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# Trends in Agriculture and Agricultural Practices in Ganga Basin Part III: Bihar

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## GRB EMP : Ganga River Basin Environment Management Plan

*by*

Indian Institutes of Technology



**IIT  
Bombay**



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## Preface

In exercise of the powers conferred by sub-sections (1) and (3) of Section 3 of the Environment (Protection) Act, 1986 (29 of 1986), the Central Government has constituted National Ganga River Basin Authority (NGRBA) as a planning, financing, monitoring and coordinating authority for strengthening the collective efforts of the Central and State Government for effective abatement of pollution and conservation of the river Ganga. One of the important functions of the NGRBA is to prepare and implement a Ganga River Basin Management Plan (GRBMP).

A Consortium of 7 Indian Institute of Technology (IIT) has been given the responsibility of preparing Ganga River Basin Management Plan (GRBMP) by the Ministry of Environment and Forests (MoEF), GOI, New Delhi. Memorandum of Agreement (MoA) has been signed between 7 IITs (Bombay, Delhi, Guwahati, Kanpur, Kharagpur, Madras and Roorkee) and MoEF for this purpose on July 6, 2010.

This report is one of the many reports prepared by IITs to describe the strategy, information, methodology, analysis and suggestions and recommendations in developing Ganga River Basin Management Plan (GRBMP). The overall Framework for documentation of GRBMP and Indexing of Reports is presented on the inside cover page.

There are two aspects to the development of GRBMP. Dedicated people spent hours discussing concerns, issues and potential solutions to problems. This dedication leads to the preparation of reports that hope to articulate the outcome of the dialogue in a way that is useful. Many people contributed to the preparation of this report directly or indirectly. This report is therefore truly a collective effort that reflects the cooperation of many, particularly those who are members of the IIT Team. A list of persons who have contributed directly and names of those who have taken lead in preparing this report is given on the reverse side.

Dr Vinod Tare  
Professor and Coordinator  
Development of GRBMP  
IIT Kanpur

## The Team

Bhagirath Behera, IIT Kharagpur  
C Kumar, IIT Roorkee  
D K Nauriyal, IIT Roorkee  
N C Nayak, IIT Kharagpur  
P M Prasad, IIT Kanpur  
Prema Rajgopalan, IIT Madras  
Pulak Mishra, IIT Kharagpur  
Pushpa L Trivedi, IIT Bombay  
Rajat Agrawal, IIT Roorkee  
S P Singh, IIT Roorkee  
Seema Sharma, IIT Delhi  
T N Mazumder, IIT Kharagpur  
V B Upadhyay, IIT Delhi  
Vinay Sharma, IIT Roorkee  
Vinod Tare, IIT Kanpur

*bhagirath@hss.iitkgp.ernet.in*  
*c.kumar803@gmail.com*  
*dknarfhs@iitr.ernet.in*  
*ncnayak@hss.iitkgp.ernet.in*  
*pmprasad@iitk.ac.in*  
*prema@iitm.ac.in*  
*pmishra@hss.iitkgp.ernet.in*  
*trivedi@hss.iitb.ac.in*  
*rajatfdm@iitr.ernet.in*  
*singhfhs@iitr.ernet.in*  
*seemash@dms.iitd.ac.in*  
*taraknm@arp.iitkgp.ernet.in*  
*upadhyay@hss.iitd.ac.in*  
*vinayfdm@iitr.ernet.in*  
*vinod@iitk.ac.in*

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## 1. Introduction

Bihar has been an agrarian economy and 90 percent of its population lives in rural areas (Economic Survey, 2010-11). The state is located in the fertile Gangetic Plains. Bihar is the ninth largest state of India in terms of its area and the second largest in terms of population. It is bounded by Nepal in the north, Orissa in the south, West Bengal in the east and Uttar Pradesh in the west. Bihar lies mid-way between the humid West Bengal in the east and the sub humid Uttar Pradesh in the west. The Bihar plain is divided into two unequal halves by the river Ganga which flows through the middle from west to east. The total area covered by the state of Bihar is 94,163 km<sup>2</sup> and is located between 21°58'10" N ~ 27°31'15" N latitude and 82°19'50" E ~ 88°17'40" E longitude. Bihar is mainly a vast stretch of very fertile flat land. Central parts of Bihar have some small hills, for example the Rajgir hills. The Himalayan mountains are to the north of Bihar, in Nepal. Chota Nagpur plateau lies towards the south of Bihar.

In 1936, Bihar was separated from Orissa. Later in November 2000, Bihar was bifurcated and a new state Jharkhand was made by transferring 13 districts to the new state. The remaining 29 districts have been reorganized into 38 districts. Hence, currently Bihar is divided into 38 districts and 9 divisions for administrative purposes. After the bifurcation of Bihar in 2000, the industrial and mineral-rich zone has gone to Jharkhand and Bihar was left with fertile land and water resources. Bihar is richly endowed with water resources, both as the ground water resource and the surface water resource. Bihar has substantial water from rainfall as well as the rivers which flow within the territory of the State. Bihar has a number of rivers, the most important of which is the Ganga. The river Ganga flows right across it from west to east. North Bihar is extremely fertile, the land being watered by the rivers Sarayu, Gandak and Ganga. Twelve districts of Bihar fall on the bank of river Ganga. The other rivers are the Sone, Poonpoon, Falgu, Karmanasa, Durgawati, Kosi, Ghaghara, etc.

The economy of Bihar is mainly based on agricultural and trading activities. The soil of Bihar is extremely fertile which makes it ideal for agriculture. Agriculture is the vital source of wealth in Bihar. Seventy-six percent of its population is engaged in agricultural pursuits. Paddy, wheat, maize and pulses are the principal food crops of Bihar. Main cash crops are sugarcane, potato, tobacco, oilseeds, onion, chillies and jute. Bihar is the third largest producer of vegetables and fourth largest producer of fruits in the country. It is the largest producer of litchi, makhana, guava, lady's finger and honey in the country. However, with improved methods and better management, state's contribution in food grain, fruit, vegetables, spices and flowers can be increased manifold. The major agro based industries of Bihar are rice, sugar, edible oil.

Though endowed with good soil, adequate rainfall and good ground water availability, Bihar has not yet realized its full agricultural potential. Its agricultural productivity is one of the lowest in the country, leading to rural poverty, low nutrition and migration of labour. Based on soil characterization, rainfall, temperature and terrain, three main agro-climatic zones in

Bihar have been identified. These are Zone I: North Alluvial Plain; Zone II, north East Alluvial Plain; Zone III: comprising of Zone IIIA (South East Alluvial Plain) and Zone IIIB (South West Alluvial Plain), each with its own unique prospects.

**Zone I:** This zone comprises of 13 districts, namely West and East Champaran, Gopalganj, Siwan, Saran, Sitamarhi, Muzaffarpur, Vaishali, Madhubani, Begusarai, Seohar, Darbhanga and Samastipur with an area of 32,665 km<sup>2</sup>. The average annual rainfall in this zone is 1234.7 mm.

**Zone II:** This zone comprises of 8 districts, namely Purnea, Katihar, Saharsa, Supaul, Arariya, Kishanganj, Madhepura and Khagaria, and covers 11.96% (20797.4 km<sup>2</sup>) of the total geographical area of Bihar. The average annual rainfall in this Zone is 1382.2 mm.

**Zone III:** This zone is located in the south of the river Ganga and comprises of 17 districts of Bhagalpur, Banka, Munger, Jamui, Lakhisarai, Shekhpura, Gaya, Aurangabad, Jahanabad, Nawada, Arwal, Nalanda, Patna, Bhojpur, Buxar, Bhabhua, and Rohtash. The total geographical area is 40,875.5 km<sup>2</sup>, which represents 25.75% of the total area of the State. The average annual rainfall in this Zone is 1102.1 mm.

Bihar is primarily an agrarian economy with largely rain-fed agriculture. Due to the poor irrigational facilities, only 50 to 60 per cent of land is covered by irrigation facilities. Its agricultural productivity is one of the lowest in the country, leading to rural poverty, low nutrition and migration of labour. In the forthcoming discussion, a detailed analysis of status of agriculture in Bihar has been presented.

## 2. Land Use Pattern

After division in 2000, Bihar is left with 54 percent of the total geographical area of erstwhile Bihar. It is important to note that after the formation of Jharkhand, only 21.8 percent of the previous forest cover was left with new Bihar and stands for 6.64 percent of the total area of current Bihar (Table 1 and Figure 1). Area under non agricultural use, which is 17.60 percent in 2005-06, has been almost constant in current Bihar with marginal rise in recent years (Figure 2). The barren land area in Bihar accounts for 4.66 percent of the total area. Current fallow land has been ranging between 5 to 7 percent in the post-division period (Figure 3). The net sown area has been fluctuating around 60% of the total reported area in the post-2001 period (Table 1 and Figure 4). On the other hand, the area sown more than once has shown decline from 24.89% in 2000-01 to 19.52% in 2004-05 and further increased to 21.94% in 2006-07 (Figure 5). Gross sown area has shown decline resulting in decrease in cropping intensity from 1.41 in 2000-01 to 1.36 in 2006-07. The continuous decline in area sown more than once has a serious concern for the sustainability of agriculture in the state.



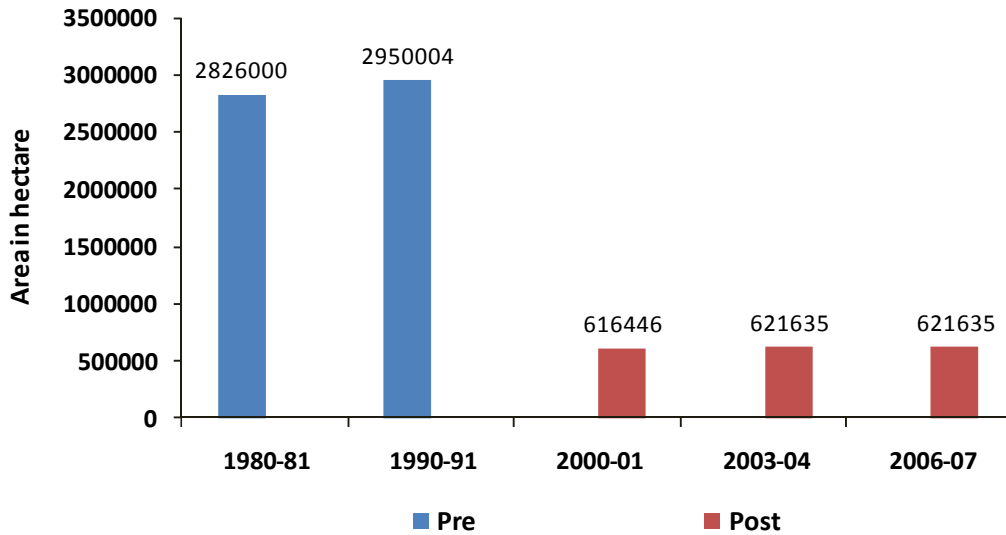


Figure 1: Forest Area of Bihar (in Hectares)

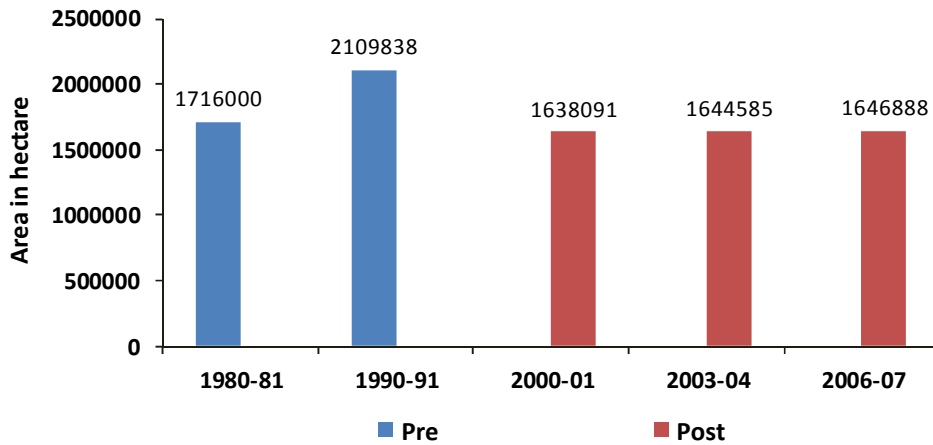


Figure 2: Area under Non Agricultural use in Bihar (in Hectares)

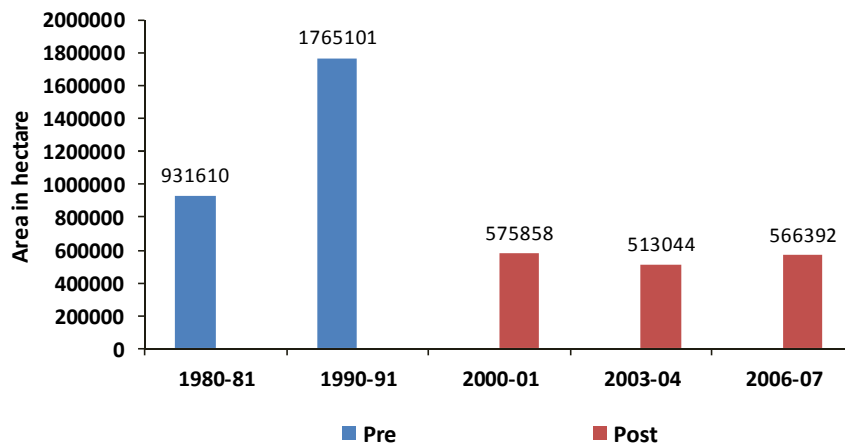
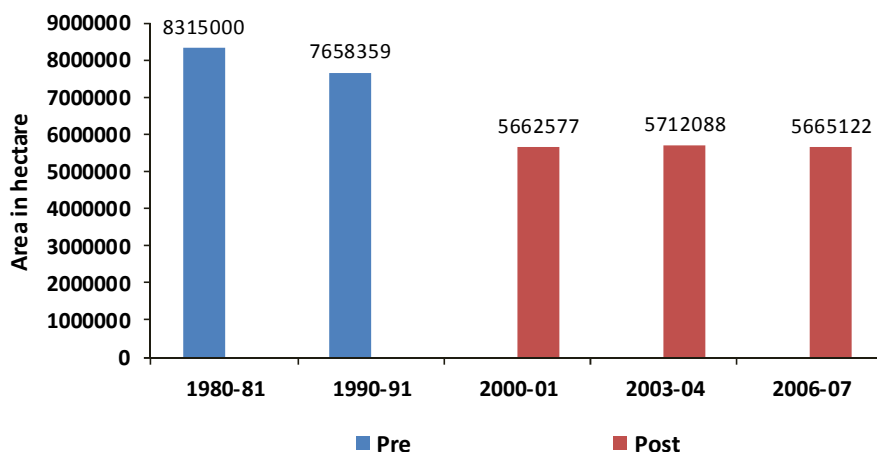
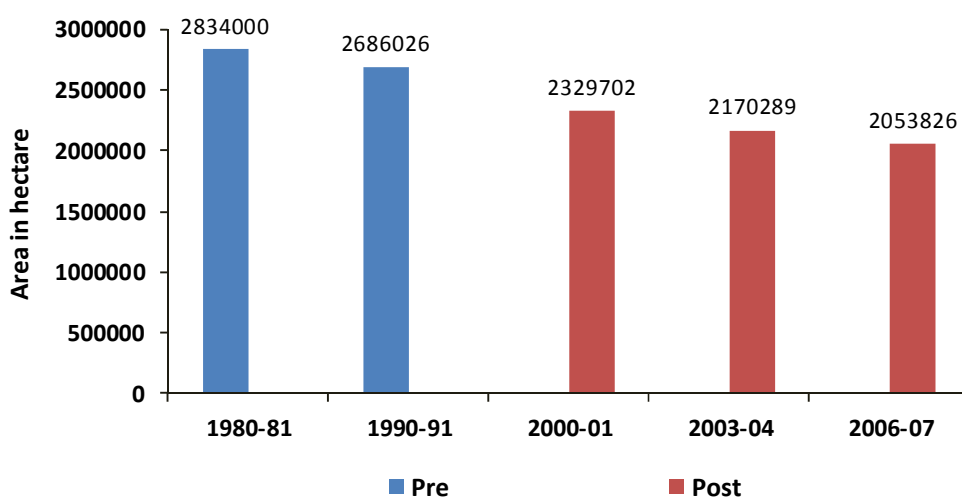


Figure 3: Current Fallow Land in Bihar (in Hectares)

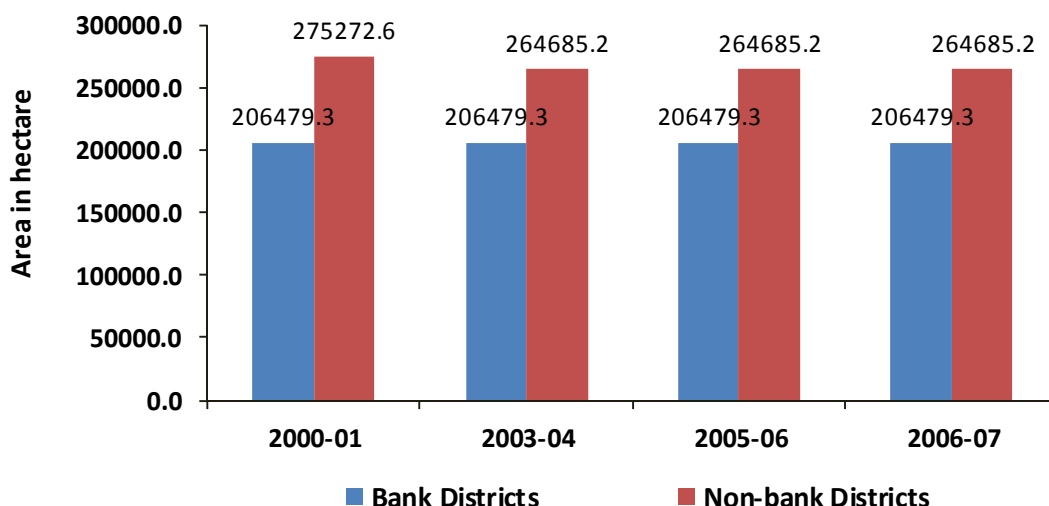


**Figure 4: Net Area Sown in Bihar (in Hectares)**

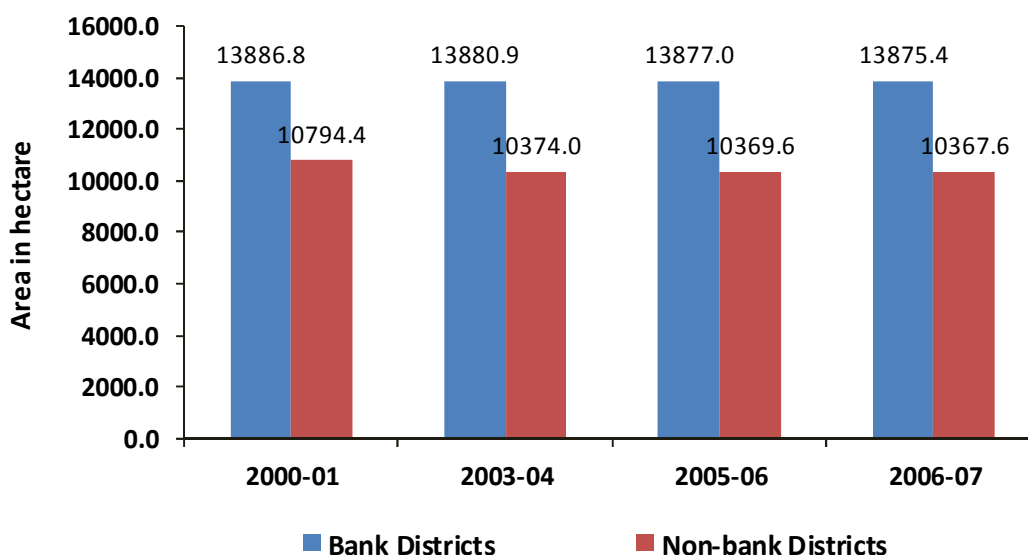


**Figure 5: Area Sown more than once in Bihar (in Hectares)**

The geographical area of Bihar in bank districts has remained constant after the bifurcation of Bihar and in non-bank districts, there is a marginal fall in the year 2003-04 as compared to 2000-01 but after that it has remained almost constant (see Table 2 and Figure 6). The barren land of bank districts and non-bank districts on an average has remained constant after the bifurcation (Table A.3 and Figure 7).

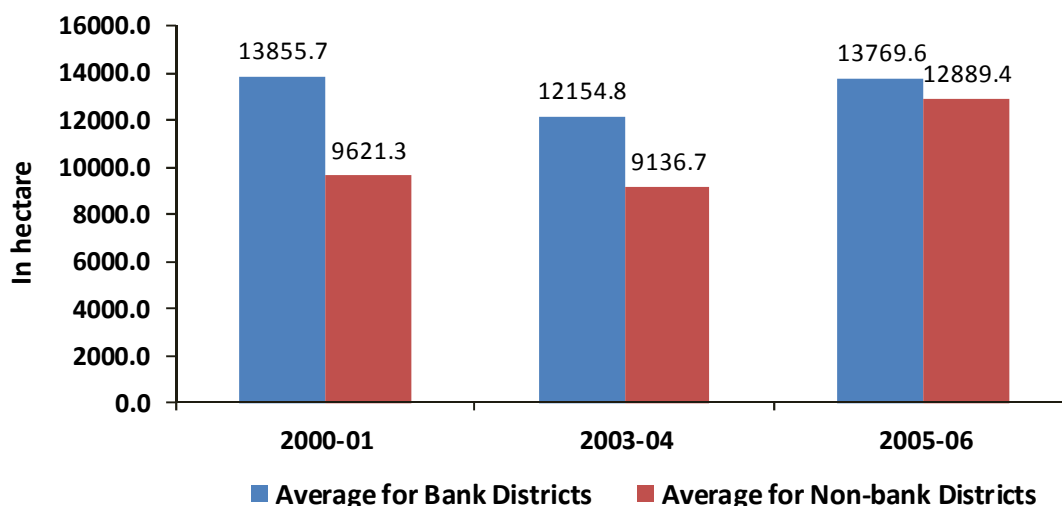


**Figure 6: Geographical Area of Bank and Non-bank Districts of Bihar (Average in Hectares)**

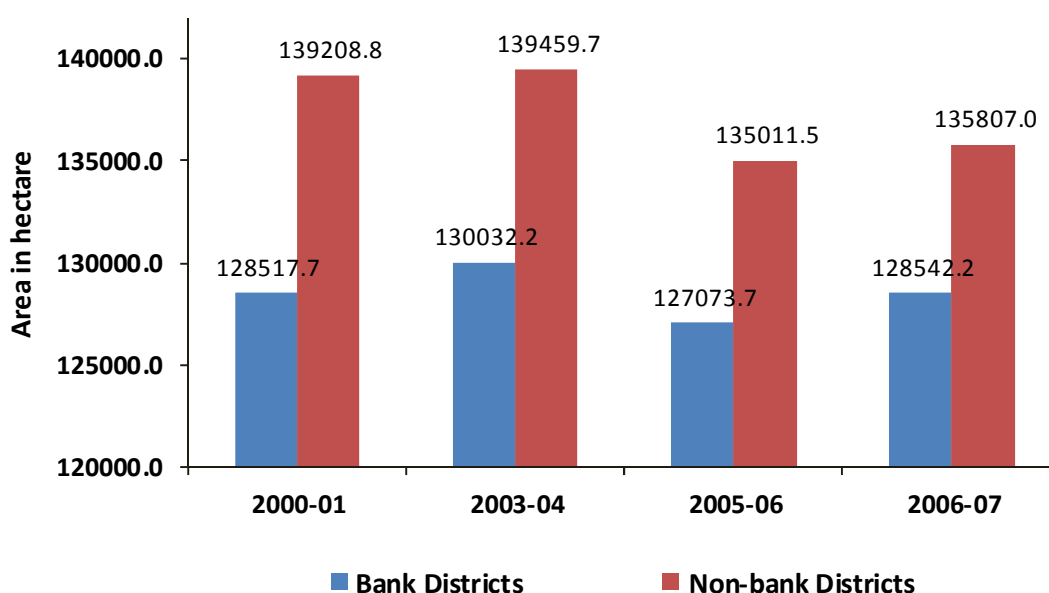


**Figure 7: Barren Land of Bank and Non-bank Districts of Bihar (Average in Hectares)**

The area under current fallow land shows a fluctuating pattern in case of bank and non-bank districts (Table A.4 and Figure 8). However, the increase in recent years in case of non-bank districts is significant. Net sown area has come down in case of non-bank districts (Table A.5 and Figure 9).

