

Agriculture Sector in Bihar

Agriculture – A General Overview

Particulars	2004 – 05	2005 – 06	2006 – 07
Geographical Area (Sq. Km.)	9359.57	9359.57	9359.57
Uncultivable Land Area (Sq. Km.)	3787.17	3803.38	3694.45
Net Sown Area (Sq. Km.)	5572.4	5556.19	5665.12
Gross Sown Area (Sq. Km.)	7399.32	7396.49	7718.95
Cropping Intensity	1.33	1.33	1.36

Source: Directorate of Statistics & Evaluation, Government of Bihar

Major Crops Production ('000 Tones) and Yield (Kgs / Hectare)

Food Products	2005 – 06	2006 – 07	2007 – 08
Rice			
Production	3709.29	5121.19	4419.17
Yield	1141	1475	1237
Wheat			
Production	2821.22	4155.54	5050.33
Yield	1409	2001	2335

Source: Directorate of Statistics & Evaluation, Government of Bihar

Major Crops Production ('000 Tones) and Yield (Kgs / Hectare)

Food Products	2005 – 06	2006 – 07	2007 – 08
Coarse Cereals			
Production	43.37	44.93	33.33
Yield	951	963	875
Pulse			
Production	411.8	448.35	496.59
Yield	730.5	833.5	844.5
Oil Seeds			
Production	134.28	147.51	137.58
Yield	975	1032	980
Jute			
Production	1329.25	1356.25	1251.48
Yield	10143	10207	9552

Source: Directorate of Statistics & Evaluation, Government of Bihar

Major Vegetable Production ('000 Tones) and Yield (Kgs / hectare)

Vegetables	2006 – 07	2007 – 08	2008-09
Potato			
Production	5741.29	6019.65	5033.59
Yield	18000	19000	16000
Onion			
Production	962.71	1019.61	946.6
Yield	19000	20000	18000
Tomato			
Production	916.77	921.87	1037.19
Yield	20000	20000	22000

Source: Department of Agriculture, Government of Bihar

Major Vegetable Production ('000 Tones) and Yield (Kgs / hectare)

Vegetables	2006 – 07	2007 – 08	2008-09
Cauliflower			
Production	1008.98	1023.89	1043.84
Yield	17000	17000	17000
Cabbage			
Production	623.46	638.11	676.98
Yield	17000	17000	18000
Brinjal			
Production	1120.58	1158.16	1186.12
Yield	21000	21000	22000
Radish			
Production	226.57	230.93	241.12
Yield	15000	15000	16000
Pea			
Production	53.07	57.58	61.28
Yield	6000	6000	7000

Source: Department of Agriculture, Government of Bihar

- After the bifurcation of the State, the mineral wealth of the State got transferred to the newly carved State of Jharkhand and Bihar was left with natural resources like fertile soil and water resources.
- 90% of the population of Bihar residing in rural areas earns its livelihood from agriculture and allied sectors.
- Bihar has three agro – climatic zones – North West Zone, North East Zone and South Zone
- As on 2008-09 the contribution of agriculture and allied sectors to the Gross State Domestic Product was 26.5 percent and the percentage is gradually coming down.
- The net sown area is 60 percent of the total geographical area and is constant over the last three years and this varies widely in the State as there are some districts where the net sown area is 70 percent and others where it is 40 – 50 percent.
- Agriculture in the State is supported by the South – West Monsoon
- In recent years, farmers have diversified into commercial production of flowers like rose, gladiolus, marigold, jasmine and tuberose.

Flower	Production (Tonnes)
Rose	53.00
Jasmine	3569.00
Marigold	120.16
Tube Rose	160.13
Others	804.58
Total	4706.87

Source: Department of Agriculture, Government of Bihar

Initiatives undertaken by the Government of Bihar to improve agriculture

The State has drafted an agriculture policy in 2006 and the main points and the focus areas of the policy were as follows:

- Food security, increase in productivity, increase in farmers' income and environmental conservation
- A project for the establishment of Soil Testing Laboratories to make soil – testing facilities more accessible to farmers has been introduced.
- Thirty one (31) new Seed –Testing Laboratories are to be established.
- Micro-nutrient testing laboratories have been established in three districts.
- Research and educational infrastructure has been strengthened.
- The Bihar State Seed Corporation has been revived and seed production has been started on 45 State agricultural farms.
- A Farmers' Commission and a Land Reforms Commission have been established.
- Seeds: Use of quality seeds increases crop yield by 20–25 percent. The Government has initiated a programme for increasing the Seed Replacement Rate (the percentage of area sown out of total area of crop planted in the season by using certified / quality seeds other than the farm saved seed) of principal crops; the Seed Replacement Rate of rice increased from 11 percent in 2004–05 to 26 percent in 2009–10. This has been possible as part of the Chief Ministers' Crash Seed Programme, Seed Village Programme, subsidy to farmers for certified seeds and State seed multiplication farms.
- Extension Services: The State Government has undertaken several steps to provide efficient extension services to farmers, which include training on the various aspects of agriculture.
- Agricultural Mechanization: The use of modern agricultural equipments to reduce the cost of cultivation and enhance the quality of production are being propagated;

- the Government has provided subsidy; power tiller is being promoted as a very useful tool for small and marginal farmers at subsidized rates.

