009	7989	2572	383	909	3	924	15514	2486	175	784	15688	2427	623	969
CGR I	***4.95***	***2.99***	***-3.51***	***3.62***	***15.48***	***6.66***	***1.76***	***-2.11***	***5.34***	***3.38***	***-4.17***	***0.85***	***11.71***	***3.40***	***12.76***	***7.43***
CGR II	***25.91***	***16.83***	***3.10***	***1.83***	***2.40***	***1.05***	***-3.61***	***3.60***	***1.94***	***1.71***	***0.68***	***1.35***	***1.92***	***1.73***	***2.99***	***1.29***
CGR ALL	***19.71***	***17.20***	***3.04***	***1.81***	***2.14***	***0.56***	***-4.26***	***2.47***	***2.65***	***2.19***	***-1.35***	***1.19***	***4.98***	***2.29***	***2.73***	***1.04***

Data Source: Statistical Abstracts (Several Volumes), Bureau of Applied Economics and Statistics, Government of West Bengal

Table 1.4: Land use Statistics in West Bengal

(Area in 000 hectare)

Year	Total Reported Area	Forest	Not Available for Cultivation	Permanent Pastures and other grazing Land	Land under Misc. Tree Crops & Grooves	Cultivable Waste Land	Fallow land other than current fellows	Current Fellows	Net Area Sown	Area Sown More than once	Total cropped area (GCA)
1985-86	8604.40	1090.10	1696.97	5.54	152.89	371.93	64.03	63.9	5159.04	1987.76	7146.80
1986-87	8846.44	1187.90	1649.68	8.49	53.75	116.94	75.15	348.64	5405.89	2379.81	7785.70
1987-88	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7784.50
1988-89	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7630.30
1989-90	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	7687.30
1990-91	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8662.28
1991-92	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8666.26
1992-93	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8540.25
1993-94	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8680.49
1994-95	8681.36	1189.14	1638.40	6.36	77.83	62.27	34.26	209.53	5463.59	3254.58	8718.17
1995-96	8694.51	1195.52	1642.37	7.03	78.52	58.15	31.21	219.78	5461.93	3510.61	8972.54
1996-97	8696.35	1195.01	1658.90	8.04	80.48	49.63	28.55	212.61	5463.13	3569.81	9032.94
1997-98	8686.63	1191.95	1650.83	7.59	76.61	46.25	29.83	218.51	5465.06	3767.97	9233.03
1998-99	8686.75	1191.95	1667.08	7.18	72.66	44.79	33.49	229.35	5440.25	3869.39	9309.64
1999-00	8689.03	1191.95	1658.94	5.20	76.47	42.20	34.26	208.30	5471.71	4073.65	9545.36
2000-01	8687.71	1190.44	1594.22	4.28	57.04	37.14	28.84	358.36	5417.38	3699.22	9116.60
2001-02	8694.67	1184.17	1573.17	4.07	56.01	37.74	28.47	289.46	5521.58	4257.23	9778.81
2002-03	8686.64	1193.64	1633.43	5.29	55.44	37.19	26.21	381.25	5354.19	4156.23	9510.42
2003-04	8687.52	1171.29	1636.04	4.69	57.87	34.47	22.12	333.37	5427.67	4233.65	9661.32
2004-05	8687.45	1174.77	1699.99	4.54	58.54	35.56	25.34	314.00	5374.71	4148.22	9522.93
2005-06	8682.95	1174.98	1753.33	5.54	62.98	42.59	29.59	319.25	5294.70	4237.91	9532.61
CGR	***0.00***	***-0.16***	***0.24***	***-4.52***	***-3.49***	***-4.51***	***-2.30***	***5.25***	***-0.21***	***2.20***	***0.78***

Data Source: Statistical Abstracts (Several Volumes), Bureau of Applied Economics and Statistics, Government of West Bengal

Note: Land use statistics are not available for the period 1987-88 to 1993-94 and thus growth rates are calculated for the period 1994-95 to 2005-06 only.

Table 1.5: Percentage Change in the Cropping Pattern

(Area as a percent to GCA)

Year	Rice	Wheat	Maize	Ragi	Gram	Tur	Potatoes	Sugar cane	Sesamum	Rapeseed & Mustard	Small Millets	Total Cereals	Total Pulses	Total Food grains	Total Oil Seeds	GCA (000'Ha)
1985-86	71.06	4.27	0.79	0.19	0.96	0.22	1.94	0.18	10.22	3.24	0.13	76.70	5.89	82.59	5.19	7146.80 (100)
1986-87	69.05	5.11	0.96	0.21	0.90	0.10	2.22	0.16	6.65	3.79	0.12	75.68	3.26	80.22	5.43	7785.70 (100)
1987-88	70.34	4.81	0.71	0.20	0.85	0.07	2.31	0.14	5.44	4.88	0.14	76.36	4.66	81.02	7.58	7784.50 (100)
1988-89	73.68	3.93	0.68	0.20	0.41	0.09	2.47	0.21	5.44	4.96	0.17	78.81	4.05	82.86	6.45	7630.30 (100)
1989-90	73.03	4.25	0.73	0.18	0.40	0.07	2.68	0.20	5.55	4.72	0.17	78.50	4.41	82.91	6.35	7687.30 (100)
1990-91	67.11	3.11	0.75	0.15	0.30	0.07	2.25	0.14	5.77	4.36	0.12	71.36	3.62	74.99	5.92	8662.28 (100)
1991-92	65.93	2.86	0.55	0.15	0.21	0.05	2.64	0.20	6.62	4.76	0.09	69.74	3.11	72.86	6.62	8666.26 (100)
1992-93	66.68	3.19	0.63	0.15	0.24	0.05	2.59	0.18	5.78	4.60	0.08	70.80	3.23	74.04	6.11	8540.25 (100)
1993-94	67.69	3.54	0.60	0.14	0.22	0.07	2.66	0.12	5.47	4.39	0.10	72.14	3.10	75.24	6.13	8680.49 (100)
1994-95	66.21	3.73	0.51	0.14	0.28	0.04	2.66	0.12	5.83	4.33	0.07	70.73	2.61	73.34	6.09	8718.17 (100)
1995-96	66.35	3.76	0.50	0.14	0.35	0.04	2.85	0.19	5.75	3.65	0.06	70.91	2.37	73.28	5.53	8972.54 (100)
1996-97	64.22	3.89	0.38	0.14	0.32	0.04	3.48	0.28	6.86	3.54	0.08	68.77	2.60	71.37	5.63	9032.94 (100)
1997-98	63.90	3.98	0.47	0.14	0.28	0.04	3.08	0.28	6.95	3.54	0.06	68.62	2.40	71.03	5.50	9233.03 (100)
1998-99	63.42	3.95	0.41	0.14	0.25	0.03	3.42	0.29	6.57	3.70	0.05	68.05	2.19	70.24	5.30	9309.64 (100)
1999-00	64.43	3.82	0.37	0.13	0.28	0.03	3.31	0.24	6.43	3.62	0.05	68.87	2.24	71.11	5.26	9545.36 (100)
2000-01	59.62	4.67	0.39	0.14	0.60	0.10	3.29	0.24	6.72	4.78	0.05	64.92	3.01	67.93	6.57	9116.60 (100)
2001-02	62.06	4.44	0.34	0.13	0.52	0.04	3.07	0.24	6.67	4.50	0.05	67.06	2.55	69.61	6.18	9778.81 (100)
2002-03	61.43	4.26	0.29	0.14	0.50	0.03	3.67	0.21	6.69	4.29	0.04	66.21	2.54	68.76	5.98	9510.42 (100)
2003-04	60.62	4.41	0.57	0.14	0.48	0.04	3.19	0.17	6.42	4.68	0.04	65.83	2.61	68.44	7.09	9661.32 (100)
2004-05	60.73	4.20	0.68	0.14	0.40	0.02	3.37	0.16	5.98	4.80	0.03	65.82	2.38	68.20	7.07	9522.93 (100)
2005-06	60.66	3.85	0.75	0.14	0.42	0.02	3.72	0.16	5.86	4.42	0.04	65.47	2.34	67.81	6.75	9532.61 (100)
CGR I	***-0.20***	***-6.69***	***-3.21***	***-4.70***	***-25.65***	***-18.70***	***3.92***	***-0.52***	***-9.72***	***6.17***	***2.40***	***-0.63***	***-4.77***	***-1.03***	***2.76***	***2.58***
CGR II	***-0.83***	***2.21***	***-0.44***	***-0.43***	***5.92***	***-5.11***	***2.27***	***0.70***	***0.37***	***0.45***	***-7.16***	***-0.67***	***-1.55***	***-0.71***	***0.81***	***0.90***
CGR ALL	***-0.93***	***0.19***	***-2.97***	***-1.96***	***-1.53***	***-7.39***	***2.68***	***1.15***	***-0.13***	***0.22***	***-7.89***	***-0.90***	***-3.53***	***-1.04***	***0.34***	***1.36***

Data Source: Statistical Abstracts (Several Volumes), Bureau of Applied Economics and Statistics, Government of West Bengal

Table 1.6: Compound growth Rates of NSDP by Sector of Origin

(Percent/annum)

Particulars	Pre reform period (1985-86 to 1990-91)	Reform Period (1991-92 to 2005-06)	Total (1985-86 to 2005-06)
Agriculture and allied activities	13.44	10.13	12.39
Fisheries	11.25	13.12	14.01
Forestry and Wild Life	11.59	9.80	11.07

1.6 Objectives

In order to examine the issues mentioned above, the present study proposes to analyse the allocation of budgetary resources by the state as well as the balance between the Central and the State schemes in West Bengal. The specific objectives of this study are:

1. To analyze the trends in budgetary allocation of resources to the agricultural sector as a whole and the sub-sectors of agriculture in particular in West Bengal.

2. To document and analyze schemes under operation in the state contributing to the development of agricultural sector in West Bengal.

3. To enlist and analyse the impact of central sector schemes operating in the agricultural sector of the state.

1.7 Methodology

In this section, the concepts, the data sources and the analytical tools used to address the specific objectives are described. The Government accounts are kept in the following three parts: Part I- Consolidated fund; Part II- Contingency fund; and Part III- Public Account. In part I of the account, there are three main divisions, namely: Revenue, Capital and Debt. The second division i.e., capital outlay deals with the expenditure met usually from borrowed funds with the objective, either of increasing concrete assets of a material character, or of reducing recurring liabilities, such as those for future pensions by payment of the capitalized

value. It also includes receipts of a capital nature intended to be applied as a set off to capital expenditure (CFRA, 1967/68). In our analysis, only the revenue account is considered. Capital account and loans and advances have been excluded. Further, the terms government expenditure, public investment, government budgetary support, government outlays are used interchangeably throughout this report.

The study is based on published and unpublished secondary data. Data on government finances, agricultural output and related statistics were compiled for the period 1985/86 to 2005/06. For the sake of clarity we have classified the entire period into two sub-periods coinciding with the phases of economic development. These periods were: i) Period I: 1985/86-1990/91, which is characterized as pre-Reform, and ii) Period II: 1991/92-2005/06, which is termed as post-Reform period. These sub-periods also witnessed distinct pattern in agricultural investment.

Besides government finance, a large number of related data were collected from various published and unpublished sources. Important datasets are on land use statistics; area, production and productivity of different crops; net state domestic product and gross state domestic product; work-force data; rural poverty; and data on various schemes on agriculture. The required information were collected from state Statistical Abstracts published by the Bureau of Applied Economics and Statistics, Government of West Bengal and from other publications from Department of Planning, Department of Agriculture; of West Bengal Government and Department of Population Census, Government of India. Data on area, production and productivity of different crops are taken from Government sources and CMIE data on total cropped area is used for converting the total expenditure data into per hectare expenditure.

In this analysis we presented our finance data at current and constant price. The choice of deflator is critical to isolate the effect of inflation while constructing a series at constant prices. However, selection of appropriate deflator is not a simple matter and entails some conceptual difficulties. After a careful examination of various deflators we find the GDP deflator more appropriate for this investigation. Thus the expenditure and state domestic product series have been prepared at 1993/94 prices by deflating the current price series by GDP deflator.

Growth analysis was carried out by computing compound (exponential) growth rate (CGR I for Period I; CGR II for Period II; and CGR ALL for Total Period), as in a biological production process like agriculture, CGR is considered to be more appropriate (Rath, 1980). Moreover, when time series data are taken into consideration, it is desirable to use a log-linear model, unless theoretical consideration points to the other clearly superior alternatives (Wagle, 1999). It also helps in reducing heteroscedasticity (Gujrati, 1995). The CGR was computed for all the time series data sets.

1.8 Organization of the Study

The study is organised into five chapters including Introduction. Chapter I set forth introductory information including a brief profile of the state followed by the review of public finance and agricultural development in the state. The objective of the study and methodology is also discussed in this chapter. Chapter II gives a detailed account of trend and pattern of budgetary expenditure on agriculture. Various agricultural development schemes in the state, including Centrally Sponsored Schemes and Externally Funded Schemes, are discussed in Chapter III. Chapter IV presents the analysis of impacts of agricultural expenditure on agricultural growth and poverty. Finally, summary and conclusions of the study are presented in Chapter V.