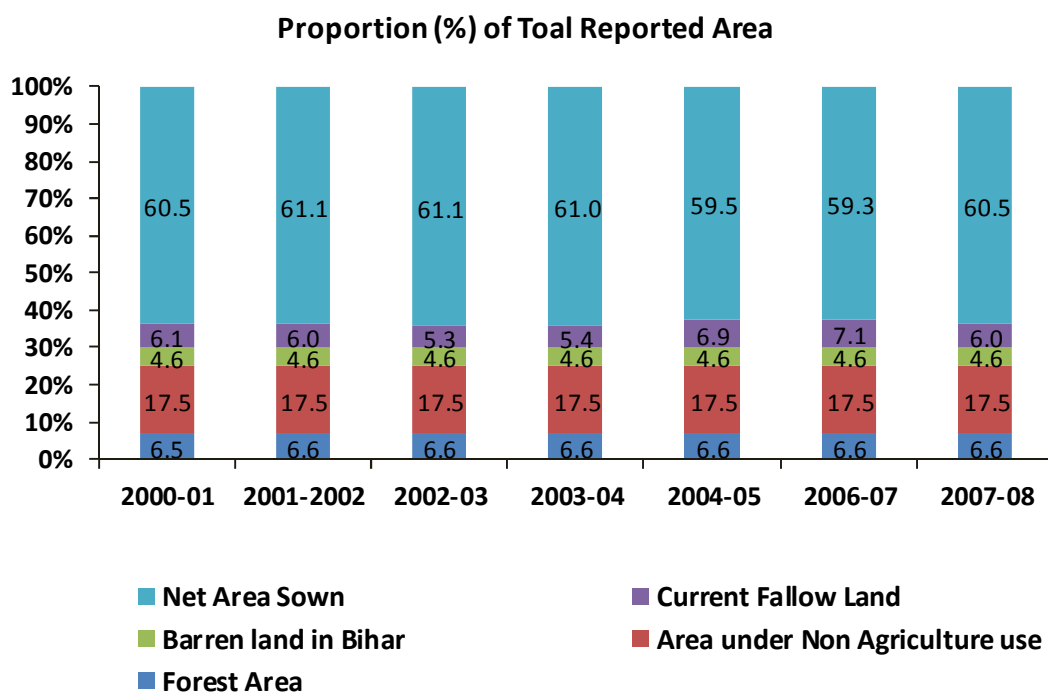


**Figure 8: Current Fallow Land of Bank and Non-bank Districts of Bihar (Average in Hectares)**



**Figure 9: Net Area Sown of Bank and Non-bank Districts in Bihar (Average in Hectares)**

The land use pattern in the post-bifurcation period has remained more or less unchanged (Figure 10). District-wise analysis also reveals similar pattern except in case of current fallow land. Fallow land has shown increase in recent years, which is more significant in case of non-bank districts. Also the net sown area has come down in case of non-bank districts.



**Figure 10: Trends in Land Use Pattern in Bihar**

### 3. Land Holdings

Table A.6 reveals that there has been continuous rise in the number of marginal land holdings in Bihar from 1980-81 to 2005-06. The share of marginal holdings has increased from 75.44 percent in 1980-81 to 84.18 percent in 2000-01 and 89.54 percent in the year 2005-06. The pattern of holdings in 2005-06 is shown in Figure 11. Over the years, share of small, semi-medium, medium and large holdings has declined (Table A.6). Table A.7 presents total area under different sizes of holdings. As can be seen, area under marginal holdings has increased from 43.09 percent in 2001-01 to 52.57 percent in 2005-06. Share of other categories has shown declining trend (see Figure 12 also). This phenomenon can be linked to the rapid fragmentation of holdings in Bihar. Another finding of serious concern is that the average marginal holding in Bihar is 0.24 hectare during the year 2005-06 which has shown constant declining trend (Table A.8, Figure 13). The average size of marginal holdings in Bihar was 0.24 hectare during 2005-06. This small average size is an obvious reflection of the predominance of the marginal holdings in Bihar.

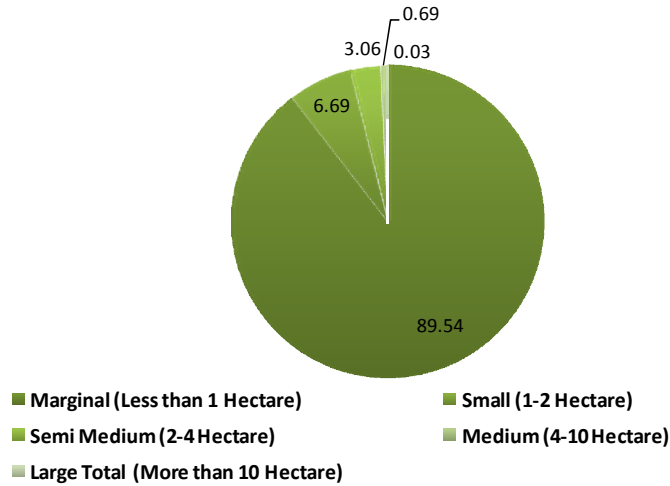


Figure 11: Share in Total Number of Land Holdings in Bihar in 2005-06 (%)

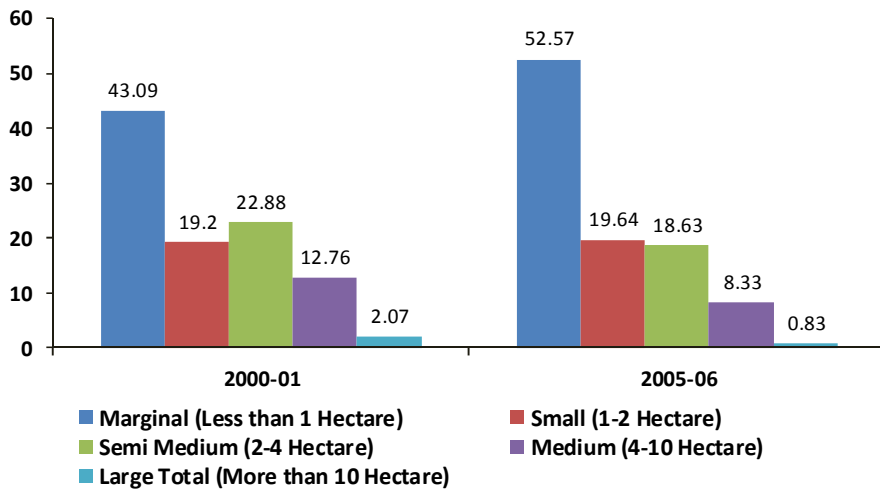


Figure 12: Share in Total Area of Land Holdings (%)

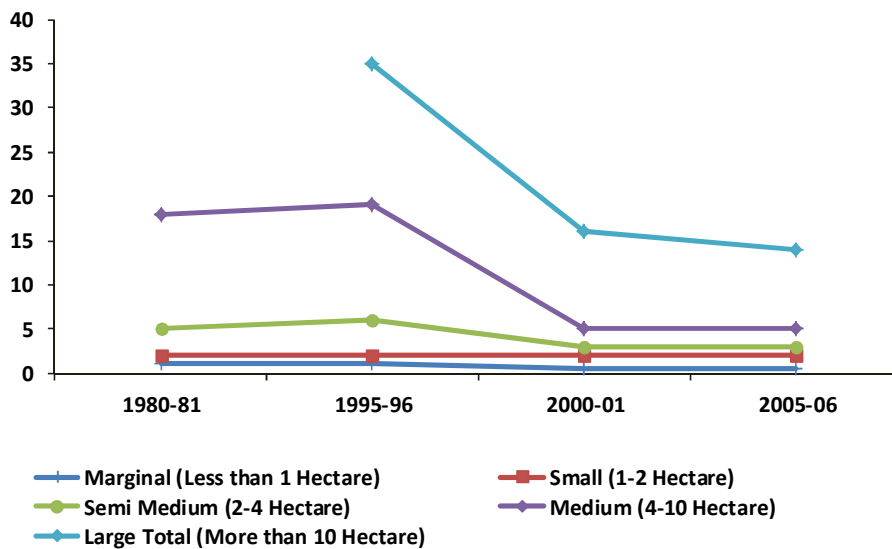


Figure 13: Average Area per Holding (in Hectares)

## 4. Sources of Irrigation

The ratio of net area irrigated to net sown area is declining in Bihar (Table A.9 and Figure 14). In 2005-06, 56.87 percent of net sown area was irrigated. The gross area irrigated has shown a fluctuating pattern with no clear trend (Table A.15). However, among all sources of irrigation, tubewell has been the predominant source of irrigation in Bihar. In 2005-06, 64.72 percent of net and 66.94 percent of gross irrigated area was irrigated by tubewells (Tables A.9 and A.10 and Figures 15 and 16). Hence, it can be said that tube-well is the major source of irrigation in Bihar.

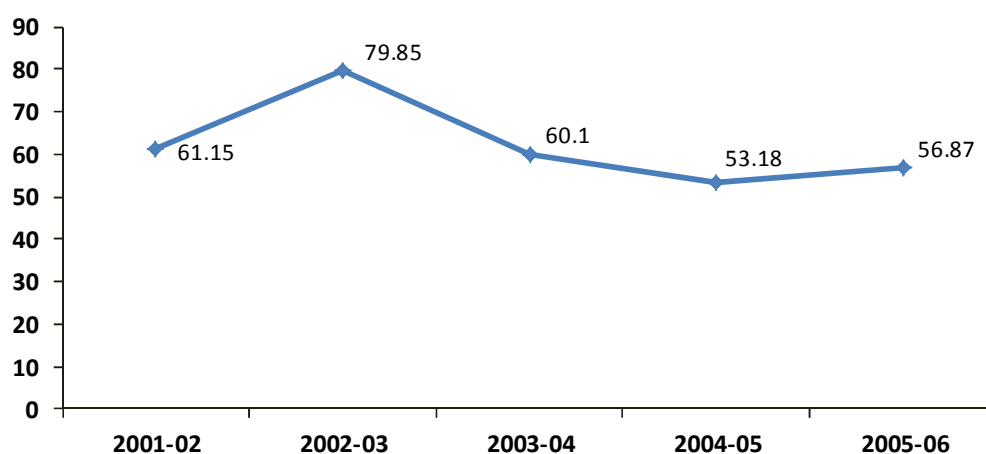


Figure 14: Net Area Irrigated as percent of Net sown Area

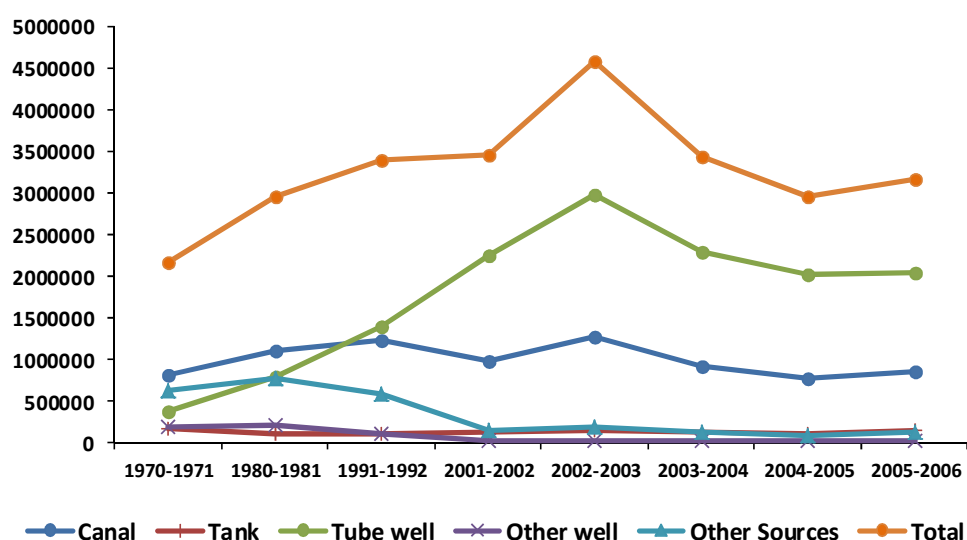
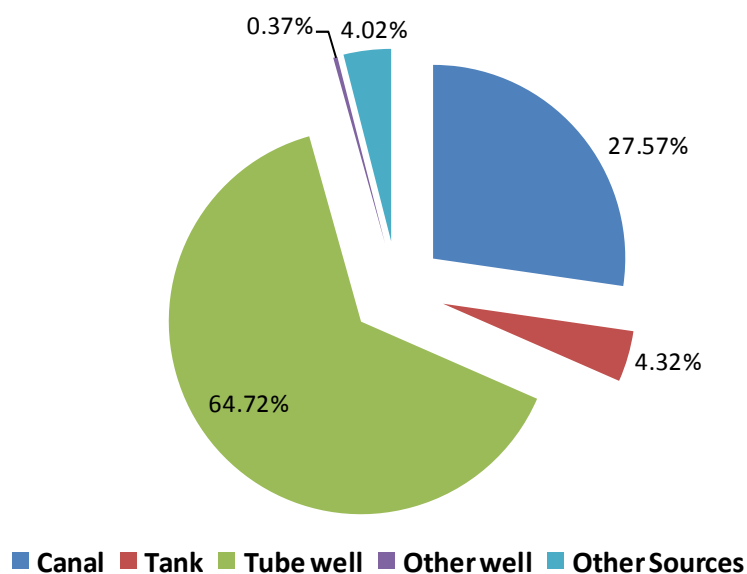
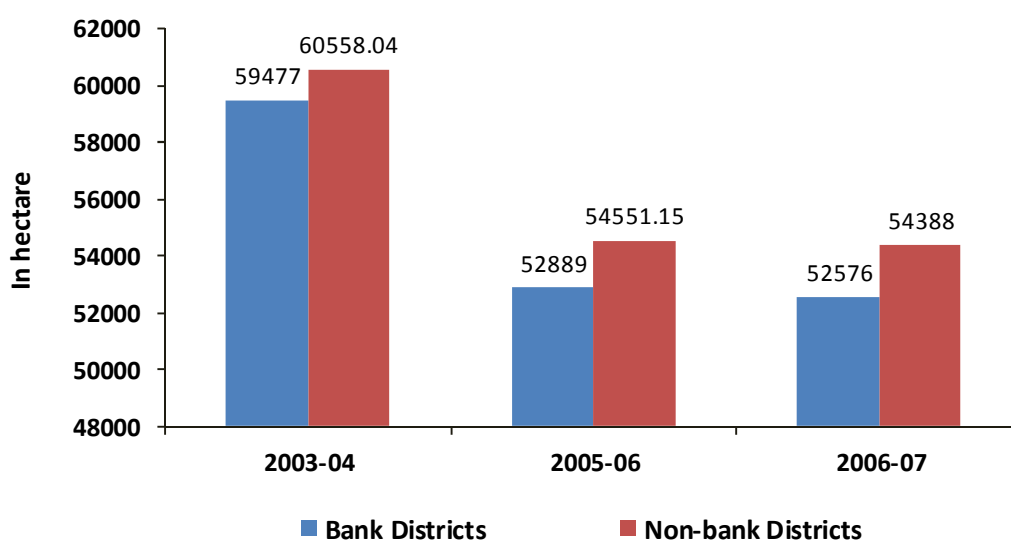


Figure 15: Sources of Net Area Irrigated (1971-2006)



**Figure 16: Sources of Net Area Irrigated (2005-2006)**

At district level, non-bank districts have shown decline in net area irrigated by canals (see Table A.10). Net area irrigated from tubewell showed decline in case of both bank and non-bank districts though the decline is relatively more in case of non-bank districts (Table A.12 and Figure 17). The number of deep tube wells and dug-wells has also declined over the years in Bihar (Tables A.23 and A.25). Another important finding is that share of Govt. tubewells is insignificant to that owned by individual farmers. This has a serious implication for basin management as the private ownership leads to enormous wastage of water.



**Figure 17: Net Area Irrigated from Tubewell in Bank and Non-bank Districts in Bihar (Average in Hectare)**



## 5. Rainfall

The rainfall in Bihar has shown considerable variations over the years (Table A.21 and Figure 18). The average rainfall for the bank districts (Table A.22 and Figure 19) in Bihar during the post-bifurcation period has shown an increasing trend. In case of the non-bank districts, rainfall has been fluctuating around the average rainfall for bank districts. Vaishali witnessed highest rainfall among bank districts in the year 2007 where as Muzaffarpur recorded the maximum rainfall among non bank districts in the year 2007.

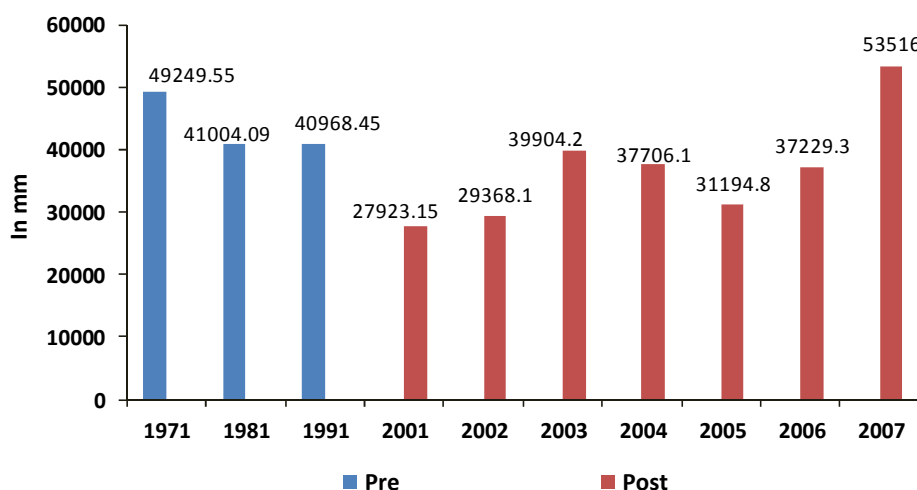


Figure 18: Rainfall in Bihar (in mm)

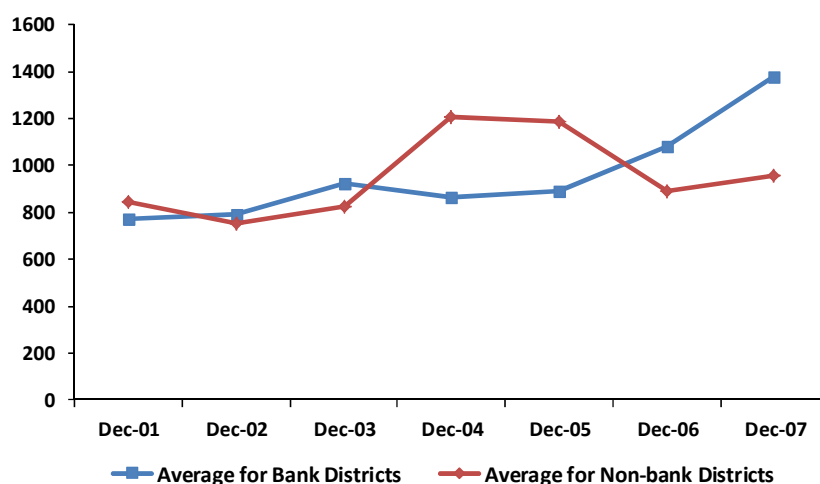


Figure 19: Rainfall in Bank and Non-bank Districts in Bihar (Average in mm)

## 6. Fertilizer Consumption

The consumption of all the three fertilizers viz., Nitrogen, Phosphate and Potash has increased substantially over the years. Nitrogenous fertilizers have registered maximum increase in per hectare use of fertilizer (Figure 20). This fertilizer accounted for 64.41% of the total fertilizer consumption in 2010 (Table A.29). The total consumption of chemical

fertilizers in Bihar has increased from 979.94 thousand tonnes in 2001 to 1309.95 thousand tonnes in 2010. The consumption of nitrogenous fertilizer has steadily been increasing from 1971 to 2010 (Figure 21 and Table A.29). The consumption of phosphate fertilizer (Table A.29 and Figure 22) has been more than the consumption of potash fertilizer (Figure 23) but less than the consumption of nitrogenous fertilizers. When compared with Bank districts, non bank districts have shown lesser consumption of all fertilizers (Table A.30, A.31, A.32 and Figures 24-26). Patna, Vaishali, Purnea, Bhojpur, Rohtas, Muzaffarpur and W. Champaran are the highest consumers of nitrogenous fertilizers (see Table A.30). Districts like Muzaffarpur, Purnea, Kartihar, Vaishali have consumed relatively more fertilizer (see Table A.31). The consumption of phosphate fertilizer has been higher in districts like Patna, Vaishali, Muzzafurpur, E. Champaran, W. Champaran, Khagaria and Samastipur (Table A.32).

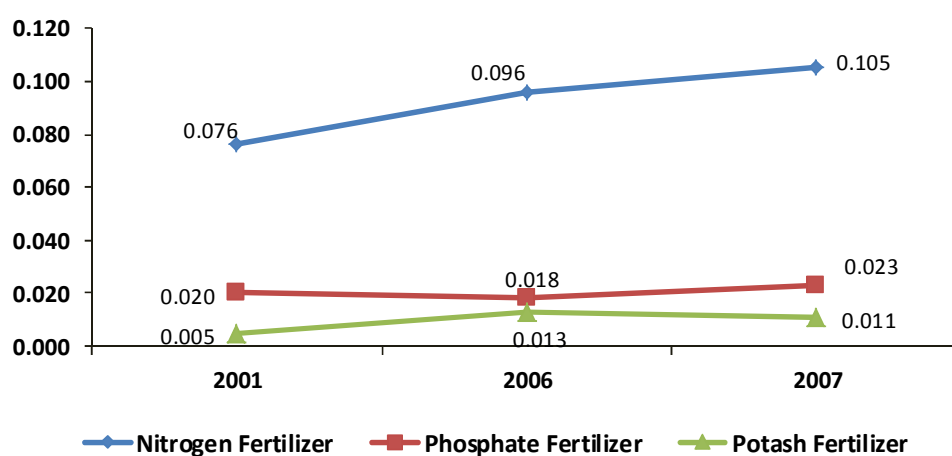


Figure 20: Per hectare Use of Fertilizers (Tonnes)

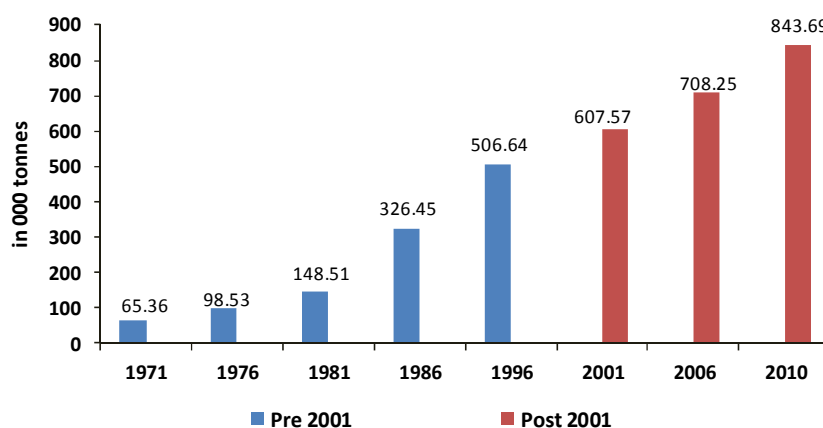


Figure 21: Consumption of Nitrogen Fertilizers in Bihar (in 000' tonnes)

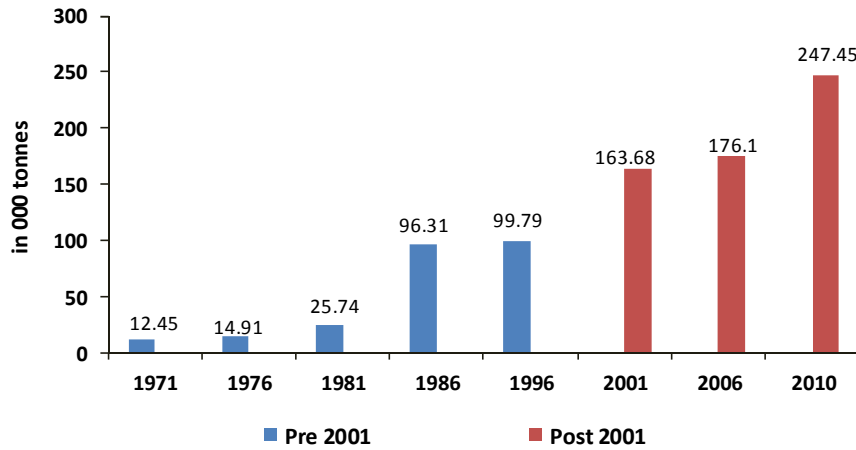


Figure 22: Consumption of Phosphate Fertilizers in Bihar (in 000' tonnes)