Farm Tools Distributed on Subsidy

Farm Tools	2006 – 07	2007 – 08	2008-09
Power Tiller	121	540	3028
Pump Set	-	3586	12637
Manually Operated Implements	-	35499	48486
Tractors	2175	1908	3543

Source: Department of Agriculture, Government of Bihar

Agro-Industries in Bihar

The end result of bifurcation is that the present Bihar is devoid of minerals and the mining / quarrying and manufacturing industries and the State has a very limited scope of development in these areas. Bihar is now left with land and water resources. With agriculture as the mainstay, there is ample scope for agro-based industries in the State and, with a population of 103.8 million, Bihar is becoming a large and growing market for food products. Of the total private consumer expenditure in the State, around 65 percent accounts for the expenditure on food only. According to a rough estimate, the present food market in Bihar is worth around US \$ 8.88 billion (INR 40,000 crore) of which processed food market, including beverages, is around US \$ 4 billion (INR 18,000 crore). Based on the estimated all India food consumption growth rate of 7 percent, the food consumption market of Bihar would be around US \$ 18.43 billion (INR 83,000 crore) in the year 2015.

Thus, Bihar has enough of scope for agro-based industries. The major agricultural products of Bihar are cereals, pulses, oilseeds, fruits, vegetables and cash crops. The important cash crops include sugarcane, potato, tobacco, jute and spices. Bihar is the third largest producer of vegetables in India after West Bengal and Uttar Pradesh and sixth largest producer of fruits.

However, the per capita annual production of agriculture in the State is the lowest owing mainly to low level of technology and input use.

Agro-based industries already enjoy the place of prominence in the State's industrial scenario. As per the Annual Survey of Industries (ASI) report 2007-08, the agro-based industries accounted for 88 percent of the total value added of US \$ 257.42 million (INR 1,159 crore) of all industrial units.

Vision Document 2015 has been prepared for the State, based on a study by Infrastructure Leasing & Financial Services (IL&FS). Under the vision, food parks will be established on Public-Private Partnership (PPP) basis. In the food-processing sector, there are 41 projects involving an investment of US \$ 105.24 million (INR 473.83 crore) and the projects are at various stages of implementation. Approval has been accorded to establish two food parks, one in Muzaffarpur-Vaishali region and the other in Bhagalpur-Katihar region. The food parks will be set up by a special purpose vehicle (SPV), preferably registered as a corporate body with at least 51 percent equity of the private entrepreneurs, the rest from the central government and the State government. The extent of assistance has been fixed at 20 percent of the project cost or US \$ 3.33 million (INR 15 crore) whichever is lower. The parks will take care of all necessary basic infrastructures like uninterrupted power and water supply and effluent treatment plants.

In food processing sector, a total of 180 project proposals have been received by the State Investment Promotion Board (SIPB) till October 2010, of which 5 projects are under work in progress, 8 are in advanced stage and 56 at different stages of completion.

Food Processing Industries in Bihar

Fruits and Vegetables: Almost all fruit and vegetable processing units are engaged in the manufacturing of fruit juices, fruit pulps, squashes, pickles, tomato sauces / puree / paste, jam / jelly, fruit beverages, etc. Along with units in the organized sector, there are units working in unorganized sector too. The pre-processing facilities like pre-cooling, cooling, grading, sorting, pack houses, etc. are virtually absent in the State. Entire fruits and vegetables produce is brought straight to the markets and only some are sent to the processing units. Through processing and post-harvest management, the present losses of fruits and vegetables to the extent of around 33 percent can be minimized and thereby an income of US \$ 444.22 (INR 2000 crore) may be added to the State economy.

Fruits: Bihar produces a variety of fruits in large quantity. It is the largest producer of litchi, third largest producer of pineapple and fourth largest producer of mango in the country. There are, by and large, specific districts in the State, producing specific fruits. For instance, Muzaffarpur and Vaishali are leading in litchi and banana production; Darbhanga, Vaishali and East and West Champaran are ahead in mango production; and Rohtas and Bhojpur lead in guava production. Owing to better quality soil and water availability, variety of fruits is grown in the State, particularly in north Bihar.

It is relevant to mention that, as per the study conducted by Rajendra Agricultural University; the non-availability of storage facility causes a huge loss of around 15-25

percent of the total banana production. In case of papaya, the loss is between 30-50 percent, vegetables between 17-25 percent, and cabbage between 41-47 percent. The poor methods of harvesting and transportation also contribute to the huge loss. The fruit growers of the State are exposed to the unfavorable prices of their produce. As per the IL & FS survey, though the prices of fruits in Bihar are at par with major producing States, it is lower when compared to main wholesale markets. With adequate attention, the fruits grown in the State will serve as important input for the agro-based industries.

Below mentioned table gives the area and production of fruits grown in 2007-08 and 2008-09.

