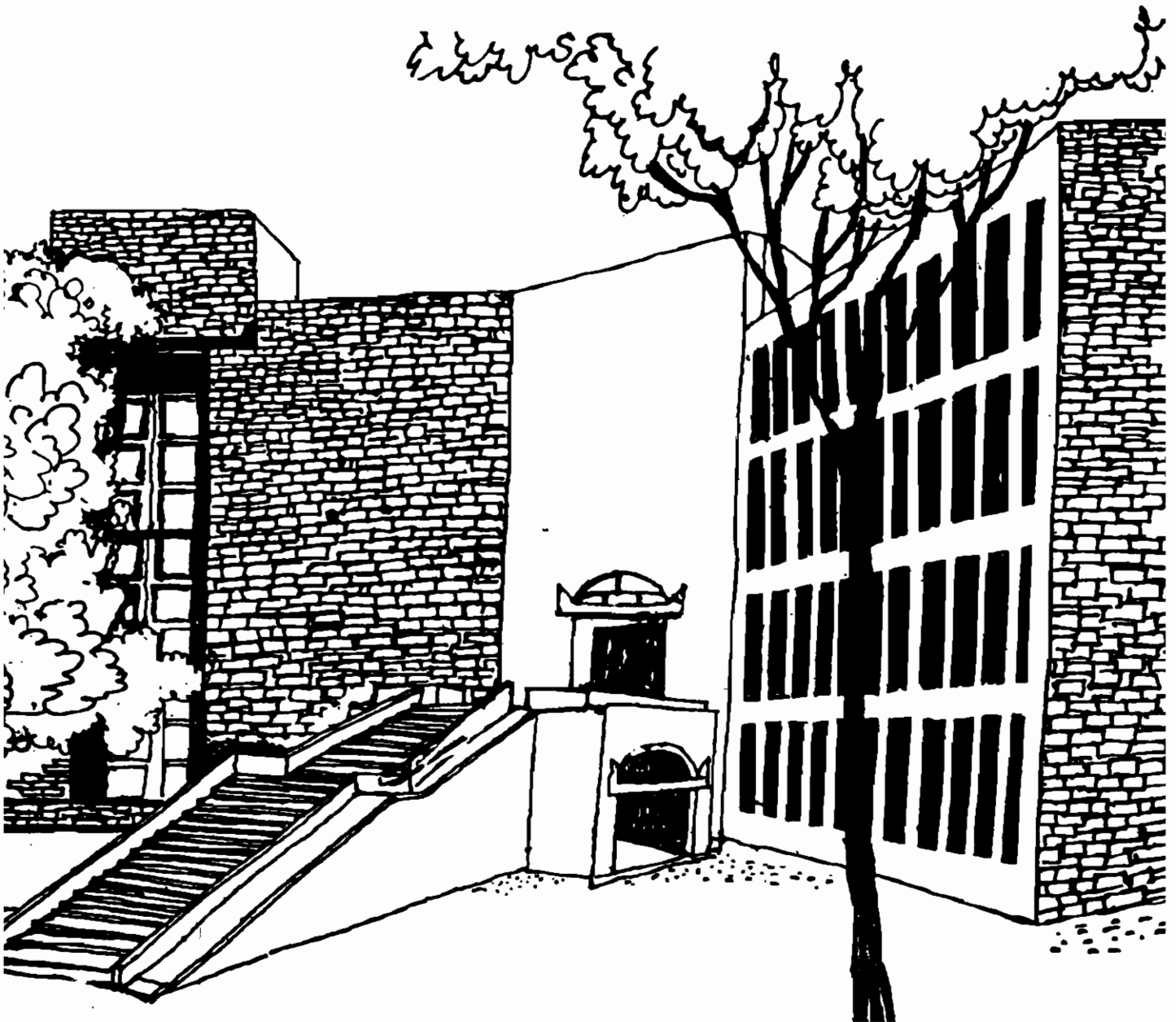




# Working Paper



PROFILE AND PERFORMANCE OF SOME FARM INPUT  
INDUSTRIES

By

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# Profile and Performance of Some Farm Input Industries

Bhupat M. Desai

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## *Abstract*

Modernisation of agriculture requires different farm inputs industries like seeds, fertilisers, pesticides, implements and machinery, feed for livestock and electricity. This is because new technologies in agriculture are invariably embodied in these inputs. This exploratory study aims to discuss (a) profile and financial performance of some units/companies in selected farm input industries in early 1990s and (b) pre and post reform growth performance of some farm input industries at the aggregate level. To study the first objective, data were collected from annual reports of the companies and some directories on industries available in the library. For the second objective, data sources are various issues of Annual Survey of Industries published by CSO, GOI and 1996-97 Economic Survey of GOI.