CHAPTER II

TRENDS AND PATTERN OF BUDGETARY EXPENDITURE ON AGRICULTURE

2.1 Introduction

The size of government spending matters, but so does the efficiency of such spending. Government expenditures appear to have strong "trickle down" characteristics but leakage, corruption and inefficiency in management are frequently reported. Nevertheless, even with a poor record in programme implementation, regions that have invested heavily in agricultural development programmes seem to do distinctly better in poverty reduction. This is not to suggest that efficiency of government spending does not matter. In fact, it points to the enormous potential that exists for accelerating poverty reductions with improvements in the efficiency of spending. With improvements, overall government expenditures are likely to have larger multiplier effects and West Bengal could witness a more rapid reduction in poverty.

The current stance of policy towards agriculture is neither efficient nor equitable. The stagnation of state budgetary support to agriculture has meant that enough productive capacity to sustain agricultural growth has not been forthcoming. At the same time political economy considerations have led to a burgeoning of the agricultural and food subsidies bill. The subsidy mix has not been well thought out and, more importantly, the subsidies are available for current production and not addition for productive capacity. Furthermore, there is widespread evidence that the more affluent farmers are able to garner a disproportionately large part of the subsidies. Hence the subsidy incidence is inequitable. At the same time, the stagnation of agriculture has led to a spillover of problems into other areas particularly, but not exclusively, in the area of unemployment.

2.2 Trends of Budgetary Expenditure on Agriculture

It is well known that agriculture is one of the most important sectors in the West Bengal economy as it contributes around 20 per cent of the Gross State Domestic Product (GSDP) and provides around 43 per cent employment to the total work force in the state. The growth

of agriculture sector has also both direct and indirect impact on reducing rural poverty (Roy, 2001). Therefore, agricultural growth assumes paramount importance in accelerating overall economic growth. State budgetary support to agriculture also induces private household investment in agriculture (Roy, 2001). As a sizable amount of public expenditure is meant for creating and facilitating infrastructure and it augments productive capacity, the level of public expenditure is crucial for growth of output. Accordingly, it has been pointed out that the decline in public investment in agriculture during early 1980s, would have adverse impact on the growth of agricultural output (Rath, 1989). Though agricultural GDP and its growth rate did not decline as predicted during the decade of 1980s, following decline in the public investment, there is no disagreement about the importance of public investment for long run output growth.

Table 2.1a shows the trend in budgetary support to agriculture at current prices and Table 2.1b shows the same at constant prices.

2.2.1. Growth of Budgetary Expenditure on Agriculture at Constant Prices

Though nominal public expenditures in agriculture have tended to rise year after year, in real terms, these have tended to diminish in absolute magnitude during mid 1990s and again during 2001-02 onwards. The decline is more severe in Capital Account than in Revenue Account. The decline on capital account was very sharp during pre-Reform period while the revenue account expenditure, in real terms, declined only in the post-Reform period. However, while looking into the total budget of the government, there is no such decline is there. Both the in the total budget and in budget for economic services, the revenue account as well as capital account expenditure increased considerable in post and pre-Reform period.

2.2.2. Growth of Per Hectare Budgetary Expenditure on Agriculture

There is another way in which we can assess the intensity of agricultural expenditure. That is by examining agricultural investment per unit of gross cropped area. Government expenditure on agriculture, in Rs/ha GCA, shows a fluctuating pattern in real terms. And such a fluctuating pattern holds true at current prices too. It is evident from the Table 2.2 that though nominal public expenditure on agriculture per unit of cropped area have tended to rise

year after year, in real terms, these have tended to diminish in absolute magnitude since the beginning of 1980s. At 1993-94 constant prices, public expenditure on agriculture plunged to Rs. 391/haGCA in 2004-05 from close to Rs. 600/ha GCA in 2000-01. More specifically, public expenditure in 1993-94 prices fell at 1.31% annually in the post-reform period from –0.92% annually during pre-reform period. Table 2.2 shows that though per hectare nominal expenditure on agriculture have tended to rise from Rs. 252/ha in 1985-86 to Rs. 823/ha in 2005-06, the real expenditure on agriculture (i.e. at constant price) has been declining in both the pre-reform and post-reform period.

Table 2.1a: Trend in Expenditure on Agriculture (at Current Price)

(Rs. in 000)

Year	Total Expenditure (Budget)			Economic Services			Expenditure on Agriculture		
	Revenue	Capital	Total	Revenue	Capital	Total	Revenue	Capital	Total
1985-86	22603300	1219300	23822600	5781748	1109729	6891477	1798936	172244	1971180
1986-87	26974800	2069000	29043800	6202782	1615810	7818592	1862798	221724	2084522
1987-88	30274700	2441200	32715900	6887447	1297468	8184915	2131080	203809	2334889
1988-89	34746200	2715500	37461700	8114440	1941460	10055900	2420078	279357	2699435
1989-90	39712500	4140700	43853200	9485274	3267820	12753094	2568286	74059	2642345
1990-91	51281200	3686200	54967400	11610228	2963972	14574200	3087883	253747	3341630
1991-92	53236900	3128800	56365700	11710036	2372812	14082848	3760482	250239	4010721
1992-93	56637000	2637200	59274200	12400000	2221592	14621592	4016579	79637	4096216
1993-94	69057500	4020400	73077900	15896454	3462170	19358624	4773776	104366	4878142
1994-95	76306600	770400	77077000	16673530	7107063	23780593	3966977	225289	4192266
1995-96	86262700	11642800	97905500	18231262	11001176	29232438	4406490	151844	4558334
1996-97	103623500	14449100	118072600	22019360	13489838	35509198	5187382	231321	5418703
1997-98	113218800	6337900	119556700	20541045	5292904	25833949	5221057	334580	5555637
1998-99	142428900	7145500	149574400	25240852	5533139	30773991	6971818	269361	7241179
1999-00	194984400	10064300	205048700	30259404	7299403	37558807	8296789	211550	8508339
2000-01	221034500	13228000	234262500	37546339	10823785	48370124	9160408	181965	9342373
2001-02	233945200	12655300	246600500	35864276	10696215	46560491	8329196	278914	8608110
2002-03	231607700	7843500	239451200	27420028	6297000	33717028	7515811	179225	7695036
2003-04	257574700	7561400	265136100	30444519	6006234	36450753	7343794	119753	7463547
2004-05	281461200	18345200	299806400	35566624	16603554	52170178	7482362	176294	7658656
2005-06	311168600	16527200	327695800	46349800	13089259	59439059	7840600	419381	8259981
CGR I	***15.41***	***22.06***	***15.86***	***14.07***	***21.22***	***15.48***	***10.83***	***-2.96***	***9.99***
CGR II	***13.59***	***12.95***	***13.47***	***8.81***	***9.32***	***8.81***	***6.11***	***3.23***	***6.00***
CGR ALL	***13.63***	***11.27***	***13.49***	***10.07***	***11.49***	***10.38***	***8.16***	***1.44***	***7.81***

Data Source: Statistical Abstracts (Several Volumes), Bureau of Applied Economics and Statistics, Government of West Bengal

Table 2.1b: Trend in Expenditure on Agriculture (at Constant Price)

(Rs. in 000)

Year	Total Expenditure (Budget)			Economic Services			Expenditure on Agriculture		
	Revenue	Capital	Total	Revenue	Capital	Total	Revenue	Capital	Total
1985-86	46129237	2488370	48617608	11799499	2264756	14064255	3671302	351519	4022821
1986-87	56197456	4310413	60507869	12922452	3366268	16288720	3880826	461925	4342751
1987-88	52197795	4208968	56406763	11874917	2237015	14111932	3674278	351395	4025673
1988-89	55152775	4310323	59463099	12880081	3081687	15961768	3841399	443424	4284823
1989-90	59272400	6180151	65452551	14157128	4877344	19034473	3833263	110536	3943799
1990-91	68374994	4914938	73289932	15480318	3951966	19432284	4117181	338330	4455511
1991-92	63377201	3724758	67101959	13940506	2824773	16765279	4476760	297903	4774663
1992-93	60252112	2805531	63057643	13191486	2363395	15554881	4272955	84720	4357675
1993-94	69057500	4020400	73077900	15896454	3462170	19358624	4773776	104366	4878142
1994-95	69369613	700363	70069976	15157749	6460964	21618713	3606341	204808	3811150
1995-96	71291506	9622151	80913657	15067163	9091883	24159046	3641728	125491	3767219
1996-97	77912405	10863985	88776390	16555910	10142735	26698645	3900287	173926	4074213
1997-98	79731578	4463311	84194890	14465530	3727399	18192928	3676802	235620	3912422
1998-99	89018013	4465935	93483948	15775524	3458210	19233734	4357384	168351	4525734
1999-00	117460510	6062833	123523343	18228561	4397232	22625793	4998067	127440	5125507
2000-01	128508470	7690700	136199170	21829274	6292900	28122174	5325820	105794	5431614
2001-02	130695658	7070001	137765659	20035911	5975540	26011451	4653183	155818	4809001
2002-03	123854426	4194386	128048813	14663121	3367381	18030502	4019152	95842	4114994
2003-04	132770491	3897630	136668120	15693054	3095998	18789052	3785462	61728	3847190
2004-05	140030434	9126964	149157399	17694836	8260474	25955310	3722568	87708	3810276
2005-06	148175530	7870096	156045625	22071334	6232981	28304315	3733619	199705	3933324
CGR I	***6.24***	***12.88***	***6.69***	***4.89***	***12.05***	***6.31***	***1.66***	***-12.14***	***0.81***
CGR II	***7.07***	***6.43***	***6.95***	***2.29***	***2.80***	***2.29***	***-0.41***	***-3.29***	***-0.52***
CGR ALL	***5.84***	***3.48***	***5.71***	***2.28***	***3.70***	***2.59***	***0.37***	***-6.35***	***0.02***

Data Source: Statistical Abstracts (Several Volumes), Bureau of Applied Economics and Statistics, Government of West Bengal

Table 2.2: Trends in Expenditure on Agriculture of Revenue Account (Current and Constant Prices)

(Rs./ha of GCA)

Year	Current Prices	Constant Prices
1985-86	251.71	513.69
1986-87	239.26	498.46
1987-88	273.76	472.00
1988-89	317.17	503.45
1989-90	334.09	498.64
1990-91	356.47	475.29
1991-92	433.92	516.57
1992-93	470.31	500.33
1993-94	549.94	549.94
1994-95	455.02	413.65
1995-96	491.11	405.88
1996-97	574.27	431.78
1997-98	565.48	398.23
1998-99	748.88	468.05
1999-00	869.20	523.61
2000-01	1004.80	584.19
2001-02	851.76	475.84
2002-03	790.27	422.60
2003-04	760.12	391.81
2004-05	785.72	390.91
2005-06	822.50	391.67
CGR I	***8.25***	***-0.92***
CGR II	***5.21***	***-1.31***
CGR ALL	***6.80***	***-0.99***

Data Source: Statistical Abstracts (Several Volumes), Bureau of Applied Economics and Statistics, Government of West Bengal

2.2.3. Expenditure on Agriculture as a Share of Total Budget

Expenditure on agriculture and allied sector as a share of total budget of revenue account is given in Table 2.3. The table shows that the share of agriculture was as high as 7.55% in 1985-86, which continuously declined to as low as 2.39%. The decline is steeper during post-Reform period than pre-Reform period.

2.2.4. Expenditure on Agriculture as a Share of Expenditure on Economic Services

Expenditure on agriculture and allied sector as a share of Economic Services of revenue account is also given in Table 2.3. The trend is similar to that of earlier one. This implies that over the years government neglected agriculture sector, while allocating public resources. The siphoning of resources from agriculture to other sectors had a telling effect on agricultural development in the state.

Table 2.3: Expenditure on Agriculture of Revenue Account as share of Total Budget and as a share of Economic Services

Year	As a share of total expenditure (Budget)	As a share of Economic services
1985-86	7.55	26.10
1986-87	6.41	23.83
1987-88	6.51	26.04
1988-89	6.46	24.07
1989-90	5.86	20.14
1990-91	5.62	21.19
1991-92	6.67	26.70
1992-93	6.78	27.47
1993-94	6.53	24.66
1994-95	5.15	16.68
1995-96	4.50	15.07
1996-97	4.39	14.61
1997-98	4.37	20.21
1998-99	4.66	22.65
1999-00	4.05	22.09
2000-01	3.91	18.94
2001-02	3.38	17.89
2002-03	3.14	22.29
2003-04	2.77	20.15
2004-05	2.50	14.34
2005-06	2.39	13.19
CGR I	***-5.01***	***-4.64***
CGR II	***-7.36***	***-2.70***
CGR ALL	***-5.33***	***-2.22***

Data Source: Statistical Abstracts (Several Volumes), Bureau of Applied Economics and Statistics, Government of West Bengal

2.2.5. Expenditure on Agriculture as a Percentage of NSDP

Another way of analyzing the trend in Expenditure on Agriculture is in terms of its percentage of NSDP as shown in Table 2.4. A perusal of the table shows that though nominal public expenditure in agriculture, till 2000-01, have tended to rise year after year, expenditure in agriculture as a proportion of NSDP has been declining very fast. And during the post-reform period the decline was too severe. Since 2000-01 onward, the expenditure on agriculture declined even in nominal price leading to an overall slump. The total declined from 1% on an average during the pre-reform period to less than 0.4% in recent years.