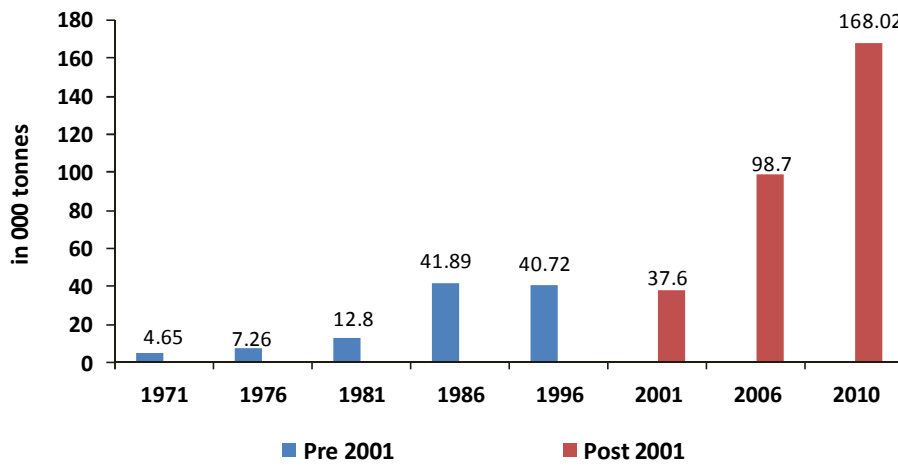


Figure 23: Consumption of Potash Fertilizers in Bihar (in 000' tonnes)

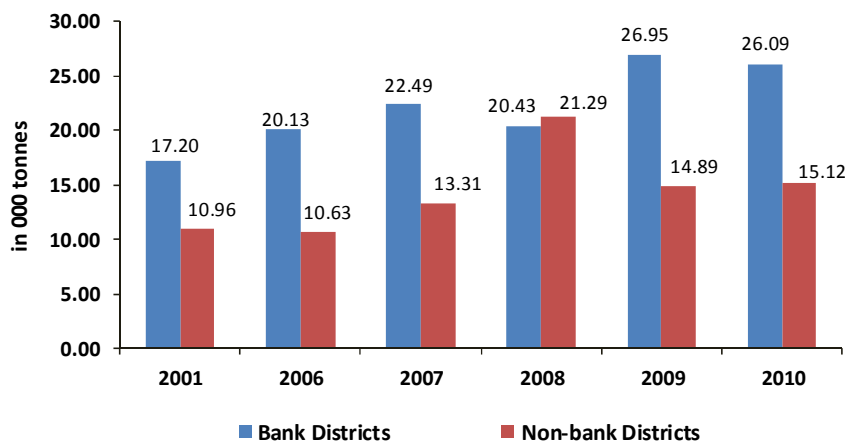
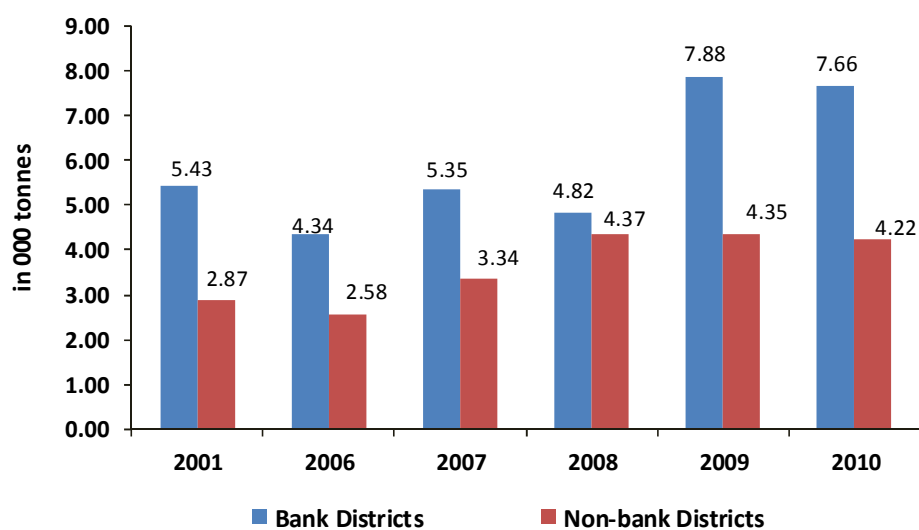
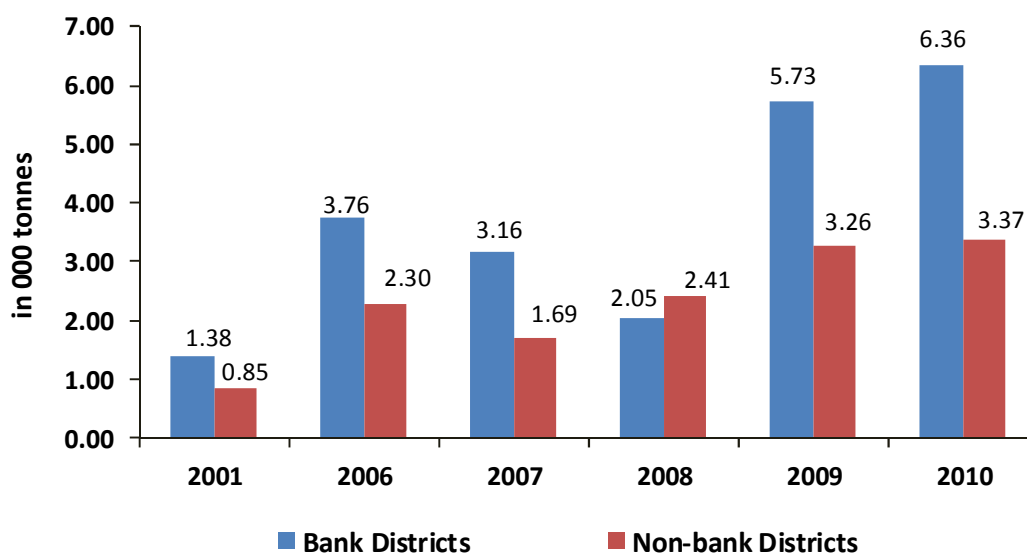


Figure 24: Consumption of Nitrogen Fertilizer in Bank and Non-bank Districts in Bihar (Average in 000' tonnes)



**Figure 25: Consumption of Phosphate Fertilizers on Bank and Non-bank Districts in Bihar (Average in 000' tonnes)**



**Figure 27: Average consumption of Potash Fertilizers on Bank Districts and Non-bank Districts in Bihar (in 000' tonnes)**

## 7. Area, Production and Yield

Bihar is primarily an agrarian economy. Table A.33 to A.35 present performance of agriculture in Bihar in terms of area, production and productivity of major crops. Figure 28 suggest that area under rice cultivation is showing a gradual declining trend whereas area under wheat has been increasing over the years. Maize cultivation however, has been constant. This signifies that farmers are shifting away from rice which is more water consuming. The trends in production and yield for these crops are presented in Figures 29 and 30.

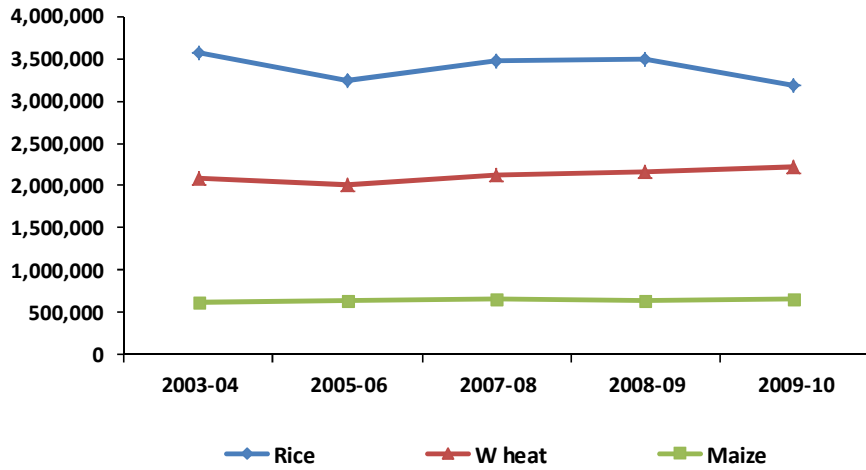


Figure 28: Area of Food Grains in Bihar (in Ha)

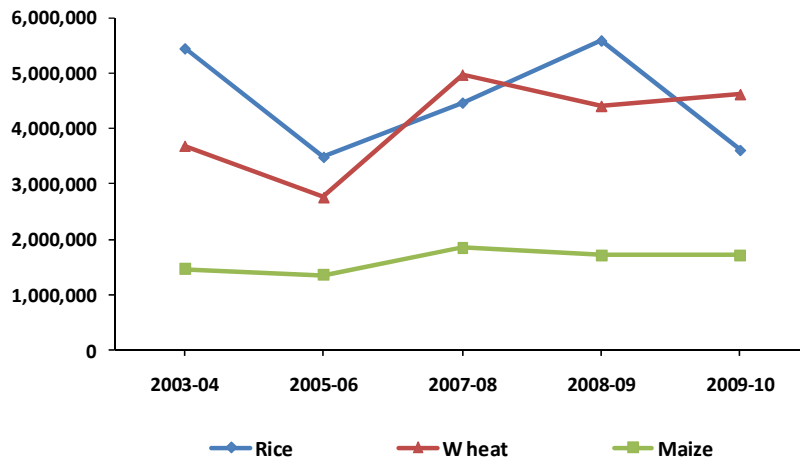


Figure 29: Production of Food grains in Bihar (in MT)

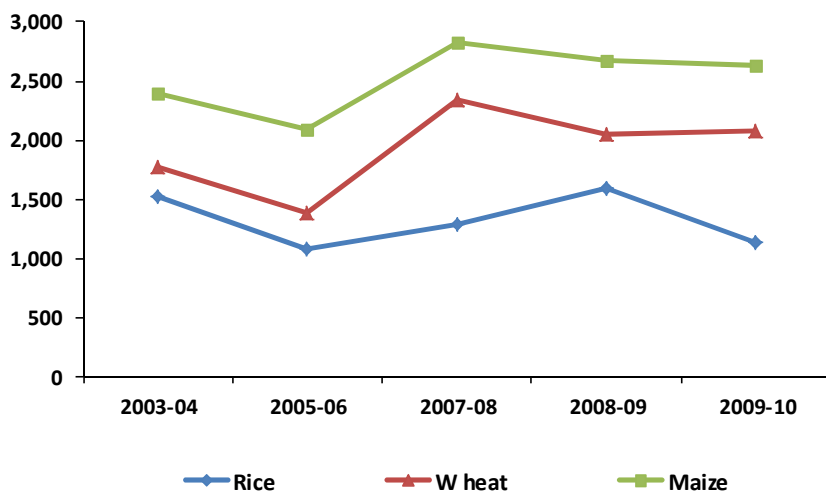
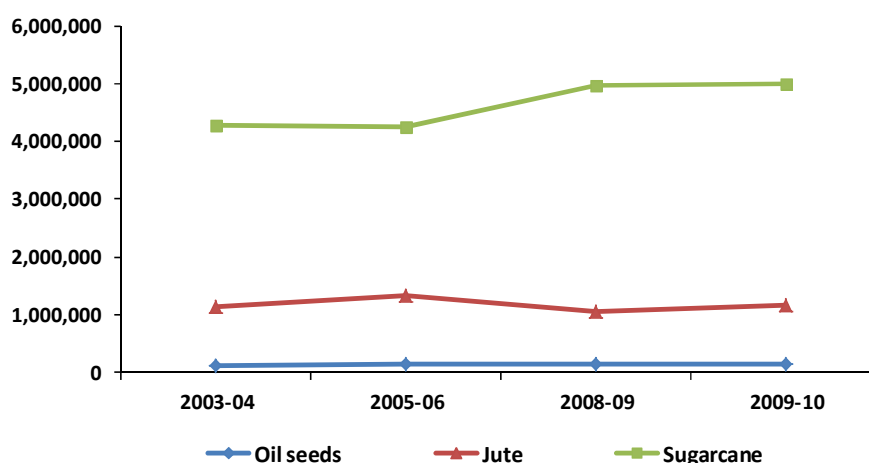


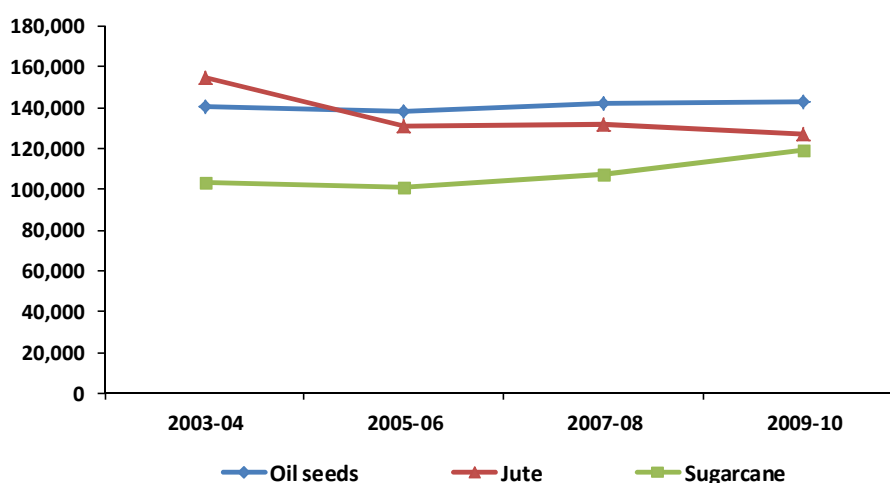
Figure 30: Yield of Food grains in Bihar (in Kg/ha)

At district level, districts like E. Champaran, Aurangabad, W. Champaran, Rohtas and Madhubani are having the largest area in the state (Table A.35). Maximum contribution to rice production has been made by Rohtas, Aurangabad, Kaimur, Banka, Bhojpur and Nalanda (Table A.36). Highest productivity is registered by Aurangabad, Banka, Bhojpur, Nalanda, Kaimur, Sheikhpura, Patna and Lakhisaria (Table A.37). In case of area under wheat cultivation, maximum area is reported by Rohtas, E. Champaran and Siwan, W. Champaran, Madhubani, Muzaffarpur and Madhepura (Table A.38). In case of production, the contribution of Gopalganj, Saran, E. Champaran, Siwan and Bhojpur is highest (Table A.39). Maximum productivity is seen in case of Gopalganj, Samastipur, Vaishali, Rohtas and Lakhisaria (Table A.40).

Figure 31 it can be seen that the production of oilseeds has remained constant overtime. The production of jute is also exhibiting more or less constant production. Production of sugarcane however, has shown rising trend (see Table A.35). It can be seen from Figure 32 that area under jute has declined and that of sugarcane has shown rise.



**Figure 31: Production of Non Food grains in Bihar (in MT)**



**Figure 32: Area under Non Food grains in Bihar (in Hectare)**

Among vegetables, the production and the area under cultivation for major vegetables have remained unchanged over the years (Figures 33 and 34). Among fruits, there is a clear bias emerging towards banana as the area has increased from 959.3 thousand hectare in 2005-06 to 1373.55 thousand hectare in 2008-09 (Table A.43 and Figures 35 and 36).

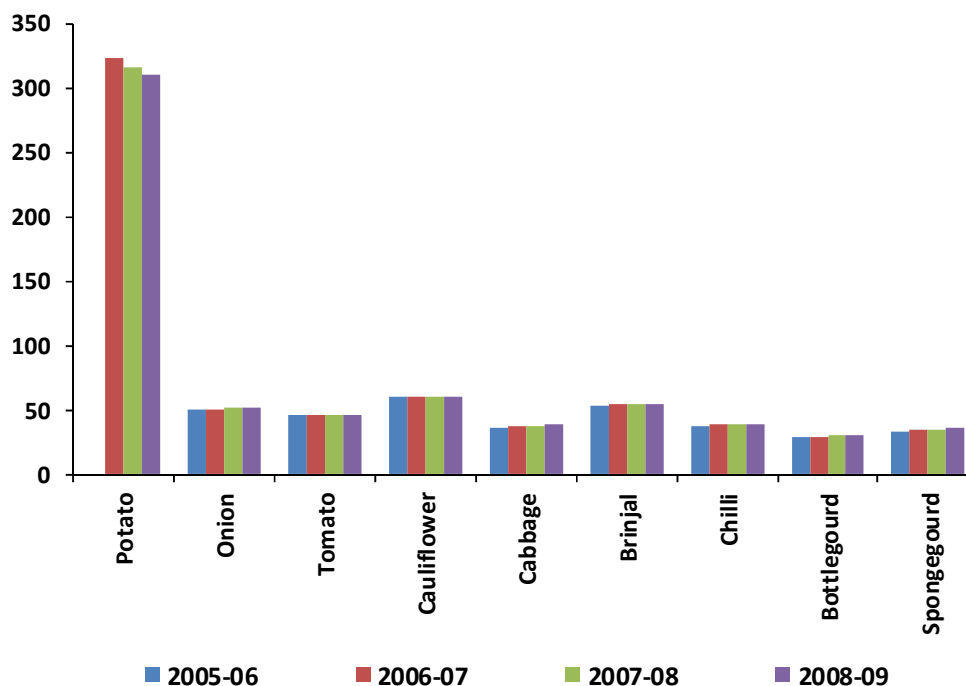


Figure 33: Production of Major Vegetables in 2008-09 ('000 tonnes)

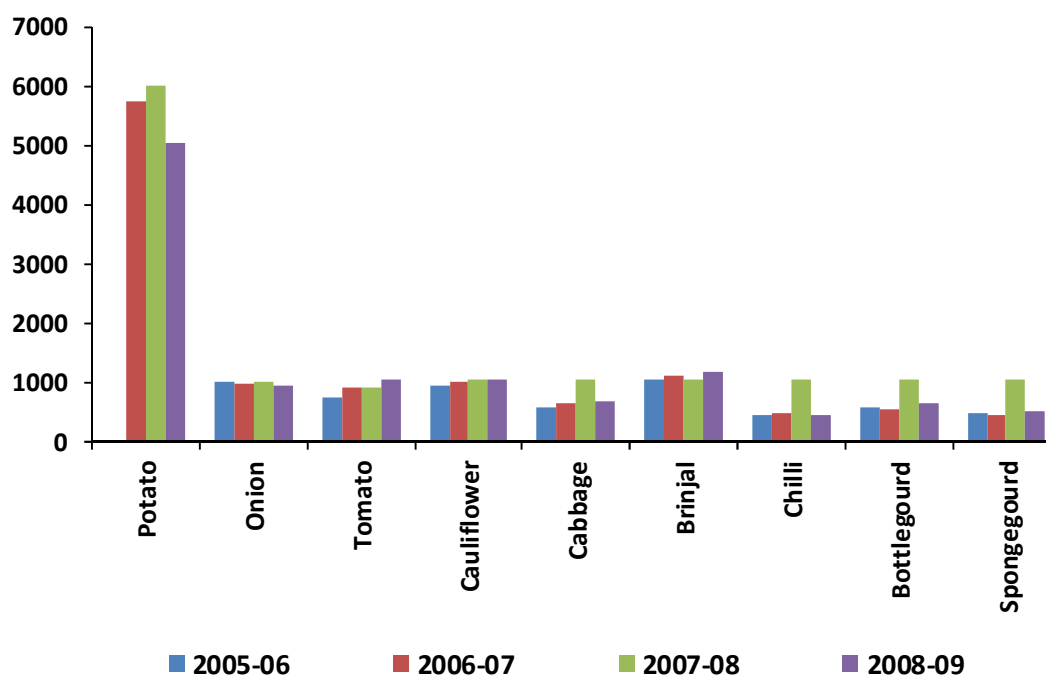


Figure 34: Area under Major Vegetables in 2008-09 ('000 hectare)

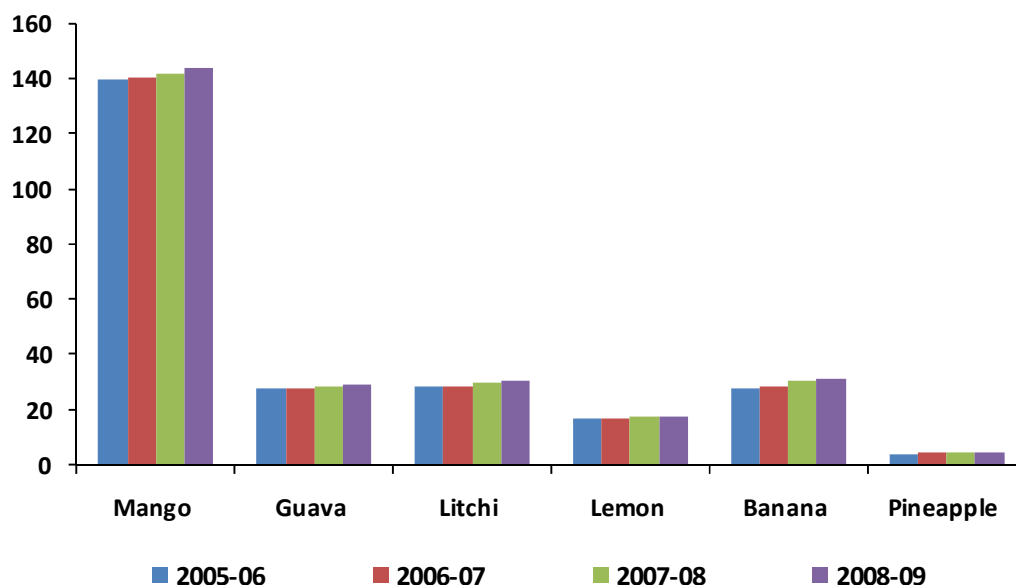


Figure 35: Production of Major Fruits in 2008-09('000 tonnes)

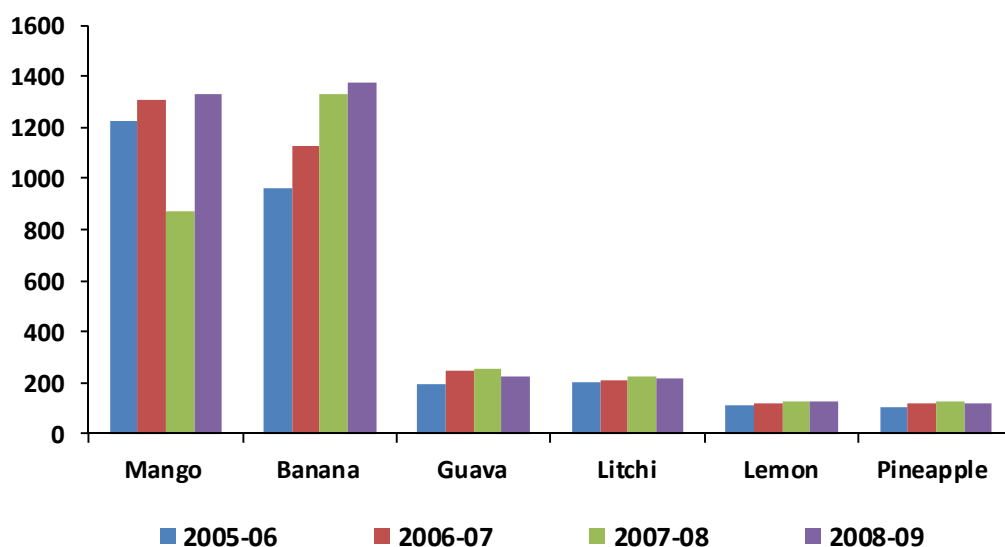
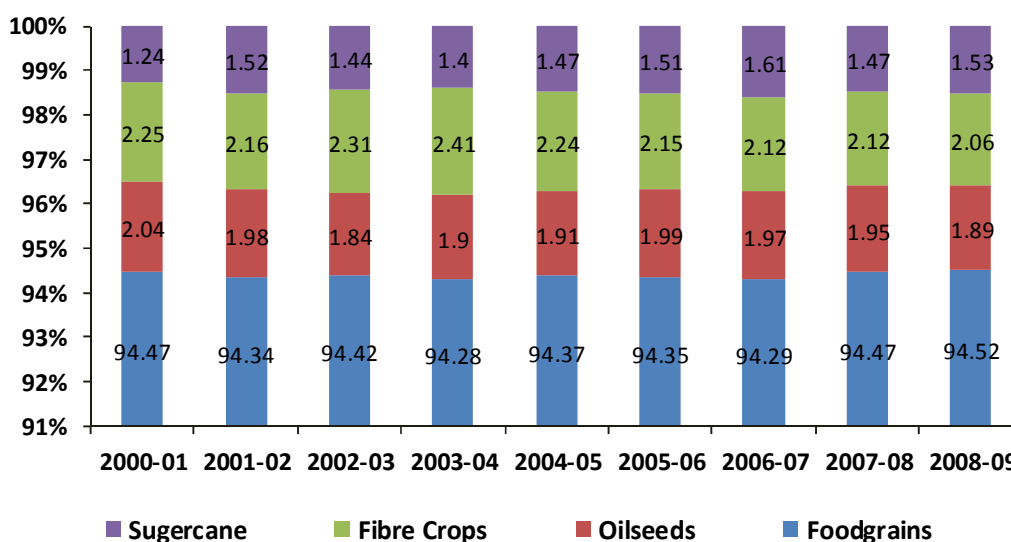


Figure 36: Area under Major Crops in 2008-09 ('000 hectare)

Table A.44 and Figure 37 present the cropping pattern of Bihar in the post-bifurcation period. The agricultural economy of Bihar exhibits a bias towards the food grains as approximately 95 percent of total cropped area has been under food grains. This indicates the orientation of Bihar agriculture towards subsistence production. Further, within the food grains, the percentage share of pulses in total cropped area has declined and cereals have shown an increase, though the changes are marginal. The oilseeds, fibers and sugarcane together account for just about 5 percent of the cropped area and their individual shares in the total cropped area have shown insignificant changes.





