

ECONOMIC STRUCTURE AND AGRICULTURE GROWTH OF BIHAR

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Abstract : The present study is an attempt to present in detail the current status of the state's economy, as well as its various sectors. The sectoral analysis will highlight the efforts made by the state government for the different sectors and their respective achievements. The rise in productivity has led to higher rate of growth of GSDP during the last decade. This rise has also led to higher generation of agricultural surplus during the recent years. This surplus has got invested in secondary and tertiary sectors, helping them to grow at high rates. The economy of Bihar is largely service-oriented, but it also has a significant agricultural base. The erstwhile state of Bihar was bifurcated in November, 2000, and the present Bihar does not have any mineral resources. The state also lost the important industrial sector that went to present Jharkhand. Therefore, Bihar has got only an agricultural sector to rely upon. The base of Bihar's agriculture is its fertile soil and abundant water resources, particularly ground water. Because of its favourable agro-climatic conditions, Bihar produces a variety of crops, vegetables and fruits. Recently, the state is producing flower on a large scale for its domestic and outside market. The state government is stressing for higher agricultural growth with a variety of interventions for technological change. Agriculture Road Map II contains a number of programmes for ensuring higher productivity in agriculture. A strong monitoring system has been put in place to ensure effective implementation of those programmes.

Keywords : Agriculture, Climatic condition, Economy of Bihar.

I. INTRODUCTION

For proper understanding of the challenges facing Bihar's economic development, it should be kept in mind that, with a population of 104.0 million in 2011, Bihar is a densely populated region, with no less than 1106 persons living per sq. km. of its area. As per the Planning Commission figures, in 2009-10, 53.5 percent of its population lived below the poverty line in Bihar. Nearly nine-tenths of its population live in the villages, where the poverty ratio is higher at 55.3 percent. Bihar had to overcome all these challenges to move ahead in a new growth path. Bihar falls in the Gangetic basin area with fertile alluvial soil and abundant ground water resources. With the bifurcation of the state, the vast mineral sector and other big industries went to Jharkhand. The present Bihar was left with only agriculture to depend upon. But with a prudent development strategy, the state could overcome these challenges. The state is now experiencing a development process that is not only very strong, but inclusive as well.

The present study is an attempt to present in detail the current status of the state's economy, as well as its various sectors. The sectoral analysis will highlight the efforts made by the state government for the different sectors and their respective achievements. It will simultaneously point out the hindrances that the economy is facing to maintain its growth momentum. Apart from this Introductory chapter on the overview of the state's economy, the analysis has been done with the following sub-topics, such as – Agriculture and Allied Sectors, Enterprises Sector, Infrastructure and Communications, Social Sector, Banking and Allied Sector and, finally, State Finances.

Agriculture and Allied Sectors

The total geographical area of 93.6 lakh hectares of Bihar has three distinct agro-climatic zones — North-West, North-East and South. The North-West zone has 13 districts. This zone receives an annual rainfall of 1040-1450 mms, and the soil here is mostly loam or sandy loam. The North-East zone has 8 districts and it receives rainfall ranging from 1200-1700 mms. The soil here is loam or clay loam. Finally, the South zone, having 17 districts, receives an average annual rainfall of 990-1300 mms. and the soil is sandy loam, loam, clay and clay loam. The status of agriculture and allied sectors is presented in this Chapter under the following major heads — Rainfall, Land Utilization, Production and Productivity, Irrigation, Agricultural Inputs, and Agricultural Credit. Under Allied Activities, the Chapter also discusses the performance in Animal Husbandry and Fishery sectors.

In Table -1, the production levels of 34 most important crops have been presented for the period 2010-11 to 2015-16. The total cereals production in 2015-16 is 140.87 lakh tonnes, compared to 103.52 lakh tonnes in 2010-11. This increase is due a high increase in rice production. The rice production increased from a modest quantum of 31 lakh tonnes in 2010-11 to about 68 lakh tonnes in 2015-16, due to a technological change that has come up with the introduction of SRI (System of Rice Intensification) technique and zero tillage method in the same. In the realm of foodgrains, it is found that during the last 6 years, the quantum of cereal production has grown annually at 2.51 percent. This has enhanced the food security of population, particularly its marginalised section. The annual growth of wheat production was negative (-6.04 percent), whereas for maize, the annual growth rate was 2.45 percent. For fiber crops, the rate of growth worked out to be moderate at 2.70 percent. For sugarcane, the growth rate was satisfactory at 2.89 percent, compared to a negative trend seen in earlier decade.