Table 2.4: Expenditure on Agriculture of Revenue Account as a percentage of NSDP

(Rupees in 000)

Year	Expenditure on Agriculture	NSDP	Expenditure on Agriculture as a percentage of NSDP (%)
1985-86	1798936	174154200	1.0329559
1986-87	1862798	189461900	0.9832045
1987-88	2131080	230122600	0.9260629
1988-89	2420078	246863800	0.9803292
1989-90	2568286	277902100	0.9241693
1990-91	3087883	315003000	0.980271
1991-92	3760482	364325000	1.0321779
1992-93	4016579	387676700	1.0360641
1993-94	4773776	483976300	0.9863657
1994-95	3966977	538194800	0.7370894
1995-96	4406490	671355500	0.6563572
1996-97	5187382	744221500	0.6970212
1997-98	5221057	895946200	0.5827422
1998-99	6971818	1061695200	0.6566685
1999-00	8296789	1248083300	0.6647624
2000-01	9160408	1289748300	0.7102477
2001-02	8329196	1439103500	0.5787767
2002-03	7515811	1535782700	0.4893798
2003-04	7343794	1725401700	0.4256281
2004-05	7482362	1889976700	0.395897
2005-06	7840600	2124530700	0.3690509
CGR I	***10.83***	***11.95***	***-1.12***
CGR II	***6.11***	***12.90***	***-6.79***
CGR ALL	***8.16***	***13.12***	***-4.96***

Data Source: Statistical Abstracts (Several Volumes), Bureau of Applied Economics and Statistics, Government of West Bengal

2.2.6. Changes in the composition of Expenditure on Agriculture

Another important aspect of agricultural expenditure is its composition. As seen from Table 2.5a, 2.5b, 2.6a, 2.6b, 2.6c and 2.6d. there has been a marked change in the composition in the total expenditure on agriculture. The priorities are shifted towards animal husbandry, fisheries, forestry, storage and warehousing, and agricultural research and education away from crop husbandry, dairying, soil and water conservation, and other agricultural programmes.

Table 2.5a: Changes in the Composition of Expenditure on Agriculture of Revenue Account as a share of Agricultural Expenditure

(Per cent)

Particulars	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Agriculture and Allied Activities	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
(i) Crop Husbandry	20.84	19.01	21.96	26.10	23.49	20.39	23.28	34.45	24.81	17.44	17.31	17.39
(ii) Soil and Water Conservation	2.96	2.70	2.60	2.45	2.52	2.55	1.86	2.07	2.04	3.57	2.90	3.46
(iii) Animal Husbandry	9.79	10.79	10.65	10.60	11.74	12.51	11.98	9.22	10.07	12.29	12.38	12.74
(iv) Dairy Development	19.67	19.84	18.51	17.22	19.44	18.33	17.45	18.20	16.22	20.08	21.22	20.48
(v) Fisheries	5.49	4.46	4.72	4.63	4.05	5.59	5.30	3.12	4.07	5.77	6.12	6.96
(vi) Forestry and Wild Life	12.59	13.62	13.20	14.19	17.02	17.35	15.50	15.38	15.01	19.94	19.89	19.57
(vii) Plantations	3.80	4.11	3.61	3.76	3.86	3.49	2.77	2.52	0.01	0.00	0.00	0.00
(viii) Food Storage and Warehousing	4.98	6.86	6.93	7.07	6.96	8.59	6.65	7.19	7.19	8.67	9.11	8.91
(ix) Agricultural Research and Education	5.31	5.57	5.24	5.41	5.46	5.01	4.27	3.87	4.24	5.66	6.06	5.51
(x) Co-operation	13.72	12.05	11.70	7.67	4.40	4.69	2.65	3.24	3.18	4.01	4.29	4.29
(xi) Other Agricultural Programmes	0.86	0.98	0.88	0.90	1.07	1.51	10.60	0.73	13.16	2.58	0.72	0.67

Data Source: Statistical Abstracts (Several Volumes), Bureau of Applied Economics and Statistics, Government of West Bengal

Table 2.5b: Changes in the Composition of Expenditure on Agriculture of Revenue Account as a share of Agricultural Expenditure

(Per cent)

Particulars	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	***CGR I***	***CGR II***	***CGR ALL***
Agriculture and Allied Activities	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	***0.00***	***0.00***	***0.00***
(i) Crop Husbandry	18.98	19.62	19.76	19.87	21.38	21.84	21.83	23.07	25.01	***2.00***	***-0.25***	***-0.17***
(ii) Soil and Water Conservation	1.60	2.23	2.03	2.29	1.42	1.60	1.63	1.55	1.34	***-2.88***	***-3.96***	***-3.06***
(iii) Animal Husbandry	13.43	15.74	15.02	15.21	14.84	16.29	16.33	17.44	16.95	***4.22***	***3.86***	***2.82***
(iv) Dairy Development	21.28	16.52	13.78	14.56	14.12	14.21	16.04	11.66	9.05	***-1.39***	***-3.94***	***-2.44***
(v) Fisheries	4.29	7.19	7.84	7.64	6.44	4.61	3.84	5.17	5.73	***-0.61***	***1.19***	***1.14***
(vi) Forestry and Wild Life	18.66	15.94	19.13	17.78	19.54	17.31	17.19	17.27	17.62	***6.69***	***0.53***	***1.47***
(vii) Plantations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	***-1.65***	***0.00***	***NA***
(viii) Food Storage and Warehousing	9.77	10.88	10.31	10.64	10.05	11.01	10.64	9.98	9.39	***7.97***	***2.86***	***3.01***
(ix) Agricultural Research and Education	6.36	5.08	5.92	6.44	6.16	7.48	7.02	7.26	6.08	***-0.92***	***3.63***	***1.72***
(x) Co-operation	4.84	5.96	5.17	4.20	4.64	4.88	4.62	5.80	5.49	***-25.19***	***4.11***	***-2.75***
(xi) Other Agricultural Programmes	0.76	0.83	1.04	1.37	1.43	0.76	0.85	0.79	3.40	***8.90***	***-7.96***	***-0.57***

Data Source: Statistical Abstracts (Several Volumes), Bureau of Applied Economics and Statistics, Government of West Bengal

Table 2.6a: Changes in per hectare expenditure on agriculture of revenue account (Rs./ha of GCA) at current price

Particulars	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Agriculture and Allied Activities	251.71	239.26	273.76	317.17	334.09	356.47	433.92	470.31	549.94	455.02	491.11	574.27
(i) Crop Husbandry	52.45	45.49	60.12	82.78	78.48	72.68	101.00	162.04	136.42	79.36	85.03	99.84
(ii) Soil and Water Conservation	7.45	6.45	7.13	7.77	8.42	9.09	8.06	9.73	11.21	16.22	14.26	19.87
(iii) Animal Husbandry	24.64	25.81	29.14	33.61	39.22	44.60	52.00	43.38	55.38	55.93	60.79	73.17
(iv) Dairy Development	49.52	47.47	50.67	54.61	64.94	65.34	75.71	85.62	89.18	91.35	104.22	117.63
(v) Fisheries	13.81	10.68	12.92	14.68	13.54	19.93	23.00	14.68	22.40	26.25	30.03	39.99
(vi) Forestry and Wild Life	31.69	32.59	36.13	45.00	56.86	61.84	67.28	72.35	82.56	90.72	97.67	112.40
(vii) Plantations	9.56	9.83	9.89	11.93	12.89	12.43	12.03	11.85	0.06	0.00	0.00	0.00
(viii) Food Storage and Warehousing	12.54	16.42	18.97	22.42	23.26	30.63	28.86	33.81	39.53	39.46	44.76	51.20
(ix) Agricultural Research and Education	13.37	13.33	14.34	17.17	18.24	17.85	18.55	18.19	23.34	25.77	29.76	31.65
(x) Co-operation	34.54	28.84	32.02	24.33	14.69	16.71	11.52	15.23	17.48	18.24	21.06	24.65
(xi) Other Agricultural Programmes	2.15	2.35	2.41	2.86	3.57	5.38	46.00	3.44	72.39	11.73	3.53	3.87

Data Source: Statistical Abstracts (Several Volumes), Bureau of Applied Economics and Statistics, Government of West Bengal

Table 2.6b: Changes in per hectare expenditure on agriculture of revenue account (Rs./ha of GCA) at current price

Particulars	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	***CGR I***	***CGR II***	***CGR ALL***
Agriculture and Allied Activities	565.68	748.88	869.20	1004.81	851.76	790.27	760.12	785.72	822.50	***8.25***	***5.21***	***6.80***
(i) Crop Husbandry	107.39	146.95	171.78	199.61	182.13	172.63	165.95	181.29	205.75	***10.25***	***4.96***	***6.63***
(ii) Soil and Water Conservation	9.04	16.69	17.67	23.00	12.08	12.66	12.35	12.19	11.00	***5.37***	***1.25***	***3.74***
(iii) Animal Husbandry	75.98	117.86	130.54	152.79	126.36	128.75	124.09	137.00	139.37	***12.47***	***9.06***	***9.62***
(iv) Dairy Development	120.38	123.75	119.81	146.32	120.23	112.28	121.96	91.65	74.40	***6.86***	***1.26***	***4.36***
(v) Fisheries	24.26	53.85	68.10	76.74	54.82	36.46	29.20	40.64	47.11	***7.64***	***6.40***	***7.94***
(vi) Forestry and Wild Life	105.54	119.39	166.29	178.70	166.41	136.81	130.69	135.69	144.93	***14.95***	***5.74***	***8.27***
(vii) Plantations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	***6.60***	***0.00***	***NA***
(viii) Food Storage and Warehousing	55.24	81.49	89.58	106.96	85.56	87.02	80.91	78.45	77.22	***16.22***	***8.07***	***9.81***
(ix) Agricultural Research and Education	35.98	38.06	51.43	64.70	52.47	59.10	53.37	57.05	50.00	***7.33***	***8.84***	***8.52***
(x) Co-operation	27.36	44.66	44.93	42.24	39.54	38.58	35.11	45.58	45.14	***-16.94***	***9.32***	***4.05***
(xi) Other Agricultural Programmes	4.31	6.18	9.07	13.74	12.16	5.99	6.49	6.18	28.00	***17.15***	***-2.75***	***6.23***

Data Source: Statistical Abstracts (Several Volumes), Bureau of Applied Economics and Statistics, Government of West Bengal

Table 2.6c: Changes in per hectare expenditure on agriculture of revenue account (Rs./ha of GCA) at constant price

Particulars	1985-86	1986-87	1987-88	1988-89	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97
Agriculture and Allied Activities	513.70	498.46	472.00	503.44	498.65	475.30	516.57	500.33	549.94	413.66	405.87	431.78
(i) Crop Husbandry	107.03	94.78	103.66	131.40	117.14	96.91	120.24	172.38	136.42	72.14	70.27	75.07
(ii) Soil and Water Conservation	15.20	13.44	12.29	12.34	12.56	12.12	9.59	10.35	11.21	14.75	11.78	14.94
(iii) Animal Husbandry	50.29	53.76	50.25	53.35	58.53	59.46	61.90	46.15	55.38	50.85	50.24	55.02
(iv) Dairy Development	101.06	98.90	87.37	86.69	96.92	87.13	90.13	91.08	89.18	83.04	86.14	88.45
(v) Fisheries	28.18	22.25	22.28	23.30	20.21	26.57	27.38	15.62	22.40	23.86	24.82	30.07
(vi) Forestry and Wild Life	64.68	67.89	62.30	71.42	84.86	82.45	80.09	76.97	82.56	82.47	80.72	84.51
(vii) Plantations	19.51	20.47	17.06	18.93	19.23	16.57	14.33	12.61	0.06	0.00	0.00	0.00
(viii) Food Storage and Warehousing	25.59	34.22	32.71	35.59	34.72	40.85	34.36	35.97	39.53	35.88	36.99	38.49
(ix) Agricultural Research and Education	27.29	27.77	24.72	27.26	27.22	23.80	22.08	19.35	23.34	23.43	24.59	23.80
(x) Co-operation	70.48	60.09	55.21	38.62	21.93	22.28	13.71	16.21	17.48	16.58	17.41	18.53
(xi) Other Agricultural Programmes	4.40	4.89	4.16	4.54	5.33	7.17	54.76	3.66	72.39	10.66	2.91	2.91

Data Source: Statistical Abstracts (Several Volumes), Bureau of Applied Economics and Statistics, Government of West Bengal

Table 2.6d: Changes in per hectare expenditure on agriculture of revenue account (Rs./ha of GCA) at constant price

Particulars	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	***CGR I***	***CGR II***	***CGR ALL***
Agriculture and Allied Activities	398.36	468.05	523.61	584.19	475.84	422.61	391.82	390.91	391.67	***-0.92***	***-1.31***	***-0.99***
(i) Crop Husbandry	75.63	91.85	103.48	116.05	101.75	92.31	85.54	90.19	97.97	***1.07***	***-1.56***	***-1.16***
(ii) Soil and Water Conservation	6.37	10.43	10.65	13.37	6.75	6.77	6.37	6.07	5.24	***-3.80***	***-5.27***	***-4.05***
(iii) Animal Husbandry	53.51	73.66	78.64	88.83	70.59	68.85	63.96	68.16	66.37	***3.29***	***2.54***	***1.83***
(iv) Dairy Development	84.77	77.34	72.18	85.07	67.17	60.04	62.87	45.60	35.43	***-2.32***	***-5.26***	***-3.43***
(v) Fisheries	17.08	33.66	41.03	44.62	30.62	19.50	15.05	20.22	22.43	***-1.53***	***-0.12***	***0.15***
(vi) Forestry and Wild Life	74.32	74.62	100.17	103.90	92.97	73.16	67.36	67.51	69.02	***5.77***	***-0.78***	***0.48***
(vii) Plantations	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	***-2.57***	***0.00***	***NA***
(viii) Food Storage and Warehousing	38.90	50.93	53.96	62.18	47.80	46.53	41.70	39.03	36.77	***7.05***	***1.55***	***2.02***
(ix) Agricultural Research and Education	25.34	23.79	30.98	37.61	29.31	31.60	27.51	28.38	23.81	***-1.84***	***2.32***	***0.73***
(x) Co-operation	19.26	27.91	27.07	24.56	22.09	20.63	18.10	22.68	21.50	***-26.12***	***2.80***	***-3.74***
(xi) Other Agricultural Programmes	3.03	3.86	5.46	7.99	6.80	3.20	3.35	3.08	13.33	***7.98***	***-9.27***	***-1.56***

Data Source: Statistical Abstracts (Several Volumes), Bureau of Applied Economics and Statistics, Government of West Bengal

As evident from the above tables, crop husbandry, Animal husbandry and forestry continued to remain as the most important item of public sector agricultural investment. Together they claimed around 52 per cent of the public investment during Period I, which further increased to around 60 per cent in Period II. The main losers plantations, co-operations and soil and water conservation. Period wise percentage allocation of public sector agricultural expenditure over different major heads of investment is shown in Table 2.7. As seen from the table it is evident that, the changing emphasis on various areas/items of investment over time has changed the composition of public sector expenditure portfolio in West Bengal agriculture. However, at nominal terms the expenditure on agriculture has increased for all the sub-heads. In real terms the composition of public sector expenditure in agriculture underwent a fundamental change.