Performance of major farm input industries under study reveals a paradoxical set of findings. At the firm level financial performance shows it to be quite good and especially for small and medium size companies particularly fertilisers, pesticides and farm implements and machinery. But the industry level growth performance especially in post reform period (upto 1995) it is not so.

New economic policies seem to have improved the financial performance to some extent but did not get translated at aggregate or industry level. Unless economic policy addresses the crucial question of composition of economic growth the stray better performing smaller farm input firms may not weild industry level performance in the directions desirable to the economy.

## **I. Introduction**

Modernisation of agriculture requires such farm input industries as seeds, fertilisers, pesticides, implements and machinery, feed for livestock, and electricity. This is because new technologies in agriculture are invariably embodied in these inputs, besides new scientific knowledge about using these and other farm inputs.

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Two-fold objectives of this exploratory study are to discuss:

- a) profile and financial performance of some units/companies in selected farm input industries in early 1990s, and
- b) pre and post-reform growth performance of some farm input industries at the aggregate level i.e. industry-level.

While the importance of the first objective is self-explanatory, that of the second objective provides an opportunity to assess whether new economic policies of delicensing, dereservation, devaluation etc. have made any difference to the growth performance of these industries.

Farm input industries covered for the first objective are seeds, fertilisers, pesticides, and farm implements and machinery, while for the second objective they are fertilisers, pesticides, farm machinery and parts, and electricity.

Data for studying the first objective were collected from such sources as annual reports of the companies and some directories on industries that were available in the library at the Institute. A mailed questionnaire was also sent to select companies but the response was quite poor.

And data sources for studying the second objective included (1) various issues of Annual Survey of Industries, published by the Central Statistical Organisation of the Ministry of Planning and Programme, Implementation, Government of India, and (2) 1996-97 Economic Survey of the Ministry of Finance, Government of India.

## **II. Profile and Financial Performance**

Private, public, joint, and co-operative sectors co-exist in most farm input industries. But the co-operative sector is mainly in fertiliser industry though they are not covered in the units/firms considered in this paper. Of the 21 fertiliser firms studied 16 are in private sector, one in public sector and four are in joint sector. In the case of pesticides 13 are in private sector, while one is a joint sector firm. Similarly, in farm implements and machinery the units studied are largely in the private sector; it being 8 out of 10. And in the case of seeds all 7 except one unit covered are also in the private sector. One exception being in public/state sector.

Thus, considering all the four inputs the private sector units are pre-ponderant; it being 43. Only 2 are public sector units and 7 are joint sector firms. Sector-wise analysis for the financial performance of these units is therefore not separately attempted.

**Table 1** provides the input-wise averages and co-efficient of variation of capital, funds, sales, exports, and gross profit of these 52 firms in addition to their financial ratios such as debt-equity, inventory turnover, gross profit margin, net profit to sales, return on capital employed and that on net-worth. Following findings may be highlighted from this **Table**. In 1995/93,

1. Among the four inputs seed and pesticide firms had much less capital and fund.
2. Turnover was largest for the fertiliser units followed by farm implements and machinery, pesticides and seeds in the order stated.
3. Exports were largest for the pesticide units followed by fertilisers and then farm implements and machinery.
4. Gross profit was largest for the fertiliser firms followed by farm implements and machinery units, pesticide firms and then seed companies.
5. Debt-equity ratio was about the same (i.e. one) for fertiliser and farm machinery firms. Both seed and pesticide companies had less than one debt-equity ratio though it was extremely low (i.e. 0.35) for the seed units.
6. Inventory-turnover ratio was over 5 to 6 for all four farm input manufacturing units except the seed companies in whose case it was 2.60.
7. Return on capital employed was over 20 percent for all the four farm input industries except fertilisers in whose case it was close to 17 percent.
8. But return on net-worth was the lowest (about 15 percent) for the seed companies.
9. Gross profit margin was highest for the seed firms which was closely followed by the fertiliser units. Between pesticide companies and farm implements and machinery firms the former had a higher gross profit margin. Both these results may be because seed, fertiliser and pesticide companies deal in divisible farm inputs which have a much larger demand-base unlike in the case of farm implements and machinery firms.