**Figure 37: Cropping Pattern in Bihar (%age of Area)**

## 8. Cost and Returns in Agriculture

Per hectare net income earned from individual crops is one of the key factors in the allocation of scarce land resources for the cultivation of various crops. In this section results of the analysis conducted on cost and returns in the major crops, use of chemical fertilizer, human labour and draught power utilization in the agriculture in Bihar has been presented. The main purpose is to determine which crop is most profitable for the farmers. Table A.44 shows the cost and returns, over the years, in paddy, wheat, maize and some other crops.

Paddy is one of the major crops in Bihar. As can be seen from the data presented in the table, net income has been fluctuating with negative trend. Return ratio has also declined during the study period. Hence paddy is not profitable for farmers. Productivity has marginally increased with CAGR as 1.91 percent. The draught power has declined drastically and fertilizer use has increased significantly with CAGR as 4.88 percent. Wheat is another important crop grown in this area. Table A.44 presents the cost and returns from the wheat cultivation. As is evident from the table, net income has been fluctuating upto 2004-05 and after that there is a remarkable increase in net income. On the other hand, the ratio of value of production (VOP) to cost of cultivation (CC) has been increasing after showing decline in 2002-03. Hence wheat is found profitable for farmers. In case of wheat, per hectare use of fertilizer has been fluctuating. Human as well as the animal labour (hrs/hect) have significantly declined during the period. It is important to note here that though the human labour has declined in both wheat and paddy cultivation the mechanical power use in wheat and paddy cultivation has significantly increased over the period. Human labour absorption in paddy cultivation is much higher than that in wheat cultivation. As can be seen from Table A.44, the rate of decline has been much higher in wheat (-5.4 percent) than paddy cultivation (-0.68 percent).

Maize cultivation is not found profitable for the farmers. As indicated in Table 7.1, net income has registered a negative compound annual growth rate of 9.26 percent. Also the return ratio has been fluctuating with negative trend. The fertilizer consumption has increased by 2.79 percent compound annually and the draught power has enormously declined by 8.25 percent.

Under pulses, masur came out to be the most profitable crop. The return ratio in case of masur has exhibited a rising trend with net income showing CAGR of 22.66 percent during the study period from 2001-02 to 2006-07. Productivity has increased by 3.14 percent compound annually. Another important feature of this crop is that the fertilizer consumption (kg/hect) has declined over the years with -5.35 percent CAGR during the study period. On the other hand, in case of gram, though the return ratio has increased but the productivity has constantly declined from 2002-03 onwards. The fertilizer use (kg/hect) has increased by 10.11 percent annually. Overall it may be stated that sugarcane, wheat and masur are the most profitable crops for farmers in Bihar.

## 9. Summary

The key points of the analysis performed above are enumerated below:

- Area sown more than once has shown declining trend in Bihar.
- Cropping intensity is on decline in Bihar.
- Current fallow land has increased in non-bank districts.
- Net sown area has declined in non-bank districts.
- Marginal holdings (less than one ha) account for 89.5 percent of the total land holdings in Bihar in 2005-06. Another alarming finding is that average size of marginal holding is 0.24 ha in Bihar in 2005-06.
- Tubewell has emerged as the most dominating source of irrigation in Bihar. In 2005-06, Tubewells irrigated 64.72 percent of the net irrigated area and 66.94 percent of the gross irrigated area.
- Consumption of chemical fertilizers has increased substantially in Bihar agriculture over the years. The rise in consumption has been more in case of bank districts.
- Area under rice cultivation has declined gradually.
- Area under wheat is showing rising trend.
- Among the non-food grain crops, sugarcane and banana have shown increase in area as well as production over the years.
- Looking at the cost and returns in major crops in Bihar, sugarcane, wheat and masur are found to be the profitable crops for farmers in Bihar whereas maize and paddy are not profitable for the farmers.
- The human and animal absorption in agriculture is declining which has implications for employment and use of animal waste as input in agriculture.

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## Annexure

Table A.1. Land use Pattern in Bihar from 1980-81 to 2006-07 (Area in hectares)

	1980-81	1990-91	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07
<b>Geographical Area</b>	17330000	17284389	9359568	9359568	9359568	9359568	9359568	9359568	9359568
<b>Forest Area</b>	2826000 (16.31)	2950004 (17.07)	616446 (6.59)	621635 (6.64)	621635 (6.64)	621635 (6.64)	621635 (6.64)	621635 (6.64)	621635 (6.64)
<b>Area under Non-agriculture Use</b>	1716000 (9.90)	2109838 (12.21)	1638091 (17.50)	1642089 (17.54)	1642976 (17.55)	1644585 (17.57)	1645680 (17.58)	1646625 (17.59)	1646888 (17.60)
<b>Barren Land in Bihar</b>	1011000 (5.83)	1013701 (5.86)	436503 (4.66)	436483 (4.66)	436406 (4.66)	436295 (4.66)	436212 (4.66)	436134 (4.66)	436062 (4.66)
<b>Current Fallow Land</b>	931610 (5.38)	1765101 (10.21)	575858 (6.15)	562557 (6.01)	499160 (5.33)	513044 (5.48)	648003 (6.92)	666184 (7.12)	566392 (6.05)
<b>Net Area Sown in Bihar</b>	8315000 (47.98)	7658359 (44.31)	5662577 (60.50)	5663552 (60.51)	5725479 (61.17)	5712088 (61.03)	5572402 (59.54)	5556186 (59.36)	5665122 (60.53)
<b>Area Sown more than once</b>	2834000	2686026	2329702	2233336	2231923	2170289	1826916	1840306	2053826
<b>Gross Sown Area</b>	11149000	10344385	7992279	7896888	7957402	7882377	7399318	7396492	7718948
<b>Cropping Intensity</b>	134.08	135.07	141.14	139.43	138.98	137.99	132.79	133.12	136.25

Note: Figures in parentheses are share in percent

Source: (1) Ministry of Agriculture, Govt. of Bihar, Patna

(2) Directorate of Statistics and Evaluation, Govt. of Bihar

(3) Economic Survey, (Various issues), Finance Department, Govt. Of Bihar

Table A.2 Total Geographical Area (in Hectares) for Districts of Bihar

District	1980-81	1990-91	2000-01	2003-04	2005-06	2006-07
Patna	320200	317236	317236	317236	317236	317236
Vaishali	203600	201449	201449	201449	201449	201449
Saran		264827	264887	264887	264887	264887
Begusarai	191800	187828	187828	187828	187828	187828
Buxar			166999	166999	166999	166999
Munger	790800	634594	139793	139793	139793	139793
Bhagalpur	558700	559921	254300	254300	254300	254300
Khagaria		149342	149342	149342	149342	149342
Katihar	305700	291349	291349	291349	291349	291349
Lakhisarai			128602	128602	128602	128602
Purnea	794300	313883	313883	313883	313883	313883
Sheikhpura			62084	62084	62084	62084
<b>Average for bank districts</b>	<b>452157.14</b>	<b>324492.11</b>	<b>206479.33</b>	<b>206479.3</b>	<b>206479.3</b>	<b>206479.33</b>
Bhojpur	409800	404338	237339	237339	237339	237339
Nalanda	236700	233906	232732	232732	232732	232732
Rohtas	721300	733169	390722	390722	390722	390722
Kaimur			342447	342447	342447	342447
Gaya	654500	493774	493774	493774	493774	493774
Jehanabad		156674	156674	94043	94043	94043
Arwal				62631	62631	62631
Nawada	249400	242732	248732	248732	248732	248732
Aurangabad	330500	330011	330011	330011	330011	330011
Siwan	221900	224410	224410	224410	224410	224410
Gopalganj	203300	203774	203774	203774	203774	203774
Muzaffarpur	317200	315351	315351	315351	315351	315351
E. Champaran	396800	431715	431715	431715	431715	431715
W. Champaran	522800	484351	484351	484351	484351	484351
Sitamarhi	264300	265366	221891	221891	221891	221891
Sheohar			43475	43475	43475	43475
Darbhanga	227900	230147	254077	254077	254077	254077
Madhubani	350100	333498	353498	353498	353498	353498
Samastipur	290400	286320	262390	262390	262390	262390
Jamui			305289	305289	305289	305289
Banka			305621	305621	305621	305621
Saharsa	590000	403162	164559	164559	164559	164559
Supaul			238603	238603	238603	238603
Madhepura		179589	179589	179589	179589	179589
Kisanganj		189080	189080	189080	189080	189080
Araria		271712	271712	271712	271712	271712
<b>Average for Non-bank Districts</b>	<b>374181.25</b>	<b>320653.95</b>	<b>275272.64</b>	<b>264685.2</b>	<b>264685.2</b>	<b>264685.23</b>

Source: (1) Ministry of Agriculture, Govt. of Bihar, Patna

(2) Directorate of Statistics and Evaluation, Govt. of Bihar

Table A.3 Total Barren Land (in Hectares) for Districts of Bihar

District	1980-81	1990-91	2000-01	2003-04	2005-06	2006-07
Patna	13570	13475	13123	13121	13116	13118
Vaishali	22290	24265	24265	24259	24255	24253
Saran		18086	18086	18080	18074	18072
Begusarai	19220	18133	18133	18128	18124	18123
Buxar			2285	2278	2273	2270
Munger	60780	48415	11511	11503	11499	11498
Bhagalpur	69190	63810	22617	22612	22608	22606
Khagaria		15086	13694	13687	13683	13682
Katihar	21340	22289	22289	22282	22277	22274
Lakhisarai			7117	7110	7109	7107
Purnea	33070	12438	12438	12430	12426	12423
Sheikhpura			1084	1081	1080	1079
<b>Average for Bank Districts</b>	<b>34208.57</b>	<b>26221.89</b>	<b>13886.83</b>	<b>13880.92</b>	<b>13877</b>	<b>13875.42</b>
Bhojpur	8270	9183	6898	6886	6880	6879
Nalanda	1810	1218	1218	1216	1215	1213
Rohtas	32750	36241	16959	16951	16945	16942
Kaimur			19282	19271	19267	19264
Gaya	32480	27664	27664	27650	27643	27641
Jehanabad		5489	5489	3292	3289	3288
Arwal				2192	2190	2189
Nawada	11840	11304	11304	11299	11293	11291
Aurangabad	15250	16440	16440	16433	16429	16426
Siwan	9110	8882	8882	8875	8871	8868
Gopalganj	8830	5577	5577	5573	5570	5569
Muzaffarpur	95790	5301	5297	5290	5284	5281
E. Champaran	5660	8206	8206	8200	8196	8193
W. Champaran	3310	3025	3025	3022	3017	3015
Sitamarhi	1530	2237	1816	1811	1808	1807
Sheohar			421	417	415	415
Darbhanga	1170	1977	1393	1386	1381	1379
Madhubani	3070	2382	2336	2333	2327	2324
Samastipur	8160	4520	3940	3934	3930	3927
Jamui			28901	28899	28894	28891
Banka			43089	43084	43078	43075
Saharsa	36400	34062	10890	10885	10881	10880
Supaul			20401	20397	20391	20389
Madhepura		3953	3953	3951	3947	3946
Kisanganj		11395	11395	11388	11384	11382
Araria		5087	5085	5089	5085	5083
<b>Average for Non-bank Districts</b>	<b>17214.38</b>	<b>10207.15</b>	<b>10794.44</b>	<b>10374</b>	<b>10369.62</b>	<b>10367.58</b>

Source: (1) Ministry of Agriculture, Govt. of Bihar, Patna  
(2) Directorate of Statistics and Evaluation, Govt. of Bihar

Table A.4. Current Fallow Land (in Hectares) for Districts of Bihar

District	1980-81	1990-91	2000-01	2003-04	2005-06	2006-07
Patna	18010	27237	16680	19190	62342	23221
Vaishali	9300	7040	1520	3686	28427	3216
Saran		19297	2328	8266	26773	8233
Begusarai	7420	4854	4018	7241	29090	6293
Buxar			8186	7686	12221	3641
Munger	80170	59897	20632	16701	19754	13861
Bhagalpur	44980	46266	5490	5115	5114	7266
Khagaria		19642	9677	9108	18679	12341
Katihar	31040	32923	30887	25921	39843	23866
Lakhisarai			18070	18121	7722	18362
Purnea	85600	38263	39270	20301	36440	32603
Sheikhpura			9510	4522	6761	12332
<b>Average for Bank district</b>	<b>39502.86</b>	<b>28379.89</b>	<b>13855.67</b>	<b>12154.83</b>	<b>24430.5</b>	<b>13769.58</b>
Bhojpur	24720	24042	9992	6424	28951	5133
Nalanda	8990	3103	2180	3933	30072	2512
Rohtas	35250	33896	1040	922	37689	1904
Kaimur			16830	14513	29801	8252
Gaya	80520	70968	99001	91403	61528	90722
Jehanabad		5725	16806	8703	12788	5263
Arwal				6810	8539	6875
Nawada	27400	6935	21683	22809	24622	30542
Aurangabad	57970	52234	65062	32925	50785	23842
Siwan	10880	4868	9515	10563	27436	10641
Gopalganj	11820	1031	3260	4042	29761	8817
Muzaffarpur	21240	17189	24020	21956	49446	30132
E. Champaran	12410	19439	21635	28302	49259	17316
W. Champaran	32010	18862	3111	4241	70059	4533
Sitamarhi	7380	15020	23975	20661	43784	11713
Sheohar			3835	1952	9224	2002
Darbhanga	17710	25603	6975	5203	42971	15869
Madhubani	15230	24844	12317	12561	69771	18133
Samastipur	21380	8047	612	2263	52957	3137
Jamui			38511	32012	34296	48553
Banka			2315	2401	35236	2281
Saharsa	42880	18539	2215	6221	21020	7973
Supaul			7378	6011	37862	16682
Madhepura		13936	1110	5742	25357	10133
Kisanganj		16396	2935	3001	23874	8465
Araria		23336	13277	11612	39365	9732
<b>Average for Non-bank Districts</b>	<b>20916.00</b>	<b>18215.13</b>	<b>9621.25</b>	<b>9136.67</b>	<b>36309.75</b>	<b>12889.42</b>

Source: (1) Ministry of Agriculture, Govt. of Bihar, Patna

(2) Directorate of Statistics and Evaluation, Govt. of Bihar

Table A.5. Net Sown Area (in Hectares) for Districts of Bihar

District	1980-81	1990-91	2000-01	2003-04	2005-06	2006-07
Patna	222530	207330	209135	206294	207288	202193
Vaishali	127050	119665	129211	126660	126944	127099
Saran		174988	199270	192938	191689	192598
Begusarai	135830	120785	120722	117193	117078	118163
Buxar			138245	138277	139661	142451
Munger	370940	263101	44436	48029	49036	51217
Bhagalpur	288960	269010	145565	145667	140869	144072
Khagaria		75211	84433	84684	82313	81429
Katihar	176920	159908	161679	167217	166372	169245
Lakhisarai			68327	68044	60300	68498
Purnea	518020	201235	201831	221166	208032	208834
Sheikhpura			39358	44217	35302	36707
<b>Average for Bank districts</b>	<b>262892.86</b>	<b>176803.67</b>	<b>128517.67</b>	<b>130032.17</b>	<b>127073.67</b>	<b>128542.17</b>
Bhojpur	329330	315320	182362	185364	182184	186872
Nalanda	182760	183374	183377	180872	182935	182236
Rohtas	402620	400987	254710	254360	254387	253299
Kaimur			152185	154226	156071	160937
Gaya	368510	236151	193071	200333	149611	204610
Jehanabad		115085	104485	63650	64722	67502
Arwal				41784	39889	41002
Nawada	123390	119584	112063	110565	93392	102721
Aurangabad	191040	196127	169080	197912	200714	206479
Siwan	170560	175881	164382	162889	165440	162923
Gopalganj	150100	157629	151659	150524	146439	145724
Muzaffarpur	226030	219043	205452	207145	197527	198831
E. Champaran	337740	313823	295765	288804	297095	299987
W. Champaran	262210	255996	281269	279758	280758	279809
Sitamarhi	203070	178256	118123	121048	121801	130192
Sheohar			24926	26483	26243	26469
Darbhanga	161600	139877	171263	172716	166448	162020
Madhubani	256400	212724	225686	225113	220825	219816
Samastipur	193590	201678	186719	184718	184061	183919
Jamui			74951	81117	58772	64836
Banka			154227	153818	151689	154489
Saharsa	371150	247544	113982	109633	108111	107864
Supaul			154192	155251	145788	144544
Madhepura		123818	136490	131531	125938	127105
Kisanganj		113085	130634	131105	128530	125608
Araria		185691	179312	180983	181932	182822
<b>Average for Non-bank districts</b>	<b>237162</b>	<b>175334.12</b>	<b>139208.75</b>	<b>139459.66</b>	<b>135011.5</b>	<b>135807</b>

Source: (1) Ministry of Agriculture, Govt. of Bihar, Patna  
(2) Directorate of Statistics and Evaluation, Govt. of Bihar



**Table A.6 Number of Land Holdings in Bihar**

Size Class	1980-1981	1995-1996	2000-2001	2005-2006
<b>Marginal (Less than 1 Hectare)</b>	8320600 (75.44%)	9577000 (84.15%)	9743016 (84.18%)	11485499 (89.54%)
<b>Small ( 1-2 Hectare)</b>	1217900 (11.04%)	1051000 (9.23%)	1068785 (9.23%)	857997 (6.69%)
<b>Semi Medium (2-4 Hectare)</b>	951100 (8.62%)	583000 (5.12%)	589288 (5.09%)	392563 (3.06%)
<b>Medium (4-10 Hectare)</b>	471500 (4.28%)	161000 (1.41%)	164130 (1.42%)	88226 (0.69%)
<b>Large Total (More than 10 Hectare)</b>	67900 (0.62%)	9000 (0.08%)	9026 (0.08%)	3219 (0.03%)
<b>Total</b>	<b>11029000</b>	<b>11381000</b>	<b>11574245</b>	<b>12827504</b>

Source: (1) Bihar through Figures, 1985, Directorate of Statistics and Evaluation, Government of Bihar  
(2) Agricultural Census of India, 2000-01, 2005-06

**Table A.7. Area of Holdings (in Hectares)**

Size Class	1980-1981	1995-1996	2000-2001	2005-2006
<b>Marginal (Less than 1 Hectare)</b>	2951600 (46.91%)	2934000 (43.08%)	2907256 (43.09%)	2870755 (52.57%)
<b>Small ( 1-2 Hectare)</b>	1647600 (26.19%)	1308000 (19.21%)	1295531 (19.2%)	1072378 (19.64%)
<b>Semi Medium (2-4 Hectare)</b>	257400 (4.09%)	1558000 (22.88%)	1543901 (22.88%)	1017067 (18.63%)
<b>Medium (4-10 Hectare)</b>	270900 (4.31%)	869000 (12.76%)	860761 (12.76%)	454939 (8.33%)
<b>Large Total (More than 10 Hectare)</b>	1164600 (18.51%)	141000 (2.07%)	139941 (2.07%)	45547 (0.83%)
<b>Total</b>	<b>6292100</b>	<b>6810000</b>	<b>6747390</b>	<b>5460686</b>

Source: (1) Bihar through Figures, 1985, Directorate of Statistics and Evaluation, Government of Bihar  
(2) Agricultural Census of India, 2000-01, 2005-06

**Table A.8. Average Area per Holdings (in Hectares)**

Size Class	1980-1981	1995-1996	2000-2001	2005-2006
<b>Marginal (Less than 1 Hectare)</b>	0.9	0.88	0.29	0.24
<b>Small ( 1-2 Hectare)</b>	1.3	1.24	1.21	1.25
<b>Semi Medium (2-4 Hectare)</b>	5.6	5.78	2.62	2.59
<b>Medium (4-10 Hectare)</b>	18.8	19.08	5.24	5.16
<b>Large Total (More than 10 Hectare)</b>		34.79	15.5	14.15

Source: (1) Bihar through Figures, 1985, Directorate of Statistics and Evaluation, Government of Bihar  
(2) Agricultural Census of India, 2000-01, 2005-06

**Table A.9. Sources of Net Area Irrigated in Bihar (in Hectares)**

Year	Canal	Tank	Tube well	Other well	Other Sources	Net Area Irrigated (NAI)	Net Sown Area (NSA)	NAI as % of NSA
<b>1970-1971</b>	814109 (37.71%)	169020 (7.83%)	364674 (16.89%)	185016 (8.57%)	625956 (29%)	2158775		
<b>1980-1981</b>	1094326 (37.05%)	96139 (3.26%)	793455 (26.87%)	202500 (6.86%)	766910 (25.97%)	2953330		
<b>1991-1992</b>	1233000 (36.39%)	101000 (2.98%)	1389000 (41%)	97000 (5.98%)	568000 (16.77%)	3388000		
<b>2001-2002</b>	965000 (27.87%)	112000 (3.23%)	2239000 (64.65%)	14000 (0.4%)	133000 (3.84%)	3463000	5663552	61.15
<b>2002-2003</b>	1259338 (27.55%)	149071 (3.26%)	2965410 (64.87%)	18260 (0.4%)	179503 (3.93%)	4571582	5725479	79.85
<b>2003-2004</b>	904028 (26.33%)	111691 (3.25%)	2288235 (66.65%)	12810 (0.37%)	116430 (3.39%)	3433194	5712088	60.10
<b>2004-2005</b>	774717 (26.14%)	88709 (2.99%)	2006016 (67.7%)	6614 (0.22%)	87196 (2.94%)	2963252	5572402	53.18
<b>2005-2006</b>	839594 (26.57%)	136576 (4.32%)	2044998 (64.72%)	11618 (0.37%)	127116 (4.02%)	3159902	5556186	56.87

Source: Bihar through Figures, 2005, 2007, Directorate of Economics and Statistics, Govt. of Bihar, Patna

**Table A.10. District-wise Net Area Irrigated from Canals (in Hectares)**

District	1970-71	1980-81	1991-92	2003-04	2004-05	2005-06
Patna	57,556	44025	34000	40806	28963	29386
Vaisali		4654	-			
saran	177	6163	-	2203	33149	19477
Begusarei		79148	0			
Buxar			-	36157	62780	60897
Monghyre	49,949		45000	12436	10211	14302
Bhagalpur	10,338	62811	62000	4297		
Khagaria						
Katihar		37592	9000		3496	10757
Lakhisarai				23951	8981	25781
Purena	49732	62139	24000	11729	10298	18135
Shekhpura				2185		809
<b>Average for bank districts</b>	<b>33,550</b>	<b>42,362</b>	<b>29,000</b>	<b>16,721</b>	<b>22,554</b>	<b>22,443</b>
Nalanda		7512	6000	5553	5829	14050
Gaya	115479	37345	20000		142	
Nawada		7212	1000	10178	4202	6551
Jehanabad			28000	596	3913	3648
Aurangabad		88641	111000	127368	83298	92316
Bojpur		152190	198000	40073	34138	44644
Rohtas		211239	327000	200851	215211	215073
Siwan		36388	139000	4821	3963	5478
Gopalganj		34348	31000	49766	31972	42961
Champarean west		94644	42000	72822	57979	63842
Champaran east		45013	31000	794		
Muzaffarepure	547	9345	4000			20310
Sitamarhi			-	1491		2032
Darbhanga	13,301		-			
Madubani		8861	1000			
Samastipur		463	0			
Saharsa	39,536	28364	30000	4903	6049	5664
Arwal			-			
Kaimur			-	76538	78880	22583
Jamui				1040	3752	
Banka				81686	38838	34218
Supaul				51260	33212	40207
Madhepura			43000	18124	23534	15688
Kishanganj						
Araria			12000		870	15514
<b>Average for Non-bank Districts</b>	<b>42215.75</b>	<b>54397.5</b>	<b>63250</b>	<b>43992</b>	<b>39057</b>	<b>39329.06</b>