Table -1 : Production Levels of Major Crops

(Production in '000 tonnes)

| Crops | 2010-11 | 2011-12 | 2012-13 | 2013-14 | 2014-15 | 2015-16 | CAGR |
|----------------------|----------|----------|----------|----------|----------|----------|--------|
| Total Cereals | 10352.15 | 17363.65 | 17286.69 | 15716.30 | 14321.11 | 14087.25 | 2.51 |
| Total Rice | 3112.62 | 8237.98 | 8322.01 | 6649.59 | 8241.62 | 6802.22 | 11.11 |
| Autumn Rice | 444.04 | 914.23 | 960.01 | 798.68 | 1010.34 | 725.21 | 7.61 |
| Aghani Rice | 2505.54 | 7141.12 | 7076.17 | 5634.96 | 7049.73 | 5876.03 | 12.09 |
| Summer Rice | 163.03 | 182.63 | 285.83 | 215.95 | 181.56 | 200.98 | 2.16 |
| Wheat | 5094.03 | 6530.96 | 6174.26 | 6134.68 | 3570.21 | 4736.45 | -6.04 |
| Total Maize | 2108.20 | 2557.06 | 2755.95 | 2904.24 | 2478.75 | 2517.10 | 2.45 |
| Kharif Maize | 468.52 | 622.42 | 926.32 | 778.21 | 825.15 | 692.70 | 7.79 |
| Rabi Maize | 922.29 | 1098.17 | 791.00 | 1199.39 | 913.78 | 1105.14 | 2.22 |
| Summer Maize | 717.39 | 836.47 | 1038.63 | 926.64 | 739.82 | 719.26 | -1.33 |
| Total Coarse Cereals | 2145.50 | 2594.71 | 2790.42 | 2932.03 | 2509.28 | 2548.58 | 2.34 |
| Barley | 15.69 | 16.69 | 15.23 | 14.25 | 13.43 | 13.90 | -3.71 |
| Jowar | 3.27 | 2.15 | 2.82 | 1.31 | 1.55 | 1.71 | -13.29 |
| Bajra | 5.42 | 5.01 | 4.84 | 3.00 | 3.73 | 4.64 | -5.93 |
| Ragi | 8.85 | 9.39 | 9.37 | 7.14 | 9.84 | 9.89 | 1.22 |
| Small Millets | 4.08 | 4.41 | 2.21 | 2.09 | 1.98 | 1.34 | -20.50 |
| Total Pulses | 467.18 | 521.62 | 542.74 | 522.02 | 428.93 | 420.78 | -3.23 |
| Total Kharif Pulses | 30.28 | 27.81 | 29.50 | 30.96 | 33.69 | 28.98 | 1.16 |
| Urad | 13.23 | 11.87 | 12.15 | 14.14 | 14.36 | 12.05 | 0.73 |
| Bhadai Moong | 6.08 | 4.70 | 7.18 | 7.36 | 9.23 | 8.34 | 10.93 |
| Kulthi | 9.32 | 8.23 | 7.75 | 7.83 | 7.96 | 7.21 | -3.85 |
| Ghagra | 0.24 | 0.57 | 0.78 | 0.34 | 0.43 | 0.49 | 5.54 |
| Other Kharif Pulses | 1.41 | 2.45 | 1.64 | 1.29 | 1.71 | 0.89 | -9.81 |
| Total Rabi Pulses | 436.91 | 493.81 | 513.25 | 491.06 | 395.24 | 391.80 | -3.53 |
| Arhar (Tur) | 39.44 | 42.06 | 47.12 | 36.46 | 28.54 | 37.13 | -4.80 |
| Gram | 59.38 | 76.82 | 86.19 | 70.34 | 57.49 | 58.55 | -3.21 |
| Lentil | 162.22 | 171.61 | 183.24 | 196.06 | 140.06 | 140.44 | -3.54 |
| Pea | 19.82 | 19.23 | 19.25 | 18.35 | 17.31 | 17.94 | -2.42 |
| Khesari | 73.18 | 92.07 | 83.80 | 70.55 | 60.06 | 50.99 | -8.89 |
| Summer Moong | 81.26 | 90.10 | 92.13 | 98.01 | 90.73 | 86.02 | 1.05 |
| Other Rabi Pulses | 1.62 | 1.93 | 1.53 | 1.30 | 1.05 | 0.73 | -15.63 |
| Total Oilseeds | 142.24 | 174.47 | 182.73 | 157.18 | 127.01 | 126.52 | -4.71 |
| Castor seed | 0.17 | 0.10 | 0.10 | 0.15 | 0.09 | 0.04 | -17.60 |
| Safflower (Kusum) | 0.06 | 0.23 | 0.08 | 1.32 | 0.08 | 0.09 | 4.86 |
| Sesamum | 2.02 | 2.25 | 1.95 | 1.99 | 2.56 | 2.39 | 3.62 |
| Sunflower | 24.99 | 22.87 | 22.24 | 19.79 | 16.64 | 16.20 | -8.83 |