10. Except for seeds, similar pattern holds for net profit to sales ratio. Seed companies have the lowest average of this ratio. This may, however, be because data of only four out of seven seed companies are more complete.
11. The coefficient of variation (CV) in sales and gross profit was the least for pesticide firm followed by fertiliser, seed and farm implement and machinery firms. But the CV in paid-up capital was the least for pesticide units, followed by seeds, farm implements and machinery and lastly fertilisers. Interestingly, however, this in total funds was the least for farm machinery units, followed by fertilisers, seeds and lastly pesticides.
12. The coefficient of variation in the ratios for solvency and liquidity cushion was relatively lower for pesticide units and farm implements and machinery firms compared to the other two input firms. Same also broadly holds for the CV in two profitability ratios. But the CV for ROI and to an extent ROE was lower for fertiliser and pesticide firms and the highest for seed firms.

38 out of 52 companies had their sales that were lower than the averages reported in **Table 1**. This domination of small to medium size firms was the most in pesticides followed by that in farm implements and machinery, seeds, and lastly fertilisers. Comparison of **Tables 2 and 3**, respectively on these 38 and 14 companies reveals the following.

1. Smaller as well as larger seed and pesticide units have smaller paid-up capital and funds. But compared to larger firms the smaller firms in all the four farm inputs have smaller capital and funds.
2. Smaller firms in all these four farm inputs have smaller sales, exports, and also gross profit.
3. But smaller firms have higher debt-equity ratio except for farm implements and machinery units which in fact have this ratio that exceed 2.
4. Except for the seed companies inventory turnover ratio of smaller firms in the other three farm inputs is higher than that of larger firms.

5. Even return on capital employed is higher for smaller firms in all the four farm inputs. This, however, is the case for return on networth only for fertiliser and pesticide firms.
6. Gross profit margin of the smaller firms in pesticide and farm implements and machinery is higher than that of the larger firms. Similar is the case for net profit to sales ratio only for the pesticide companies.
7. But coefficient of variation (CV) for smaller firms was higher than that for larger firms in all the four farm inputs production. Only major exceptions are the CVs in two profitability ratios of the pesticide firms, two ratios related to returns of the farm implements and machinery firms, and all the variables excluding debt-equity ratio, inventory turnover ratio, ROI, and gross profit margin of the seed companies.

To conclude, small to medium size firms in all the four farm input industries have superior financial performance. This is especially so for their debt-equity ratio, inventory turnover ratio, and return on capital employed (ROI). Indeed, their ROI ranged from over 17 percent in fertiliser industry to close to 23 percent in farm implements and machinery industry. Between these two industries return on net-worth of smaller firms was higher for fertilisers but not for farm implements and machinery. But the gross profit margin and/or net profit margin of smaller firms were better in pesticides and farm implements and machinery. In fertiliser and seed industries these are better for larger firms. Moreover, such firms in these industries have ROI of about 16 percent. But, in pesticides and farm implements and machinery larger firms have ROI of about 11 to 12 percent. And lastly, the financial performance of the smaller firms was, however, not as stable as that of the larger firms in all the four farm inputs. This may be because both the industrial policy and environment in general has a bias in favour of larger units rather than smaller ones.

### **III. Real Growth in Sales, Exports and Gross Profits of Selected Farm Input Units**

**Table 4** reports this for smaller and larger firms separately. The annual compound growth rates of both sales and exports in 1981-82 prices were better for smaller firms in fertiliser as well as farm implements and machinery industries. But in pesticide industry the



larger firms had better growth rates in sales, exports as also gross profit. This however, may not be typical growth performance as the number of units studied is rather small.

Another finding of **Table 4** is that in 1995 growth in both sales and exports was modest in all the four farm input industries except fertiliser firms growth rate in exports. This exceptional finding could be a statistical illusion as it is based on smaller magnitude of the base year 1991. Indeed, this seems to be the case for most of the high growth rates in exports reported in **Table 4**.