Source: Bihar through Figures, 2005, 2007, Directorate of Economics and Statistics, Govt. of Bihar, Patna

**Table A.11. District-wise Net Area Irrigated from Tanks (in Hectares)**

District	1970-71	1980-81	1991-1992	2003-04	2004-05	2005-06
Patna	3,448	9	-	40	34	
Vaisali		7051	-	162		
saran	12003	6151	-	61	7395	5965
Begusaree		123	-	1555	1452	1437
Buxar			-	143		
Monghyre	4,813	2444	6000			
Bhagalpur	3,378	9461	15000	8193	4286	3055
Khagaria			-			
Katihar		616	-			
Lakhisarai			-			
Purena	120	182	-			
Shekhpura			-	194		
<b>Average for bank districts</b>	<b>4,752</b>	<b>3,255</b>	<b>10,500</b>	<b>1,478</b>	<b>3,292</b>	<b>3,486</b>
Nalanda		647	9000	1116	1172	4224
Gaya	23659	3258	1000			
Nawada		1058	-			
Aurangabad		780	-	3493	3381	3460
Bojpur		6767	1000			
Rohtas		5985	1000	17994	5010	23922
Siwan		1176	1000	2446	2320	2229
Gopalganj		1401	1000			
Champarean west		1471	2000		1	
Champaran east		1189	1000	411		
Muzaffarepure	4540	1060	1000			19993
Sitamarhi		1635	3000	4570	1416	1871
Darbhanga	11,061	5238	10000	4883	20080	10883
Madubani		7797	23000	64114	30472	51225
Samastipur		2049	-			
Saharsa	208	5420	1000	311	205	207
Arwal			-			
Jamui			-	539		
Banka			-	1122	7804	8105
Supaul			-	271		
Madhepura			-	73		
Kishanganj			-			
Araria			-			
Jehanabad			1000			
Kaimur			-		3681	
<b>Average for Non-bank Districts</b>	<b>9867</b>	<b>2933.19</b>	<b>4000</b>	<b>7795.62</b>	<b>6867.45</b>	<b>12611.9</b>

Source: Bihar through Figures, 2005, 2007, Directorate of Economics and Statistics, Govt. of Bihar, Patna

**Table A.12 District-wise Net area irrigated from Tube Well (in Hectares)**

District	1970-71	1980-81	1990-91	2003-04	2004-05	2005-06
Patna	97,992	68991	66000	83906	81259	72344
Buxar			-	42373	35986	40747
Saran	32558	17769	92000	105359	64821	73441
Vashali		16400	62000	53964	60708	62333
Munger	17,335	20959	51000	18059	18433	15142
Begusarai		45097	68000	84584	73637	73438
Shekhpura			-	35910	17314	21108
Lakhisarai			-	19214	20851	15427
Khagaria			35000	65103	67525	70472
Bhagalpur	3,034	17222	28000	39906	50729	56512
Purnea	9997	21039	51000	86288	76280	54691
Katihar		17206	52000	79060	67128	75258
<b>Average for Bank Districts</b>	<b>32183</b>	<b>28085</b>	<b>56111</b>	<b>59477</b>	<b>52889</b>	<b>52576</b>
Nalanda		82131	103000	94523	99547	96808
Bojpur		25179	62000	89503	65615	63814
Rohtas		42489	38000	24596	27312	22432
Kaimur			-	42366	9281	81119
Gaya	48071	529946	36000	177161	83396	81856
Jehanabad			29000	54957	29520	24701
Arwal			-	15343	8135	16010
Nawada		27978	33000	77829	49075	51376
Aurangabad		7927	11000	54019	30215	18217
Siwan		47191	16000	89041	91047	101509
Gopalganj		44455	28000	47193	64910	53320
Muzaffarpur	19617	40422	60000	106150	112168	67948
East Champaran		46940	42000	122917	124482	147660
West Champaran		13831	31000	23271	28600	36029
Sitamarhi		22503	35000	48182	47331	51586
Sheohar			-	11897	14334	13860
Darbhanga	21,687	13272	35000	74281	52585	57963
Madhubani		7686	-	26738	77222	40042
Samastipur		41305	97000	102020	97722	98067
Jamui			-	23989	17413	15970
Banka			-	16733	37397	46470
Saharsa	6,446	34242	56000	49618	46201	47453
Supaul			-	49209	46985	49479
Madhepura			19000	47170	64368	64404
Kishanganj			16000	33203	27789	26215
Araria			62000	72600	65680	39777
<b>Average for Non-bank Districts</b>	<b>23955.25</b>	<b>64218.56</b>	<b>42578.95</b>	<b>60558.04</b>	<b>54551.15</b>	<b>54387.88</b>

Source: Bihar through Figures, 2005, 2007, Directorate of Economics and Statistics, Govt. of Bihar, Patna

Table A.13. District-wise Net area irrigated from Other Wells (in Hectares)

District	1970-71	1980-81	1991-92	2003-04	2004-05	2005-06
Patna	13,969	1520	-			
Buxar			-			
Saran	74578	31221	-			
Vashali		11152	1000	4772	1373	
Munger	8,837	34151	4000	12	44	63
Begusarai		436	1000			
Shekhpura			-	310		
Lakhisarai			-	6	85	
Khagaria			-			
Bhagalpur	2,182	4291	15000	1061		
Purnea	113	376	1000			
Katihar		2893	-			
<b>Average for Bank Districts</b>	<b>19936</b>	<b>10755</b>	<b>4400</b>	<b>1232</b>	<b>501</b>	<b>63</b>
Nalanda		18370	3000	15		7059
Bojpur		2365	4000			
Rohtas		2690	-			
Kaimur			-			
Gaya	29,760	7360	11000			
Jehanabad			2000			
Arwal			-		177	
Nawada		17254	1000			
Aurangabad		2541	1000	4688	4742	4338
Siwan		10447	1000	79	193	158
Gopalganj		809	-			
Muzaffarpur	6027	3299	-			
East Champaran		587	1000			
West Champaran		262	16000			
Sitamarhi		641	-			
Sheohar			-			
Darbhanga	1,326	14	-			
Madhubani		108	-			
Samastipur		2647	-			
Jamui			-	1700		
Banka			-	167		
Saharsa	162	4255	-			
Supaul			-			
Madhepura			2000			
Kishanganj			-			
Araria			-			
<b>Average for Non-bank Districts</b>	<b>9318.75</b>	<b>4603.06</b>	<b>4200.00</b>	<b>1329.80</b>	<b>1704.00</b>	<b>3851.67</b>

Source: Bihar through Figures, 2005, 2007, Directorate of Economics and Statistics, Govt. of Bihar, Patna

Table A.14. District-wise Net area irrigated from Other Sources (in Hectares)

District	1970-71	1980-81	1991-92	2003-04	2004-05	2005-06
Patna	89020	41213	20000	5755	5851	
Buxar			-	1323	1401	1458
Saran	131816	41233	11000			365
Vashali		2465	-	5212	3456	4072
Munger	1,06,679	24205	14000	3646		
Begusarai		6143	12000			12
Shekhpura			-	6539	397	1947
Lakhisarai			-	2386	2577	1787
Khagaria			23000	4318	2006	2357
Bhagalpur	45,975	37241	18000	2865		
Purnea	64544	4569	2000			
Katihar		3053	5000			
<b>Average for Bank Districts</b>	<b>82839</b>	<b>20015</b>	<b>13125</b>	<b>4006</b>	<b>2615</b>	<b>1714</b>
Nalanda		68356	17000	10484	11132	17497
Bojpur		66183	46000	5818	4922	1484
Rohtas		25153	15000	6928	6366	7115
Kaimur			-	11141	8543	13779
Gaya	537009	200785	67000	2787	2363	
Jehanabad			50000	8851	8588	21845
Arwal			-	1318	2963	130
Nawada		67221	50000	2456	4869	625
Aurangabad		58009	32000	7577	1684	25862
Siwan		4283	1000	4310	1607	1098
Gopalganj		3639	26000	2799	189	203
Muzaffarpur	38701	8242	19000			
East Champaran		1407	9000			
West Champaran		3745	8000	2937	8750	11741
Sitamarhi		3012	5000	1960	264	321
Sheohar			-			
Darbhanga	63,525	6275	21000		282	5764
Madhubani		6715	7000	2944	3571	
Samastipur		10660	4000			
Jamui			-	1718	2315	1356
Banka			-	499	324	
Saharsa	49040	17630	15000	3056	2013	5979
Supaul			-	813	567	
Madhepura			7000	5924	226	
Kishanganj			3000			319
Araria			10000			
<b>Average for Non-bank Districts</b>	<b>172068.75</b>	<b>34457.19</b>	<b>20600.00</b>	<b>4437.89</b>	<b>3576.90</b>	<b>7194.88</b>

Source: Bihar through Figures, 2005, 2007, Directorate of Economics and Statistics, Govt. of Bihar, Patna

**Table A.15. Sources of Gross Area Irrigated (1971-2006)**

Year	Canal	Tank	Tube well	Other well	Other Sources	Total
<b>1970-1971</b>	1118355 (41.85%)	149717 (5.6%)	515823 (19.3%)	221481 (8.29%)	667221 (24.97%)	2672597
<b>1980-1981</b>	1397135 (38.47%)	117925 (3.21%)	1001000 (27.26%)	242861 (6.61%)	872758 (23.77%)	3631679
<b>1991-1992</b>	1509000 (36.3%)	124000 (2.98%)	1702000 (40.94%)	124000 (2.98%)	698000 (16.79%)	4157000
<b>2000-2001</b>	1229769 (26.96%)	179637 (3.94%)	2871170 (62.95%)	15874 (0.35%)	264665 (5.8%)	4561115
<b>2001-2002</b>	1237156 (27.87%)	139580 (3.14%)	2864846 (64.54%)	15870 (0.36%)	181562 (4.09%)	4439014
<b>2002-2003</b>	1259338 (35.26%)	149071 (4.17%)	1965410 (55.03%)	18260 (0.51%)	179503 (5.03%)	3571582
<b>2003-2004</b>	1143361 (25.04%)	149856 (3.28%)	3103326 (67.95%)	13222 (0.29%)	157070 (3.44%)	4566835
<b>2004-2005</b>	1062594 (0.25%)	117531 (2.8%)	2886959 (68.78%)	6694 (0.16%)	123362 (2.94%)	4197140
<b>2005-2006</b>	1061478 (24.54%)	182599 (4.22%)	2894879 (66.94%)	11687 (0.27%)	174044 (4.02%)	4324687

Source: Bihar through Figures, 2005, 2007, Directorate of Economics and Statistics, Govt. of Bihar, Patna



Table A.16. District-wise Gross Area Irrigated from Canals (In Hectares)

Gross Area Irrigated from Canals (in Hectares)								
Districts	1970-71	1980-81	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
Patna	72716	48307	19121	28972	49992	51115	32431	34852
Vaisali		5059						
Saran	177	6537	21049	23271	27035	2414	33149	19477
Begusarai								
Buxar						44421	80760	86671
Bhagalpur	47,299	67153	5430	5256		4297		
Khagaria								
Katihar		15592	4415	4332	6558		4694	11444
Lakhisarai					15616	23951	16640	25781
Purenea	75366	70333	14434	10556	9144	11729	10298	18135
Sheikhpura			10170	1826	2428	2185		809
<b>Average for Bank districts</b>	<b>48889.5</b>	<b>35496.8</b>	<b>12436.5</b>	<b>12368.8</b>	<b>18462.2</b>	<b>20016</b>	<b>29662</b>	<b>28167</b>
Bojpur		188430	115152	154308	112537	50781	54713	60238
Nalanda		7678	6594	6452	7026	9442	9018	19453
Rohtas		322081	274199	262369	271928	262570	250397	266829
Kaimur			98998	75977	82126	98493	121038	28353
Gaya	131123	40356	43204	64212	57447		142	
Jehanabad						596	3913	3648
Arwal						28712	22358	20710
Nawada		8387	13685	13227	12947	13944	6033	8546
Aurangabad		101497	104471	180535	175901	140664	95416	100384
Siwan		37539	3270	2912	5938	6314	5397	6686
Gopalganj		40869	46444	46946	48103	50672	39407	46060
Muzaffarpur	735	105611	454	138				20310
Champanan West		38962	151224	130308	122192	128686	113917	109254
Champanan East		49537	32220	2345	1818	794		
Sitamarhi								
Darbhanga	15,899							
Madhubani		15371	4047					
Samastipur		463						
Jamui			5128	1316	1013	1040	3752	
Banka			51585	57268	61571	90062	50880	44654
Saharsa	61,005	68539	3908	5469	8658	5527	9309	6616
Supaul			41842	50699	53918	67352	49804	60816
Madhepura			63561	46517	53258	32795	34942	26489
Kishanganj								
Araria			2795				870	17346
<b>Average for Non-bank districts</b>	<b>52190.5</b>	<b>73237.2</b>	<b>55935.8</b>	<b>64764.59</b>	<b>67273.81</b>	<b>58143.77</b>	<b>48405.9</b>	<b>49787.77</b>

Source: Bihar through Figures, 2005, 2007, Directorate of Economics and Statistics, Govt. of Bihar, Patna

**Table A.17. District-wise Gross Area Irrigated from Tanks (in Hectares)**

Districts	1970-71	1980-81	2000-01	2001-02	2003-04	2004-05	2005-06
Patna	3879	29	1720		40	34	
Vaisali		9480	498	960	162		
saran	12024	6161	16301	18803	61	7395	5965
Begusaree		183	1102	1143	1673	1581	1564
Buxar			2505	2555	143		
Bhagalpur	6,951	10353	7351	2234	12344	4286	5079
Khagaria				272			
Katihar		762	47				717
Lakhisarai				498			
Purena	136	182					
Shekhpura					194		
<b>Average for Bank districts</b>	<b>5747.5</b>	<b>3878.57</b>	<b>4217.71</b>	<b>3780.71</b>	<b>2088.14</b>	<b>3324</b>	<b>3331.25</b>
Bojpur		6980					
Nalanda		875	1712	1708	2110	1927	4815
Rohtas		7658	14002	30408	20299	7941	25928
Kaimur			10244			4371	
Gaya	24072	5722	7064	1045			
Jehanabad							
Arwal							
Nawada		1620					
Aurangabad		968	2681	2724	3493	3381	3460
siwan		1280	2307	2510	2446	2320	2229
Gopalganj		2959					
Muzaffarepore	4848	1177	999	400			19993
Champarean west		1860					
Champaran east		1282			411		
Sitamarhi		1960	3342	5835	4570	1416	2621
Sheohar			138	134			
Darbhanga	13,586	8068	21929	28521	6351	28657	19425
Madubani		9495	71546	34699	93006	43809	79428
Samastipur		2158					
Jamui			1257	1160	539		
Banka			11321	2239	1177	10065	11168
Saharsa	227	7767	599	375	493	347	207
Supaul				167	271		
Madhepura				81	73		
Kishanganj							
Araria							
<b>Average for Non-bank districts</b>	<b>10683.25</b>	<b>3864.31</b>	<b>10652.93</b>	<b>7467.07</b>	<b>10403</b>	<b>10423.4</b>	<b>16927.4</b>

Source: Bihar through Figures, 2005, 2007, Directorate of Economics and Statistics, Govt. of Bihar, Patna

**Table A.18. District-wise Gross Area Irrigated from Tube well (in Hectares)**

Districts	1970-71	1980-81	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
Patna	144651	93757	127071	128603	133043	121049	120625	129169
Vaisali		16618	66357	70612	68879	65655	80656	85669
saran	34071	18239	80236	76236	76066	115231	79108	83048
Begusarei		49577	88221	86449	88488	89416	84921	88499
Buxar			38348	44726	46851	66410	43979	58024
Bhagalpur	7,565	24306	48812	52742	62147	57797	70966	80449
Khagaria						76748	75922	79919
Katihar		28333	124990	119610	125372			
Lakhisarai						26526	30017	24090
Purena	12,123	34266	137139	158949	160387	158775	151072	151344
Shekhpura						41107	22356	33137
<b>Average for Bank districts</b>	<b>49602.5</b>	<b>37870.85</b>	<b>88896.75</b>	<b>92240.87</b>	<b>95154.12</b>	<b>81871.4</b>	<b>75962.2</b>	<b>81334.8</b>
Bojpur		34562	56716	25641	73897	125775	84567	83856
Nalanda		97133	201158	153824	162774	164270	158970	125608
Rohtas		76317	48198	39249	46645	36037	40935	31238
Kaimur			49367	91404	55651	54414	13845	120614
Gaya	73370	62666	137746	137446	157937	232303	124415	122484
Jehanabad			117705	125693	97515	57759	47678	44763
Arwal						18034	11102	19703
Nawada		41841	98658	99800	101334	108831	74173	76382
Aurangabad		15907	65266	28402	45854	65794	45826	18468
siwan		49928	107754	116170	120037	93353	101027	113635
Gopalganj		47156	45323	56292	58625	54027	69670	58949
Muzaffarepure	28498	44877	126359	132278	132466	130164	132654	85774
Champarean west		15702	49001	50538	47734	42971	58790	60753
Champaran east		49457	164373	184194	156111	154450	164293	165385
Sitamarhi		28189	58670	76688	69664	63661	55665	56995
Darbhanga	33,578	15874	45698	43175	56482	95736	75119	79829
Madubani		11458	40991	86726	69262	41113	91551	59216
Samastipur		55739	113158	110688	111789	112387	113436	113715
Jamui						30439	22353	20418
Banka			50371	45621	47587	23793	55025	56950
Saharsa	7969	38787	108400	93918	88633	84562	81993	78578
Supaul			79426	71548	69471	73678	88359	82398
Madhepura			61223	93073	80424	92954	94475	103481
Kishanganj			37580	47644	47664	50535	49786	44377
Araria			103066	11890	109318	110962	103199	88841
<b>Average for Non-bank districts</b>	<b>35853.75</b>	<b>42849.56</b>	<b>85487.26</b>	<b>83560.95</b>	<b>87255.39</b>	<b>84720.08</b>	<b>78356.24</b>	<b>76496.4</b>

Source: Bihar through Figures, 2005, 2007, Directorate of Economics and Statistics, Govt. of Bihar, Patna

Table A.19. District-wise Gross Area Irrigated from Other Wells (in Hectares)

Districts	1970-71	1980-81	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
Patna	16614	1652	1851					
Vaisali		11251	7281	8847	8402	5043	1373	
saran	77976	31279						
Begusarei		705	112	113	111			
Buxar								
Bhagalpur	6444	10784		1539	4050	1061		
Khagaria								
Katihar		3633						
Lakhisarai				25	19	10	95	
Purena	123	422						
Shekhpura			85			310		
<b>Average for Bank districts</b>	<b>25289.25</b>	<b>8532.28</b>	<b>2332.25</b>	<b>2631</b>	<b>3145.5</b>	<b>1606</b>	<b>734</b>	
Bojpur		3492						
Nalanda		18895	528	544	541	29		7059
Rohtas		6301						
Kaimur					3			
Gaya	41650	10868	955		2715			
Jehanabad								
Arwal							177	
Nawada		18608		9	10			
Aurangabad		3407	3527	1256	660	4811	4812	4348
siwan		13232	188	188	185	79	193	158
Gopalganj		834						
Muzaffarepure	7287	3495						
Champarean west		262						
Champaran east		730						
Sitamarhi		762						
Darbhanga	1,637	14						
Madubani		151						
Samastipur		3330						
Jamui			202	867	1164	1700		
Banka			668	245	76	167		
Saharsa	165	5874	4	324	324			
Supaul				1368				
Madhepura								
Kishanganj								
Araria								
<b>Average for Non-bank districts</b>	<b>12684.8</b>	<b>5640.93</b>	<b>867.42</b>	<b>600.12</b>	<b>630.88</b>	<b>1357.2</b>	<b>1727.33</b>	<b>3855</b>

Source: Bihar through Figures, 2005, 2007, Directorate of Economics and Statistics, Govt. of Bihar, Patna

Table A.19. District-wise Gross Area Irrigated from Other Sources (in Hectares)

Districts	1970-71	1980-81	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
Patna	89870	47229	26915	10522	7292	7391	6190	
Vaisali		2491	6938	9173	8866	6686	5138	6079
saran	1313	41697		875				365
Begusarei		6453	2407	2229	2246			12
Buxar			8902	18896	10644	2936	2643	1458
Bhagalpur	75148	46586	10001	14515	10520	2865		
Khagaria			1838	398	378	6645	5058	3903
Katihar		4841						
Lakhisarai			3289	6816	9187	2937	4632	2652
Purena	4966	6140	3360					
Shekhpura			6283	9455	6047	6984	397	2773
<b>Average for Bank districts</b>	<b>42824.25</b>	<b>22205.28</b>	<b>7770.33</b>	<b>8097.66</b>	<b>6897.5</b>	<b>5206.28</b>	<b>4009.66</b>	<b>2463.14</b>
Bojpur		75935	7597	19133	9684	11538	10650	2684
Nalanda		72835	12047	16868	15559	17437	14564	28556
Rohtas		33390	698		856	11928	6395	9556
Kaimur			3787	5377	11724	13630	14280	20800
Gaya	320169	226754	8309	251	5251	2787	2363	
Jehanabad			8494			8851	8588	21845
Arwal						1385	4516	206
Nawada		74481	10961	15088	10181	3783	6537	625
Aurangabad		62427	3598	4156	3917	9439	2355	36877
Siwan		4572	10139	1053	4901	5070	2396	1481
Gopalganj		4065	10820	2003	3366			
Muzaffarepure	10,119	9861	494					
Champarean west		4837	21446	7338	9276	5026	12257	15335
Champan east		9955	609					
Sitamarhi		4511	1182	2390	2425	1960	264	321
Darbhanga	18,557	9145	11140	5957			282	5764
Madubani		7838	7706	4264	4542	4432	4930	
Samastipur		12173	3	46				
Jamui			12622	4279	9351	3297	3113	2667
Banka			22093	3305	7276	499	447	
Saharsa	3,087	19638	6707	4492	6292	4401	3996	9513
Supaul			2510	2117	2010	813	567	
Madhepura			19792	7203	11907	7302	446	
Kishanganj			77					319
Araria			1776					
<b>Average (Non-bank )</b>	<b>87983</b>	<b>39526.06</b>	<b>7691.95</b>	<b>5851.11</b>	<b>6971.64</b>	<b>6309.88</b>	<b>5207.68</b>	<b>10436.6</b>

Source: Bihar through Figures, 2005, 2007, Directorate of Economics and Statistics, Govt. of Bihar, Patna

Table A.20. Rainfall in Bihar in mm (1971-2007)

Year	1971	1981	1991	2001	2002	2003	2004	2005	2006	2007
Rainfall	49249.55	41004.09	40968.45	27923.15	29368.1	39904.2	37706.1	31194.8	37229.3	53516