| | | | | | | | |
|-------------------|----------|----------|----------|----------|----------|----------|-------|
| Mustard/ Rapeseed | 95.82 | 127.93 | 138.52 | 117.14 | 92.89 | 94.39 | -3.38 |
| Linseed | 18.82 | 20.27 | 19.05 | 15.87 | 14.16 | 12.91 | -8.60 |
| Ground Nut | 0.37 | 0.83 | 0.78 | 0.91 | 0.59 | 0.50 | 1.79 |
| Total Fibre Crops | 1309.41 | 1738.81 | 1717.73 | 1745.08 | 1637.12 | 1630.60 | 2.70 |
| Jute | 1164.59 | 1490.70 | 1490.24 | 1498.08 | 1418.71 | 1308.60 | 1.26 |
| Mesta | 144.82 | 248.11 | 227.49 | 247.00 | 218.41 | 322.00 | 11.13 |
| Sugarcane | 11827.66 | 11288.58 | 12741.42 | 12881.78 | 15498.95 | 11914.62 | 2.89 |

Source: Govt. of Bihar, Finance Department, Economic Survey 2016-17

Table -2 : Productivity Level of Major Crops

(kgs/ha)

| Crops | Triennium Average (2005-08) | 2013-14 | 2014-15 | 2015-16 | Triennium Average (2013-16) | Percentage change between trienniums |
|----------------------|-----------------------------|---------|---------|---------|-----------------------------|--------------------------------------|
| Total Cereals | 1493 | 2595 | 2328 | 2320 | 2462 | 64.9 |
| Total Rice | 1284 | 2110 | 2525 | 2104 | 2318 | 80.5 |
| Autumn Rice | 868 | 1454 | 1739 | 1321 | 1597 | 83.9 |
| Aghani Rice | 1350 | 2246 | 2711 | 2258 | 2479 | 83.6 |
| Summer Rice | 1557 | 2342 | 2207 | 2472 | 2275 | 46.1 |
| Wheat | 1915 | 2855 | 1657 | 2244 | 2256 | 17.8 |
| Total Maize | 2549 | 3966 | 3508 | 3571 | 3737 | 46.6 |
| Kharif Maize | 1380 | 2814 | 2974 | 2559 | 2894 | 109.7 |
| Rabi Maize | 3477 | 4552 | 3630 | 4421 | 4091 | 17.7 |
| Summer Maize | 3223 | 4820 | 4171 | 3903 | 4496 | 39.5 |
| Total Coarse Cereals | 1956 | 3877 | 3425 | 3491 | 3651 | 86.7 |
| Barley | 1104 | 1398 | 1109 | 1304 | 1254 | 13.5 |
| Jowar | 1035 | 1065 | 1068 | 1063 | 1067 | 3.0 |
| Bajra | 1067 | 1138 | 1134 | 1133 | 1136 | 6.5 |
| Ragi | 789 | 1015 | 1474 | 1429 | 1245 | 57.7 |
| Small Millets | 752 | 754 | 757 | 756 | 756 | 0.5 |
| Total Pulses | 1606 | 1044 | 848 | 844 | 946 | -41.1 |
| Total Kharif Pulses | 860 | 886 | 892 | 821 | 889 | 3.4 |
| Urad | 782 | 912 | 913 | 883 | 913 | 16.7 |
| Bhadai Moong | 602 | 805 | 838 | 683 | 822 | 36.5 |
| Kulthi | 872 | 952 | 957 | 929 | 955 | 9.5 |
| Other Kharif Pulses | 578 | 752 | 757 | 753 | 755 | 30.5 |
| Total Rabi Pulses | 746 | 1056 | 844 | 846 | 950 | 27.4 |
| Arhar | 949 | 1667 | 1438 | 1577 | 1553 | 63.6 |
| Gram | 919 | 1147 | 958 | 986 | 1053 | 14.5 |
| Lentil | 753 | 1272 | 916 | 932 | 1094 | 45.3 |
| Pea | 942 | 1060 | 1010 | 1053 | 1035 | 9.9 |
| Khesari | 826 | 1116 | 990 | 934 | 1053 | 27.5 |
| Summer Moong | 594 | 672 | 579 | 548 | 626 | 5.3 |
| Other Rabi Pulses | - | 1010 | 1000 | 1010 | 1005 | - |
| Total Oilseeds | 996 | 1279 | 1093 | 1059 | 1186 | 19.1 |
| Castor seed | 944 | 956 | 958 | 953 | 957 | 1.4 |
| Safflower (Kusum) | 800 | 805 | 804 | 802 | 805 | 0.6 |
| Sesamum | 788 | 872 | 874 | 868 | 873 | 10.8 |