(Area '000 ha/Production '000 tones)

Fruits	2007-08		2008-09	
	Area	Production	Area	Production
Mango	142.21	870.35	144.07	1329.8
Guava	28.67	255.72	29.09	229.19
Litchi	29.84	223.23	30.47	216.92
Lemon	17.58	125.84	17.74	128.09
Banana	30.46	1329.4	31.27	1373.55
Pineapple	4.64	126.77	4.69	119.48
Papaya	1.27	30.36	1.43	33.61
Amla	1.31	12.09	1.38	12.83
Others	30.26	278.66	30.56	279.34
Total	286.24	3252.42	290.71	3722.81

Source: Department of Horticulture, GOB

With around 2 lakh tonnes of litchi production, Bihar accounts for almost 75 percent of national production. The brand Muzaffarpur Litchi commands a special respect in the fresh fruit as well as processed fruit segments. Similarly, about 14 lakh tonnes of banana, produced in about 31 thousand hectares of land, offers significant opportunities for both fresh fruit and processed food market. Banana fibre also has a scope as one of the diversified textile fibres. This provides an added advantage of setting up fibre extraction and yarning units in the State.

Vegetables: As mentioned above, on account of availability of better soil and water resources, Bihar produces large quantities of a variety of vegetables. The State is the largest producer of okra, second largest producer of cabbage, third largest producer of potato, brinjal, onion and cauliflower and significant producer of other variety of vegetables in the country. However, the extent of wastage of the total vegetables produced

has been assessed at around 33 percent. The growers get a lower price, whereas the wholesalers and retailers, by and large, get good prices.

Production of Vegetables

(Area in '000 ha/Production in '000 tonnes)

Vegetables	2007-08		2008-09	
	Area	Production	Area	Production
Potato	315.50	6019.65	310.33	5033.58
Onion	51.29	1019.61	51.61	946.60
Tomato	46.32	921.87	46.39	1037.19
Cauliflower	60.66	1023.89	60.97	1043.84
Cabbage	37.45	638.11	38.33	676.98
Brinjal	54.55	1158.16	55.12	1186.12
Sponge Gourd	34.34	467.68	36.07	497.10
Chillies	38.96	439.42	39.42	450.61
Others	184.68	2379.35	188.63	2513.73
Total	823.75	14067.74	826.87	13385.75

Source: Department of Horticulture, GOB

Major Crop Production and Area of Various Crops (2008-09)

Year / Crops	2008-09		
	Area ('000 ha)	Production ('000 tonnes)	Productivity (Kg/ha)
Total Cereals	6333.74	11751.7	1855
Rice	3495.73	5590.35	1599
Wheat	2158.33	4410.02	2043
Maize	640.46	1714.00	2676
Coarse Cereals	39.23	37.33	952
Total Pulses	584.37	468.44	802
Total Oilseeds	138.08	137.88	999
Total Fibre Crops	150.97	1220.12	8081
Sugarcane	111.9	4959.92	44324

Source: Department of Agriculture, GOB

Food processing in any agricultural economy is a key factor in pushing up its growth. However the State has great potential but it is still at a nascent stage. In order to give a boost to the food processing industry, the State government has prepared Food Processing Policy 2008 and created a separate food-processing Directorate in the State.

The Vision Document 2015 for India has estimated the losses to the extent of around 35 percent due to non-processing of food. In Bihar, it is still higher. As per the IL&FS report, the loss in cereals is estimated at US \$ 1 billion (INR 4,500 crore). The food processing industries can minimize the losses through establishment of more units and marketing channels. Most of the food processing units are in unorganized sector and has very few success stories. However, the State has a large potential for milling and processing of food grains like rice, wheat, maize and pulses. The installed capacity of rice milling in the State is inadequate to meet the existing demand. The rice mills also require expansion and modernization. There is a large scope for setting up new rice mills in the State, which can make a variety of rice products. There are significant opportunities of utilization of byproducts for making starch, bran oil, etc., along with setting up husk-based power generation in the State. As regards maize, on account of its Rabi maize, Bihar has a unique position in the national market. Most of the maize processing units in North India highly depend on maize from Bihar. With State productivity much higher than the national productivity level and rise in area under maize, there exists significant opportunities for entrepreneurs. However, the level of processing in the State is quite insignificant. Thus, there is large opportunity for maize processing units, which may be set up for making a range of products like starch, corn oil, corn flakes, poultry feed, etc.

Makhana (Gorgon Nut)

Besides fruits and vegetables, some positive trend for makhana (gorgon nut) industry has also emerged in the State. Bihar is the only State producing makhana on commercial basis. This item is quite nutritive and compares well with fish and mutton in so far as the protein content is concerned. It is also very rich in carbohydrates. In China, raw makhana seed powder is an essential ingredient of the baby food. This is considered superior to dry fruits. It has a big market, local as well as outside. However, the processing technology used here is very old and labour intensive.

Tea

Tea is an important agro-based industry, which is taking roots in the State since the 90s. More than 25,000 acres of land in Kishanganj district is covered by tea plantation. There are two processing units in the district with an output of more than 2,300 tonnes of tea. The State has a potential for growing tea.

Sugar Industry

Sugarcane has been an important crop of Bihar, its area of coverage being 2.70 lakh hectares in 2009-10. In terms of area, production and productivity, the districts of East and West Champaran were on the top in 2009-10. There is enormous scope for sugarcane cultivation in the State.