Source: Indian Harvest Database, CMIE

**Table A.21. District-wise Rainfall in Bihar (in mm)**

District	Dec-61	Dec-71	Dec-81	Dec-86	Dec-91	Dec-96	Dec-01	Dec-02	Dec-03	Dec-04	Dec-05	Dec-06	Dec-07
Begusarai	1007	1327	999	992	1106	773	758	762	1225	804	732	903	1592
Bhagalpur	1004	1363	1083	997	1292	970	866	853	0	0	1134	1178	1249
Buxar	1084	1272	1137	1049	1077	762	583	691	922	454	735	777	934
Katihar	1085	1426	1203	1091	1412	1157	1018	986	1802	2194	993	1146	1224
Khagaria	990	1328	1013	973	1104	842	803	793	1512	908	1007	1024	1472
Lakhisarai	1017	1331	1009	994	1207	794	760	758	1237	724	986	1526	1450
Munger	1003	1347	1030	984	1227	859	800	792	0	1006	1003	983	1109
Patna	1055	1287	1017	1054	1125	739	662	719	745	608	710	1065	1493
Purnia	1064	1397	1166	1067	1260	1082	988	951	1654	2299	1149	1155	1403
Saran	1050	1264	1059	1076	924	769	614	722	1082	837	926	941	1602
Sheikpura	1046	1326	1004	1014	1212	761	727	737	885	489	571	1093	1246
Vaishali	1048	1298	1020	1068	1000	710	671	751	0	44	714	1196	1738
<b>Average for Bank Districts</b>	<b>1038</b>	<b>1330</b>	<b>1062</b>	<b>1030</b>	<b>1162</b>	<b>852</b>	<b>771</b>	<b>793</b>	<b>922</b>	<b>864</b>	<b>888</b>	<b>1082</b>	<b>1376</b>
Araria	1143	1489	1250	1152	1162	1091	1080	1030	1788	1582	1111	1137	1714
Aurangbad	1128	1311	1093	1118	1401	741	622	692	1345	608	599	967	1093
Banka	1054	1432	1141	1053	1485	961	871	866	967	1449	1028	1292	1617
Bhojpur	1067	1256	1065	1068	1074	758	598	696	1046	684	852	1040	1373
Darbhangha	1024	1352	1053	1061	898	741	766	820	822	896	908	826	1611
Gaya	1132	1340	1073	1128	1464	764	674	718	1011	694	500	1074	1273
Gopalganj	1084	1342	1277	1134	845	831	646	764	860	1220	857	1105	1815
Jamui	1086	1418	1122	1082	1489	888	812	814	1072	829	510	1270	1183
Kaimur (Bhabua)	1157	1345	1233	1084	1315	767	647	719	1334	763	848	1080	1046
Kishanganj	1357	1689	1484	1449	1551	1399	1339	1258	2417	2998	1299	1034	2172
Madhepur	1002	1326	1052	992	1068	890	856	838	1363	1439	1024	1190	1358
Madubani	1052	1383	1133	1123	919	785	825	875	660	878	781	685	1805
Muzaffarpur	1052	1345	1087	1119	852	760	690	795	1051	958	835	1058	2272
Nalanda	1057	1306	1006	1036	1200	733	693	721	1080	503	496	940	1258
Nawada	1100	1381	1083	1092	1450	811	737	754	1061	654	661	1208	1179
W. Champaran	1263	1645	1828	1488	1094	1041	861	1000	1775	1270	1100	999	
E Champran	1126	1439	1337	1271	869	895	736	856	1236	1634	1071	1089	2042
Rohtas	1134	1315	1163	1093	1307	756	625	705	930	661	731	902	977
Saharsa	988	1313	1013	975	1035	836	812	800	983	965	612	864	1271
Samastpur	1013	1321	996	1017	999	728	733	766	1269	827	577	1031	1695
Sheoha	1093	1403	1200	1217	849	836	723	836	147	1748	1269	868	1605
Sitamarhi	1112	1458	1264	1269	885	833	800	896	1558	1343	976	895	1725
Siwan	1061	1296	1182	1079	821	800	611	727	1420	1015	803	811	1386
Supaul	1054	1380	1129	1069	991	894	915	904	1648	1721	1089	879	1450
<b>Average for Non-bank Districts</b>	<b>1094</b>	<b>1395</b>	<b>1120</b>	<b>1220</b>	<b>1157</b>	<b>1030</b>	<b>843</b>	<b>755</b>	<b>824</b>	<b>1203</b>	<b>1184</b>	<b>889</b>	<b>955</b>

Source: Indian Harvest Database, CMIE

**Table A.22. Construction of Deep Tubewells and Dugwell in Bihar**

	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01
Deep Tubewell	202	158	132	48	36	43	43
Dug well	11380	8149	5096	3602	2467	1415	1039

**Table A.23. Distribution of Deep Tube-wells According to the Farmers in Bihar**

Name of District	Marginal	Small	Medium	Big	Total
	( 0 - 1 ha )	( 1 - 2 ha )	( 2 - 10 ha )	( > 10 ha )	
Aurangabad	0	0	0	0	0
Banka	0	0	0	0	0
Begusarai	0	0	0	0	0
Bhagalpur	0	0	0	0	0
Bhojpur	0	0	0	0	0
Buxar	0	1	0	0	1
Darbhanga	0	0	0	0	0
East Champaran	0	0	0	0	0
Gaya	0	0	2	1	3
Gopalganj	0	0	0	0	0
Jamui	0	0	0	0	0
Jehanabad	0	0	0	3	3
Kaimur (Bhabua)	0	0	0	1	1
Katihar	0	0	0	0	0
Khagaria	0	0	0	0	0
Kishanganj	0	0	0	0	0
Lakhisarai	0	0	0	0	0
Madhepura	0	0	0	0	0
Madhubani	24	16	12	2	54
Munger	0	0	0	0	0
Muzaffarpur	0	0	0	0	0
Nalanda	0	0	0	0	0
Nawada	0	3	13	4	20
Patna	1	1	0	0	2
Purnia	0	0	0	0	0
Rohtas(Sasaram)	0	0	0	15	15
Saharsa	0	0	0	0	0
Samastipur	0	0	0	0	0
Saran	0	0	0	0	0
Shekhpura	0	0	0	0	0

Source: Minor irrigation Census, 2001, Ministry of Water Resources, Govt. of India

Table A.24. Construction of Deep Tube-wells in Bihar

Name of District	Upto 1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	Total
Aurangabad	84	4	4	1	2	1	0	0	96
Banka	3	0	0	0	0	0	0	0	3
Begusarai	225	11	8	7	0	0	0	1	252
Bhagalpur	150	2	2	0	0	0	0	1	155
Bhojpur	121	15	1	4	0	0	0	1	142
Buxar	144	3	6	0	2	0	0	0	155
Darbhanga	203	8	1	3	0	1	0	0	216
East Champaran	195	12	7	14	3	10	25	16	282
Gaya	36	0	0	9	4	4	1	5	59
Gopalganj	49	3	1	1	0	0	0	2	56
Jamui	3	0	0	0	0	0	0	0	3
Jehanabad	23	2	2	9	0	0	0	0	36
Kaimur (Bhabua)	127	2	0	2	3	1	9	3	147
Katihar	65	1	0	0	0	0	0	1	67
Khagaria	118	1	2	1	0	2	2	0	126
Kishanganj	10	0	0	0	0	0	0	0	10
Lakhisarai	45	0	0	0	0	0	0	0	45
Madhepura	31	0	2	2	0	0	0	0	35
Madhubani	494	52	42	26	17	6	2	3	642
Munger	2	0	0	0	0	0	0	0	2
Muzaffarpur	232	7	1	3	1	2	0	3	249
Nalanda	138	9	27	4	6	0	0	4	188
Nawada	94	25	16	13	1	1	0	0	150
Patna	288	8	6	1	0	2	2	1	308
Purnia	3	0	0	0	0	0	0	0	3
Rohtas(Sasaram)	77	1	1	6	1	0	1	1	88
Saharsa	15	0	0	0	0	0	0	0	15
Samastipur	246	8	1	2	0	0	0	0	257
Saran	103	4	8	21	8	6	1	0	151
Shekhpura	93	24	20	3	0	0	0	1	141

Source: Minor irrigation Census, 2001, Ministry of Water Resources, Govt. of India



Table A.25. Distribution of Deep Tube-wells in Bihar

Name of District	Govt.	Coop Societies.	Panchayat	Group of farmers	Individual Farmers	Others	Total
Araria	0	0	0	1	13651	0	13652
Aurangabad	10	0	0	4	8575	0	8589
Banka	10	0	0	1	5505	0	5516
Begusarai	90	0	0	2	21088	0	21180
Bhagalpur	1	0	1	2	11894	7	11905
Bhojpur	11	0	3	1	18291	0	18306
Buxar	0	0	0	0	13782	35	13817
Darbhanga	0	0	0	0	12569	0	12569
East Champaran	0	1	1	0	34902	0	34904
Gaya	130	14	23	12	24621	10	24810
Gopalganj	3	2	0	11	21227	0	21243
Jamui	4	8	0	0	3958	0	3970
Jehanabad	7	0	1	0	19794	0	19802
Kaimur (Bhabua)	6	1	0	0	12663	0	12670
Katihar	4	1	0	0	34147	0	34152
Khagaria	1	0	0	0	14080	0	14081
Kishanganj	2	2	0	0	10432	0	10436
Lakhisarai	0	0	0	4	7131	0	7135
Madhepura	2	0	1	0	17658	0	17661
Madhubani	97	4	1	1	15323	281	15707
Munger	87	5	0	0	3280	0	3372
Muzaffarpur	3	1	0	0	34611	0	34615
Nalanda	13	2	0	6	21015	2	21038
Nawada	9	1	7	0	17460	1	17478
Patna	19	1	0	0	27906	4	27930
Purnia	2	1	0	0	22437	0	22440
Rohtas(Sasaram)	8	2	0	2	20872	1	20885
Saharsa	0	0	0	0	11784	0	11784
Samastipur	0	0	0	0	31427	3	31430
Saran	13	27	0	1	22971	0	23012

Source: Minor irrigation Census, 2001, Ministry of Water Resources, Govt. of India

**Table A.26. Construction of Dugwells in Bihar**

Name of District	Upto 1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	Total
Aurangabad	4797	474	404	175	171	119	44	19	6203
Banka	5481	757	504	262	315	224	150	154	7847
Bhagalpur	2045	553	749	714	418	236	85	88	4888
Bhojpur	2307	135	36	16	28	23	32	20	2597
Buxar	569	89	60	23	28	15	5	0	789
East Champaran	20	1	1	0	0	0	0	0	22
Gaya	12630	1817	1192	785	631	425	233	169	17882
Gopalganj	4494	41	23	18	3	1	0	0	4580
Jamui	6013	812	591	398	317	270	195	99	8695
Jehanabad	2019	246	135	87	22	16	9	3	2537
Kaimur (Bhabua)	6660	845	519	217	153	97	47	58	8596
Katihar	15	0	0	0	0	0	0	0	15
Lakhisarai	548	163	95	84	110	48	23	64	1135
Madhepura	4	0	0	0	0	0	0	0	4
Madhubani	121	0	0	0	0	0	0	0	121
Munger	2892	253	137	109	42	22	1	4	3460
Muzaffarpur	104	0	3	0	1	0	0	0	108
Nalanda	12716	2499	1842	1375	934	697	366	301	20730
Nawada	2959	1181	1037	122	68	35	40	21	5463
Patna	3962	540	243	115	64	29	15	3	4971
Rohtas (Sasaram)	5361	283	276	175	225	153	134	32	6639
Saran	11246	218	114	328	14	28	32	1	11981
Shekhpura	413	70	68	45	12	9	0	2	619
Siwan	13788	323	78	29	36	17	0	1	14272
Vaishali	865	80	42	19	10	3	4	0	1023
<b>Bihar</b>	<b>102029</b>	<b>11380</b>	<b>8149</b>	<b>5096</b>	<b>3602</b>	<b>2467</b>	<b>1415</b>	<b>1039</b>	<b>135177</b>

Source: Minor irrigation Census, 2001, Ministry of Water Resources, Govt. of India

**Table A.27. Distribution of Dugwells According to Farmers' Holding Size in Bihar**

Name of District	Marginal (0 - 1 ha)	Small (1 - 2 ha)	Medium (2 - 10 ha)	Big (> 10 ha)	Total
Aurangabad	2211	2020	1596	191	6018
Banka	4250	2187	809	55	7301
Bhagalpur	3288	1056	461	60	4865
Bhojpur	802	1156	562	28	2548
Buxar	230	296	207	11	744
East Champaran	2	14	6	0	22
Gaya	8342	5642	3225	194	17403
Gopalganj	2148	1688	532	39	4407
Jamui	4469	2468	668	32	7637
Jehanabad	937	954	478	35	2404
Kaimur (Bhabua)	2109	2823	3061	550	8543
Katihar	0	3	10	2	15
Lakhisarai	859	193	79	3	1134
Madhepura	0	3	0	0	3
Madhubani	45	56	15	1	117
Munger	2358	712	138	32	3240
Muzaffarpur	18	72	8	0	98
Nalanda	8798	7781	3652	318	20549
Nawada	3362	1138	448	51	4999
Patna	1946	1788	905	111	4750
Rohtas (Sasaram)	1713	2105	2526	200	6544
Saran	8090	3088	665	47	11890
Shekhpura	208	248	115	21	592
Siwan	7615	4847	1357	88	13907
Vaishali	507	368	136	7	1018
Bihar	64307	42706	21659	2076	13074

Source: Minor irrigation Census, 2001, Ministry of Water Resources, Govt. of India

**Table A.28. Fertilizer Consumption in Bihar (in 000' tonnes)**

Year	Nitrogenous	Phosphate	Potash	Total
1971	65.36 (79.3%)	12.45 (15.1%)	4.65 (5.6%)	82.46
1976	98.53 (81.6%)	14.91 (12.4%)	7.26 (6.0%)	120.7
1981	148.51 (79.4%)	25.74 (13.8%)	12.8 (6.8%)	187.05
1986	326.45 (70.3%)	96.31 (20.7%)	41.89 (9.0%)	464.65
1996	506.64 (78.3%)	99.79 (15.4%)	40.72 (6.3%)	647.15
2001	607.57 (75.1%)	163.68 (20.2%)	37.6 (4.6%)	808.85
2006	708.25 (75.4%)	131.98 (14.1%)	98.7 (10.5%)	938.93
2007	807.84 (75.7%)	176.1 (16.5%)	82.78 (7.8%)	1066.72
2008	892.8 (77.3%)	183.95 (15.9%)	77.95 (6.8%)	1154.7
2009	885.06 (67.9%)	252.99 (19.4%)	165.53 (12.7%)	1303.58
2010	843.69 (67.0%)	247.45 (19.7%)	168.02 (13.3%)	1259.16

Note: Figures in parentheses are the percentage share of the total.

Source: Indian Harvest Database, CMIE

Table A.29. District-wise Consumption of Nitrogen Fertilizer (in '000 Tonnes)

District	Dec 71	Dec 76	Dec 81	Dec 86	Dec 96	Dec 01	Dec 06	Dec 07	Dec 08	Dec 09	Dec 10
Patna	10.96	7.76	11.12	23.17	34.38	30.44	39.87	42.88	45.45	46.31	40.38
Baxur						11.15	12.38	17.53	23.26	19.89	22.03
Saran	11.7	4.43	6.58	11.09	18.36	18.65	17.66	21.71	31.66	25.1	24.69
Vaishali		2.17	2.78	6.6	12.79	21.36	27.04	29.56	1.59	35.26	39.68
Begusarai		3.29	4.71	9.31	17.97	24.25	24.49	25.74	33.21	29.06	28.04
Munger	6.29	4.84	7.1	10.53	16.13	6.38	3.34	5.56	31.66	5.97	5.9
Sheikhpura						4.23	7.68	6.49	6.51	7.88	5.96
Lakhisarai						5.65	3.9	6.53	4.78	6.86	6.9
Khagaria				4.71	13.77	21.35	28.15	27.44	26.19	32.48	32.39
Bhagalpur	1.46	3.54	7.83	11.44	36.3	25.32	23.25	29.67	12.14	39.53	34.46
Purnea	1.86	2.54	4.22	18.17	21.15	22.96	31.84	35.52	16.45	45.74	44.62
Katihar		1.03	1.15	6.17	11.98	14.66	21.96	21.29	12.26	29.37	28.03
<b>Average for Bank Districts</b>	<b>6.45</b>	<b>3.7</b>	<b>5.69</b>	<b>11.24</b>	<b>20.31</b>	<b>17.2</b>	<b>20.13</b>	<b>22.49</b>	<b>20.43</b>	<b>26.95</b>	<b>26.09</b>
Nalanda		5.84	8.48	19.9	34.63	27.05	26.49	33.58	36.34	35.6	31.97
Bhojpur	14.4	8.57	13.99	26.71	31.89	30.05	33.7	42.37	51.79	45.35	42.83
Rohtas		10.21	15.66	38.33	37.9	36.44	33.94	40.61	48.91	45.11	40.11
Kaimur						11.4	11.38		18.11	19.13	17.94
Gaya	3.12	5.3	13.71	21.76	21.11	27.59	29.68	33.5	41.82	38.91	30.33
Jehanabad					10.96	12.63	10.96	16.23	11.58	12.73	10.24
Arwal										5.61	5.02
Nawada		2.08		8.41	16.85	16.51	10.89	13.35	4.23	14.22	12.57
Aurangabad		2.35	3	13.93		25.47	22.03	24.98	15.13	28.71	27.99
Siwan		3.19	4.04	8.37	8.87	9.12	15.44	19.32	22.42	21.64	20.96
Gopalganj		2.67	7.6	13.33	8.53	6.43	7.64	12.23	22.11	16.33	15.2
Muzaffarpur	4.89	5.77	8.44	10.87	20.24	29.25	39.8	42.45	13.2	51.03	46.76
E. Champaran	2.77	6.59	8.13	14.36	34.01		50.64	53.39	50.8		
W. Champaran		3.11	4.81	10.67	22.3	37.73	46.53	46.23	55.69	48.57	47.26
Sitamarh		2.11	3.42	6.9	9.9	18.69	10.74	18.03	46.42	22.15	24.28
Seohar						0.72	0.52	2.16	20.12	2.57	2.39
Darbhanga	5.64	1.93	1.96	4.62	12.35	20.55	21.06	17.18	31.28	22.68	19.74
Madhubani		1.28	1.71	3.89	4.14	9.19	7.61	11.13	20.37	13.17	13.54
Samastipur		3.38	4.79	10.01	16.14	26.42	32.12	32.79	10.25	35.33	36.69
Jamui						3.23	10.79	10.84	7.43	14.6	13.13
Banka						7.19	4.15	10.28	37.35	11.62	12.03
Saharsa	2.27	1.75	3.28	5.9	13.93	10.58	8.23	12.86	8.19	13.1	16.39
Supaul						5.66	3.08	6.92	12.94	6.52	7.69
Madhepura		2.8		7.3	9.07	14.48	12.26	15.26	5.56	14.94	15.19
Kisanganj					4.47	4.21	4.6	7.19	50.23	6.59	4.97
Araria					6.52	10.58	12.41	15.04	5.37	15.4	15.39
<b>Average for Non-bank Districts</b>	<b>3.96</b>	<b>2.21</b>	<b>3.03</b>	<b>6.44</b>	<b>9.57</b>	<b>10.96</b>	<b>10.63</b>	<b>13.31</b>	<b>21.29</b>	<b>14.89</b>	<b>15.12</b>

Source: Indian Harvest Database, CMIE

Table A.30. District-wise Consumption of Potash Fertilizer (in '000 Tonnes)

District	Dec 71	Dec 76	Dec 81	Dec 86	Dec 96	Dec 01	Dec 06	Dec 07	Dec 08	Dec 09	Dec 10
Patna	0.31	0.19	0.25	1.36	0.98	1.24	3.4	3.04	3.59	5.03	6.29
Baxur						0.34	0.38	0.51	1.07	1.88	1.67
Saran	0.32	0.48	0.89	1.39	1.85	1.86	0.95	0.85	1.14	4.38	4.45
Vaishali		0.24	0.21	0.55	0.87	1.8	2.56	1.36	0.3	7.69	9.28
Begusarai		0.32	0.51	1.75	2.48	2.98	6.66	5.2	3.86	8.02	9.16
Munger	1.08	0.44	0.66	1.22	0.63	0.07	0.06	0.35	4.65	1	1.31
Sheikhpura						0.02	0.11	0.27	0.69	0.52	0.49
Lakhisarai						0.01	0.56	0.83	0.77	1.4	1.14
Khagaria				1.23	1.26	2.17	6.26	6.88	3.98	11.32	13.1
Bhagalpur	0.07	0.31	0.84	1.5	5.8	1.78	7.91	5.98	0.92	6.35	6.92
Purnea	0.57	0.31	0.63	3.02	4.19	3.49	10.85	8.7	1.97	12.15	12.94
Katihar		0.12	0.2	1.22	3.48	0.78	5.36	3.96	1.65	9.05	9.59
Average for Bank Districts	<b>0.47</b>	<b>0.3</b>	<b>0.52</b>	<b>1.47</b>	<b>2.39</b>	<b>1.38</b>	<b>3.76</b>	<b>3.16</b>	<b>2.05</b>	<b>5.73</b>	<b>6.36</b>
Nalanda		0.2	0.41	2.52	0.48	0.69	1.83	2.27	2.94	5.04	4.84
Bhojpur	0.94	0.36	0.58	2.61	0.69	0.63	1.15	2.7	3.12	5.32	4.17
Rohtas		0.54	0.88	5.59	0.82	0.91	1.04	1.15	2.01	4.54	3.59
Kaimur						0.53	0.29		1.06	1.87	1.69
Gaya	0.18	0.25	0.78	1.76	1.09	0.27	2.25	1.83	1.94	5.16	3.25
Jehanabad					0.18	0.08	0.27	0.69	0.86	1.6	0.91
Arwal										0.73	0.35
Nawada		0.17		1.2	0.19	0.17	0.29	0.33	0.16	1.17	0.9
Aurangabad		0.19	0.17	1.7		0.55	0.69	0.69	0.4	3.05	2.03
Siwan		0.29	0.79	0.61	0.43	0.32	1	0.93	1.45	2.79	2.7
Gopalganj		0.24	1.04	2.04	0.29	0.1	0.38	0.54	1.69	1.78	1.32
Muzaffarpur	0.59	0.43	0.67	1.55	2.02	3.48	7.93	6.09	0.7	9.46	10.53
E. Champaran		0.48	0.87	2.12	2.39	1.3	4.2	3.35	4.2	7.67	7.09
W. Champaran		0.5	0.8	1.12	1.64	1.86	7.04	4.02	3.91	7.42	7.89
Sitamarhi		0.23	0.29	0.62	0.17	0.72	1.29	1.25	4.29	2.81	3.29
Seohar						0.04	N.A.	0.2	0.98	1.16	0.46
Darbhanga	0.21	0.18	0.26	0.64	0.53	1.6	3.29	1.76	3.88	4.04	4.12
Madhubani		0.1	0.24	0.45	0.48	0.51	0.36	0.74	1.85	2.07	2.63
Samastipur		0.26	0.59	1.51	2.73	2.29	6.06	4.91	0.91	7.41	9.55
Jamui						0.01	1.04	1	0.47	1.31	1.74
Banka						0.12	0.46	0.57	4.75	2.14	2.05
Saharsa	0.38	0.27	0.24	1.22	1.06	1.36	1.43	2.15	1.03	4.78	3.91
Supaul						0.69	1	1.1	2.84	1.71	2.06
Madhepura		0.16		1.39	1.17	1.46	3.9	2.71	1.08	3.67	3.99
Kisanganj					0.77	0.18	1.06	0.43	6.53	1.37	1.37
Araria					2.05	1.19	5.39	3.44	0.31	6.67	5.25
Average for Non-bank Districts	<b>0.3</b>	<b>0.2</b>	<b>0.32</b>	<b>0.97</b>	<b>1.12</b>	<b>0.85</b>	<b>2.3</b>	<b>1.69</b>	<b>2.41</b>	<b>3.26</b>	<b>3.37</b>

Source: Indian Harvest Database, CMIE

Table A.31. District-wise Consumption of Phosphate Fertilizer (in '000 Tonnes)

District	Dec 71	Dec 76	Dec 81	Dec 86	Dec 96	Dec 01	Dec 06	Dec 07	Dec 08	Dec 09	Dec 10
Patna	1.36	0.6	0.8	3.32	5.08	10.26	11.3	10.06	9.69	12.56	12.47
Baxur						1.15	1.13	3.15	3.84	4.51	5.07
Saran	0.06	0.88	1.6	2.51	6.44	7.11	2.74	3.68	5.93	8.33	7.26
Vaishali		0.41	0.66	2.26	3.84	5.13	3.69	5.45	0.55	15.01	13.47
Begusarai		0.44	0.96	3.43	4.52	10.19	7.04	9.06	7.88	11.66	10.33
Munger	2.44	0.72	1.1	3.08	1.59	0.55	0.16	1.01	8.92	1.78	2.33
Sheikhpura						0.59	0.43	1.34	2.29	1.21	1.33
Lakhisarai						0.69	0.82	1.36	1.42	3.02	2.5
Khagaria				1.53	3.45	5.92	3.33	6.88	6.24	10.4	10.31
Bhagalpur	0.15	0.39	1.47	2.5	8.12	10.42	6.39	6.76	2.9	6.89	8.24
Purnea	1.32	0.86	1.08	6.95	5.87	5.59	9.22	9.85	3.99	10.22	9.62
Katihar		0.24	0.25	3.02	2.08	7.52	5.78	5.58	4.21	8.99	8.93
<b>Average for Bank Districts</b>	<b>1.07</b>	<b>0.57</b>	<b>0.99</b>	<b>3.18</b>	<b>4.55</b>	<b>5.43</b>	<b>4.34</b>	<b>5.35</b>	<b>4.82</b>	<b>7.88</b>	<b>7.66</b>
Nalanda		0.45	0.78	4.83	3.02	5.73	4.35	6.99	7.09	9	9.07
Bhojpur	5.18	1.15	1.71	6.04	3.18	4.69	4.8	7.79	10.3	9.47	10.24
Rohtas		1.48	2.58	12.76	6.38	10.21	3.53	6.8	8.85	9.54	9.6
Kaimur						2.48	0.99		3.49	4.68	4.94
Gaya	0.47	0.6	1.57	4.62	6.72	5.18	6.91	6.14	7.74	8.91	8.28
Jehanabad					0.94	1.82	1.13	2.28	2.63	3.26	3.75
Arwal										2.5	2.25
Nawada		0.34		2.53	3.09	2.17	1.16	1.75	0.92	3.1	2.48
Aurangabad		0.35	0.48	4.03		4.08	2.54	4.43	1.54	6.5	6.83
Siwan		0.74	1.1	2.68	1.53	2.05	2.27	3.85	5.22	7.37	6.95
Gopalganj		0.82	1.7	4.78	0.74	0.81	0.64	2.21	5.53	4.58	4.73
Muzaffarpur	0.16	0.73	1.3	4.39	6.45	8.3	8.17	8.92	3.2	13.97	12.68
E. Champaran		0.65	1.52	4.31	5.46	7.43	6.33	9.3	9.01	11.28	11.97
W. Champaran		0.78	1.43	3.22	2.71	9.16	8.73	11.39	8.09	12.08	11.15
Sitamarhi		0.27	0.45	1.32	0.44	2.71	1.92	2.99	10.56	5.6	6.05
Seohar						0.06	N.A.	0.37	3.97	1.05	0.89
Darbhanga	0.29	0.29	0.41	1.38	4.52	6.92	4.75	5.04	9.1	8.25	6.79
Madhubani		0.32	0.47	1.78	0.59	2.62	0.92	2.36	5.15	5.3	4.47
Samastipur		0.39	1.6	3.66	6.02	9.44	6.29	7.67	2.55	10.54	10.79
Jamui						0.47	2.81	2.96	1.01	2.69	2.88
Banka						0.98	0.92	1.61	4.79	1.89	2.34
Saharsa	1.02	0.42	0.72	2.27	2.06	2.47	1.35	3.1	1.83	3.81	4.42
Supaul						2.11	1.07	2.05	2.76	2.14	2.32
Madhepura		0.59		3.11	2.48	3.73	2.42	4.72	1.42	3.81	3.87
Kisanganj					0.39	0.13	1.23	1.23	8.4	1.53	1.21
Araria					2.08	2.81	4.72	5.97	0.94	5.56	4.64
<b>Average for Non-bank Districts</b>	<b>0.66</b>	<b>0.38</b>	<b>0.73</b>	<b>2.25</b>	<b>2.32</b>	<b>2.87</b>	<b>2.58</b>	<b>3.34</b>	<b>4.37</b>	<b>4.35</b>	<b>4.22</b>