| | | | | | | |
|--------------------|-------|-------|-------|-------|-------|-------|
| Sunflower | 1339 | 1410 | 1429 | 1421 | 1420 | 6.0 |
| Mustard & Rapeseed | 967 | 1374 | 1100 | 1053 | 1237 | 27.9 |
| Linseed | 851 | 850 | 861 | 859 | 856 | 0.5 |
| Ground Nut | 494 | 1024 | 1023 | 1018 | 1024 | 107.2 |
| Jute | 9967 | 2571 | 2694 | 2508 | 2633 | -73.6 |
| Mesta | 9185 | 2746 | 2402 | 3515 | 2574 | -72.0 |
| Sugarcane | 40178 | 49916 | 60938 | 48826 | 55427 | 38.0 |

Source: Govt. of Bihar, Finance Department, Economic Survey 2016-17

The productivity level of various crops produced in Bihar is presented in Table -2. The triennium averages of productivity ending 2005-08 and 2013-16 are shown in two different columns of Table -2. The comparison of triennium averages allows one to measure productivity gains, eliminating short term fluctuations. The last column represents the percentage change between two trienniums for each crop. The average productivity of three important cereals for the triennium (2013-16) are — 2318 kgs/ha. for rice, 2256 kgs/ha. for wheat and 3737 kgs/ha. for maize. For rice, the percentage change between two trienniums was found out to be 80.5 percent. For wheat, the change was of the order of 17.8 percent and for maize, it stood at 46.6 percent.

Area and Production of Fruits

Bihar is known all over India for its litchi and mango. In litchi season, production from Bihar can be found in all markets of India, be it a rural one or a big metro. The Muzaffarpur variety of litchi, particularly 'shahi' litchi, is famous for its taste and flavour. The 'malda' variety of mango from Bihar is also special for its taste. The levels of production of seven major fruits in Bihar in 2015-16 were — mango (1465 thousand tonnes), guava (370 thousand tonnes), litchi (198 thousand tonnes), banana (1535 thousand tonnes), pineapple (116 thousand tonnes), papaya (53 thousand tonnes) and amla (13 thousand tonnes) (Table -3). For three of these seven fruits (litchi, pineapple and amla), the annual growth rates of production have been negative in last five years. However, for four other fruit crops, the annual growth rates have been positive — mango (2.8 percent), guava (13.5 percent), banana (0.2 percent) and papaya (8.5 percent).