To conclude, in post-reform years sales growth in all the major farm input industries was modest; it being 4 to 10 percent annually compounded. Only exception is smaller fertiliser firms which had this growth of about 30 percent. This may be because some of these firms may have benefited from increased subsidy on fertilisers that was initially reduced in the wake of reforms. But this does not bear out from their growth in gross profit. This brings us to discuss the second objective of whether the industry level performance is better in post vis-a-vis pre-reform period.

#### **IV. Industry-level Growth Performance of Selected Farm Input Industries**

This is studied for energy generated for agriculture, and for invested capital, output and net value added for fertilisers and pesticides, and for agricultural machinery and parts. This choice of input industries is restricted by the availability of data in Annual Survey of Industries published by the CSO. Another limitation is that the data for fertilisers and pesticides are not separately available for these two industries. The former problem requires that CSO covers each of the major farm input industries and the latter requires treating each of these industries separately.

**Table 5** reveals that the growth performance of all the three farm input industries declined in post-reform period. Only exception is the annual compound growth rate of net value added in fertiliser and pesticide industries. But this may be more associated with pesticides rather than fertilisers as the former have attracted MNCs which have developed more value added products. Another farm input industry which has attracted MNCs is seeds but that is mainly for fruits and vegetables which constitutes a small share in the enterprise mix of the farmers.

To put it differently, the major farm input industries like hard core seeds, fertilisers, farm implements and machinery and rural electricity have lower growth in post-reform years (for similar conclusion on fertilisers see Narayan and Gupta 1997, and Desai 1997). New economic policies of delicensing, dereservation, devaluation etc. have thus benefited only a small segment of pesticide and of fruit and vegetable seed industries. As a result, the broad based technical change and commercialisation of agriculture has been restrained with consequent lower growth in both production and productivity in this sector (for some evidence on this see **Tables 6 to 9**). Even the rural poverty has worsened in post-reform period (see **Table 9**).

## **V. Concluding Observations**

This exploratory study of firm-level financial performance and industry-level growth performance of major farm input industries reveals a paradoxical set of findings. While the firm-level financial performance shows it to be quite good and especially for small to medium sized companies particularly in fertilisers, pesticides, and farm implements and machinery, the industry level growth performance especially in post-reform period is not so.

New economic policies seem to have improved the financial performance to an extent (for some further evidence on fertilisers see **Table 10**). But this did not get translated at the aggregate or industry level. While small number of units studied, outdated technology, and ad hoc changes in subsidy etc. policies may be responsible for this, it would be imprudent to not to delineate some deeper malaise.

This seems to lie in the industrialisation strategy of heavy and capital goods pursued since mid-1950s. Under this strategy what seems to have resulted is the neglect of consumer non-durable and intermediate goods industries such as agro-processing and agri-inputs (see, for example, Oza 1997 and Karnik 1997). It has also resulted into neglect of agricultural sector (see, for example, Desai 1997 and 1998). Both of these compounded further from the neglect of infrastructure oriented capital goods industries which benefit agri-input, agro-processing and agriculture alike.

The story does not seem to end only in such neglect but gets extended to the “mindset” of the government, financial institutions, industries, and people at large that perceives big as bountiful and small as not so.

Unless, therefore, economic policy addresses the crucial question of composition of economic growth the stray better performing smaller farm input firms cannot wield industry-level performance in the directions desirable to the economy.

But the macro reforms merely aim at economic growth, poverty alleviation, and sound macro aggregates. Moreover they do not distinguish between economic “strategy” and “instruments” to implement it. It seems the latter itself is viewed as a strategy. Unless, therefore, this distinction is identified by “prioritising” “Textiles-First” industrialisation as a “strategy” neither agriculture/agri-input industries would grow rapidly nor would there be a better match between the “problems” these sectors/industries have and the “instruments” required to ease them.