Sugar and allied industries have ample scope for investment in the State, particularly for co-production of ethanol and electricity from sugarcane. Therefore, the State government has decided to encourage the sugarcane-based industries in the State. With a view to attracting the investors in sugar industry, the State government has declared a scheme under which various concessions and subsidies have been provisioned.

In the first half of the twentieth century, there were in all 33 sugar mills in the State. Now there remain only 28 mills, of which 18 mills under public sector are closed and the remaining 10 mills under private sector. Of the 18 closed public sector mills, 15 are under Bihar State Sugar Corporation (BSSC) and 3 under central Public Sector Undertaking (PSUs). However, the State government has taken some positive steps in recent years for their revival. With the efforts of the State government, the Lauriya and Sugauli units of BSSC are being transferred to Hindustan Petroleum Corporation Limited (HPCL) and the first bid process is complete. HPCL is establishing a 3,500 Tonnes Per Day (TPD) sugar unit with 60 Kilolitre Per Day (KLPD) distillery and 20 MW co-generation units at both the places. The total investment is expected to be US \$ 136.60 million (INR 615 crore).

The area covered under sugarcane has been around 2.70 lakh hectares and its total production remained about 150 lakh tonnes. The sugarcane available for crushing was 52 lakh tonnes in 2006-07, which declined to 36.39 lakh tonnes in 2007-08 and was expected to decline further in 2008-09 due mainly to erratic rains.

The sugar production too declined from 4.51 lakh tonnes in 2006-07 to 3.90 lakh tonnes in 2007-08 and again to 2.20 lakh tonnes in 2008-09. This was in keeping with the national trend in 2008-09, which witnessed a significant decline. In 2009-10 too, the decline was about 60 percent. However, the sugar recovery rate remained around 9 percent. The details are given show in the below table.

Details of Area, Production of Sugarcane/Sugar

Unit	2006-07		2007-08		2008-09	
	Target	Achievement	Target	Achievement	Target	Achievement
Area for Sugarcane (in lakh hectare)	2.7	2.52	3.25	2.75	3.25	2.65
Production of Sugarcane (in lakh tonne)	143.64	143.64	191.95	159.5	191.95	122.22
Productivity of Sugarcane (tonne / hectare)	53.2	57	59	58	59	46
Availability of Sugarcane for crushing (in lakh tonne)	49.1	52.04	63.1	36.39	63.8	23.7
Production of Sugar (in lakh tonne)	4.55	4.51	5.47	3.9	5.4	2.2
Percent of Sugar Availability	9.5	8.67	9.5	9.32	9.5	9.3

Source: Department of Sugarcane; GOB

All the working sugar mills in the State are old, established in 1930s and are operating much below its capacity, which may be observed from table.

Working Status of Sugar Mills (2008-09)

(Figures in lakh quintal)

Name of Sugar Mill	Sugarcane crushing capacity (tones crush per day)	Sugarcane Crushed	Sugar Produce	Percent of Recovery
Bagha	2500	13.83	1.29	9.33
Harinagar	10000	63.01	5.95	9.44

Source: Department of Sugarcane; GOB

Working Status of Sugar Mills (2008-09)

(Figures in lakh quintal)

Name of Sugar Mill	Sugarcane crushing capacity (tones crush per day)	Sugarcane Crushed	Sugar Produce	Percent of Recovery
Narkatiagunj	7500	45.16	4.28	9.48
Majhaulia	4300	29.37	2.72	9.26
Sasamua	3450	12.06	1.06	8.79
Gopalgunj	5000	20.88	1.85	8.86
Sidhwalia	5000	16.34	1.73	10.59
Riga	4500	25.58	2.28	8.91
Hasanpur	3000	10.78	0.89	8.26
Total	45250	237.01	22.05	9.3

Source: Department of Sugarcane; GOB

Towards for the revival of the sugar industry in Bihar, the State government has undertaken the following initiatives:

The application which was put before the Hon'ble Patna High Court for liquidation of Bihar State Sugar Corporation (BSSC) in 2002 has been withdrawn by the State government in 2007 and action is being taken for its privatization.

Efforts are made to revive 15 closed sugar mills and two distillery units under the BSSC through the investment of private players. The diagnostic studies and feasibility reports have been completed, along with assessment of their assets. The closed units are being revived through lease agreements with investor's viz., HPCL, Reliance Industries Ltd and M/s Jhoolan Vanaspati from private sector and two auction processes have been completed for their transfer.

In order to attract investments, the State Investment Promotion Board has been established in the State and upto October 2010, 37 sugar mill related proposals have been approved, of which 27 are for new sugar mills, 8 for expansion of working mills and 2 for new ethanol plants for working sugar mills

Bihar State Cooperative Milk Producer's Federation (COMFED)

COMFED is an implementing agency of Operation Flood programme. There are six districts level Milk Producers Cooperative Unions affiliated to COMFED, covering 26 districts of the State. In terms of milk procurement, Bihar is among the top 10 States. Upto September 2010, there were 9,130 organized dairy cooperatives, of which 6,451 were functional and 3,569 were registered. The membership of these cooperatives is 4.89 lakh households.