Table -3 : Area and Production of Fruits in Bihar

(area in '000 hectares/ production in '000 tonnes)

| Year | Area/ Production | Mango | Guava | Litchi | Banana | Pineapple | Papaya | Amla | Others | Total |
|---------|---------------------|---------|--------|--------|---------|-----------|--------|-------|--------|---------|
| 2013-14 | Area | 148.78 | 29.96 | 32.17 | 35.26 | 4.16 | 1.76 | 1.69 | 32.09 | 285.86 |
| | Production | 1477.74 | 373.71 | 258.69 | 1723.87 | 113.91 | 61.97 | 16.04 | 323.61 | 4349.53 |
| 2014-15 | Area | 148.37 | 29.40 | 32.20 | 34.64 | 4.21 | 1.88 | 1.69 | 32.11 | 284.50 |
| | Production | 1271.62 | 370.00 | 197.70 | 1526.50 | 116.37 | 65.25 | 15.54 | 310.58 | 3873.55 |
| 2015-16 | Area | 149.14 | 29.34 | 32.10 | 34.80 | 4.30 | 1.60 | 1.50 | 32.40 | 285.18 |
| | Production | 1464.93 | 370.00 | 198.00 | 1535.30 | 116.30 | 53.44 | 13.50 | 310.90 | 4062.37 |
| CAGR* | Production | 2.79 | 13.47 | -5.09 | 0.19 | -2.28 | 8.47 | -2.90 | -0.09 | 0.68 |

Note : *CAGR is calculated for 5 years (2011-12 to 2015-16)

Source: Govt. of Bihar, Finance Department, Economic Survey 2016-17

There is widespread variation across districts in Bihar in terms of fruit production. In the table, production for four important fruit crops have been presented, for 2014-15 and 2015-16. These fruit crops are —mango, litchi, guava and banana.

II. AGRO-BASED INDUSTRIES

The cultivators in Bihar produce a variety crops, besides foodgrains, thanks to the wide biodiversity of the state. These crops include oilseeds, fibres, fruits, vegetables, sugarcane and tea. In addition, Bihar also produces a substantial amount of milk. Thus Bihar offers enormous opportunities for agro-based industries.

Food Processing Industry

Table -4 presents the current status of food processing industries in Bihar. The number of food processing industries in Bihar in 2015-16 was 399, of which 266 (66.7 percent) were operational. By August, 2016, there were a few additions, resulting in 407 units, of which 278 (68.3 percent) were operational. Although the range of products of the agro-based industries in Bihar is quite wide, it is the cereal-based industries (rice, wheat and maize) which dominate the sector. No less than two-thirds of the agro-based industries in Bihar are engaged in processing of cereals. The total employment under the Food Processing Industry is 48.4 thousand.

Table -4 : Details of Food Processing Industry in Bihar

| Types of Industries | 2015-16 | | As on August, 2016 | | | | |
|-----------------------------|--------------|-------------|--------------------|-------------|--------------------------------|----------------|-------------------|
| | No. of Units | | No. of Units | | Financial Progress (Rs. crore) | | Employment (Nos.) |
| | Total | Operational | Total | Operational | Approved Project Cost | Grant Released | |
| Rice Mills | 174 | 115 | 174 | 120 | 1607.45 | 184.10 | 6438 |
| Wheat Milling | 44 | 33 | 44 | 33 | 355.17 | 57.89 | 1806 |
| Maize Processing | 41 | 29 | 43 | 32 | 504.72 | 52.71 | 2120 |
| Rural Agri Business Centres | 52 | 37 | 53 | 37 | 466.23 | 74.32 | 1807 |
| Cold Storage | 3 | 0 | 3 | 0 | 15.10 | 1.35 | 122 |
| F & V Processing | 16 | 7 | 16 | 8 | 108.32 | 13.46 | 580 |
| Milk Processing | 9 | 6 | 9 | 6 | 242.42 | 16.44 | 586 |
| Makhana Processing | 4 | 2 | 4 | 2 | 5.55 | 0.67 | 70 |
| Honey Processing | 3 | 3 | 3 | 3 | 2.60 | 0.53 | 41 |
| Biscuits Manufacturing | 10 | 8 | 12 | 8 | 213.13 | 26.10 | 1946 |
| Edible Oil Manufacturing | 10 | 8 | 10 | 9 | 507.50 | 33.35 | 2001 |
| Ice Cream | 6 | 4 | 7 | 4 | 34.73 | 3.53 | 203 |
| Other Projects | 25 | 14 | 27 | 16 | 316.39 | 29.40 | 2087 |
| Food Park | 2 | 0 | 2 | 0 | 309.80 | 3.00 | 28597 |
| Total | 399 | 266 | 407 | 278 | 4689.10 | 496.86 | 48404 |