<b>Table 1</b>				
<b>Profile and Some Financial Ratios of Selected Farm Input Units in early 1990s</b>				
<i>Details</i>	<i>Seeds</i>	<i>Fertilisers</i>	<i>Pesticides</i>	<i>Farm Implements &amp; Machinery</i>
1. No. of Firms/Units	7	21	14	10
<b>2. Average of</b> ----- Rs. Mn. -----				
2.1 Paid-up capital	25.10 (1.16)	1078.60 (1.28)	82.95 (0.52)	215.92 (1.22)
2.2 Total Funds	214.95 (1.05)	6696.00 (1.04)	843.88 (1.35)	6103.25 (0.54)
2.3 Sales	257.47* (1.17)	4894.05 (0.92)	1214.27 (0.89)	4119.24 (1.39)
2.4 Exports	-	145.24 (1.37)	128.68 (1.81)	85.28 (1.73)
2.5 Gross Profit	55.40* (1.20)	966.18 (1.14)	166.78 (0.93)	405.22 (1.49)
<b>3. Average of</b>				
3.1 Debt-Equity Ratio	0.35 (0.89)	1.02 (2.20)	0.62 (0.61)	1.01 (1.05)
3.2 Inventory-Turnover Ratio	2.60 (0.83)	6.61 (0.80)	5.30 (0.22)	5.61 (0.59)
3.3 Return on Capital Employed (%)	20.05 (0.81)	16.94 (0.45)	21.17 (0.60)	20.54 (0.55)
3.4 Return on Net-worth (%)	14.88 (0.74)	19.00 (0.72)	20.11 (0.54)	27.80 (0.79)
3.5 Gross Profit Margin (%)	21.52* (0.67)	19.74 (1.16)	13.73 (0.51)	9.84 (0.43)
3.6 Net Profit to Sales (%)	3.96* (0.66)	13.02 (1.86)	10.35 (0.75)	6.83 (0.37)
Figures in parentheses are coefficient of variation (CV)				
* Based on data for only 4 firms as data for others are incomplete				

<b>Table 2</b>				
<b>Profile and Some Financial Ratios of Selected Farm Input Firms with Lower than Average Sales in Early 1990s</b>				
<i>Details</i>	<i>Seeds</i>	<i>Fertilizers</i>	<i>Pesticides</i>	<i>Farm Implements &amp; Machinery</i>
1. No. of Firms with below Average Sales	5	13	12	8
<b>2. Average of ----- Rs. Mn. -----</b>				
2.1 Paid-up capital	11.52 (1.93)	335.00 (0.92)	73.02 (0.51)	89.88 (0.44)
2.2 Total Funds	68.57 (8.80)	1850.00 (0.79)	414.07 (0.61)	842.83 (0.63)
2.3 Sales	41.86 (2.83)	2045.18 (0.85)	915.45 (0.93)	1690.75 (0.78)
2.4 Exports	-	129.22 (1.22)	62.17 (2.46)	44.56 (1.34)
2.5 Gross Profit	9.03 (0.69)	221.83 (0.79)	140.72 (0.99)	171.70 (1.00)
<b>3. Average of</b>				
3.1 Debt-Equity Ratio	0.42 (0.35)	1.07 (2.57)	0.63 (0.62)	0.73 (0.62)
3.2 Inventory-Turnover Ratio	1.88 (1.85)	7.20 (0.89)	5.39 (0.22)	6.05 (0.57)
3.3 Return on Capital Employed (%)	21.89 (19.22)	17.33 (0.86)	22.66 (0.58)	22.88 (0.45)
3.4 Return on Net-worth (%)	9.46 (5.41)	23.68 (0.60)	21.90 (0.48)	21.58 (0.39)
3.5 Gross Profit Margin (%)	21.57 (16.57)	10.85 (0.81)	15.37 (0.45)	10.15 (0.45)
3.6 Net Profit to Sales (%)	2.67 (1.36)	10.47 (1.55)	10.69 (0.73)	6.50 (0.38)
<b>Figures in parentheses are coefficient of variation (CV)</b>				