Table 2.7: Compound Growth Rates of Expenditure on Agriculture and Allied Activities of Revenue Account

(Per cent/annum)

Particulars	At Current Price			At Constant Price		
	CGR I	***CGR II***	***CGR ALL***	***CGR I***	***CGR II***	***CGR ALL***
Agriculture and Allied Activities	**8.25**	**5.21**	**6.80**	**-0.92**	**-1.31**	**-0.99**
(i) Crop Husbandry	***10.25***	***4.96***	***6.63***	***1.07***	***-1.56***	***-1.16***
(ii) Soil and Water Conservation	***5.37***	***1.25***	***3.74***	***-3.80***	***-5.27***	***-4.05***
(iii) Animal Husbandry	***12.47***	***9.06***	***9.62***	***3.29***	***2.54***	***1.83***
(iv) Dairy Development	***6.86***	***1.26***	***4.36***	***-2.32***	***-5.26***	***-3.43***
(v) Fisheries	***7.64***	***6.40***	***7.94***	***-1.53***	***-0.12***	***0.15***
(vi) Forestry and Wild Life	***14.95***	***5.74***	***8.27***	***5.77***	***-0.78***	***0.48***
(vii) Plantations	***6.60***	***0.00***	***NA***	***-2.57***	***0.00***	***NA***
(viii) Food Storage and Warehousing	***16.22***	***8.07***	***9.81***	***7.05***	***1.55***	***2.02***
(ix) Agricultural Research and Education	***7.33***	***8.84***	***8.52***	***-1.84***	***2.32***	***0.73***
(x) Co-operation	***-16.94***	***9.32***	***4.05***	***-26.12***	***2.80***	***-3.74***
(xi) Other Agricultural Programmes	***17.15***	***-2.75***	***6.23***	***7.98***	***-9.27***	***-1.56***

2.3 SAP and Changing Nature of Expenditure on Agriculture

After attaining independence, India embarked upon ambitious strategy for growth and development of rural economy and for improving income and level of living of rural people who at that time comprised 83 percent of total population of the country. This was sought to be achieved through Five Year Plans and the first five-year plan was launched during 1950-51. The first five-year plan was stated to be essentially a plan for laying foundation for more rapid development in the future. The state plan proposed total expenditure of Rs. 67.71

crores during 1951-56 on various development programmes of the public sector which can be treated as expenditure for development of infrastructure. Out of the total outlay, 12.6 percent was proposed for agriculture and community development. This comes to an outlay of Rs. 8.5 crore. Based on satisfactory performance in the first five-year plan, the total outlay was roughly doubled during the second five-year plan. In subsequent plans, total plan outlay on agriculture as well as its share in the total state plan increased substantially (Table 2.8). It is evident from the table 2.8 that outlay on agriculture as a proportion of total plan outlay has been on a rising trend till 1970s, but it has been continuously falling since the 1980s. There was a mild revival during eighth plan but since then it has resumed its downward trend. This is in sharp contrast to the spurt in aggregate plan outlay. Increase in farm subsidies was seen as one of the factors for the failure to generate surplus on revenue account

Table 2.8: Plan Outlay on Agriculture

(Rs. in Lakhs)

Plan	**Plan Period**	**Outlay on Agriculture**	**Total Plan Outlay**	**Share of Agriculture in Total Plan Outlay (%)**
First Plan	1951-56	*852*	6771	*12.58*
Second Plan	1956-61	*1786*	14857	*12.02*
Third Plan	1961-66	*5384*	30475	*17.67*
Annual Plans	1966-69	*5558*	16146	*34.42*
Fourth Plan	1969-74	*5903*	36346	*16.24*
Fifth Plan	1974-79	*18218*	83926	*21.71*
Annual Plans	1979-80	*17810*	79268	*22.47*
Sixth Plan	1980-85	*68524*	350000	*19.58*
Seventh Plan	1985-90	*29500**	412500	*7.15*
Annual Plans	1990-91	*6853**	129027	*5.31*
Annual Plans	1991-92	*5420**	115258	*4.70*
Eight Plan	1992-97	*60932**	993000	*6.14*
Ninth Plan	1997-02	*71213**	2102974	*3.39*
Tenth Plan	2002-07	*89183**	2864100	*3.11*

* Excluding Rural Development & Irrigation and Flood Control

Behaviour of government expenditure on agriculture is largely explained by agricultural policies of the time. An examination of this behaviour appears to have been dictated mainly by food situation at the country level and agricultural policies governed by political economy of the time (Mishra, 1996; Roy, 2001 and Gulati and Bathla, 2002). One could sort out four major policy epochs in this regard. First, the food deficit facing the state after independence was compulsive enough to pilot more public investment towards the development of

irrigation system. Second, the food crisis of 1960s was another major compulsion to escalate growth in public sector investment during 1970s. In fact for most of its post-independence history, West Bengal was food deficit state, dependent upon the central government for a major part of its supply. The third epoch has been since 1980s when decline in pubic investment has been strongly voiced. The irony is that the success of green revolution strategy itself has led to the emergence of political economy compulsions, which continues to persist. The emergence of surplus produce in agricultural sector has given rise to the emergence of politically powerful farmers' groups, which have become rather powerful to dictate the priorities of public expenditure in agriculture. The first priority has been to meet the demand for production subsidies, for which, resources have to be diverted from capital account to current account. The next important priority has been to finance private sector capital formation by institutional loans and capital subsidies. Due to these political economy compulsions, the decline in public sector investment has occurred, even total public expenditure (plan and non-plan) on agriculture has declined. In fact, public sector investment in agriculture has become a residual claimant. The fourth epoch emerging during economic reform regime is expected to encourage crowding in by both the household and corporate sector to accelerate their investment in agricultural sector.

2.4 Conclusions

Government expenditure on agriculture have played an important role in West Bengal's agricultural development and poverty reduction The period from the mid 1970s to the end of the 1980s when income poverty showed a marked reduction was also a decade when public expenditures rose phenomenally. This also corresponded to a period when Government introduced several new poverty alleviation programmes. There was an increased political commitment to poverty eradication which was backed by an increased allocation of resources and by a set of new pro-poor policies. Nationalized commercial banks were required to assign 40% of their lending to priority sectors - small farmers, small businesses, and artisans. New employment-creation and asset generation programmes for income poverty reduction were introduced. As a result, agricultural production increased substantially. But most important, since 1991, steep decline in government expenditure on agriculture resulted into slowing down of agricultural production growth from more than 10% per annum to less than 2% per annum. On the other hand, after economic reforms were introduced, real government expenditure per capita fell 15% during 1990-93, but increased again by 6% in 1993-94.

Income poverty too worsened in the initial years of the reforms, but in 1994, showed improvement.

The Central government has an important role to play through macro-economic policies that affect agriculture by provision of adequate resource transfer to States, and in ensuring that State finances and options are not affected adversely by the macro-economic consequences of decisions taken at the centre. However according to the Economic Survey (1995-96 and other issues), there is a rising trend in non-development expenditure while development expenditure as a percentage of GDP is declining. Of this the expenditure on agriculture and allied services is declining. The total spending, both plan and non-plan, under the heads agriculture, irrigation and rural development in the Central Budget (including fertilizer subsidy) has was cut from 1.99% of GDP in 1989-90 to 1.46% in 1995-96. In 1996-97 this was placed at 1.45%, but the actual spending under these heads in 1996-97 was only 1.32% of GDP according to the revised figures. For 1997-98 this has been budgeted at only 1.29 percent of GDP.

CHAPTER III

AGRICULTURAL DEVELOPMENT SCHEMES

3.1 Introduction

Agriculture is the state subject in India. Thus most of the development schemes in agriculture are financed and implemented by the state government. However, the Union government too sponsors a number of schemes on agriculture in different states.

In this chapter an attempt has been made to review the development schemes implemented in agriculture sector in West Bengal. Since 2000-01, the Department of Agriculture, Government of West Bengal, has been implementing various schemes under the Centrally Sponsored Macro Management Mode with a view to bring about all round development of agriculture in the state. Table 3a shows the allocation and utilization of funds under Macro Management of Agriculture Scheme in West Bengal from 2001-02 to 2008-09.

Table 3a. Allocation and Utilization of Fund under Macro Management of Agriculture Scheme in West Bengal (Rs. Lakh)

Year	Share of Govt.of India	Share of Govt. of West Bengal	Carry Over (If Any)	Total Fund Allocated (G.O.I. + State)	Total Fund Utilized (G.O.I. + State)
2001-02	2500.00	283.74	53.69	2890.43	2120.33
2002-03	1427.47	230.35	645.66	2303.48	1925.62
2003-04	1920.00	251.12	340.07	2511.19	2268.84
2004-05	3152.65	374.53	218.12	3745.29	2862.10
2005-06	2500.00	366.09	794.79	3660.87	3483.10
2006-07	3190.00	372.22	160.00	3722.22	3072.46
2007-08	3364.21	438.78	584.79	4387.78	3317.00
2008-09	3811.30	530.56	963.70	5305.56	4427.98

Source: Directorate of Agriculture, Government of West Bengal

3.2 Centrally Sponsored Schemes

The following major schemes were/are in operation in West Bengal under Centrally Sponsored Schemes on agriculture**.**

Name of the Scheme	Purpose	Remarks
Special Rice Production Programme (SRPP)	The objective of the scheme was to bring the substantial increase in the productivity of rice in low productivity areas.	Started from 1985-86, in 420 selected blocks in the State. As the constraints vary from block to block the programme of work across the block also vary. Under the scheme, programmes were taken up to improve the supply of inputs like quality seeds, fertilizers, pesticides, farm equipments and implements, etc. Programme requiring short-term measures for taking up the other works for the improvement of the irrigation, drainage and development of infrastructure facilities were also included.
Special Food-grains Production Programme (SFPP)-Rice	Was launched with a view to achieve the minimum food production of 166 million tonnes during 1988-89 and 175 million tonnes in 1989-90, in the country.	Was launched in 7 selected districts of West Bengal, consequent to the mid-term appraisal of the 7th Plan. All the areas in the identified districts were covered for the implementation of the programme and was 100% funded by the Government of India.
Integrated Programme for Rice Development (IPRD)	To achieve the objectives of SRPP and SFPP-Rice programmes	On the recommendations of the Planning Commission, SRPP and SFPP-Rice were merged and this unified scheme was implemented from 1990-91. Whereas the SRPP was implemented in the identified blocks and SFPP-Rice in the identified districts, the IPRD was implemented in all the districts of the States covered under the programme. The funding pattern under the scheme was modified to 75:25 to be shared between the Govt. of India and the concerned State Government.
Integrated scheme of Oilseeds, Pulses, Oil Palm and Maize (ISOPOM).	To increase the productivity of selected oilseeds, pulses and maize crop in the state.	Launched during 2004-05. In this new scheme all the ongoing schemes of OPP,NPDP and APDP have been merged. The main component of this scheme are distribution of seed and irrigation materials, IPM demonstration, installation of sprinkler sets, etc.
Integrated Cereals Development Programme in Rice based Cropping System Areas (ICDP- RICE)	The objective of the modified scheme is to increase the overall productivity of cereals under specific crop based systems as a whole as against the individual crop approach.	This is the modified version of the Integrated Programme for Rice Development (IPRD). The ICDP-Rice was implemented in 125 identified blocks of West Bengal.