The average milk procurement, which averaged to 281.08 thousand kgs per day in 1999-2000, was more than doubled to 608.38 thousand kgs per day in 2006-07. However, in 2007-08 and 2008-09, the procurement per day declined considerably, due to heavy floods in most of the areas of the State. But in 2009-10 again, procurement has increased to 739 thousand kgs per day. The details are given below.

Milk Procurement by Dairy Cooperative Societies

('000 kgs per day)

Milk Union	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11*
Patna	147.39	157.33	127.81	92.13	151.31	207.48
Barauni	162.84	173.69	136.99	119.91	222.85	316.45
Muzaffarpur	77.77	87.13	53.66	45.97	80.71	109.82
Samastipur	106.21	129.85	106.04	104.21	175.79	232.42
Shahabad	47.06	45.41	38.23	28.54	66.28	98.35
Gaya	5.49	2.42	2.56	2.21	4.88	8.63
Ranchi	5.52	4.78	3.64	2.94	4.61	4.42
Bhagalpur	5.64	7.78	10.52	19.54	29.82	32.04
Koshi	0.00	0.00	0.00	0.00	2.52	4.87
Total	557.92	608.39	479.45	415.45	738.77	1014.48

*Till Sept, 2010 Source: COMFED; GOB

Under the Milk Production Enhancement Programme, the main technical inputs given to milk producers include breeding facility, animal health cover, food and fodder and extension / training services. It is noteworthy that no input is provided free to the milk producers.

The average marketing of liquid milk was 532 thousand liters per day in 2006-07, which increased to 720 thousand liters per day in 2010-11 (upto September 2010). The marketing of milk and milk products is being done in about 105 towns / cities through 6,690 outlets in Bihar, Jharkhand and Uttar Pradesh. Allahabad has been recently added to the list of towns. The dairies have resorted to the production of various long shelf life, value added and fresh milk products. All the products are sold under the brand name, 'Sudha'.

Area of Investment in Agro- Industries in Bihar

Bihar is the second largest producer of vegetables in India with a production of nearly 13.38 million tonnes per annum. It is the largest producer of Okra in the country, second largest producer of Cabbage, third largest producer of Potato, Brinjal, Cauliflower and Onion and these are transported to distant cities and towns. Growth in organized retail market in fresh fruits and vegetables offers significant opportunities for processing and value packaging

Bihar is known for its 'Litchi' (a juicy fruit) and the State accounts for 80 percent of the national production. The demand is high in India as well as abroad. The district of Muzaffarpur (North Central) has been selected for establishing an Agriculture Export Zone for litchis and a National Centre for Litchi.

The State is also one of the leading honey producing State with an average yield of 60 kilograms per box against the national average of 20 Kilograms

Bihar is the only State producing 'Makhana' (Gorgon Nut) commercially. This is an aquatic organic crop rich in protein and low in fat content and accounts for 80 percent of India's production.

Mango occupies 50 percent of the total area that is under fruit cultivation and the district of Darbhanga (North Central) has been selected for the development of Mango.

Even though Bihar is not a traditional tea growing State, tea is grown on 25,000 acres of land in the eastern district of Kishanganj. The government has established two tea processing plants and these units produce tea leaves that can be converted into 2,300 tonnes of processed tea annually

The State has a large cattle population, which makes it a viable destination for investment into leather based industries. The State has 50,000 footwear artisans, 85 leather units, 1,000 household / cottage footwear units making slippers, sandals and handmade shoes for the

local wholesale and retail market. The Bihar Leather Development Corporation and the Bihar Finished Leather Limited are organizations, which promote the leather industry in the State. Important centers of leather are Munger (East), Patna (Central), Aurangabad (South), Purnia (East), Bettiah (North East) and Muzzaffarpur (Central).

The Sugar industry is the largest agro based Industry in the State as it is climatically suited to producing sugarcane. Input costs are low compared to other States, which makes the production competitive.

Around 5 Million Tonnes of paddy is produced in the State that has some fine varieties of aromatic rice. Bihar is one of the largest markets for milled rice and the installed capacity of rice milling is not enough to meet the growing demand which gives rise to an opportunity to set up rice mills for the production Starch, Bran oil etc.

Around 2 million tonnes of maize is produced in the State, which provides an opportunity to maize processing units. The productivity is higher than the national productivity and area under cultivation is expected to rise. The level of processing is insignificant which presents an opportunity for processing maize into Starch, Corn oil, Corn flakes, Corn flour, Poultry feed etc.

Due to the presence of ample quantities of raw materials like wheat, barley and milk, bakery companies are looking at this emerging segment

Initiatives undertaken by the Bihar government to develop agro industry

A scheme for the integrated development of food processing sector has been planned where the objective would be to overcome the constraints related to infrastructure, technology, skills and marketing faced by rice, maize, pulses, honey, makhana, fruits and vegetables and other food processing units in the State.

A Vision Document 2015 was prepared which had laid emphasis on the establishment of Food Parks on a Public Private Partnership (PPP) basis The Asian Development Bank (ADB) is supporting the Agribusiness Project for the development of a modern agriculture marketing system in the State. It aims to work on the value chains for two products – Litchi in Muzzaffarpur and for potato and cereal crops in Nalanda.