<b>Table 3</b>				
<b>Profile and Some Financial Ratios of Selected Farm Input Firms with Higher than Average Turnover in early 1990s</b>				
<i>Details</i>	<i>Seeds</i>	<i>Fertilizers</i>	<i>Pesticides</i>	<i>Farm Implements &amp; Machinery</i>
1. No. of Firms with Above Average Sales	2	8	2	2
2. Average of ----- Rs. Mn. -----				
2.1 Paid-up capital	59.15 (2.00)	2287.20 (0.68)	142.50 (0.14)	720.00 (0.22)
2.2 Total Funds	507.70 (10.98)	14570.80 (0.33)	3422.75 (0.33)	27144.90 (0.01)
2.3 Sales	628.75 (25.97)	9523.40 (0.39)	3007.20 (0.03)	13833.20 (0.04)
2.4 Exports	-	171.27 (1.46)	527.80 (0.45)	248.15 (0.01)
2.5 Gross Profit	194.50 (9.73)	2175.74 (0.40)	323.20 (0.50)	1339.30 (0.06)
3. Average of				
3.1 Debt-Equity Ratio	0.24 (0.19)	0.95 (0.63)	0.52 (0.60)	2.13 (0.84)
3.2 Inventory-Turnover Ratio	3.68 (1.80)	5.66 (0.37)	4.77 (0.24)	3.85 (0.49)
3.3 Return on Capital Employed (%)	16.37 (3.10)	16.32 (0.32)	12.27 (0.12)	11.17 (0.89)
3.4 Return on Net-worth (%)	23.01 (11.74)	17.33 (0.45)	9.39 (0.32)	52.70 (0.69)
3.5 Gross Profit Margin (%)	30.93 (2.80)	22.85 (0.58)	10.75 (0.69)	9.69 (0.17)
3.6 Net Profit to Sales (%)	7.85 (3.93)	16.51 (0.68)	8.34 (0.88)	8.16 (0.29)
Figures in parentheses are coefficient of variation (CV)				

<b>Table 4</b>				
<b>Annual Compound Growth Rates (ACGR - %) in Sales, Exports and Gross Profit (in 1981-82 Prices)* of Smaller and Larger Firms in Some Farm Input Industries between 1991 &amp; 1995.</b>				
<i>Details</i>	<i>Seeds</i>	<i>Fertilizers</i>	<i>Pesticides</i>	<i>Farm Implements &amp; Machinery</i>
<b>1. No. of Firms with Below Average Sales</b>	5	13	12	8
<b>2. Their ACGR (%) in</b>				
<b>2.1 Sales</b>	15.37**	30.11	9.36	6.47
<b>2.2 Exports</b>	-	45.68	- 8.32	55.76
<b>2.3 Gross Profit</b>	11.34**	6.44	16.69	7.09
<b>3. No. of Firms with above Average Sales</b>	2	8	2	2
<b>4. Their ACGR (%) in</b>				
<b>4.1 Sales</b>	na	7.77	10.25	4.07
<b>4.2 Exports</b>	na	32.19	38.72	-10.80
<b>4.3 Gross Profit</b>	na	16.82	53.81	27.31
<b>5. All Firms/Units</b>	7	21	14	10
<b>6. Their ACGR (%) in</b>				
<b>2.1 Sales</b>	15.37**	9.28	9.67	4.83
<b>2.2 Exports</b>	-	38.52	8.24	0.60
<b>2.3 Gross Profit</b>	11.34**	15.02	22.82	18.37
* Wholesale price index deflator with 1981-82 base for seeds is foodgrains, for fertilizers and pesticides it is chemicals and for farm implements and machinery it is machinery.				
** Based on data for only 2 firms as data for others are not available.				

<b>Table 5</b> <b>Annual Compound Growth Rates (ACGR- %) for Some Farm Input Industries in Pre and Post-Reform Periods</b>			
<i>Details</i>		<i>Pre-Reform 1987-88 to 1990-91</i>	<i>Post-Reform 1991-92 to 1994-95</i>
1.	<b>Energy Generated for</b>		
	(a) Agriculture	12.76	12.10
	(b) All sectors	9.50	7.06
2.	<b>Fertilisers and Pesticides<sup>①</sup> in 1980-81 Prices</b>		
	(a) Invested capital	10.86	2.72
	(b) Output	18.48	-2.10
	(c) Net value added	11.03	20.46
3.	<b>Agricultural Machinery and Parts<sup>①</sup> in 1980-81 Prices</b>		
	(a) Invested capital	9.17	5.61
	(b) Output	16.19	-0.12
	(c) Net value added	25.23	2.57
<p>① Separate data for these two industries are not available. Moreover, pre and post-reform years for these industries are, respectively, 1988-89 to 1990-91 and 1991-92 to 1993-94 as data for more recent years are not available. The wholesale price index with 1981-82 base for chemical and chemical products and for machinery and machine tools are, respectively, used for these two industries to derive growth rates in constant prices.</p> <p><i>Source:</i> (i) <b>Economic Survey: 1996-97</b>, Ministry of Finance, GOI, New Delhi. (ii) <b>Annual Survey of Industries</b>, Central Statistical Organisation, Ministry of Planning and Programme Implementation, GOI, New Delhi, Various Issues.</p>			



