

## 7.4 BIHAR

### 7.4.1 Introduction

Bihar, the land of the Buddha and the Mahavir, lies between latitude 24°16' and 27°45' N and longitude 83°16' and 88°30' E. It is situated in the eastern part of India bordering Nepal and has a geographical area of 94,163 km<sup>2</sup>. It is a part of the Gangetic Plains and is drained by two major rivers, the Ganga and the Gandak. Annual rainfall in the State varies from 1,000 mm to 2,000 mm and the mean annual temperature ranges between 20°C to 28°C. The land use pattern of the State is given in the Table 7.4.1.

The total population of the State is 82.88 million (Census 2001), which constitutes 8.05% of the country's population. Of this, rural population is 89.50% and urban 10.50%. The population density is 880 persons per km<sup>2</sup>. The projected population of the State by the Office of RGI, for the year 2009 is 95.03 million. The livestock population is 48.2 million (Livestock Census 2003), which has increased by about 30% since the census of 1992.

### 7.4.2 Recorded Forest Area

The recorded forest area of the State is 6,473 km<sup>2</sup>, which is 6.87% of the geographical area. Reserved Forests constitute 10.70%, Protected Forests 89.28%, and Unclassed Forests, 0.02% of the total forest area.

### 7.4.3 Protected Areas

There is one National Park and 12 Wildlife

Sanctuaries covering an area of 0.32 million ha, which constitutes 3.38% of the total geographical area of the State. Valmiki is the only Tiger Reserve in the State covering an area of 840 km<sup>2</sup>. Kabar, situated in Begusarai district with an area of 6,738 ha is a wetland of national importance.

### 7.4.4 Joint Forest Management

The State initiated the Joint Forest Management in 1990. There are 532 JFM committees managing 3.7 lakh ha of forest area as on March 2005. About 2.05 lakh families are involved in JFM of which 32,303 families belong to Scheduled Tribes.

Source: MoEF, 2005.

### 7.4.5 Forest Cover

The forest cover in the State, based on interpretation of satellite Data of Oct 2006 - Feb 2007, is 6,804 km<sup>2</sup>, which is 7.23% of the State's geographical area. In terms of forest canopy density classes, the State has 231 km<sup>2</sup> very dense forest, 3,248 km<sup>2</sup> moderately dense forest, and 3,325 km<sup>2</sup> open forest. The distribution of forest cover of the State is shown in Fig. 7.4.

Comparison of the current forest cover (satellite data of Oct 2006 - Feb 2007) with the previous assessment (satellite data of Oct - Dec 2004 - Jan 2005) shows a loss of 3 km<sup>2</sup> of forest cover.

The change matrix, given in Table 7.4.2, reveals

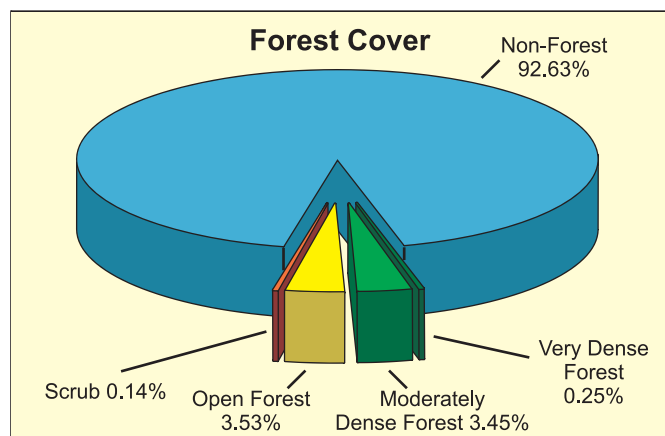
**Table 7.4.1: Land use pattern**

Land Use	Area in '000 ha	Percentage
Total geographical area	9,416	
Reporting area for land utilization	9,360	100.00
Forests	622	6.65
Not available for cultivation	2,083	22.25
Permanent pastures and other grazing lands	17	0.18
Land under misc. tree crops & groves	240	2.56
Culturable wasteland	46	0.49
Fallow lands other than current fallows	129	1.38
Current fallows	666	7.12
Net area sown	5,556	59.36

Source: Land Use Statistics, Ministry of Agriculture, GOI, 2006.



Fig 7.4 : Forest cover map of Bihar



that there has been a decrease of 1 km<sup>2</sup> in very dense forest, 5 km<sup>2</sup> in the moderately dense forest and increase of 3 km<sup>2</sup> in open forest.