State-Level Training Programme on Rice Production Technology	To disseminate the latest rice production technology to the Extension Officers of the State Governments.	The training programmes was conducted at the State Agricultural Universities (BCKVV, Nadia) since 1975-76.
Special Orientation Training Programme on Rice Production Technology	To disseminate the latest boro rice production technology to the Extension Officers of the State Governments.	This training programme was conducted in BCKVV, Nadia since 1997-98 for boro-rice.
Scheme on Transport subsidy for the movement of seeds in hill areas of West Bengal.	To ensure supply of seeds to the farmers in time at reasonable prices in the identified areas	This scheme was started in West Bengal from 1998-99.The scheme is applicable only for movement of certified seed of cereal, oilseed, pulses, fibre, vegetable excluding potato & spices.
Quality Control Arrangement on Seeds	Setting up of the National Seed Training Centre (NSRTC) with modern Seed Testing Laboratory and strengthening of Seed Quality Control Organisation.	Started in the year 1997. Assistant of Rs.15 lakhs has been provided for strengthening one SSTLs in each state.
Seed Bank Scheme (i) Scheme for establishment & maintenance of seed bank (ii) Guidelines for Implementation of Seed Bank Scheme	To make available seeds for contingent situations and also develop infrastructure for seed storage.	The scheme is in operation since 1999-2000. Seed of about 20 crops of various varieties which are suitable for different agro - climatic zones are maintained in the seed bank for meeting any contingent situation arising out of drought / flood situation.
Scheme for implementation of legislation on plant varieties and farmers rights protection	To provide requisite strength to the seed sector to fulfill the obligation under TRIPS agreement of WTO	The Scheme is in operation since 1999-2000. The scheme is a statutory requirement for implementing of plant varieties and farmers rights legislation.
High Yielding Varieties Programmes	To increase area under high yielding varieties and also in demonstration of improved crop production technology to the farmers.	Initiated during 1966-67. This scheme has contributed in increasing rice production and productivity.
Programme of Soil	Prevention of land degradation by adoption of a	In the present form, is being implemented through Macro

Conservation for Enhancing the Productivity of degraded Lands in the Catchments of River Valley Project & Flood Prone River (RVP & FPR),	multi– disciplinary integrated approach of soil conservation & watershed management in catchment areas; Improvement of land capability and moisture regime in the watersheds; Promotion of land use to match land capability; Prevention of soil loss from the catchments to reduce siltation of multipurpose reservoirs and enhance the in-situ moisture conservation and surface rainwater storages in the catchments to reduce flood peaks & volume of runoff.	Management Mode, since November 2000
Programme for Strengthening of State Land Use Board (SLUB)	To establish State Land Use Board (SLUB) as an apex body with major objectives of:- a) To provide policy directive for sustainable development of land resources; b) To ensure close coordination among various land user departments and c) To initiate necessary steps for integrated planning for optimal use of available land resources	Was launched in 1983. Till 2001-02, a sum of Rs. 1.02 crore expenditure is made in West Bengal under this scheme. Then onward, annually 7-8 lakhs are being spent under this scheme.

Macro Management Scheme of Agriculture

The previous pattern of Centrally Sponsored Schemes (**CSS**) was lacking in various flexibility resulting in large amount of unutilized balances with the State Governments. Therefore, the Govt. of India has merged 27 Centrally Sponsored Schemes into Macro Management Mode in the year 2000-01 with the objective to ensure that central assistance is spent on focused and specific interventions for the development of agriculture in states. The outlay of the Work Plan is shared by the Centre and the States in the ratio of 90:10. Central assistance to the states is released in two installments in the ratio of 80 per cent as grants and 20 per cent as loans. The following 27 CSS have been integrated into Macro Management mode:

1. Assistance to Weaker Section.
2. Assistance to Women Co operatives.
3. Non- overdue Cover Scheme.
4. Agricultural Credit Stabilization Fund.
5. Special Scheme for SC/ST.
6. Integrated Cereal Development Programmes in Rice Based Cropping System Areas.
7. Integrated Cereal Development Programmes in Wheat Based Cropping System Areas.
8. Integrated Cereal Development Programmes in Coarse Cereals Based Cropping System Areas.
9. Special Jute Development Programme.
10. Sustainable Development of Sugarcane Based Cropping System Areas.
11. Balanced and Integrated use of Fertilizer.
12. Promotion of Agricultural Mechanization among Small Farmers.
13. Integrated Development of Tropical, Arid & Temperate Zone Fruits.
14. Production and Supply of Vegetable seeds.
15. Development of Commercial Floriculture.
16. Development of Medicinal and Aromatic Plants.
17. Development of Roots and Tuber Crops.
18. Development of Cocoa and Cashew.
19. Integrated Programme for Development of Spices.

20. Development of Mushroom.
21. Use of Plastics in Agriculture
22. Bee keeping.
23. National watershed Development Project for Rainfed Areas.
24. Schemes for Foundation & Certified Seed Production of Vegetable Crops.
25. Soil Conservation in Catchments of River Valley Projects and Flood Prone Rivers.
26. Reclamation and Development of Alkali Soils.
27. State Land use Boards.

Though, the Macro Management Mode, initially consisted of 27 CSS schemes relating to cooperative, crop production programmes (for rice, wheat, coarse cereals, jute, sugarcane), watershed development programmes (NWDPRA, River Valley Projects [RVP]/Flood-Prone Rivers [FPR]), horticulture, fertiliser, mechanisation and seeds production programmes, with the launching of the National Horticulture Mission in 2005-06, 10 schemes pertaining to horticulture development were taken out of the purview of this scheme.

The present Macro Management approach provides more flexibility to State Govts. to develop and pursue programmes on the basis of regional priorities. The states have been given a free hand to finalise their sector-wise allocation as per requirements of their developmental priorities. The objective of this scheme is all round development in agriculture through Work Plans prepared by the respective State keeping in view the following aspects:

1. Reflection of local needs/crops/regions specific/priorities etc.
2. Providing flexibility and autonomy to States.
3. Optimum utilization of scarce financial resource.
4. Maximization of returns and
5. Removal of regional imbalances.

The focus of agricultural activities under Macro Management Mode of Agriculture in West Bengal was on Seed development and varietal replacement, Integrated nutrient management; Integrated pest management, farm mechanization, natural resource management, training and extension, modernization of soil testing laboratories, and minor irrigation. A detailed list of

on-going schemes/sub-schemes under Macro Management Mode of Agriculture in West Bengal is given below:

A. Soil Health Management Group:
    1) Publicity campaign on organic farming and balanced use of fertilizers
    2) Preparation of enriched compost and green manuring
    3) Correction of soil acidity by application of soil ameliorate by demonstration
    4) Demonstration with micro nutrient fertilizers straight
    5) Promotion of bio-fertilizer use in pulse crops
    6) Maintenance of government Azola & BGA units
    7) Maintenance of government Vermicompost production units
    8) Setting up of vermicompost production unit at farmers field
    9) Purchase of instrument, equipment, chemical/glass wares
    10) Purchase of AAS for analysis of micro nutrients for soil testing labs
    11) Preparation of information sheets
    12) Purchase of AAS for fertilizer testing labs
    13) Purchase of digertion seeds
    14) Purchase of moisture meter
    15) Purchase of equipments
    16) Setting up of bio-fertilizer control labs
B. Natural Resource Management Group
    1) NWDPRA
    2) RVP & FPR
    3) SLUB
C. Agricultural Crops and Other Group
    1) Integrated Cereal Development Programme-Rice
    2) Special Jute Development Programme
    3) Sugarcane Development Programme
    4) Integrated Pest Management
    5) Farm Mechanization
    6) Strengthening of Seed Farms and Production of Quality Seeds
    7) ICDP Coarse Cereal
    8) ICDP-Wheat
    9) Concurrent Evaluation
    10) Development of Irrigation Facilities

D. New Initiatives

1) Agricultural Marketing
2) Agricultural Extension Programme
3) Ensuring Effective Participation of Women in Agriculture
4) Development of Problem Soil in West Bengal
5) Soil Survey Establishment linking with Central Remote Sensing Laboratory

3.3 State Sector Schemes

The major ongoing schemes under state sector are:

1. Quality Seed Multiplication and Distribution
2. Soil Testing
3. Crop Protection
4. Seed Potato Development
5. Intensive Sugarcane Development Scheme
6. Agricultural Marketing
7. Farmers Training and Education

3.4 Externally Funded Schemes

The major ongoing schemes under state this are

1. Rashtria Krishi Bima Yojna
2. Tea Development Scheme
3. Rural Infrastructure Development Fund

3.5 Brief Review of Available Evaluation Studies by Schemes

A brief review of the evaluation studies, by schemes, are given below. It is important to note here that the availability of information on such schemes is very limited and incomplete. In spite of our repeated attempt we could not obtain specific information needed for this study. We did not find any report which provides information for all the ongoing schemes or for any scheme for all the years. We could only obtain information on few schemes for selected years. The available information are presented through Table 3.1a, 3.1b, 3.1c, 3.1d, 3.1e, 3.1f, 3.2 and 3.3 below A perusal of these tables shows a wide year to year variation in the utilization of funds as well as physical target achievements under different schemes. For many years the physical targets are kept very low and physical achievements lags far behind financial achievements. In general, physical achievements are quite poor and highly fluctuating from year to year for almost all the schemes concerned.

Table 3.1a: Centrally Sponsored Schemes on Agriculture (Year is to be specified)

Name of the Scheme	Implemented year	Allocation (Rs. Lakhs)	Number of Beneficiaries	Target	Achievement
Special Rice Production Programme (SRPP)	1985-86	NA	NA	NA	*NA*
Special Food-grains Production Programme (SFPP)-Rice	1988-89	NA	NA	NA	*NA*
Integrated Programme for Rice Development (IPRD)	1990-91	NA	NA	NA	*NA*
Integrated scheme of Oilseeds, Pulses, Oil Palm and Maize (ISOPOM).	2002-03	NA	NA	NA	*NA*
Integrated Cereals Development Programme in Rice based Cropping System Areas (ICDP- RICE)	NA	NA	NA	NA	*NA*
State-Level Training Programme on Rice Production Technology	1975-76	NA	NA	NA	*NA*
Special Orientation Training Programme on Rice Production Technology	1997-98	NA	NA	NA	*NA*
Scheme on Transport subsidy for the movement of seeds in hill areas of West Bengal.	1998-99	NA	NA	NA	*NA*
Quality Control Arrangement on Seeds	1997-98	NA	NA	NA	*NA*
Seed Bank Scheme (i) Scheme for establishment & maintenance of seed bank (ii) Guidelines for Implementation of Seed Bank Scheme	1999-00	NA	NA	NA	*NA*
Scheme for implementation of legislation on plant varieties and farmers rights protection	1999-00	NA	NA	NA	*NA*
High Yielding Varieties Programmes	1966-67	NA	NA	NA	*NA*
Programme of Soil Conservation for Enhancing the Productivity of degraded Lands in the Catchments of River Valley Project & Flood Prone River (RVP & FPR),	2000-01	NA	NA	NA	*NA*
Programme for Strengthening of State Land Use Board (SLUB)	1983-84	NA	NA	NA	*NA*
Macro-Management on Agriculture	2006-07	3544.44	NA	NA	*NA*

Table 3.1b: Centrally Sponsored Schemes on Macro-Management on Agriculture (2006-07)

Name of the Scheme	Implemented year	Allocation (Rs. In Lakhs)	Number of Beneficiaries	Financial Target	Achievement
Soil Health Management	2006-07	340.75	NA	NA	*NA*
Natural Resource Management	2006-07	957.69	NA	NA	*NA*
NWDPRA		793.39			
RVP & FPR		108.30			
SLUB		56.00			
Agricultural Crops and Others	2006-07	1854.62	NA	NA	*NA*
Integrated Cereal Development Programme-Rice		250.00			
Special Jute Development Programme		239.50			
Sugarcane Development Programme		30.05			
Integrated Pest Management		23.25			
Farm Mechanization		665.00			
Strengthening of Seed Farms and Production of Quality Seeds		304.98			
ICDP Coarse Cereal		38.40			
ICDP-Wheat		253.00			
Concurrent Evaluation		18.00			
Development of Irrigation Facilities		32.44			
New Initiatives	2006-07	391.38	NA	NA	*NA*
Agricultural Marketing		127.00			
Culture-Agriculture		30.00			
Agricultural Extension Programme		8.00			
Ensuring Effective Participation of Women in Agriculture		17.00			
Development of Problem Soil in West Bengal		185.38			
Soil Survey Establishment linking with Central Remote Sensing Laboratory		24.00			
TOTAL	**2006-07**	**3544.44**	**NA**	**NA**	***NA***

Table 3.1c: Scheme-wise financial outlay and fund sanctioned under Macro-Management on Agriculture in West Bengal

(Rs. In Lakhs)

Sl. No.	Scheme / Sub-Scheme	Financial Outlay		Fund Sanctioned	
		2006-07	2007-08	2006-07	2007-08
1.	Integrated Cereal Development Programme – Rice :	250.00	262.78	100.50	262.78
2.	Special Jute Development Programme	239.50		239.50	
3.	Sugarcane Development Programme	30.05	50.00	30.05	50.00
4.	Integrated Pest Management :	23.25	143.67	23.25	38.00
5.	Farm Mechanization :	665.00	858.50	665.00	650.00
6.	Strengthening of Seed Farms and Production of Quality Seeds:	304.98	706.11	304.98	400.00
7.	ICDP Coarse Cereals :	38.40	112.00	Nil	52.00
8.	Dissemination of New Technology through Demonstration for Diversification of Suitable Crops – ICDP Wheat	253.00	377.50	253.00	40.00
9.	Concurrent Evaluation	18.00	19.35	18.00	Nil
10.	Development of Irrigation Facilities	32.44		32.44	
TOTAL		1854.62	2529.91	1666.72	1494.78