**Table 6**  
**Average Annual Compound Growth Rates (%) in Yield per hectare**  
**of Major Crops in Pre and Post-Reform Periods**

<i>Crops</i>	<i>Pre-Reform 1986-87 to 1990-91</i>	<i>Post-Reform 1991-92 to 1995-96</i>
<b>High Value Crops</b>		
1. Paddy-Rice	5.24	2.09
2. Wheat	4.15	1.78
3. Oilseeds	6.72	4.01
4. Cotton	10.27	2.64
5. Sugarcane	2.50	1.80
<b>Low Value Crops</b>		
1. Jowar (Sorghum)	8.58	2.55
2. Bajra (Millet)	15.82	2.50
3. Pulses (Leagumes)	3.35	1.34

*Date Source:* **Fertiliser Statistics**, Fertiliser Association of India, New Delhi, 1996-97.

<b>Table 7</b>		
<b>Agricultural Output in 1980-81 Prices: Its Composition and Annual Compound Growth Rates in Pre and Post-Reform Periods</b>		
<i>Details</i>	<i>Post-Reform 1991-92 to 1994-95</i>	
	<i>% Share to total</i>	<i>Annual compound growth rate (%)</i>
<b>High Value</b>		
1. Paddy/Rice	16.38	3.76
2. Wheat	10.06	5.94
3. Oilseeds	10.22	4.32
4. Sugarcane	7.18	3.43
5. Cotton	3.11	5.59
6. Drugs & Narcotics	1.66	-0.18
7. Condiments & Spices	2.04	6.24
8. Fruits & Vegetables	9.03	6.47
9. Milk & Milk Products	15.21	4.42
10. Eggs	0.95	5.43
11. Marine Fish	1.01	11.13
<i>Total</i>	76.85	
<b>Low Value</b>		
1. Coarse Cereals	4.93	2.78
2. Pulses (Leagumes)	4.52	5.55
3. Inland Fish	1.54	8.57
<i>Total</i>	11.09	
<b>All</b>	<b>100.00</b>	<b>4.36</b>
<i>Source: National Accounts Statistics, Central Statistical Organisation, Ministry of Planning and Programme Implementation, Government of India, New Delhi, Various Issues.</i>		

<b>Table 8</b>						
<b>Intermediate Inputs of Agriculture: Their Profile and Annual Compound Growth Rates (ACGR-%) during Pre and Post-Reform Periods (Rupees Million in 1980-81 Prices)</b>						
<i>Inputs</i>	<i>Pre-Reform</i>					<i>Post-Reform</i>
	<i>1951-52 to 1954-55</i>	<i>1961-62 to 1964-65</i>	<i>1971-72 to 1974-75</i>	<i>1981-82 to 1984-85</i>	<i>1987-88 to 1990-91</i>	<i>1991-92 to 1994-95</i>
<b>1. Fertilisers</b>						
(a) Average Amount	580	2825	11532	33875	56610	86237
(b) % to Total	0.92	3.69	11.67	17.91	17.07	16.18
(c) ACGR	18.44	18.68	2.85	9.30	12.23	2.39
<b>2. Irrigation Charges</b>						
(a) Average Amount	312	440	1110	1577	2695	3942
(b) % to Total	0.49	0.57	1.12	0.83	0.81	0.74
(c) ACGR	2.24	12.55	1.08	6.33	7.27	10.92
<b>3. Electricity</b>						
(a) Average Amount	32	175	1127	3652	6907	11795
(b) % to Total	0.05	0.23	1.14	1.93	2.08	2.21
(c) ACGR	10.35	5.89	15.39	9.18	1.37	29.89
<b>4. Diesel Oil</b>						
(a) Average Amount	65	177	23.67	7580	13575	29245
(b) % to Total	0.10	0.23	2.39	4.01	4.09	5.48
(c) ACGR	16.93	11.90	9.08	9.87	20.51	15.73
<b>5. Current Repairs and Maintenance</b>						
(a) Average Amount	1327	1902	3905	10717	24485	43625
(b) % to Total	2.10	2.49	3.95	5.66	7.38	8.18
(c) ACGR	0.53	4.46	13.53	15.23	17.86	13.70
<b>6. Pesticides</b>						
(a) Average Amount	22	330	2285	3740	5325	8177
(b) % to Total	0.03	0.43	2.31	1.98	1.61	1.53
(c) ACGR	12.93	10.43	41.80	13.50	-0.31	23.57
<b>7. Six Major Market Purchased Inputs</b>						
(a) Average Amount	2338	5849	22146	61141	109575	183021
(b) % to Total	3.70	7.64	22.58	32.32	33.04	34.32
(c) ACGR	5.65	12.14	13.25	10.55	13.02	15.36
<b>8. All Intermediate Inputs*</b>						
(a) Average Amount	63212	76465	98855	189182	331567	533087
(b) ACGR	3.57	1.70	2.77	8.68	11.46	11.11
* This includes seeds, organic manure, feed to livestock and market charges in addition to the six market purchased inputs						
Source: National Accounts Statistics of India: 1950-51 to 1995-96, Economic and Political Weekly Research Foundation, Mumbai, October, 1997.						