The Government is helping to develop Bihar as an important centre for sugarcane processing. The sector is getting various incentives like exemption of electricity duty, stamp duty and registration fee on land purchase, subsidy on capital investment, exemption of administrative charges and value added tax on molasses, reimbursement of central excise duty on sugar and exemption of purchase tax on sugarcane.

Around 100 Rural Agri Business Centres are planned and these centers would be a one stop point for farmers to get all information about various facets of the cultivation and the forward integration leading to the sale of the produce.

A Food Development Centre is being set up in State to support entrepreneurs in the food-processing sector.

Investment in the Agro & Food Processing Sector (2008 – 10)

Name of Investor	Details	Approximate Investment (US \$ Million)
Gulshan Polyols Ltd.	Maize Processing Unit	96.07
Hindustan Petroleum Corporation Ltd	Sugar Mill	71.69
Jay Shri Ram Annapurna Rice Mil Private Limited	Rice Mill	54.49
India Green Fuel Private Limited	Sugar Mill Distillery Plant	54.49
Ruchi Soya Industries Limited	Packaged Blended / Refined Oils Textured Soya Protein Packaged Grains	48.75
Maurya Sugar Private Limited	Sugar Complex	38.72
Vaidyanath Sugar Mills Private Ltd	Sugar Mill	38.72
Durga Agro Energy Limited	Rice Mill	31.55
Amrapali Foods Limited	Food Park	28.68
Suman Agritech Private Limited	Vegetable Refined Oil	27.24

Source: State Investment Proposal Board

Investment in the Agro and Food Processing Sector (2008 – 10)

Name of Investor	Details	Approximate Investment (US \$ Million)
ITC Ltd.	Milk Processing Plant	22.94
Hindustan Coca-Cola Beverage Pvt Ltd	Soft Drinks Non-alcoholic Beverages Fruit Juice / Fruit Based Drinks Packaged Drinking Water	22.37
Jhunjhunwala Vanspati Limited	Edible Oil Plant	21.51
Era Agritech (I) Pvt. Ltd.	Agro Business Centre	20.07
Esveegee Starch & Chemical Pvt Ltd	Maize Processing Unit	20.07
Ambo Agro Products Limited	Refined Edible Rice Oil Mill	18.64
Bihar Agro Projects Limited	Food Park	17.21
Britannia Industries Ltd.	Bakery Products	12.33
Tiger Warehousing Cold Chain Pvt Ltd.	Warehousing Cold Storage	11.47
Prashant Jalan & Associates	Skimmed Milk Powder Poly Pack Milk Ice-cream Curd manufacturing project	7.17
Jain Agro Distilleries Private Limited	Distillery Plant	6.74

Source: State Investment Proposal Board

Investment in the Agro and Food Processing Sector (2008 – 10)

Name of Investor	Details	Approximate Investment (US \$ Million)
Ambo Exports Limited	Rice Bran Oil Extraction Plant	5.74
Bansal Biscuits Private Limited	Biscuit production unit	4.47
Dumraon Textiles Limited	Rice Mill	4.3
Ambo Exports Limited	Biscuit production unit	3.94
Ambo Exports Limited	Maize Primary Processing Drying Sorting Packaging unit	3.87
Bihar Starch Limited	Maize Processing unit	3.8
Unique Foods	Frozen / Canning Line Cold Room Cold Chain	3.8
Shimla Horticulture Private Limited	Multipurpose Cold Storage	3.51
Ganapati Biscuits Private Limited	Biscuit production unit	3.31
Siddhashram Rice Mills Cluster Pvt Ltd	Rice Mill	3.2
Om Shri Laxminarayan Warehouse Shoppers Limited	Rice Mill	3.15
Sano Foods Private Limited	Agriculture Implements	2.87
Amrapali Biotech India Pvt Limited	Pickles and Corn Flakes	2.87

Source: State Investment Proposal Board

Investment in the Agro and Food Processing Sector (2008 – 10)

Name of Investor	Details	Approximate Investment (US \$ Million)
Satbhani Agro Private Limited	Rice Mill and Warehouse	2.58
Vindhyabasini Rice Mills Cluster Private Limited	Rice Mill Warehouse	2.31
Om Shri Gramin Fodder Food Process Limited	Rice Mill	2.29
Archi Breweries Private Limited	Beer Plant	2.15
Radhe Shyam Cold Storage & Foods Private Limited	Fruit Pulp and Juice Plant	2.15
Bhartiya Agro Products Private Limited	Cold Storage & Dry Warehouse	2.08
Lichchhwi Foods India Private Limited	Multi Commodity Cold Storage	1.95
Leela Anand Fertilizer & Chemical Private Limited	Fertilizer unit	1.86
Keshri Agro Products & Construction Private Limited	Cold Storage Potato & Rice Mill	1.72
Amit Oil Limited	Solvent Extraction Plant	1.72
Tarouna Cold Storage Private Limited	Cold Storage	1.62

Source: State Investment Proposal Board

Investment in the Agro and Food Processing Sector (2008 – 10)