Table 3.1d: Target and achievements under Sugarcane Development Programme

Year	Fund utilization (Rs. Lakhs)		Field Demonstration (Nos)		State level training for Extension officials (Nos.)		Farmers training (Nos)		Seed Cane Multiplier (Nos)	
	Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievements	Target	Achievements
2001-02	32.00	32.0	376	376	1	1	100	32	50	42
2002-03	33.33	20.67	420	290	1	1	70	32	69	42
2003-04	20.00	15.88	250	250	1	1	25	25	25	25
2004-05	20.00	19.55	250	250	2	2	25	25	16	16
2005-06	29.18	29.18	420	420	3	3	64	64	30	30
2006-07	30.05	28.73	420	412	3	1	64	61	30	30
2007-08	50.00	44.80	680	640	6	2	100	89	70	64
2008-09 (P)	61.76	49.31	1080	937	5	1	100	49	70	32

Source: Directorate of Agriculture, Government of West Bengal

Table 3.1e: Target and achievements under Special Jute Development Programme

Year	Fund utilization (Rs. Lakhs)		Field Demonstration (Nos)		District level training (Nos.)		Farmers training (Nos)		Certified Seed distribution (MT)	
	Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievements	Target	Achievements
2001-02	151.40	114.81	2200	2167	10	4	660	502	580	338
2002-03	54.15	47.68	0	0	0	0	79	105	178	163
2003-04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2004-05	82.20	72.75	34795	34686	1	1	1000	1000	167	160
2005-06	103.20	96.40	27500	27371	0	0	1000	890	173	173
2006-07	239.50	202.50	140762	140762	0	0	0	0	146	80
2007-08	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2008-09 (P)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Source: Directorate of Agriculture, Government of West Bengal

Table 3.1f: Target and achievements under Balanced Integrated Use of Fertilizers (under Soil Health Management)

Components	Physical Achievement				Financial Achievements (Rs. Lakhs)			
	2006-07		2007-08		2006-07		2007-08	
	Target	Achievement	Target	Achievement	Target	Achievement	Target	Achievement
Publicity Campaign on Organic Farming & Balanced Use of Fertilizers, etc.	250	236	500	417	7.50	6.83	20.00	16.52
Preparation of Enriched Compost (Nos)	600	481	1000	697	18.00	13.79	40.00	26.83
Green Manuring (Bigha)	7000	6421	10000	9906	7.00	5.92	15.00	13.92
Correction of Soil Acidity by Application of Soil Ameliorator (MT)	1500	1509	4104	3944	30.00	30.00	102.60	98.60
D/C with Micronutrients (Bigha)	50000	56126	497500	496730	60.80	60.43	237.50	231.90
Promotion of Bio-fertilizer Use in Crops (Bigha)	62500	59772	100000	103338	7.50	6.90	16.00	14.98
Maintenance of Azola and Blue Green Algae at Govt. Farms (Nos)	7	5	0	0	1.40	0,98	1.400	0.60
Maintenance of Vermicompost Production Units at Govt. Farms (Nos)	120	67	120	63	6.00	3.33	6.00	3.02
Setting-up of Vermicompost Units at Farmers' Fields (Nos)	500	377	1000	702	15.00	10.68	40.00	29.72
Purchase of Instruments, Equipments, Chemicals, Glassware, etc. (No of labs)	11	11	-	-	20.00	19.41	100.00	100.00
Purchase of AAS for Analysis of Micronutrients for STL (No of labs)	2	2	-	-	20.00	20.00	41.20	41.20
Preparation of Information Sheets (No of labs)	10	9	-	-	2.00	1.70	0.00	0.00
Purchase of AFS for FCL (No of labs)	2	2	-	-	20.00	20.00	0.00	0.00
Purchase of Digestion Sets (No of labs)	3	3	-	-	3.00	3.47	2.00	2.00
Purchase of Moisture Meters (No of labs)	1	1	-	-	3.00	2.89		
Purchase of Equipments (No of labs)	10	10	-	-	14.00	12.96	42.50	42.50
Setting-up of Bio-fertilizer Production Units (Nos)	1	1	-	-	15.55	15.55	12.00	12.00
Demonstration with Enriched Organic Manures and Herbal Products (Bigha)	-	-	1500	1357	-	-	15.00	13.11
Total	-	-	-	-	250.75	234.85	691.20	646.69

Source: ***Deputy Director of Agriculture (Manures & Fertilizers), Directorate of Agriculture, Government of West Bengal***

Table 3.2: State Sector Schemes on Agriculture (Year is to be specified)

Name of the Scheme	Implemented year	Allocation	Number of Beneficiaries	Target	Achievement
Quality Seed Multiplication and Distribution	2002-03 to 2006-07	NA	NA	NA	*NA*
Soil Testing	2002-03 to 2006-07	NA	NA	NA	*NA*
Crop Protection	2002-03 to 2006-07	NA	NA	NA	*NA*
Intensive Sugarcane Development Scheme	2002-03 to 2006-07	NA	NA	NA	*NA*
Seed Potato Development	2002-03 to 2006-07	NA	NA	NA	*NA*
Agricultural Marketing	2002-03 to 2006-07	NA	NA	NA	*NA*
Farmers Training and Education	2002-03 to 2006-07	NA	NA	NA	*NA*

Table 3.3: Externally Funded Schemes on Agriculture (Year is to be specified)

Name of the Scheme	Implemented year	Allocation	Number of Beneficiaries	Target	Achievement
Rashtria Krishi Bima Yojna	NA	NA	NA	NA	*NA*
Tea Development Scheme	NA	NA	NA	NA	*NA*
Rural Infrastructure Development Fund	NA	NA	NA	NA	*NA*

District wise performance ranking of different on going schemes in selected districts is given as Annexure I**.** The key observations/findings in evaluation reports submitted by the concerned evaluating agencies in West Bengal are briefly given below:-

- The macro management mode of agricultural intervention is quite successful than other schemes as it gives the state governments a leeway to exploit their own potential through the judicious allocation of funds and to give emphasis on projects that the states think best for themselves. This creates a sense of ownership of projects among state officials and enthusiasm among the district/block level functionaries.

- The implementation of the scheme has significantly contributed in improved adoption of high-yielding varieties / technology.

- A positive impact of the programme on overall development of agriculture and employment generation was observed.

- Beneficiaries of the scheme were benefited by way of increase in their income though in different proportions, varying from scheme to scheme.

- In order to avoid the thin spread of resources, focused attention is given to such priority areas as seed development and varietal replacement, IPM, INM, farm mechanization, natural resource management, training and extension, modernization of soil testing laboratories, and minor

- Detailed salient findings are given below:

    - Farmers have acquired fair knowledge and skill on IPM and INM and they are adopting the same in rice and vegetable cultivation.

    - Demonstration of micro-nutrient has given very strong and positive results in zinc, boron and molybdenum deficient regions of the state.

    - Adoption of bio-village concept has created good impact among farming community towards organic.

- The are under HYV of rice, wheat and maize is increasing

- Farmers are well motivated to grow new crops like maize, sunflower, groundnut and pulses

- The attitude of the farmers is changing towards farm mechanization due to labour scarcity during peak periods.

- There is great demand for quality seeds, chemical and organic fertilizers and plant protection chemicals but there are deficiencies in supplying these vital modern farm inputs in West Bengal.

- The development of marketing infrastructure for facilitation of farming communities is not very much encouraging.

- The performance of soil testing and quality testing laboratories are quite poor.

3.6 Conclusions

Agriculture being the state subject, public expenditure in agriculture is the responsibility of the States, but like many other states West Bengal too have neglected investment in infrastructure for agriculture. There are many centrally sponsored schemes on rural infrastructure projects, which have started out but are lying incomplete for want of resources (Government of India 1995). The fund flow system is not up to the desired level. The total net transfers (i.e. state's shares of central taxes and loans and grants to the states less interest and amortisation of loans) from the Centre to States also reached a new low in recent years. At block and village level, most of the schemes are implemented either on commitment basis or carry forward in the following years. Some times it has been observed that lack of assistance/convergence of need based services from other agencies the performance of different schemes are not upto the level of satisfaction. The farmers are also very much anxious about the quality and timely availability of agricultural inputs and there is a great difficulty in getting quality testing services. For example, the potato seeds used during Rabi season 2006-07 was mostly not true to the type and contaminated with pathogens of blight disease resulting economic losses to thousands of farmers in West Bengal. The oilseed and

pulse seed production scheme is not encouraging. There has not been any significant improvement in the productivity of food grains. The link workers are working as facilitator to motivate and train the women. Until and unless they are trained properly on different technology, it would be difficult to transfer the technology to the target group. In spite of the above problem, the area, production and yield of some major crops like wheat, sugarcane, maize, mustard, jute and lentil has been increasing in the programme areas. Progress of activities under organic farming, NWDPRA and Problem soils has been quite encouraging. Under this circumstances, in order to derive maximum benefits of different centrally sponsored schemes, emphasis has to be given on broad basing of technologies/techniques and as a result of this attempt the entire farming community of the state will be benefited directly or indirectly. Fund flow system has to be streamlined for getting optimum results of different schemes. Efficiency of the soil and seed testing laboratories has to be increased and the timely supply of quality inputs should be ensured. More emphasis has to be given on crop diversification programme as monopoly of cereals over the years may lead to incidence of serious pest and diseases. Finally, the state government has to raise its expenditure on different state sector programmes on agriculture.

CHAPTER IV

NEXUS BETWEEN STATE INTERVENTION AND AGRICULTURAL DEVELOPMENT

4.1 Introduction

The nexus between investment and agricultural growth, and between agricultural growth and rural poverty are very well articulated in literature. Given the positive impact of agricultural growth on poverty alleviation, the role of investment as one of the major engines of agricultural growth has been well placed in the development policy perspective.

The impact of rural infrastructure like road, market, storage, electrification, etc on poverty is well documented. Rural infrastructure can influence poverty by creating new employment opportunities as well as by changing input and output prices. Improved access to infrastructure in rural areas can encourage the cultivation of perishable products, thereby exerting favourable influence on crop diversification. Public investment affects agricultural production/productivity directly, as well as indirectly through its inducement effect on private sector investments in agriculture. Among the various infrastructures transport, research, power and irrigation have greater influence on the agricultural growth (Roy, 2001).

Investment in agriculture has played an important role in poverty reduction. The period from the mid 1970s to the end of the 1980s when poverty showed a marked reduction was also a decade when investment in agriculture rose phenomenally and agriculture sector growth was highest. Public investment in agriculture appears to have strong "trickle down" characteristics, much more distinctly so than productivity growth. Practically all states that have succeeded in reducing poverty have made sizable investments in agriculture and achieved higher agricultural growth rate. During this period nationalized commercial banks were required to assign 40% of their lending to priority sectors - small farmers, small businesses, and artisans.

4.2 Impact of Agricultural Expenditure on Production, NSDP and Poverty

The positive association between agricultural expenditure and agricultural productivity as well as reduction in rural poverty is understandable. Serious concern about the decline in the public expenditure on agriculture during the 80's and the 90's was expressed supposedly because of its close linkages with deceleration in the rate of growth of agricultural output in general and food grain output in particular during the same period. A number of studies empirically examined the impact of agricultural expenditures on agricultural production, net state domestic product and rural poverty (Chand, 2000; Roy, 2001; Gulati and Bathla, 2002; Roy and Pal, 2002). In all these studies, the volume and composition of agricultural expenditures has turned out to be one of the major determinants of agricultural productivity and output growth, and it is an important instrument to raise the level of agricultural productivity and output growth, and through this growth the effect on poverty alleviation. Fan, Hazell and Thorat (1999) tried to estimate the direct and indirect effect of different types of government expenditures (revenue and capital taken together) on agriculture growth (measured in term of total factor productivity) and rural poverty during 1970 to 1993. Government spending on productivity-enhancing investments (especially agricultural research and extension), rural infrastructure (especially roads and education), and rural development targeted directly to the rural poor, all contribute to reductions in rural poverty, and most also contribute to growth in agricultural productivity mainly through improvement in non farm employment and wages. But their effects on poverty and productivity differ greatly. Additional government expenditure on roads, agriculture research and extension and education in that order are found to have the largest impact on poverty reduction as well as a significant impact on productivity growth. The education expenditure help reduce poverty largely through increases in non-farm employment and rural wages that it induces. Additional government spending on rural and community development, including Integrated Rural Development Programs, contributes to reductions in rural poverty, but its impact is smaller than expenditures on roads, agricultural R & D, and education. Additional government expenditures on soil and water conservation and health have expected sign and favourable impact on productivity growth, and their effects on poverty alleviation through employment generation and wage increases are also small. In a separate exercise Jha also observed a favourable impact of expenditure on education, health and total development expenditures on poverty reduction during 1957-58 to 1997-98. In particular, expenditure on higher, university, technical, adult and vocational educations as opposed to elementary and secondary education

is more effective in poverty reduction. These exercises (Fan, Hazell and Thorat 1999 and Jha 2001) however estimated the impact at aggregate level without looking in to the regional differences in the outcome. Chand (2000) estimated the impact of public investment and private investment in agriculture on agriculture productivity per hectare and growth of agriculture output and found to have positive and significant impact on agriculture productivity. Similarly, investment also showed positive impact on net state domestic product from agriculture when sum of public and private investment was used as a variable. Gulati and Bathla (2002) also observed significant positive impact of both public and private investment (taken in term of canal intensity and supply of power or in cumulative public investment financial form) in growth of agriculture gross domestic product. Using simultaneous equation modeling framework, Roy (2001) estimated the effects of government spending on agriculture on agricultural productivity, rural poverty and on inducing private investment in agriculture. The finding of the study (see also Roy and Pal, 2002) shows that there is strong and positive relationship between agricultural expenditure and agricultural productivity, reduction in rural poverty, and with private investment in agriculture. The study also finds that instability in government expenditure on agriculture is found to be inversely related to the growth in agricultural sector. Roy and Pal (2002) in a separate exercise observed differential impact of government agricultural expenditure on agricultural productivity and rural poverty reduction across the states. For all the states, there is positive and significant impact but the magnitude of such impacts is more strong in eastern and southern states (particularly West Bengal, Karnataka and Tamil Nadu) than northern and western states. The marginal returns on investment in agriculture were found to be high in eastern and southern states as compared to northern and western states.