**Table 9**  
**Agricultural Performance in Pre and Post-Reform Periods**

<i>Details</i>		<i>Pre-reform 1986-87 to 1990-91</i>	<i>Post-reform 1991-92 to 1995-96</i>
1	Average of Index of Wholesale Prices of Agriculture to Index of Wholesale Prices of Manufacturing (Terms of Trade for Agriculture with Base: 1981-82)	110.40	113.80*
2	Annual Compound Growth Rate (per cent) in these Relative Prices for Agriculture	-1.57	-0.43*
3	Annual Compound Growth Rates (per cent) in		
3.1	HYV Area	4.23	3.89
3.2	Fertilizer Use	10.78	2.86
3.3	Gross Irrigated Area	3.94	2.40*
3.4	Electricity Use in Agriculture	13.99	12.29
4	Annual Compound Growth Rates (per cent) in		
4.1	Real Plan Expenditure on Agriculture and Rural Development in 1980-81 Prices	1.72	3.10
4.2	Real Plan Expenditure on Agriculture Alone in 1980-81 Prices*	1.04	0.81
5	Annual Compound Growth Rates (per cent) in		
5.1	Real Total Institutional Rural Credit Issued during the Year	-2.12	5.80
5.2	Real Total Institutional Rural Credit Outstanding	2.16	1.56
6	Annual Compound Growth Rate (per cent) in		
6.1	Foodgrains Production Index	6.36	2.57
6.2	Non-foodgrains Production Index	8.60	4.44
6.3	Agricultural Production Index	7.69	3.34
6.4	Gross Real Value Added (GDP) from Agriculture in 1980-81 Prices	6.29	3.70
6.5	Net Real Value Added (NDP) from Agriculture in 1980-81 Prices	4.36	2.74
6.6	NDP from Agriculture in Current Prices	12.58	9.67
7	Rural Poverty Ratio (%)	36.60	39.88**
8	Urban Poverty Ratio (%)	35.22	32.17**
* These are for four years as data for 1995-96 are not available.			
** These are for three years each as data for other years are not available.			
Source: Adapted from "Budget: A Retrograde for Agriculture", Bhupat M Desai, <i>Vikalpa</i> , Vol.22, No.2, April-June 1997.			

**Table 10**  
**Financial Performance of Fertiliser Industry in Pre and Post-Reform Periods**

<i>Details</i>		<i>Pre-Reform 1989-90 to 1991-92</i>	<i>Post-Reform</i>	
			<i>1992-93 to 1994-95</i>	<i>1995-96 to 1996-97</i>
1.	Raw material productivity i.e. gross value added per Rupee of raw material cost	0.65	0.62	0.70
2.	Gross sales to gross fixed assets (%)	4.52	1.00	1.07
3.	Profit after tax to gross sales (%)	4.50	2.64	4.36
4.	Return on investment (ROI %)	9.02	10.50	14.78
5.	Return on equity (ROE %)	5.42	5.29	14.52
6.	Net working capital cycle length (days)	167	176	157

*Source:* Adapted from "Structure, Conduct and Performance of Fertiliser Industry", Ajay Kumar Virmani, CMA, Indian Institute of Management, Ahmedabad, 1998. (unpublished)

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