Source: Indian Harvest Database, CMIE

Table A.32. Area, Production &amp; Yield of Different Crops in Bihar

Area in ha., Prod. in MT, Yield in kg/ha.										
Sl. No.	Crops	2003-2004			2004-2005			2005-2006		
		Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield
1	Rice	3,577,988 (48.24%)	5,447,795	1,523	3,188,246 (45.95%)	2,625,135	823	3,252,357 (46.91%)	3,495,932	1,075
2	W heat	2,076,839 (28%)	3,688,941	1,776	2,022,347 (29.16%)	3,279,946	1,622	2,003,728 (28.90%)	2,763,324	1,379
3	Maize	616,430 (8.31%)	1,473,569	2,390	626,853 (9.04%)	1,491,183	2,379	648,822 (9.36%)	1,361,110	2,098
4	Jowar	1,513 (0.02%)	1,527	1,009	2,006 (0.03%)	2,034	1,014	4,112 (0.06%)	4,203	1,022
5	Bajra	1,568 (0.02%)	1,638	1,045	1,193 (0.02%)	1,309	1,097	4,338 (0.06%)	4,591	1,058
6	Ragi	15,187 (0.2%)	10,375	683	15,424 (0.22%)	10,900	707	14,506 (0.21%)	11,277	777
7	Barley	21,446 (0.29%)	24,007	1,119	18,379 (0.27%)	20,306	1,105	16,302 (0.24%)	18,813	1,154
8	Small Millets	7,010 (0.09%)	5,325	760	5,457 (0.08%)	4,156	762	7,369 (0.11%)	5,506	747
9	<b>Total Coarse Cereals (3 to 8)</b>	663154	1,516,441	2,287	669,312	1,529,888	2,286	695,449	1,405,500	2,021
10	<b>Total Cereals (1 to 8)</b>	6,317,981	10,653,177	1,686	5,879,905	7,434,969	1,264	5,951,534	7,664,756	1,288
11	Gram	80,322 (1.08%)	78,585	978	73,278 (1.06%)	60,960	832	62,238 (0.90%)	56,061	901
12	Lentil	171,037 (2.31%)	159,754	934	179,358 (2.59%)	131,190	731	162,545 (2.34%)	114,525	705
13	Khesari	133,064 (1.79%)	122,574	921	117,982 (1.7%)	84,948	720	92,079 (1.33%)	78,635	854
14	Pea	23740 (0.32%)	22,172	934	23,104 (0.33%)	20,908	905	24,116 (0.35%)	21,488	891
15	Summer Moong	181,373 (2.45%)	88,908	490	171,178 (2.47%)	87,539	511	174,123 (2.51%)	96,218	553
16	Other Rabi Pulses	3,298 (0.04%)	2,450	743	2,322 (0.03%)	1,777	765	2,408 (0.03%)	1,929	801
17	Tur	38,855 (0.52%)	48,100	1,238	35,276 (0.51%)	49,189	1,394	33,311 (0.00%)	43,040	1,292
18	Moong	8,398 (0.11%)	4,231	504	6,835 (0.1%)	3,854	564	8,247 (0.12%)	4,898	594
19	Urad	24,199 (0.33%)	18,009	744	24,412 (0.35%)	18,068	740	25,197 (0.36%)	19,443	772
20	Ghaghra	421 (0.01%)	232	551	502 (0.01%)	248	494	477 (0.01%)	236	495
21	Kulthi	15,425 (0.21%)	11,399	739	14,296 (0.21%)	12,367	865	11,744 (0.17%)	10,101	860
22	Other kharif Pulses	740 (0.01%)	397	536	681 (0.01%)	354	520	903 (0.01%)	520	576
23	<b>Total Pulses</b>	680,872	556811	818	649,224	471,402	726	597,388	447,094	748
24	<b>Total Foodgrain</b>	6,998,853	11,209,988	1,602	6,529,129	7,906,371	1,211	6,548,922	8,111,850	1,239
25	Carstor seed	155 (0%)	154	994	150 (0%)	141	940	911 (0.01%)	450	494

Area in ha., Prod. in MT, Yield in kg/ha.										
Sl. No.	Crops	2003-2004			2004-2005			2005-2006		
		Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield
26	Groundnut	468 (0.01%)	231	494	769 (0.01%)	381	495	164 (0.00%)	154	939
27	Sesamum	3,795 (0.05%)	2,840	748	3,497 (0.05%)	2,741	784	3,188 (0.05%)	2,554	801
28	Sunflower	17,531 (0.24%)	24,159	1,378	21,183 (0.31%)	29,122	1,375	22,713 (0.33%)	30,473	1,342
29	Rapeseed and Mustard	83,666 (1.13%)	68,966	824	83,339 (1.2%)	59,802	718	83,622 (1.21%)	77,365	925
30	Linseed	34,696 (0.47%)	27,202	784	27,768 (0.4%)	23,958	863	27,135 (0.39%)	23,227	856
31	Safflower				214 (0%)	17	799	173 (0.00%)	138	798
32	<b>Total oil seeds</b>	140,311	123,552	881	136,920	116,316	850	137,906	134,361	974
33	Jute	154,588 (2.08%)	1,147,358	1,336	148,876 (2.15%)	1,223,691	1,564	131,049 (1.89%)	1,329,256	41,884
34	Mesta	20,011 (0.27%)	138,908	1,249	16,057 (0.23%)	147,292	1,691	14,532 (0.21%)	143,039	1,772
35	Sugarcane	103,599 (1.4%)	4,285,888	41,370	104,457 (1.51%)	3,769,207	36,084	101,243 (1.46%)	4,240,413	41,884

Note: Production of Jute & Mesta in 000' Bales(1 bales = 180 kg) ; Yield of Potato & Onion in MT/ha

Source: Department of Agriculture, Govt. of Bihar



**Table A.33. Area, Production & Yield of Different Crops in Bihar**

Sl. No.	Crops	Area in ha., Prod. In MT, Yield in kg/ha.					
		2006-2007			2007-2008		
		Area	Prod.	Yield	Area	Prod.	Yield
1	Rice	3,463,463 (48%)	5,131,179	1,482	3,473,015 (48%)	4,472,679	1,288
2	W heat	2,069,444 (29%)	4,149,019	2,005	2,131,232 (29%)	4,974,663	2,334
3	Maize	646,703 (9%)	1,754,410	2,713	657,884 (9%)	1,857,009	2,823
4	Jowar	3,688 (0%)	3,804	1,031	3,426 (0%)	3,762	1,098
5	Bajra	4,708 (0%)	5,005	1,063	3,497 (0%)	3,858	1,103
6	Ragi	14,142 (0%)	13,335	943	13,222 (0%)	7,998	605
7	Barley	16,961 (0%)	18,708	1,103	15,402 (0%)	18,513	1,202
8	Small Millets	4,526 (0%)	3,391	749	7,000 (0%)	5,169	738
9	<b>Total Coarse Cereals (3 to 8)</b>	690,728	1,798,653	2,604	700,431	1,896,309	2,707
	<b>Total Cereals (1 to 8)</b>	<b>6,223,635</b>	<b>11,078,851</b>	<b>1,780</b>	<b>6,304,678</b>	<b>11,343,651</b>	<b>1,799</b>
13	Gram	70,397 (1%)	59,609	847	64,105 (1%)	63,473	990
14	Lentil	166,785 (2%)	121,098	726	158,487 (2%)	126,134	796
15	Khesari	102,872 (1%)	81,156	789	98,114 (1%)	82,348	839
16	Pea	23,934 (0%)	22,255	930	23,288 (0%)	25,083	1,077
17	Summer Moong	155,887 (2%)	79,888	512	156,044 (2%)	93,579	600
18	Other Rabi Pulses	3,287 (0%)	2,386	726	3,052 (0%)	2,261	0
19	Tur	37,508 (1%)	46,504	1,240	30,860 (0%)	42,667	1,383
20	Moong	9,184 (0%)	6,023	656	8,834 (0%)	5,358	607
21	Urad	24,891 (0%)	19,348	777	22,366 (0%)	17,497	782
22	Ghaghra	883 (0%)	637	721	994 (0%) (0%)	885	890
23	Kulthi	13,926 (0%)	12,016	863	13,711 (0%)	12,739	929
24	Other kharifPuls	868 (0%)	503	579	1,403 (0%)	917	654
26	<b>Total Pulses</b>	<b>610,422</b>	<b>451,423</b>	<b>740</b>	<b>581,258</b>	<b>472,941</b>	<b>814</b>
27	<b>Total Foodgrain</b>	<b>6,834,057</b>	<b>11,530,274</b>	<b>1,687</b>	<b>6,885,936</b>	<b>11,816,592</b>	<b>1,716</b>
28	Carstor seed	115 (0%)	109	948	203 (0%)	194	956
29	Groundnut	1,006 (0%)	497	494	1,207 (0%)	868	719
30	Sesamum	3,227	2,497	774	2,832	2,245	793

Area in ha., Prod. In MT, Yield in kg/ha.							
Sl. No.	Crops	2006-2007			2007-2008		
		Area	Prod.	Yield	Area	Prod.	Yield
		(0%)			(0%)		
31	Sunflower	21,513 (0%)	28,590	1,329	22,052 (0%)	30,646	1,390
32	Rapeseed and Mustard	86,101 (1%)	83,856	974	88,126 (1%)	87,464	992
33	Linseed	29,638 (0%)	25,162	849	27,507 (0%)	22,691 (0%)	825
34	Safflower	80 (0%)	64	800	115 (0%)	92	800
35	<b>Total oil seeds</b>	141,680	140,775	994	142,042	144,200	1,015
37	Jute	132,644 (2%)	1,353,967	1,837	131,627 (2%)	1,242,822	1,700
38	Mesta	17,646 (0%)	151,245	1,543	22,626 (0%)	209,564	1,667
40	Sugarcane	117,494 (2%)	5,416,400	46,092	107,039 (1%)	4,027,229	37,624

Source: Department of Agriculture, Govt. of Bihar

**Table A.34. Area, Production & Yield of Different Crops in Bihar**

Sl. No.	Crops	Area in ha, Prod. In MT, Yield in kg/ha.					
		2008-2009 (Last Est.)			2009-2010 (Forth Adv. Est.)		
		Area	Prod.	Yield	Area	Prod.	Yield
1	Rice	3,495,734 (47.76%)	5,590,352	1,599	3,180,280 (44.77%)	3,620,690	1,138
2	W heat	2,158,327 (29.49%)	4,410,017	2,043	2,226,680 (31.34%)	4,623,000	2,076
3	Maize	640,455 (8.75%)	1,714,001	2,676	652,170 (9.18%)	1,713,930	2,628
4	Jowar	2,399 (0.03%)	2,540	1,059	3,930 (0.06%)	4,310	1,097
5	Bajra	2,969 (0.04%)	3,599	1,212	4,170 (0.06%)	4,990	1,197
6	Ragi	11,435 (0.16%)	9,296	813	10,680 (0.15%)	8,760	820
7	Barley	14,592 (0.20%)	15,898	1,090	12,730 (0.18%)	14,140	1,111
8	Small Millets	7,832 (0.11%)	5,993	765	5,080 (0.07%)	3,930	774
<b>9</b>	<b>Total Coarse Cereals (3 to 8)</b>	<b>679,682</b>	<b>1,751,327</b>	<b>2,577</b>	<b>688,760</b>	<b>1,750,060</b>	<b>2,541</b>
	<b>Total Cereals (1 to 8)</b>	<b>6,333,743</b>	<b>11,751,696</b>	<b>1,855</b>	<b>6,095,720</b>	<b>9,993,750</b>	<b>1,639</b>
13	Gram	61,214 (0.84%)	56,637	925	60,330 (0.85%)	60,660	1,005
14	Lentil	163,773 (2.24%)	128,599	785	171,730 (2.42%)	147,800	861
15	Khesari	97,195 (1.33%)	79,791	821	92,960 (1.31%)	94,790	1,020
16	Pea	23,768 (0.32%)	22,865	962	23,290 (0.33%)	22,850	981
17	Summer Moong	162,666 (2.22%)	108,935	670	160,690 (2.26%)	94,650	589
18	Other Rabi Pulses	4,159 (0.06%)	3,082	741	3,670 (0.05%)	2,700	736
19	Tur	28,139 (0.38%)	33,119	1,177	35,980 (0.51%)	49,910	1,387
20	Moong	8,587 (0.12%)	5,609	653	8,980 (0.13%)	5,880	655
21	Urad	21,444 (0.29%)	17,980	838	26,370 (0.37%)	22,460	852
22	Ghaghra				2,060 (0.03%)	1,360	660
23	Kulthi	11,308 (0.15%)	10,404	920	12,840 (0.18%)	10,750	837

Sl. No.	Crops	Area in ha, Prod. In MT, Yield in kg/ha.					
		2008-2009 (Last Est.)			2009-2010 (Forth Adv. Est.)		
		Area	Prod.	Yield	Area	Prod.	Yield
24	Other kharifPuls	2,116 (0.03%)	1,414	668			
26	<b>Total Pulses</b>	584,369	468,435	802	598,900	513,810	858
27	<b>Total Foodgrain</b>	6,918,112	12,220,131	1,766	6,694,620	10,507,560	1,570
28	Carstor seed	185 (0.00%)	177	957	180 (0.00%)	180	1,000
29	Groundnut	1,734 (0.02%)	857	494	1,650 (0.02%)	820	497
30	Sesamum	2,298 (0.03%)	1,842	802	3,230 (0.05%)	2,600	805
31	Sunflower	22,419 (0.31%)	31,062	1,386	23,760 (0.33%)	31,050	1,307
32	Rapeseed and Mustard	85,265 (1.16%)	81,811	959	87,220 (1.23%)	90,800	1,041
33	Linseed	25,957 (0.35%)	21,959	846	27,100 (0.38%)	22,930	846
34	Safflower	215 (0.00%)	172	800	220 (0.00%)	170	773
35	<b>Total oil seeds</b>	138,073	137,880	999	143,360	148,550	1,036
37	Jute	131,949 (1.80%)	1,054,798	1,439	127,340 (1.79%)	1,161,090	1,641
38	Mesta	19,019 (0.26%)	165,323	1,618	19,420 (0.27%)	144,310	1,338
40	Sugarcane	111,902 (1.53%)	4,959,918	44,324	119,420 (1.68%)	4,999,620	41,866

Source: Department of Agriculture, Govt. of Bihar

Table A.35. Area used for Production of Rice in the Districts of Bihar (in hectares)

District	2000-01	2001-02	2002-03	2003-04	2004-05	2006-07
Baghalpur	46448	46041	45960	45055	41693	48200
Begusarai	23103	28367	29297	26902	24898	24451
Buxar	84153	73347	67949	67878	58545	82536
Katihar	125197	125811	130849	126839	116604	106491
Khagaria	24885	28290	26283	23568	20276	22217
Lakhisaria	31295	29093	33473	30314	28204	24520
Patna	99926	104738	108394	100978	76258	88480
Purnia	114767	120395	127367	120397	113594	123851
Saran	92523	80174	87310	78924	81437	86752
Sheikhpura	23987	13046	30373	29386	27218.8	39302
Vaishali	62874	61511	62183	62188	60592	59596
Monghyr	46774	38525	27926	38981	38474	59693
<b>Average For Bank Districts</b>	<b>64661</b>	<b>62445</b>	<b>64780</b>	<b>62618</b>	<b>57316.57</b>	<b>63841</b>
Araria						138639
Arwal				31856	24656	
Aurangabad	131316	164109	176397	173050	105259	171133
Banka			103299	100564	71841	99429
Kaimur	99500	108673	94093	109947	95307	133136
Bhojpur	108849	111618	111685	106433	96763	85454
Champanan (East)	192009	201290	189667	170981	187580	212875
Champanan (West)	186268	158125	160977	157932	169039	168920
Darbhanga	92701	72738	94065	100718	93695	74855
Gaya	143648	152985	147435	160989	72404	54595
Gopalganj	92265	94283	94197	91125	89838	75801
Jahanabad	86295	84043	61340	44571	34334	84720
Kishanganj	112975	95883	87376	102693	102598	82768
Madhubani	191082	179854	182561	176482	169632	158929
Madhepura	85070	89465	86669	79125	76801	78281
Muzaffarpur	130230	134716	146674	154116	151329	139377
Nalanda	123926	87819	93295	99066	94061	95385
Nawadha	82483	80834	81106	78474	37552	73308
Rohtas	213648	197725	193291	195726	178297	166681
Saharsa	102816	94029	94686	88143	79329	87740
Samastipur	87852	84598	84977	83803	63697	70238
Sheohar	16141	26960	23524	25310	24164	23671
Sitamarhi	91557	123360	106844	103388	71973	92512
Siwan	105977	109711	105913	105036	113061	106790
Supaul			116838	124978	116429	102061
Jamui	47597	37981	53386	52784	48284	
<b>Average For Non-Bank Districts</b>	<b>114737</b>	<b>113218</b>	<b>112096</b>	<b>108692</b>	<b>94717</b>	<b>107387</b>

Source: Bihar through Figures, 2007, Directorate of Economics and Statistics, Govt. of Bihar

Table A.36. Production of Rice in the Districts of Bihar (in tonnes)

District	2000-01	2001-02	2002-03	2003-04	2004-05	2006-07
Baghalpur	51776	57017	51558	57045	20412	114228
Begusarai	23521	32663	28473	36330	12592	33919
Buxar	225068	183073	170384	154420	22366	187071
Katihar	160312	176206	168475	155497	105673	138899
Khagaria	14715	14819	5977	22168	5156	19132
Lakhisaria	47188	41233	48097	42299	15913	56289
Monghyr	46774	38525	27926	38981	38474	59693
Patna	202790	203542	218176	230566	43374	145350
Purnia	165399	145730	145758	188409	90812	118237
Saran	131329	97972	99238	141486	58822	97669
Sheikhpura	31950	20193	57047	38431	2844	94300
Vaishali	97965	88866	80475	44254	18675	46071
<b>Average (Bank Districts)</b>	<b>99899</b>	<b>91653</b>	<b>91799</b>	<b>95824</b>	<b>36259</b>	<b>92572</b>
Araria						142541
Arwal				54084	19357	
Aurangabad	257326	345060	334134	312702	120193	444650
Banka			145882	150537	97758	258065
Kaimur	193229	271478	246883	341878	137845	310928
Bhojpur	252862	243841	207493	224770	31775	226802
Champanan (East)	237240	275936	264547	242179	117723	166100
Champanan (West)	388842	270832	296371	227115	127864	167909
Darbhanga	89287	65161	70097	102002	41056	65429
Gaya	229902	257723	244069	246468	13502	80617
Gopalganj	112602	124793	110118	134432	122631	89959
Jahanabad	134133	163476	100679	80925	13230	156043
Kishanganj	130584	98342	93800	146778	71253	75595
Madhubani	216912	173059	141280	176318	46846	141393
Madhepura	110802	95687	115228	117017	86041	89689
Muzaffarpur	164967	144543	158660	165258	43067	95559
Nalanda	116419	132648	83225	96891	17099	227246
Nawadha	91166	131561	123596	127430	13022	147689
Rohtas	544066	492175	465583	517411	465646	468067
Saharsa	153859	92994	94089	107515	70393	86432
Samastipur	94341	90791	66881	67996	12112	41689
Sheohar	21644	32885	29540	12071	10866	12351
Sitamarhi	102317	146387	111241	130879	33271	64415
Siwan	133368	131447	130564	122387	109707	148459
Supaul			142709	164591	119930	120735
Jamui	50893	27598	70195	60080	20970	88727
<b>Average (Non-Bank Districts)</b>	<b>173944</b>	<b>173110</b>	<b>160286</b>	<b>165189</b>	<b>78526</b>	<b>156684</b>

Source: Bihar through Figures, 2007, Directorate of Economics and Statistics, Govt. of Bihar

Table A.37. Yield of Rice in the Districts of Bihar (in tonnes/hectare)

District	2000-01	2001-02	2002-03	2003-04	2004-05	2006-07
Baghalpur	1.11	1.24	1.12	1.27	0.49	2.37
Begusarai	1.02	1.15	0.97	1.35	0.51	1.39
Buxar	2.67	2.5	2.51	2.27	0.38	2.27
Katihar	1.28	1.4	1.29	1.23	0.91	1.3
Khagaria	0.59	0.52	0.23	0.94	0.25	0.86
Lakhisaria	1.51	1.42	1.44	1.4	0.56	2.3
Monghyr	1.5	1.44	1.19	1.5	1.5	1.99
Patna	2.03	1.94	2.01	2.28	0.57	1.64
Purnia	1.44	1.21	1.14	1.56	0.8	0.95
Saran	1.42	1.22	1.14	1.79	0.72	1.13
Sheikhpura	1.33	1.55	1.88	1.31	0.33	2.4
Vaishali	1.56	1.44	1.29	0.71	0.31	0.77
<b>Average (Bank Districts)</b>	<b>1.46</b>	<b>1.42</b>	<b>1.35</b>	<b>1.47</b>	<b>0.61</b>	<b>1.61</b>
Araria						1.03
Arwal				1.7	0.79	
Aurangabad	1.96	2.1	1.89	1.81	1.14	2.6
Banka			1.41	1.5	1.36	2.6
Kaimur	1.94	2.5	2.62	3.11	1.45	2.34
Bhojpur	2.32	2.18	1.86	2.11	0.33	2.65
Champan(East)	1.24	1.37	1.39	1.42	0.63	0.78
Champan(West)	2.09	1.71	1.84	1.44	0.76	0.99
Darbhangha	0.96	0.9	0.75	1.01	0.44	0.87
Gaya	1.6	1.68	1.66	1.53	0.19	1.48
Gopalganj	1.22	1.32	1.17	1.48	1.37	1.19
Jahanabad	1.55	1.95	1.64	1.82	0.39	1.84
KISHANGANJ	1.16	1.03	1.07	1.43	0.69	0.91
MADHUBANI	1.14	0.96	0.77	1	0.28	0.89
MADHEPURA	1.3	1.07	1.33	1.48	1.12	1.15
MUZAFFARPUR	1.27	1.07	1.08	1.07	0.28	0.69
NALANDA	0.94	1.51	0.89	0.98	0.18	2.38
NAWADHA	1.11	1.63	1.52	1.62	0.35	2.01
ROHTAS	2.55	2.49	2.41	2.64	2.61	2.81
SAHARSA	1.5	0.99	0.99	1.22	0.89	0.99
SAMASTIPUR	1.07	1.07	0.79	0.81	0.19	0.59
SHEOHAR	1.34	1.22	1.26	0.48	0.45	0.52
SITAMARHI	1.12	1.19	1.04	1.27	0.46	0.7
SIWAN	1.26	1.2	1.23	1.17	0.97	1.39
SUPAUL			1.22	1.32	1.03	1.18
JAMUI	1.07	0.73	1.31	1.14	0.43	1.76
<b>Average (Non-Bank Districts)</b>	<b>1.44</b>	<b>1.45</b>	<b>1.38</b>	<b>1.46</b>	<b>0.75</b>	<b>1.45</b>