In this study too, the contrast between the pre-reform and the post-reform periods in respect of the performance of agriculture in West Bengal is quite stark. Except for wheat and sugarcane, the yield performance of all the major crops was worse in the post reform period. The total foodgrain production which grew as high as 11.79 per cent per annum during pre-reform period, reduced to just 1.92 per cent during post-reform period. This is most likely due to the slowing down of public and private investment in agriculture. The state budgetary support to agriculture at constant price, which grew 0.81 per cent per annum during pre-reform period reduced in absolute figure during post-reform period.

One of the most significant consequences of this poor growth performance in the post reform period has been the rise in unemployment in West Bengal. It is widely recognised that agriculture is facing difficulties; some would even argue that it is facing a crisis manifested in several dimensions. Agricultural output growth rate has stagnated. As a consequence agricultural employment growth has been low and aggregate unemployment has risen.

It is well accepted now that the rate of poverty decline was greater during the 1980s than during the post-reform period. The principal reason for that was even with a lower aggregate growth rate the higher agricultural growth rate during the 1980s increased the demand for labour sufficiently to make a significant dent on poverty. During the post 1991 reform period, although trend real GSDP growth rate has been higher, such growth has been concentrated in services and, of late, in high value added manufacturing. This has led to a sharp increase in the demand for skilled labour whereas the stagnation of the agricultural sector has led to inadequate growth in demand for unskilled labour, hence the slow decline in poverty.

4.3 Impact of Agricultural Expenditure on Farm Sector Distress

The agrarian crisis in West Bengal has both long-term structural and institutional as well as short term manifestations. The long-term structural features are a sharp decline in the share of agriculture in the State Gross Domestic Product (SDP) accompanied by a very low rate of labour force diversification away from agriculture. This has resulted in declining relative productivity of agriculture *vis-à-vis* that of the non-agricultural sector. A large dependence of working population on land has also resulted in a steep decline in per capita land availability. There has been an increase in the marginalisation of ownership and operational holdings. The increasing pressure on land resources is accompanied by severe stress on the availability of credit in rural West Bengal. The result is growing dependence on non-institutional sources of credit at very high rates of interest. It is only recently that some efforts have been made to rejuvenate the credit system in the country as a whole. Except levy rice, the food procurement mechanism is particularly non-functional in the state and does not serve the purpose of ensuring minimum prices to agricultural producers.

The crisis has been exacerbated further by rapid decline in the state budgetary support to agriculture and plateauing of the existing agricultural technology. The gradual withdrawal of the state from active participation in development activities has resulted in a steep decline in

public investment in agricultural infrastructure in general, and in agricultural science and technology in particular. This has resulted in deterioration of rural infrastructure, stagnation of agricultural research and development, and neglect of extension services. These factors have combined to impinge adversely on the production potential of the agricultural sector in the state. As a consequence, the growth rate of agriculture has decelerated noticeably during the post reform period 1991-92 to 2005-05 as compared to the pre-reform period 1985-86 to 1991-92. The slowing down and stagnation of agricultural growth has adversely affected the income and employment of vast majority of rural people dependent on agriculture.

Although almost all regions/states in India have experienced a deceleration in their agricultural growth, the adverse impact is especially serious in rainfed regions and among small and marginal farmers with limited resources. One more factor that has exacerbated the situation is that just at a time when small, marginal and medium farmers were showing signs of enterprise by investing resources to enhance productivity there has been deterioration in support systems. Since rainfed areas are prone to frequent failure of rainfall, leading to very large fluctuations in output, many farmers who are in deep debt due to investments in farming are driven to distress and desperation in the case of crop failure.

The period since 1991 has been marked by very low rates of employment generation in West Bengal. Rural employment in the post-Reform period grew at the very low rate of less than 0.6 per cent per annum, lower than any previous period and well below the rate of growth of rural population. However during the post-Reform period ii was more than 2 per cent per annum. This led to a severe crisis in the rural economy as cultivators have been hit by acute unemployment. Further, the pattern of job creation has shifted towards more casual, marginal, part time and insecure contracts or self employment (GoWB, 2004). Most of this poor employment generation was because of decline in absolute employment in agriculture; non-agricultural employment did not increase fast enough to make up for this decline. One of the main reason which contributed to such a dismal state of rural employment in West Bengal was reduced government spending on agriculture and public services.

The current trends of liberalisation in agriculture- making it easier for corporations to enter agri-business and so displacing peasants; transferring responsibility of infrastructure development to the private sector whose interest in the rural areas is virtually nil - unless accompanied by a massive step up in public expenditure on agriculture investment would be

extremely counter productive. Agriculture exports would rise but would not be accompanied by any significant increase in agricultural output. Consequently, inflation would increase sharply and there would be an adverse effect on non-agricultural output and employment. In this situation, outcomes are less adverse if public expenditures can be stepped up.

4.4 Impact of Government Schemes on Agricultural Development

The most important manifestations of the declining budgetary support to agriculture are deceleration of agricultural growth combined with increasing inefficiency in input use thereby adversely affecting the profitability of agricultural production. The growth of agriculture both in terms of gross product and in terms of output has visibly decelerated during the post-reform period compared with that during the eighties. The growth rates of agriculture both in terms of SDP from agriculture and agricultural output (and yield) have also decelerated in West Bengal. For example, the growth rate of SDP from agriculture decelerated from 4.45 per cent during 1980-81 to 1990-91 to 3.45 per cent during 1992-93 to 2002-03 at constant prices (Source: Report of the Expert Group on Agricultural Indebtness, Government of India, 2007).

Several researchers have expressed serious concern regarding declining public sector investments in agriculture during the 1980s (Rath 1989; Roy and Pal, 2001; Rao and Gulati 1994; Chand, 2000; Roy, 2001). The demand-supply paradigm, the growing land scarcity and lop-sided development are outward manifestation of stagnant capital formation in agriculture. Public investment is a critical factor to capture capital formation in agriculture and sustain private investment. If the declining trend of public sector capital formation is not reversed, prospects of agricultural growth in the state are dim. Some of the reasons for slower growth in public investment in agriculture are - diversion of resources from investments to current expenditures in the form of subsidies, large expenditure incurred on maintenance of existing projects, inordinate delays in completing the projects on hand, relatively lower allocation for irrigation, rural infrastructure and research, lack of effective credit support and credit infrastructure in rural areas, and a belated growth in private investment. Given the importance of agriculture in India, the repercussion of a fall in agricultural growth will be felt in all sectors of the economy and, in particular, the incomes and welfare of poor who depend on agriculture will be severely affected.

Further, the decline in public expenditure on agriculture invariably retards the creation of fresh potential, which has a cascading impact on private investment (Roy, 2001). The Planning Commission stated that, "The complementarity between public and private investment is most pronounced in agriculture where public investment has stagnated or even declined in recent years. The decline in public investment has also induced a decline in private investment" (Planning Commission 1994). In a similar vein the annual Economic Survey, 1993-94 *inter alia* stated that private investment in agriculture could increase if public investment grows, implicitly affirming complementarity between the two.

4.5 Conclusions

To summarize the discussion, it is evident that public sector expenditure in agriculture positively influences the agricultural development, (taken in the form of agricultural income, land productivity or total factor productivity.) Public investment affects agricultural production/productivity directly, as well as indirectly through its inducement effect on private sector investments in agriculture. The public expenditure on agriculture also helps to reduce the poverty directly and indirectly through agricultural growth by improving employment and wages rate.

Given the importance of agriculture in West Bengal, the repercussion of a fall in agricultural growth will be felt in all sectors of the economy and, in particular, the incomes and welfare of poor who depend on agriculture will be severely affected. Some of the reasons for slower growth in state budgetary support to agriculture are - diversion of resources from agricultural investments to current expenditures in the form of subsidies, large expenditure incurred on maintenance of existing projects, inordinate delays in completing the projects on hand, relatively lower allocation for irrigation, rural infrastructure and research, lack of effective credit support and credit infrastructure in rural areas, and a belated growth in private investment.

The role of government must evolve so that those activities which it still does are performed with the greatest effectiveness, in terms of meeting the needs of the agricultural sector. Public investment will have a leading role to play, in the form of infrastructure as well as necessary research and development in farm technologies. Spread of infrastructure in power, transport, communication, storage and processing sectors are important. There is an emerging need to step up public investment to implement land reforms and employment prospects of rural

labour. The productive base of the farm sector also need to be enlarged through direct public investments in irrigation schemes, soil and water conservation works, land reclamation, construction of regulated market structures for farm produce etc. Public investments need to be stepped up in regions which although relatively backward have a high potential for agricultural growth.

This public investment in agricultural sector is the pivot to increase the gross area under cultivation, enhancing productivity and bringing about shifts in cropping pattern. Public investment in irrigation development however continues to decline. In the major States, the percentage of allocation hovers around 15% of the total investment. This is clearly inadequate in the major and medium irrigation sectors. At the same time, government needs to pump in greater investment in developing minor irrigation facilities to provide benefits to larger agrarian community who otherwise are unable to benefit from major and medium irrigation schemes because of equity considerations. Further, the decline in public investment invariably retards the creation of fresh irrigation potential, which has a cascading impact on private investment. Investments in sector important for agriculture such as power has been declining as well and the actual expenditure has been much lower than the planned outlays in the more recent years.

The Structural Adjustment Program taken up is essentially concerned with macro-economic contraction (lower public expenditure) and reduction in the developmental role of the State. The theory is that private investment will rise when public investment declines. Even assuming this does happen, the problem is that specific direction that private investment will take will always be motivated by private profitability and will not involve consideration of infrastructure, employment generation or poverty alleviation. There is a pressing need for a more fundamental change in strategy to raise resources and accelerate the pace of capital formation in this sector. Two possibilities are: targeting and downsizing the subsidies on agricultural inputs and food, and ploughing back the resources so generated to agricultural sector as investments in irrigation and other infrastructural activities; selling off the public sector enterprises (owned by the states and the centre) to partially finance the resources for agricultural investments. The government needs to concentrate on rectifying the inefficiencies which may induce more private investments.

Pressures need to be mobilised by expanding the tax base and by increasing user charges on electricity and irrigation. There has not been much progress at all towards mobilising surpluses for rural investment or increasing user charges for electricity or irrigation water so that the feasibility of any significant step up in public investment is at present severely constrained by fiscal problems. Critics point out that since the late 80's there have been a strong growth in private sector investment in agriculture. However increase in private investment does not alone can lead to sustained agricultural growth. There is an emerging need to raise investment in non-price factors such as research and development, technological innovations and infrastructure development including irrigation. According to Dantwala (1987), in Indian agriculture the price policy plays only a limited role in raising aggregate input. Furthermore as Binswanger (1989) says, the supply response to price takes time to develop fully, sometimes 10- 20 years and depends on public investment in roads, market, irrigation, infrastructure development, education and health. In other words a higher level of irrigation and other public investment created infrastructure raise the impact of prices on output.

The consistent decline in public investments since the 1980s need to be looked into. Public investment in agriculture has a potential to enlarge the potential base of agriculture through the stimulation effect. It results in an increase in the farmers' own investment in farm business as the marginal productivity per unit investment is now higher. The capital stock of agriculture therefore becomes even higher. However there is need to get a deeper insight of the specific areas of public investment which result in a greater stimulation effect. There is no escape from the fact that public investment in agriculture would have to be focused on providing food security by expanding domestic production to meet the needs of growing population. The privatisation process aims to reduce the involvement of the state in the agricultural sector by shifting the divide between public sector and private sector in favour of the latter. The multi-national companies are starting to emerge as a dominant player in the agricultural sector by taking advantage of the existing policies that promote the enhanced participation of the private sector in technology development and delivery. This has put them in a powerful position for marketing their products in remote corners of the country.

CHAPTER V

SUMMARY AND CONCLUSION

After having analyzed empirical experience on the trends and pattern of government expenditure on agriculture, and their impact on agricultural growth and poverty during the last forty years or so in West Bengal we recapitulate the main observations to draw lessons and implications for the future investment policy for rural area. Public sector investment in agriculture has all along occupied a prominent place in investment in rural area, particularly in certain categories like road, irrigation, market, research and education. The real public expenditure on agriculture, in West Bengal, indicate periodic ups and down. In real terms, it had increased at higher rate in 1950's, 1960's and the 1970's with a peak in 1970's. However after this raising trend and the peak in the 1970's there was a significant decline in the 1980's and the 1990's. Although there was a marginal improvement in few years during early 1990's as well as in late 1990s, the rate of growth was negative during the post-reform period. Decline in government expenditure particularly during the 1980's and the early 1990's is attributed to number of these factors, particularly to the erosion of the capacity of the state government due to growing deficit in the revenue account, which in turn according to some was the outcome of public financing of the private investment, particularly through transfer in the form of input subsidies and other grants. This left much less resources for investment in agriculture and irrigation in the 1980's (Roy and Pal, 2002). The deceleration in the real government expenditure on agriculture in West Bengal is being associated with decline in the growth rate in the agricultural output particularly the food grain out put and slowing down the rate of poverty reduction. This has raised serious concern because of the linkages of public expenditure with agricultural growth and poverty in rural area.