Source: Govt. of Bihar, Finance Department, Economic Survey 2016-17

The Directorate of Food Processing was providing special assistance to the sector under the following schemes which were operational up to June, 2016:

- (i) *Integrated Development Project* : Under this project, the ongoing subsidy for cluster scheme is payable at 40 percent and, for individual units, it is 35 percent. The project provides the following facilities:
 - (a) For the capacity expansion under the cluster scheme, the maximum subsidy amount payable is Rs. 10.00 crore and, for individual unit, it is Rs. 5.00 crore. For the scheduled castes / scheduled tribes / women / handicapped entrepreneurs, an additional 5 percent subsidy is payable.

- (b) For the projects costing of Rs. 50-100 crore, an interest subsidy of 3 percent and on the projects costing above Rs. 100 crore an interest subsidy of 6 percent is also payable.
- (ii) *Food Park Scheme* : Under this scheme, the rate of payable subsidy has been raised to 30 percent with a maximum of Rs. 50 crore. The establishment of a Food Park at Buxar has been approved. In 2013-14, a sum of Rs. 30 crore was approved for subsidy payment.
- (iii) *Modernisation Scheme for Established Rice Mills* : Under National Food Processing Mission of the central government, the traditional rice milling units are paid 25 percent subsidy for modernization. Under this scheme, an additional state subsidy of 15 percent is payable in accordance with the guidelines of the central government.
- (iv) *Cold Storage Scheme* : The cold storage with a capacity of 5-10 thousand tonnes is paid a subsidy of 30 percent on the capital expenditure. For a capacity of more than 10 thousand tonnes, 35 percent subsidy will be payable. The maximum amount of subsidy will be Rs. 5 crore.
- (v) *Scheme for Silo for Maize Storage* : Under this scheme, the benefit of subsidy will be given for establishment of silos for the storage of maize. The construction of silo with a storage target of 5 thousand tonnes of maize will be considered as one unit and a subsidy of 35 percent will be payable on this.

Sugar Industries

The sugarcane is grown in about 3 lakh hectares in Bihar, approximately 6 percent of the total area under cultivation. The state government, therefore, promotes sugar industry in the state to strengthen rural economy. This industry not only creates direct employment, but substantial indirect employment as well through a number of related activities.

At present, 9 sugar mills are operating in the state in the private sector. There are also 2 new sugar mills under the Bihar State Sugar Corporation which were handed over to HPCL in 2011 on long term lease. During 2015-16, 515 lakh quintals of sugarcane was crushed in Bihar, producing 50 lakh quintals of sugar (Table 2.9). This production level was about 10 percent lower than in 2014-15 when 574 lakh quintals of sugarcane was crushed. However, the recovery rate (9.8 percent) was higher in 2015-16 than a year ago (9.2 percent).