Name of Investor	Details	Approximate Investment (US \$ Million)
Ashwini Jhunjhunwala	Cold Room Pack House Processing Hall Agri Input Warehouse Grain Storage Warehouse	1.43
Om Shivam Modern Rice Mill Pvt Ltd.	Rice Mill Warehouse	1.43
Shiv Shakti Modern Flour Mills Pvt. Ltd.	Flour Mill	1.43
Kamla Agro Private Limited	Rice Mill	1.43
Maurya Foods Private Limited	Cold Storage	1.43
Shree Kalu Cold Storage Private Ltd	Cold Storage	1.43
Rainbow Products Private Limited	Rice processing Unit	1.43
Prakash Udyog	Fruit & Packaged Drink Unit	0.57
Sunasi Food & Bederages Pvt Ltd	Fruit Juice Plant	0.50
G.C. Foods Pvt. Ltd.	Puff & Snack Food Unit	0.44

Source: State Investment Proposal Board

Leather Industries

Leather and allied industries in India play a significant role in terms of providing employment to a large number of artisans. The major factors responsible for the growth of leather industries is availability of raw materials (hides and skins), cheap labour, technology and government support. Bihar has a rich bovine population, accounting for nearly 8 percent of the country's total bovine populations. Further, the goat population in

Bihar accounts for about 12 percent of the country's total goat population. In case of goat population, Bihar ranked third in the country, next only to West Bengal and Rajasthan.

Livestock Wealth

(in million no.)

Type	Bihar	India	Share of Bihar to All India (%)
Cattle	14.74	189.22	7.79
Buffalo	4.04	95.48	4.23
Goat	15.39	127.07	12.11
Sheep	0.98	51.73	1.89

Source: Report of All India survey on Raw Hides and Skin Markets, 2005

As per a recent survey, conducted by Central Leather Research Institute (CLRI), Bihar produces annually 2.64 million bovine hides and 5.09 million bovine skins. Bihar is known for the best quality goat skins, cow hides and buffalo calf skins. Goat skins are smaller in size and they are the best suitable materials for the production of glazed kid leather products, which are mostly exported.

Marketwise Details of Hides and Skins (2003)

(Fig. in lakh pieces)

Market	Cattle Hides	Cow Calf Skins	Buffalo Hides	Buffalo Calf Skin	Goat Skins	Sheep Skins
Patna	0.54	0.15	0.41	0.44	4.50	0.51
Arrah	0.72	-	1.08	-	1.22	-
Aurangabad	0.72	0.02	0.48	0.02	1.82	-
Munger	0.35	-	0.86	-	1.46	-
Muzaffarpur	0.14	0.36	0.04	12.00	1.44	0.06
Pabai	0.42	0.18	0.30	0.10	1.30	-
Purnea	0.32	0.06	0.55	0.10	2.55	-

Source: Report of All India survey on Raw Hides and Skin Markets, 2005

In case of buffalo hides, Arrah is the biggest market, whereas Muzaffarpur is the major market for buffalo calf skin. In case of goat skins, Patna is the major market. According to a rough estimate, on an average, daily three trucks loaded with raw material consisting of 7,000 to 8,000 pieces of goat skins and 2,000 to 3,000 of cow hides are transported from

Muzaffarpur to different destinations. Some of the well-known Tamil Nadu tanners have their own collection agents for hides and skins in all important markets in Bihar. The local tanning industries are confined to a few working tanneries in Muzaffarpur and Bata tannery at Mokamaghat. As a result, most of the raw materials find their ways to Kolkata, Kanpur, Chennai and other places.

Handloom Sector

The handloom sector in the State has seen a gradual decline over time and today the sector remains largely a story of impoverished weavers gradually moving to large cities in search of alternative livelihood. Despite various schemes and programmes taken up by government and non-government agencies, the production in handloom sector is continuously declining. Even in 2009-10, the handloom sector could not revive from the previous year's slump when it recorded a decline of 3.1 percent. However, the fact remains that more than 1.4 lakh weavers and their family members are completely dependent on this sector. A bulk of these weavers was outside the cooperatives. Only around 10,850 handlooms are operating under 1,090 weavers cooperative societies. Out of 38 districts in the State, the handloom units are concentrated in 14 districts, important among them being Patna, Gaya, Madhubani, Siwan, Bhagalpur and Nalanda.

IL&FS was mandated by the Department of Industries, Government of Bihar for diagnostic survey of seven handloom clusters / districts in Bihar, viz., Gaya, Patna, Darbhanga, Madhubani, Bhagalpur, Siwan and Biharsharif. The study reiterates that most of the weavers were still operating on a very small scale and do not have a commercially sustainable size of operation. There is a necessity to federate the weavers and bring their operations to a viable scale. The fact remained that the weavers' cooperatives have largely failed to deliver.