Source: Bihar through Figures, 2007, Directorate of Economics and Statistics, Govt. of Bihar

**Table A.38. Area Used for the Production of Wheat in the Districts of Bihar (in hectares)**

District	2000-01	2001-02	2002-03	2003-04	2004-05	2006-07
Baghalpur	42251	42781	42187	43502	56392	44159
Begusarai	60737	56277	56065	55379	52639	52751
Buxar	45742	46633	46647	45684	65969	60699
Katihar	43144	47809	43461	46803	36216	35316
Khagaria	35783	41772	41069	40787	41286	32229
Patna	61360	61484	63403	61820	59857	57643
Purnia	52485	58812	57017	58778	51855	46296
Lakhisaria	23133	20020	25035	23938	21137	30061
Saran	91452	90027	98192	94593	94074	88112
Sheikhpura	20234	19323	17486	22287	15893	20530
Vaishali						47880
Monghyr	22802	21320	19350	22780	18418	18205
<b>Average (Bank Districts)</b>	<b>45375</b>	<b>46023</b>	<b>46356</b>	<b>46941</b>	<b>46703</b>	<b>44490</b>
Araria						57551
Arwal				14770	11622	
Aurangabad	55516	55528	57409	53655	52479	61320
Banka			26260		21538	28781
Kaimur	66012	69409	60977	63927	64511	61071
Bhojpur	67312	82212	82037	76500	49786	75252
Champanan (East)	113956	114857	81431	91390	98001	98681
Champanan (West)	83236	84041	80092	79151	80131	83627
Darbhanga	60446	59395	66303	73492	69647	67181
Gaya	51685	51878	71524	63367	48810	73663
Gopalganj	78256	86361	87218	85212	84361	83202
Jahanabad			34230	19220	22710	32803
Kishanganj	25552	28459	29190	27750	28121	21676
Madhubani	69182	72068	87324	82822	92281	82150
Madhepura	51512	51601	50082	38948	38450	36629
Muzaffarpur	85586	85827	86840	90699	92891	85448
Nalanda	88154	101255	83416	83849	81480	82238
Nawadha	45237	45680	49407	49812	43423	45191
Rohtas	119690	150461	132763	128102	119130	135644
Saharsa	54469	49963	50013	43708	44093	42621
Samastipur	55149	54766	52095	52112	52126	51367
Sheohar	11962	10936	10944	10838	10942	14075
Sitamarhi	52744	70696	70712	52930	49806	68215
Siwan	97531	93941	98714	84459	85638	91888
Supaul	43299	47414	43369	39075	44743	50795
Jamui	20851	20490	17278	16972	15177	11777
<b>Average (Non-bank districts)</b>	<b>63515.32</b>	<b>67601.73</b>	<b>62901.17</b>	<b>59281.67</b>	<b>56075.88</b>	<b>61713.84</b>

Source: Bihar through Figures, 2007, Directorate of Economics and Statistics, Govt. of Bihar,



**Table 3.39. Production of Wheat in the Districts of Bihar (in tonnes)**

District	2000-01	2001-02	2002-03	2003-04	2004-05	2006-07
Baghalpur	87814	69488	63061	76853	72898	73965
Begusarai	145269	107892	103343	107492	88559	114505
Buxar	131621	113817	127040	126276	123090	123162
Katihar	94508	83436	69677	56043	42603	44389
Khagaria	63733	60395	52928	61432	70979	47665
Patna	162834	145488	163022	158649	111277	123775
Purnia	94510	91884	84862	71463	59646	62224
Lakhisaria	50877	30104	56500	51182	27249	74091
Saran	219828	212755	188654	208739	200718	206367
Sheikhpura	38098	30904	31902	39392	23427	41845
Vaishali						120298
Monghyr	38970	31234	22678	41423	34678	33736
<b>Average (Bank Districts)</b>	<b>102551</b>	<b>88854</b>	<b>87606</b>	<b>90813</b>	<b>77739</b>	<b>88835</b>
Araria						40153
Arwal				40533	21265	
Aurangabad	113367	110171	121475	111218	74460	124774
Banka			36958		27735	53142
Kaimur	162507	175141	162476	144491	105395	131927
Bhojpur	171824	205799	164475	185606	91356	190165
Champanan (East)	255835	233874	143375	143031	208865	199138
Champanan (West)	246107	212254	170399	141538	177609	159715
Darbhanga	99524	65825	99172	97345	120068	126518
Gaya	95283	147132	143891	127641	54608	156981
Gopalganj	193138	283784	163081	199739	115719	208168
Jahanabad			80656	47494	43974	72142
Kishanganj	40741	44737	47913	22669	37283	27904
Madhubani	106501	94980	114682	65802	74322	131494
Madhepura	120800	98516	81820	40681	70831	53177
Muzaffarpur	185053	179819	162133	129362	144180	163884
Nalanda	177138	189805	157880	124225	67059	157209
Nawadha	75350	82304	99484	95080	40440	97142
Rohtas	253865	326907	322003	322248	245078	330444
Saharsa	149817	94601	93821	79240	71703	82012
Samastipur	122104	122758	87958	59571	96491	143248
Sheohar	22211	25480	19140	18893	16571	19128
Sitamarhi	91912	152426	119007	84738	80475	118146
Siwan	201281	208778	193517	181132	179321	191136
Supaul	109076	108088	91786	34720	96752	94125
Jamui	23128	27920	19868	22120	17409	17647
<b>Average For Non Bank Districts</b>	<b>137116.5</b>	<b>145050</b>	<b>120707.1</b>	<b>104963.2</b>	<b>91158.76</b>	<b>123580.76</b>

Source: Bihar through Figures, 2007, Directorate of Economics and Statistics, Bihar, Patna

**Table A.40. Yield of Wheat in the districts of Bihar (in tonnes/hectare)**

Districts	2000-01	2001-02	2002-03	2003-04	2004-05	2006-07
Baghalpur	2.08	1.62	1.49	1.77	1.29	1.67
Begusarai	2.39	1.92	1.84	1.94	1.68	2.17
Buxar	2.88	2.44	2.72	2.76	1.87	2.03
Katihar	2.19	1.75	1.60	1.20	1.18	1.26
Khagaria	1.78	1.45	1.29	1.51	1.72	1.48
Patna	2.65	2.37	2.57	2.57	1.86	2.15
Purnia	1.80	1.56	1.49	1.22	1.15	1.34
Lakhisarai	2.20	1.50	2.26	2.14	1.29	2.46
Saran	2.40	2.36	1.92	2.21	2.13	2.34
Sheikhpura	1.88	1.60	1.82	1.77	1.47	2.04
Vaishali						2.51
Monghyr	1.71	1.47	1.17	1.82	1.88	1.85
<b>Average For Bank Districts</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>	<b>2</b>
Araria						0.70
Arwal				2.74	1.83	
Aurangabad	2.04	1.98	2.12	2.07	1.42	2.03
Banka			1.41		1.29	1.85
Kaimur	2.46	2.52	2.66	2.26	1.63	2.16
Bhojpur	2.55	2.50	2.00	2.43	1.83	2.53
Champanan (East)	2.25	2.04	1.76	1.57	2.13	2.02
Champanan (West)	2.96	2.53	2.13	1.79	2.22	1.91
Darbhanga	1.65	1.11	1.50	1.32	1.72	1.88
Gaya	1.84	2.84	2.01	2.01	1.12	2.13
Gopalganj	2.47	3.29	1.87	2.34	1.37	2.50
Jahanabad	1.87	2.15	2.36	2.47	1.94	2.20
Kishanganj	1.59	1.57	1.64	0.82	1.33	1.29
Madhubani	1.54	1.32	1.31	0.79	0.81	1.60
Madhepura	2.35	1.91	1.63	1.04	1.84	1.45
Muzaffarpur	2.16	2.10	1.87	1.43	1.55	1.92
Nalanda	2.01	1.87	1.89	1.48	0.82	1.91
Nawadha	1.67	1.80	2.01	1.91	0.93	2.15
Rohtas	2.12	2.17	2.43	2.52	2.06	2.44
Saharsa	2.75	1.89	1.88	1.81	1.63	1.92
Samastipur	2.21	2.24	1.69	1.14	1.85	2.79
Sheohar	1.86	2.33	1.75	1.74	1.51	1.36
Sitamarhi	1.74	2.16	1.68	1.60	1.62	1.73
Siwan	2.06	2.22	1.96	2.14	2.09	2.08
Supaul	2.52	2.28	2.12	0.89	2.16	1.85
Jamui	1.11	1.36	1.15	1.30	1.15	1.50
<b>Average For Non Bank Districts</b>	<b>2.08</b>	<b>2.09</b>	<b>1.87</b>	<b>1.73</b>	<b>1.59</b>	<b>1.92</b>

Source: Bihar through Figures, 2007, Directorate of Economics and Statistics, Bihar, Patna

Table A.41. Area and Production of Vegetables in Bihar

Area in '000 ha/Production in '000 tonnes								
Crops	2005-06		2006-07		2007-08		2008-09	
Area	Prodn.	Area	Prodn.	Area	Prodn.	Area	Prodn.	Area
Potato	-	-	322.84 (39.17%)	5741.29 (42.19%)	315.46 (38.30%)	6019.65 (42.79%)	310.33 (37.53%)	5033.58 (37.60%)
Onion	49.80 (10.04%)	1011.70 (13.93%)	50.47 (6.12%)	962.71 (7.07%)	51.29 (6.23%)	1019.61 (7.25%)	51.61 (6.24%)	946.60 (7.07%)
Tomato	46.00 (9.27%)	727.20 (10.01%)	46.46 (5.64%)	916.77 (6.74%)	46.23 (5.61%)	921.87 (6.55%)	46.39 (5.61%)	1037.19 (7.75%)
Cauliflower	59.80 (12.5%)	938.50 (12.92%)	60.14 (7.30%)	1008.98 (7.41%)	60.66 (7.36%)	1023.89 (7.28%)	60.97 (7.37%)	1043.84 (7.80%)
Cabbage	36.60 (7.38%)	578.30 (7.96%)	37.00 (4.49%)	623.46 (4.58%)	37.45 (4.55%)	638.11 (4.54%)	38.33 (4.64%)	676.98 (5.06%)
Brinjal	53.70 (10.82%)	1031.00 (14.20%)	54.07 (6.56%)	1120.58 (8.23%)	54.55 (6.62%)	1158.16 (8.23%)	55.12 (6.67%)	1186.12 (8.86%)
Chilli	38.13 (7.69%)	442.35 (6.09%)	38.51 (4.67%)	459.73 (3.38%)	38.96 (4.73%)	439.42 (3.12%)	39.42 (4.77%)	450.61 (3.37%)
Bottlegourd	29.21 (5.89%)	566.73 (7.80%)	29.37 (3.56%)	542.46 (3.99%)	29.86 (3.63%)	574.29 (4.08%)	30.62 (3.70%)	625.22 (4.67%)
Spongegourd	33.68 (6.79%)	458.10 (6.31%)	33.88 (4.11%)	455.56 (3.35%)	34.34 (4.17%)	467.68 (3.32%)	36.07 (4.36%)	497.10 (3.71%)
Cucumber	1.25 (0.25%)	14.52 (0.20%)	1.47 (0.18%)	15.68 (0.12%)	1.60 (0.19%)	17.21 (0.12%)	1.72 (0.21%)	18.74 (0.14%)
Ridgegourd	8.10 (1.63%)	46.96 (0.65%)	8.27 (1.00%)	47.80 (0.35%)	8.42 (1.02%)	49.50 (0.35%)	8.49 (1.03%)	50.45 (0.38%)
Bittergourd	8.51 (5.89%)	49.35 (0.68%)	8.73 (1.06%)	59.38 (0.44%)	8.93 (1.08%)	61.82 (0.44%)	9.01 (1.09%)	63.44 (0.47%)
Ashgourd	0.30 (0.06%)	7.03 (0.10%)	0.31 (0.04%)	7.06 (0.05%)	0.34 (0.04%)	7.88 (0.06%)	0.37 (0.04%)	8.64 (0.06%)
Water melon	0.89 (0.18%)	19.12 (0.26%)	0.98 (0.12%)	19.93 (0.15%)	1.08 (0.13%)	21.97 (0.16%)	1.11 (0.13%)	23.54 (0.18%)
Muskmelon	0.63 (0.13%)	7.25 (0.10%)	0.71 (0.09%)	8.45 (0.06%)	0.80 (0.10%)	9.77 (0.07%)	0.85 (0.10%)	10.49 (0.08%)
Pointedgourd	4.64 (0.94%)	47.81 (0.66%)	4.86 (0.59%)	46.02 (0.34%)	5.63 (0.68%)	57.80 (0.41%)	5.76 (0.70%)	60.17 (0.45%)
Cowpea	11.64 (2.35%)	86.11 (1.19%)	12.17 (1.48%)	88.25 (0.65%)	12.40 (1.51%)	92.72 (0.66%)	12.72 (1.54%)	97.85 (0.73%)
Pea	8.10 (1.63%)	50.50 (0.70%)	8.74 (1.06%)	53.07 (0.39%)	8.97 (1.09%)	57.58 (0.41%)	9.09 (1.10%)	61.28 (0.46%)
Radish	14.43 (2.91%)	221.02 (3.04%)	14.93 (1.81%)	226.57 (1.66%)	15.15 (1.84%)	230.93 (1.64%)	15.54 (1.88%)	241.12 (1.80%)
Carraot	4.06 (0.82%)	45.32 (0.62%)	4.16 (0.50%)	46.33 (0.34%)	4.23 (0.51%)	48.03 (0.34%)	4.47 (0.54%)	52.21 (0.39%)
Sweet Potato	0.22 (0.04%)	4.24 (0.06%)	0.23 (0.03%)	4.44 (0.03%)	0.26 (0.03%)	5.24 (0.04%)	0.33 (0.04%)	6.62 (0.05%)
Colocasia	0.59 (0.12%)	6.15 (0.08%)	0.60 (0.07%)	6.44 (0.05%)	0.69 (0.08%)	7.56 (0.05%)	0.77 (0.09%)	8.60 (0.06%)
Yam (Oal)	0.33 (0.07%)	14.05 (0.19%)	0.35 (0.04%)	15.38 (0.11%)	0.41 (0.05%)	17.88 (0.13%)	0.47 (0.06%)	21.40 (0.16%)
Others	85.51 (17.24%)	888.70 (12.24%)	84.92 (10.30%)	1132.16 (8.32%)	85.99 (10.44%)	1119.18 (7.96%)	87.29 (10.56%)	1163.95 (8.70%)
<b>Total</b>	<b>496.11</b>	<b>7262.01</b>	<b>824.16</b>	<b>13608.50</b>	<b>823.70</b>	<b>14067.74</b>	<b>826.87</b>	<b>13385.75</b>

Source: Economic Survey 2010-11, Govt. of Bihar

**Table A.42. Area and Production of Fruits in Bihar**

Area in '000 ha/Production in '000 tonne								
Fruits	2005-06		2006-07		2007-08		2008-09	
Area	Prodn.	Area	Prodn.	Area	Prodn.	Area	Prodn.	Area
<b>Mango</b>	140.20 (50.72%)	1222.70 (39.85%)	140.80 (50.39%)	1306.90 (38.15%)	142.21 (49.68%)	870.35 (26.76%)	144.07 (49.56%)	1329.80 (35.72%)
<b>Guava</b>	27.70 (10.02%)	199.00 (6.49%)	28.00 (10.02%)	248.00 (7.24%)	28.67 (10.02%)	255.72 (7.86%)	29.09 (10.01%)	229.19 (6.16%)
<b>Litchi</b>	28.40 (10.27%)	200.10 (6.52%)	28.80 (10.31%)	211.90 (6.19%)	29.84 (10.42%)	223.23 (6.86%)	30.47 (10.48%)	216.92 (5.83%)
<b>Lemon</b>	16.80 (6.08%)	112.30 (3.66%)	17.10 (6.12%)	121.20 (3.54%)	17.58 (6.14%)	125.84 (3.87%)	17.74 (6.10%)	128.09 (3.44%)
<b>Banana</b>	28.00 (10.13%)	959.30 (31.26%)	29.00 (10.38%)	1125.10 (32.84%)	30.46 (10.64%)	1329.36 (40.87%)	31.27 (10.76%)	1373.55 (36.90%)
<b>Pineapple</b>	4.20 (1.52%)	108.00 (3.52%)	4.50 (1.61%)	121.10 (3.53%)	4.64 (1.62%)	126.77 (3.90%)	4.69 (1.61%)	119.48 (3.21%)
<b>Papaya</b>	1.00 (0.36%)	22.50 (0.73%)	1.10 (0.39%)	25.30 (0.74%)	1.27 (0.44%)	30.36 (0.93%)	1.43 (0.49%)	33.61 (0.90%)
<b>Aonla</b>	1.10 (0.40%)	8.60 (0.28%)	1.20 (0.43%)	10.70 (0.31%)	1.31 (0.46%)	12.09 (0.37%)	1.38 (0.47%)	12.83 (0.34%)
<b>Others</b>	28.90 (10.46%)	235.90 (7.69%)	29.00 (10.38%)	255.90 (7.47%)	30.26 (10.57%)	278.66 (8.57%)	30.56 (10.51%)	279.34 (7.50%)
<b>Bihar</b>	<b>276.40</b>	<b>3068.40</b>	<b>279.40</b>	<b>3426.00</b>	<b>286.24</b>	<b>3252.38</b>	<b>290.71</b>	<b>3722.82</b>

Source: Economic Survey 2010-11, Govt. of Bihar

**Table A.43. Cropping Pattern in Bihar**

Crops	Percentage of Area								
	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09
<b>Foodgrains</b>	94.47	94.34	94.42	94.28	94.37	94.35	94.29	94.47	94.52
<b>Cereals*</b>	90	90.15	90.15	90.27	89.91	91.31	91.01	91.56	91.55
<b>Pulses*</b>	10	9.85	9.85	9.73	10.09	8.69	8.91	8.44	8.45
<b>Oilseeds</b>	2.04	1.98	1.84	1.9	1.91	1.99	1.97	1.95	1.89
<b>Fibre Crops</b>	2.25	2.16	2.31	2.41	2.24	2.15	2.12	2.12	2.06
<b>Sugarcane</b>	1.24	1.52	1.44	1.4	1.47	1.51	1.61	1.47	1.53
<b>Total Area</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

\* Share (%) in total area under foodgrains

Source: Economic Survey 2010-11, Govt. of Bihar

Table A.44. Cost and Returns in Major Crops in Bihar (Rs./ha)

	Total Value of Production (VOP)	Cost of Cultivation (CC)	Net Income	Ratio of VOP to CC	yield qntl. per ha	Fertilizer Kg per ha	Human labor Hrs/ha	Animal Labour hrs/ha
<b>Paddy</b>								
1990-91	5819.69	5501.61	318.08	1.06	20.95	49.3	893.3	177.54
1996-97	10313.51	9395.03	918.48	1.1	21.43	72.37	885.08	107.43
1997-98	10918.55	9827.74	1090.81	1.11	22.61	80.07	845.13	99.62
1998-99	12310.7	10461.54	1849.16	1.18	23.79	76.57	870.14	103.49
1999-00	12964.07	12251.94	712.13	1.06	23.52	76.56	888.25	76.25
2000-01	10846.29	12796.84	-1950.55	0.85	23.38	75.36	900.6	63.55
2001-02	11427.77	12304.27	-876.5	0.93	24.56	67.62	808.46	60.86
2002-03	11906.13	13292.84	-1386.71	0.9	22.91	82.06	873.85	56.16
2003-04	12293.84	13557.33	-1263.49	0.91	24.84	75.68	840.23	55.82
<b>CAGR</b>	<b>8.66</b>	<b>10.54</b>	<b>-216.56</b>		<b>1.91</b>	<b>4.88</b>	<b>-0.68</b>	<b>-12.06</b>
<b>Wheat</b>								
2001-02	14804.97	14525.2	279.77	1.02	23.52	129.86	536.66	51.11
2002-03	15033.67	15310.28	-276.61	0.98	22.53	130.24	485.68	45.45
2003-04	15368.95	15460.31	-91.36	0.99	21.9	118.01	454.78	44.76
2004-05	16441.16	15456.25	984.91	1.06	22.7	116.74	404.06	36.83
2005-06	16982.02	15642.09	1339.93	1.09	18.78	121.16	399.93	29.98
2006-07	21306.57	16104.6	5201.97	1.32	20.5	122.31	384.73	32.3
<b>CAGR</b>	<b>6.26</b>	<b>1.74</b>	<b>62.77</b>		<b>-2.26</b>	<b>-0.99</b>	<b>-5.4</b>	<b>-7.36</b>
<b>Maize</b>								
1996-97	11308.2	8790.11	2518.09	1.29	22.61	92.65	782.96	77.91
1997-98	10395.82	8711.07	1684.75	1.19	18.4	98.27	750.2	77.4
1998-99	11949.28	10187.71	1761.57	1.17	20.76	126.28	755.14	80.1
1999-00	10582.93	13031.85	-2448.92	0.81	22.22	142.39	785.64	37.5
2000-01	12864.58	14419.19	-1554.61	0.89	24.88	157.07	776.36	83.49
2001-02	10904.7	13850.29	-2945.59	0.79	21.7	120.98	823.15	60.17
2002-03	17099.66	13200.49	3899.17	1.3	31.91	106.31	758.24	38.45
2003-04	17029.71	15872.44	1157.27	1.07	34.94	115.45	799.2	39.11
<b>CAGR</b>	<b>5.25</b>	<b>7.67</b>	<b>-9.26</b>		<b>5.59</b>	<b>2.79</b>	<b>0.26</b>	<b>-8.25</b>
<b>Masur</b>								
2001-02	11253.95	8809.59	2444.36	1.28	7.8	35.85	308.59	34.61
2002-03	15338.48	10374.5	4963.98	1.48	10.39	29.04	300.04	28.83
2003-04	17099.1	10512.76	6586.34	1.63	10.64	22.36	315.3	38.23
2004-05	15658.27	9931.47	5726.8	1.58	10.42	28.62	302.89	48.61
2005-06	16502.42	11218.16	5284.26	1.47	8.98	38.33	321.13	34.56
2006-07	19757.99	11432.6	8325.39	1.73	9.39	25.78	297.22	36.7
<b>CAGR</b>	<b>9.83</b>	<b>4.44</b>	<b>22.66</b>		<b>3.14</b>	<b>-5.35</b>	<b>-0.62</b>	<b>0.98</b>
<b>Gram</b>								
2001-02	14409.95	9216.35	5193.6	1.56	8.59	32.69	244.94	19.38
2002-03	17367.25	11494.93	5872.32	1.51	10.14	13.54	279.81	7.67
2003-04	16367.01	10430.55	5936.46	1.57	9.21	18.73	267.53	9.5
2004-05	14765.54	9974.3	4791.24	1.48	8.71	44.31	213.74	12.99
2005-06	19387.53	11860.32	7527.21	1.63	8.75	47.48	286.42	7.01

	Total Value of Production (VOP)	Cost of Cultivation (CC)	Net Income	Ratio of VOP to CC	yield qntl. per ha	Fertilizer Kg per ha	Human labor Hrs/ha	Animal Labour hrs/ha
<b>2006-07</b>	21747.37	12552.23	9195.14	1.73	7.75	58.27	273.24	6.87
<b>CAGR</b>	<b>7.1</b>	<b>5.28</b>	<b>9.99</b>		<b>-1.7</b>	<b>10.11</b>	<b>1.84</b>	<b>-15.87</b>
				<b>Potato</b>				
<b>2005-06</b>	59922.77	39765.17	20157.6	1.51	183.92	215.99	1198.3	58.67
<b>2006-07</b>	70796.29	45305.61	25490.68	1.56	180.14	210.68	1111.84	84.8
<b>Sugarcane</b>								
<b>1990-91</b>	18229.41	9026.91	9202.5	2.02	436.3	35.57	652.8	1.55
<b>1991-92</b>	19503.52	8299.04	11204.48	2.35	425.05	38.54	569.39	6.07
<b>Jute</b>								
<b>1997-98</b>	9208.16	6995.69	2212.47	1.32	16.87	50.92	560.61	37.13
<b>1998-99</b>	9233.98	7145.05	2088.93	1.29	16.69	49.35	481.95	37.07

Source: Based on data from [www.indiastat.com](http://www.indiastat.com)