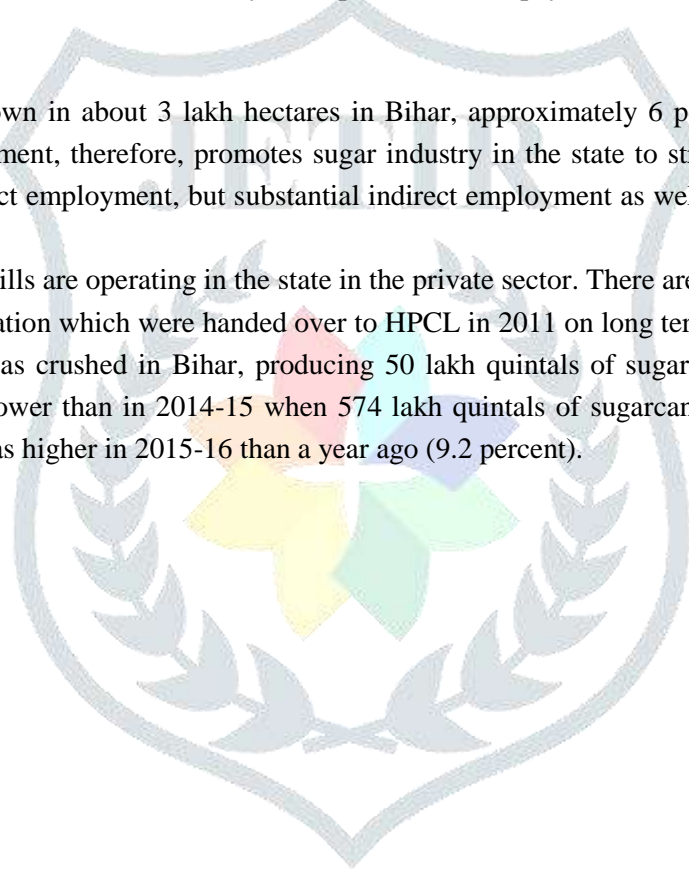


Table 5 : Performance of Sugar Mills

| Name of Sugar Mill | Sugar-cane Crushed (lakh qntl.) | Sugar Produced (lakh qntl.) | Recovery (Percentage) | Sugar-cane Crushed (lakh qntl.) | Sugar Produced (lakh qntl.) | Recovery (Percentage) | Sugar-cane Crushed (lakh qntl.) | Sugar Produced (lakh qntl.) | Recovery (Percentage) |
|------------------------|---------------------------------|-----------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|---------------------------------|-----------------------------|-----------------------|
| | 2013-14 | | | 2014-15 | | | 2015-16 | | |
| Bagha | 82.49 | 7.89 | 9.6 | 79.86 | 7.55 | 9.4 | 74.91 | 7.44 | 9.9 |
| Harinagar | 139.00 | 12.94 | 9.3 | 125.67 | 11.52 | 9.2 | 115.08 | 11.51 | 10.0 |
| Narkatiagunj | 95.44 | 9.11 | 9.6 | 82.08 | 7.65 | 9.3 | 75.84 | 7.58 | 10.0 |
| Majhulia | 60.75 | 5.33 | 8.8 | 48.47 | 4.77 | 9.8 | 42.20 | 4.03 | 9.5 |
| Sasamusa | 28.75 | 2.56 | 8.9 | 18.44 | 1.55 | 8.4 | 12.80 | 1.16 | 9.1 |
| Gopalganj | 50.25 | 4.53 | 9.0 | 38.81 | 3.69 | 9.5 | 33.03 | 3.30 | 10.0 |
| Sidhwalia | 62.62 | 5.66 | 9.9 | 51.56 | 4.78 | 9.3 | 45.84 | 4.30 | 9.4 |
| Riga | 52.84 | 4.70 | 8.9 | 47.95 | 4.20 | 8.8 | 36.45 | 3.40 | 9.3 |
| Hasanpur | 35.27 | 2.94 | 8.3 | 34.55 | 3.11 | 9.0 | 31.13 | 3.19 | 10.2 |
| Sub Total | 607.41 | 55.66 | 9.2 | 527.39 | 48.82 | 9.23 | 467.28 | 45.91 | 9.8 |
| New Sugar Mills | | | | | | | | | |
| Lauriya | 26.17 | 1.80 | 6.9 | 25.10 | 2.00 | 8.0 | 27.22 | 2.58 | 9.5 |
| Sugauli | 30.42 | 2.04 | 6.7 | 21.96 | 1.85 | 8.4 | 20.73 | 1.84 | 8.9 |
| Sub Total | 56.59 | 3.84 | 6.8 | 47.06 | 3.85 | 8.2 | 47.95 | 4.42 | 9.2 |
| Total | 664.00 | 59.50 | 9.0 | 574.45 | 52.67 | 9.2 | 515.23 | 50.33 | 9.8 |

Source: Govt. of Bihar, Finance Department, Economic Survey 2016-17

At present, the following schemes are in operation for supporting sugar mills and sugarcane growers :