The study also brings out that only 54 percent of weavers owned their handlooms and the remaining 46 percent were provided handlooms by the traders. Among the districts, Madhubani reported the highest concentration of weavers owning the looms, followed by Siwan. It was revealed that weaving remained a male dominated occupation; however, women in the family do provide support services in pre- and post-weaving operations. It was also observed that, by and large, for around 62 percent of the weavers, weaving was the main source of income. More than 50 percent of weavers earned less than US \$ 45 (INR 2,000) per month, mainly because they are not fully engaged. Most of the weavers reported non-availability of work for 10-12 days in a month. During the monsoon and floods, there is cessation of work for almost 45-60 days. Such a low level of earnings kept the weavers trapped in vicious circle of poverty with little resources to go for modern loom accessories or better quality of raw material. This also acts as a barrier to skill upgradation

and adoption of new designs. The new generation does not perceive handloom as a career, because of these difficult problems.

Handloom sector is not a capital intensive business. The basic looms cost around US \$ 112 (INR 5,000) and additional accessories like doobby and jacquard may cost further US \$ 67 – 89 (INR 3,000–4,000). A majority of weavers (70 percent) procure raw material from local traders. In majority of cases, weavers take up job works for the traders with raw materials being supplied by the traders themselves. More than 80 percent of weavers report raw material quality to be average or poor.

There are eight State government institutions for training and capacity building of handloom weavers in the State viz. (i) Weavers Training Centre, Chakand, Gaya, (ii) Weavers Training Centre, Amarpur, Banka, (iii) Weavers Training Centre, Obra, Aurangabad, (iv) Central Design Centre, Rajendranagar, Patna, (v) Polyester & Silk Vastra Training cum Production Centre, Barari, Bhagalpur, (vi) Weavers Training Centre, Kako, Jehanabad, (vii) Weavers Training Centre, Purnea and (viii) Weavers Training Centre, Jhinganager, Nalanda. But most of these centres do not have adequate infrastructure. They are run in dilapidated buildings with no access to power and water supply. In most of the cases, the looms are not in good condition. The syllabus is outdated and teaching staff old without any modern orientation. The training institutes are also not linked to market.

The major problems confronting the handloom sector in Bihar are; (i) Scarcity of raw material, (ii) Lack of training in new products / designs, (iii) Insufficient production base for timely supply of quality products, (iv) No pricing methodology, (v) Non-availability of credit facilities and (vi) Inadequate market linkage.

For establishment of common production facility within a handloom cluster in Bhagalpur, M/s Bhagalpur Handloom Infrastructure Development has submitted a project proposal to the Ministry of Commerce and Industries, Government of India, which involves an outlay of US \$ 5.32 million (INR 23.93 crore). The government of India has approved only US \$ 4.62 (INR 20.82 crore) for the project, the remaining part will be provided by the State government in the form of land. In principle, the State government has accorded approval for the project and earmarked land at Kahalgaon. Besides, a project report was also prepared for cluster development programme under Handloom Cluster Development Scheme. For this, US \$ 3.39 million (INR 1.5251 crore) of the central government and US \$.60 million (INR .2711 crore) of the State government have been released in the first phase of 14 handloom cluster and 6 group approach projects.

For weavers in the power loom sector, there is one Power Loom Service Centre at Bhagalpur, where six training sessions of two months duration each are conducted. In each training session, 20 trainees are imparted training and each trainee is paid a stipend of US \$

7 (INR 300) per month. In 2009-10, 120 trainees were imparted training. However, there has been no follow up of the weavers who had received training.

Sericulture

Under Centrally Sponsored Scheme, for execution of Mulberry Development Project (Purnea), Tusser Development Project (Nawada, Banka) and Castor Silk Development Project (Begusarai), a sum of US \$ 3.71 million (INR 1.67 crore) was allotted to the State in the year 2009-10 as central share. A proportionate State share of US \$ 1.29 million (INR .58 crore) has been released and a sum of US \$.77 million (INR .35 crore) is under the process of approval. In 2009-10, mulberries have been planted in 151.36 acres and tusser in around 62 acres.

For inculcating a sense of competition among the cocoon farmers and yarn producers, a system of reward is in vogue since 2004-05. For silk cocoon growers, a cycle supply scheme has been introduced in 2008-09 for marketing of cocoons and yarn. This scheme has a good impact on the farmers. There is a provision to supply cycle to 125 farmers on a subsidized rate of US \$ 45 (INR 2,000). In Bhagalpur, there is a proposal to construct a building of Bihar Silk and Textile Institute.

Jute

IL&FS has conducted an analytical study and identified the obstacles for the jute sector and recommended a business plan for it. The needed interventions recommended are: establishment of jute park, modernization of looms, establishment of processing and design centre, establishment of a nodal centre for design and product development, establishment of raw material bank for jute, etc. It has been suggested that the execution of these projects may be given to professional agencies. The estimated cost of the project is US \$ 13.10 million (INR 59 crore) of which US \$ 3.60 million (INR 16.20 crore) will be borne by the State government.

A jute park at the cost of US \$ 9.41 million (INR 42.36 crore) is being established at Maranga in Purnea district on Private-Public Partnership basis. The central government has agreed to grant a subsidy of US \$ 1.67 million (INR 7.50 crore) and the State government US \$.44 million (INR 2.00 crore) for this park. As a part of its equity, the State government will provide 44.20 acres of land whose price would be US \$.37 million (INR 1.67 crore). This park will have basic infrastructure and will provide direct employment to 4,500 persons and indirect employment to about 9,000 persons. This park will help in production of quality jute.