The planners have come a long way since the launching of the First Five -Year Plan when capital needs of Agriculture sector were deemed to be low. Today the capital needs of West Bengal agriculture are even more explicit for attaining sustainable growth in order to meet the steadily rising need of food and fiber for the burgeoning population, as also providing sustainable livelihood to majority of rural masses.

The rate of growth in crop productivity in West Bengal during 1977-95 was nearly 5%. This was mainly due to increased private investment in minor irrigation (shallow tubewells) and due to land reforms. Security of tenure has altered the credit relations that had earlier trapped the peasants in debt cycles. With increasing access to institutional credit, farmer was able to put more land under HYV cultivation. He also invested in shallow tube wells, thanks to easy availability of groundwater. With assured irrigation, the cropping pattern during rabi also changed in favour of high value non-food crops, such as potato, oilseeds, etc.

The policy approach to agriculture, particularly since the 1990s, has been more to secure increased production through input subsidies rather than through building new capital assets in irrigation and power. This has reduced the pace and pattern of technological change in agriculture and effected TFP (total factor productivity) adversely. The equity, efficiency, and sustainability of the current approach thus become debatable. The subsidies also do not improve income distribution and the demand for labour. The boost in output from subsidy-stimulated use of fertilizers, pesticides and water may partly be coming at the expense of deterioration in the aquifers and soil – an environmentally unsustainable approach that may partly explain the rising costs and slowing growth and productivity in agriculture. Moreover, the deteriorating state finances have meant that subsidies have, in effect: -

a) crowded-out public agricultural investment in irrigation and roads and expenditure on technological upgrading,

b) limited maintenance of canals and roads, and

c) contributed to the low quality of rural power.

These problems are particularly severe in rainfed districts. Although private investment in agriculture has grown, this is hardly a substitute for lower public investment and deteriorating quality of public services, in some cases involving macroeconomic inefficiencies (such as private investment in diesel generating sets). At the same time, power capacity is underutilized because of poor distribution and maintenance, and excessive use of capital on the farms encouraged by subsidies. The fiscal problems of the state governments suggest that the subsidies cannot continue to grow, and the stock of rural productive assets and

technological basis for growth will be limited by the past pattern of spending, unless low cost options are pursued, which have a higher capital-output ratio.

In the short run, some concrete measures have to be taken up to reduce the burden of vulnerable sections of the peasantry. For this, the institutional arrangements for credit, extension and marketing need to be revived. In the long run, a serious attempt has to be made to rejuvenate the agricultural sector with large investments in rural infrastructure, and in agricultural research and technology. The long-term credit needs of the farmers have to be augmented substantially to increase overall investment in agriculture.

Economic theory as well as several empirical studies (Roy, 2001; Kalirajan and Sankar, 2000) suggests that reforms that encourages more government supports to agriculture and raises incomes of rural masses will effectively expand the market for manufacturers. Put another way, a reform process that ignores agriculture also ignores the sectors capacity to contribute to a more rapid overall rate of economic growth. Investment in agriculture particularly in neglected geographical areas of eastern and southern states of India with unexploited agricultural potentials could provide another surge in rural purchasing power. For example investment into high value added activities such as agro-processing could stimulate expansion in modernising manufacturing sector. However, there is no lack of recognition of the need for agricultural reforms in government. The State as well as National policies on agriculture stresses the need for stepping up public investment in agriculture, reduction in input subsidies, upgrading the quality of rural infrastructures particularly irrigation, road and market, re-vamping agricultural research, education and extension systems, and strengthening institutional credit system. While the government given this recognition of the need for agricultural reform, it has not yet acted accordingly.

As a decade, the 1990s could attract a variety of descriptions for agricultural development in India. For one thing, it was the decade of liberalisation, when India, after a seeming eternity of hesitation, finally decided to engage with the global economy. For another, it was when the Indian middle class, thwarted in its ambitions for generations, carried through its revolution of rising aspirations. With all this, the 1990s could also be remembered as the decade when agriculture fell off the radar screen. Two points in time when the Indian economy was severely buffeted by weather adversities capture the essence of this transition. The two worst years over the last quarter-century in terms of weather conditions have been 1987 and 2002.

In 1987-88, when agricultural GDP fell by 1.39 percent, overall growth clocked in at 3.8 percent. In 2002-03, the impact of adverse weather on agriculture was even more catastrophic, with GDP in the sector falling by 5.99 percent. Yet overall GDP registered a growth of almost 4 percent. A similar trend was observed for West Bengal too.

The transformations of the last decade-and-a-half have meant that agriculture, despite being the sector that hosts by far the majority of our population, is of less consequence for the economy than ever before. Indeed, much of the growth over this period has been driven by the revolution of rising aspirations of the great Indian middle class. Clearly, the flagging growth momentum in agriculture has meant much more than an arithmetical failure to contribute to overall GSDP growth. It has meant that the vast majority of the working population in the state has been unable to participate in the growth story, because their purchasing power has been under severe pressure. Various strategies have been advanced over time as possible antidotes to the persistent malaise of agriculture. Virtually all agree that investment in agriculture, which has fallen off rapidly over the years and only shown some hesitant signs of recovery in recent times, needs to be stepped up. Others argue that the input subsidies given to agriculture should be redeployed as productive investment (Roy, 2001; Chand, 2000).

There is a pressing need for a more fundamental change in strategy to raise resources and accelerate the pace of agricultural development. Two possibilities are: targeting and downsizing the subsidies on agricultural inputs and food, and ploughing back the resources so generated to agricultural sector as investments in irrigation and other infrastructural activities; selling off the public sector enterprises (owned by the states and the centre) to partially finance the resources for agricultural investments. The government needs to concentrate on rectifying the inefficiencies which may induce more private investments. Additional resources need to be mobilised through larger support from the Union government and by increasing user charges on electricity and irrigation. There has not been much progress at all towards mobilising surpluses for rural investment or increasing user charges for electricity or irrigation water so that the feasibility of any significant step up in public investment is at present severely constrained by fiscal problems. Critics point out that since the late 80's there have been a strong growth in private sector investment in agriculture. However increase in private investment does not alone can lead to sustained agricultural growth.

The Way Forward

1. Shifting away from non-productive expenditures.

The proportion of total subsidies to India's GDP has gone up from 0.67% in 1973-74 to 1.17% in 1989-90 and further to 1.5% in recent years. State governments bear the brunt of these agricultural subsidies (which have reached financial unsustainable levels) and a large proportion of public expenditure on agriculture in recent years went into current expenditures in the form of increased subsidies for food, fertilisers, electricity, irrigation and other agricultural inputs rather than on creation of assets.

Burgeoning farm subsidies are impinging upon the government's ability to invest in key areas. Even a one-fourth reduction in these subsidies could enable the government to nearly double its investments in critical areas like irrigation and other infrastructure (Planning Commission, 2007). Apart from their misuse and leakages, subsidies in several cases are doing more harm than good through the over-use of irrigation water and imbalances in the use of plant nutrients resulting in wastage and inefficiency. Removing distorting subsidies would also lead to a reduction in environmental damage and an increase in the government resource mobilisation.

2. Provide conducive environment for private household investment is agriculture

Private investment, both household and corporate investment, needs to be encouraged in specific areas of agriculture to reduce the burden on public investment. The government needs to concentrate on rectifying the inefficiencies which may induce more private investments.

3. Institutionalising price reforms.

According to C.H Hanumantha Rao, " There is no basis for complacency about the role of public investment in agriculture - which is vital in inducing private investment and for deriving full benefits of economic reforms. To raise such public sector investments in, say, canal irrigation or electrification, subsidies on these critical inputs need to be cut down. This

requires major reforms in the pricing and institutional framework for the management of these inputs." Pressures need to be mobilised by expanding the tax base and by increasing user charges on electricity and irrigation. There has not been much progress at all towards mobilising surpluses for rural investment or increasing user charges for electricity or irrigation water so that the feasibility of any significant step up in public investment is at present severely constrained by fiscal problems.

4. Redeployment of funds.

The budgetary outlays in agriculture has always been lop-sided towards macro irrigation projects. Since 1950-51 onwards, considerable importance has been given to large-scale irrigation projects namely provision of large dams and canal irrigation. Nevertheless the relative importance of canal irrigation has come down from 40% to 35% whereas are under canal irrigation increased from 8.3 million hectares to 16.9 million hectares between 1950 and 1990. Large - scale irrigation projects suffer from time and cost overruns, and huge maintenance costs which have to be incurred periodically to keep them operational.

There is a need to plough back the resources generated by curbing non-productive expenditures into irrigation and other infrastructural activities; selling off the public sector enterprises (owned by the states and the centre) to partially finance the resources for agricultural investments. Public investments need to be stepped up in regions which although relatively. backward have a high potential for agricultural growth.

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Annexure I: Performance Ranking Matrix

Sl. No.	Indicators \ District	Purulia	Bankura	West Midnapur	Burdwan	Birbhum	South 24 Parganas	Malda	Dakshin Dinajpur	Jalpai guri	Cooch Behar
1	Awareness of farmers towards Organic Farming	M	M	M	M	M	M	M	M	M	M
2	Farmers' knowledge on different methods of Copost making	M	M	M	E	M	E	E	E	E	E
3	Knowledge of farmers on balanced use chemical fertilizers	L	E	E	E	M	M	E	M	E	M
4	Awareness of farmers on used of micronutrients in deficit areas	M	M	M	E	M	M	E	M	E	E
5	Awareness about the benefits on use of soil ameliorants	M	M	E	E	M	M	M	M	M	M
6	Acceptance on use of bio fertilizers by farmers	L	M	M	E	M	E	E	E	E	E
7	Benefit of soil testing facilities availed by farmers from STLs	L	L	L	M	L	L	M	L	L	L
8	Farmers response on multipurpose use WHS	E	E	E	E	E	E	L	NA	E	E
9	Adoption of vegetative measures on Field Building Areas	M	E	E	M	E	M	L	NA	E	E
10	Farmers deriving benefits out of NRM & FPS under NWDPRA	L	M	M	M	M	E	L	M	E	E
11	Performance level of SHG towards self reliance/ sustainability	L	M	M	M	M	E	L	M	E	E
12	Performance of LSS in watershed areas	NA	L	L	NA	E	E	L	NA	E	E
13	Farmers' participation in DC/ scheme implementation	E	E	E	E	E	E	E	E	E	E
14	Acceptance of improved technology for higher productivity of HYV rice	E	E	E	E	E	E	E	E	E	E
15	Farmers' response on Jute cultivation	NA	NA	NA	NA	NA	NA	E	E	E	M
16	Farmers' response on Sugarcane cultivation	E	NA	E	M	E	NA	E	L	L	NA
17	Farmers' response on cultivation of Hybrid Maize under crop diversification	E	E	E	M	E	NA	E	E	E	NA
18	Quality seed production through seed growing farmers	L	L	L	L	L	L	L	L	L	L
19	Status of foundation & certified seed production in Govt. Farms	M	M	M	M	M	M	M	M	M	L
20	Adoption of IPM technology in rice by farmers	M	M	M	M	M	M	M	M	M	M
21	Trend of transfer of IPM technology for other crops except rice	M	M	E	E	M	M	M	L	M	L
22	Level of crop productivity in various crops	M	M	M	M	M	M	M	M	M	M
23	Adoption trend on use of farm machineries and implements	E	E	E	E	E	E	E	E	E	E
24	Level of capacity built up of farmers, farm women through various need based training	M	M	M	M	M	M	M	M	M	M
25	Regularly/ timely availability of fund flow for implementing schemes	M	M	M	M	M	M	M	M	M	M
26	Follow up supervision of MMM work by field officials	M	M	M	M	M	M	M	M	M	M
27	Development of marketing infrastructure	NA	E	E	E	NA	NA	E	NA	E	E
28	Benefits derived by farmers out activities under problem soil	E	E	E	E	E	E	NA	NA	E	E
	E – Encouraging ; M – Moderate; L – Low; NA – No Scheme Executed										
	Source : Concurrent Evaluation of Centrally Sponsored Schemes Under Macro Management Mode of Agriculture in West Bengal (Final Report 2006-07) By Agricultural Finance Corporation Ltd. , Eastern Regional Office – Kolkata										

COMMENTS FOR STATE BUDGETARY RESOURCES AND AGRICULTURAL DEVELOPMENT IN WEST BENGAL AND ACTION TAKEN

Dear Prof. Kazi M. B. Rahim,

Many thanks for sending draft report on " State Budgetary Resources and Agricultural Development in West Bengal". I have gone through the report and found that you have done a good job. However, I am enclosing a few comments which you may incorporate in the final report. Please send the final report along with soft copy (by email) as early as possible.

1. Table1.2 should be sector wise share of GSDP at constant prices (1993-94)

2. In chapter III, you have only listed the schemes. It is important to analyze schemes implemented by year, objectives, targets, type of beneficiaries, operational area, year wise expenditure and achievements etc.

With Warm Regards,

Yours sincerely,

SD/
(GB Lokesh)

Action Taken Report

As per the suggestions, the change as pointed out in no.1 has been made. Regarding no.2 it is not possible to analyze all the schemes listed due to non-availability of required information. However, we have tried to analyze selected schemes depending on available information.

(Kazi M.B. Rahim)
Hony. Director
A.E.R. Centre, Visva-Bharati