- The concession to sugar mills include reduction in VAT on ethanol and denatured spirit (from 12.5 to 4.0 percent) and abolition of literage fee on ethanol.
- The farmers are given a subsidy of Rs. 135 per quintal on purchase of certified sugarcane seed of improved variety, declared by sugar mills. This benefit is available for a maximum of 2.5 acres and, once a farmer has availed the subsidy, he will not be entitled for the subsidy on that variety for next three years.
- There is also a subsidy to the sugar mills for growing foundation seed at the rate of Rs. 25,000 per hectare. Further, there is also a provision of subsidy for growing breeder seed through research stations — Indian Institute of Sugarcane Research (Lucknow) and Sugarcane Research Institute (Pusa).
- There is training facility for farmers for use of improved variety of sugarcane, selected from outside the state, and sowing the seeds by trench and rig-pit method.
- There is an incentive amount for inter-cropping with sugarcane under National Food Security Mission (NFSM) programme.
- There is an arrangement for technical publicity and extension scheme, both of which are closely supervised and monitored.

Despite good soil favourable to the sugarcane cultivation, productivity level is low in Bihar for several reasons. Presently, only 25-30 percent of the area under sugarcane is having irrigation facility and even this irrigated area gets only 1-2 waterings on an average because, during April- June, water is not available in the canal. Due to poor drainage system, there is also a problem of water logging in cane fields during the rainy season. The state is facing shortage of high-yielding varieties of sugarcane. The state government, in coordination with Sugarcane Research Institute (SRI) and sugar mills, is making an attempt to solve this problem.

Dairy Industry

Because of its close linkage with farming operations, animal husbandry is a traditional occupation for rural households in Bihar. The dairy industry in the state is, therefore, very large; but it is the state-run Bihar State Milk Cooperative Federation (COMFED) which plays a pivotal role in dairy industry. Established in 1983, COMFED is the implementing agency for Operation Flood Programme, working towards White Revolution. For the establishment of

the milk cooperatives, COMFED has adopted a three-tier pattern, under which there is milk producers' cooperative society at the village level, milk union at the district level and, finally, milk federation at the state level.

There were 19.5 thousand milk cooperative societies in 2015-16, compared to 18.4 thousand societies a year ago (Table -7). It implies an annual growth of 6.0 percent. However, of the total number of societies, 14.0 thousand were operative (71.8 percent) and 6.0 thousand were registered (30.8 percent).

Table 7 : Number of Dairy Cooperative Societies under Different Milk Union/Project

| Location of Union/Project | 2015-16 | | | 2014-15 | | |
|--|---------------------|-------------------|----------------------|---------------------|-------------------|----------------------|
| | Organised Societies | Working Societies | Registered Societies | Organised Societies | Working Societies | Registered Societies |
| Vaishali Patliputra Milk Union, Patna | 3973 | 2490 | 1228 | 3840 | 2929 | 1218 |
| Deshratna Dr.Rajendra Prasad Milk Union, Barauni | 2162 | 1970 | 1094 | 2124 | 1987 | 1079 |
| Mithila Milk Union, Samastipur | 2305 | 1841 | 1036 | 2186 | 2001 | 879 |
| Tirhut Milk Union, Muzaffarpur | 3181 | 1904 | 947 | 3027 | 1964 | 887 |
| Shahba Milk Union, Ara | 3206 | 2432 | 1205 | 3007 | 2375 | 1205 |
| Vikramshila Milk Union, Bhagalpur | 1616 | 1027 | 250 | 1404 | 813 | 234 |
| Kosi Dairy Project, Purnea | 1384 | 987 | 87 | 1276 | 950 | 80 |
| Ranchi Dairy Project, Ranchi | 60 | 46 | 12 | 60 | 46 | 12 |
| Total | 19543 | 14016 | 6042 | 18385 | 14189 | 5754 |

Source: Govt. of Bihar, Finance Department, Economic Survey 2016-17

The activities of the COMFED include procurement of milk, processing milk to produce a number of milk products, marketing of the products and, finally, providing a number of services for the animal husbandry sector.

III. CONCLUSION

The above analysis of economic structure of Bihar, here we discuss Agriculture and Allied sources of income. In the last of this chapter we say that economic structure of Bihar mainly depends on agriculture and its allied sector.

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