On the basis of ground truthing by the officials of FSI and the information gathered from the State Forest Department, main reasons for the increase in forest cover in the districts Kishanganj and Katihar are gain in TOF areas whereas, the reason for decrease in forest cover in the district of Pashchimi Champaran is loss of TOF area. Gain in Gaya is on account of plantation.

Table 7.4.2: Forest cover change matrix

(area in km<sup>2</sup>)

2005 Assessment (Data of Oct - Dec 2004 - Jan 2005)	2007 (Data of Oct 2006-Feb 2007)					Total of 2005
	VDF	MDF	OF	Scrub	NF	
Very Dense Forest	231	1	0	0	0	232
Moderately Dense Forest	0	3,226	12	0	15	3,253
Open Forest	0	12	3,291	1	18	3,322
Scrub	0	0	1	130	1	132
Non-Forest	0	9	21	3	87,191	87,224
<b>Total of 2007</b>	<b>231</b>	<b>3,248</b>	<b>3,325</b>	<b>134</b>	<b>87,225</b>	<b>94,163</b>
Net Change	-1	-5	3	2	1	

District wise forest cover in different canopy density classes and scrub along with the changes

compared to 2005 assessment are given in the Table 7.4.3.

**Table 7.4.3: District-wise forest cover in 2007**

Number of districts: 37

(area in km<sup>2</sup>)

District	Geographical area	Very dense forest	Mod. dense forest	Open forest	Total	Percent of G.A.	Change*	Scrub
Araria	2,830	0	16	74	90	3.18	0	0
Aurangabad	3,305	0	54	97	151	4.57	0	13
Banka	3,022	0	111	110	221	7.31	2	12
Begusarai	1,918	0	20	23	43	2.24	0	0
Bhabhua	3,381	0	555	507	1,062	31.41	0	20
Bhagalpur	2,567	0	29	13	42	1.64	0	0
Bhojpur	2,390	0	16	3	19	0.79	0	0
Buxar	1,708	0	2	1	3	0.18	0	0
Darbhanga	2,279	0	41	144	185	8.12	0	0
Gaya	4,976	0	124	506	630	12.66	4	46
Gopalganj	2,033	0	2	2	4	0.20	0	0
Jamui	3,107	0	383	249	632	20.34	-1	2
Jehanabad	1,569	0	2	1	3	0.19	0	5
Katihar	3,057	0	18	44	62	2.03	7	0
Khagaria	1,486	0	2	6	8	0.54	0	0
Kishanganj	1,884	0	26	49	75	3.98	9	0
Lakhisarai	1,356	0	180	14	194	14.31	0	2
Madhepura	1,788	0	6	20	26	1.45	0	0
Madhubani	3,501	0	18	118	136	3.88	0	0
Munger	1,347	0	251	14	265	19.67	0	7
Muzaffarpur	3,172	0	82	74	156	4.92	0	0
Nalanda	2,367	0	5	23	28	1.18	0	6
Nawada	2,494	0	187	323	510	20.45	1	10
Pashchimi Champaran	5,228	231	520	162	913	17.46	-25	0
Patna	3,202	0	13	3	16	0.50	0	0
Purbi Champaran	3,968	0	76	88	164	4.13	-1	0
Purnia	3,229	0	6	41	47	1.46	0	0
Rohtas	3,832	0	321	385	706	18.42	1	11
Saharsa	1,680	0	2	9	11	0.65	0	0
Samastipur	2,904	0	39	18	57	1.96	0	0
Saran	2,641	0	38	17	55	2.08	0	0
Sheikhpura	612	0	0	0	0	-	0	0
Sheohar	572	0	2	17	19	3.32	0	0
Sitamarhi	2,071	0	18	64	82	3.96	0	0
Siwan	2,219	0	1	1	2	0.09	0	0
Supaul	2,432	0	8	93	101	4.15	0	0
Vaishali	2,036	0	74	12	86	4.22	0	0
<b>Total</b>	<b>94,163</b>	<b>231</b>	<b>3,248</b>	<b>3,325</b>	<b>6,804</b>	<b>7.23</b>	<b>-3</b>	<b>134</b>

\* Change compared to 2005 assessment (revised).

### 7.4.6 Altitude Zone wise Forest Cover

Forest cover of the State in different altitude zones is given in Table 7.4.4.

**Table 7.4.4: Altitude zone wise forest cover**

(area in km<sup>2</sup>)

Altitude Zone	VDF	MDF	OF	Total
0-500m	225	3,106	3,191	6,522
500-1000m	6	142	134	282
<b>Total</b>	<b>231</b>	<b>3,248</b>	<b>3,325</b>	<b>6,804</b>

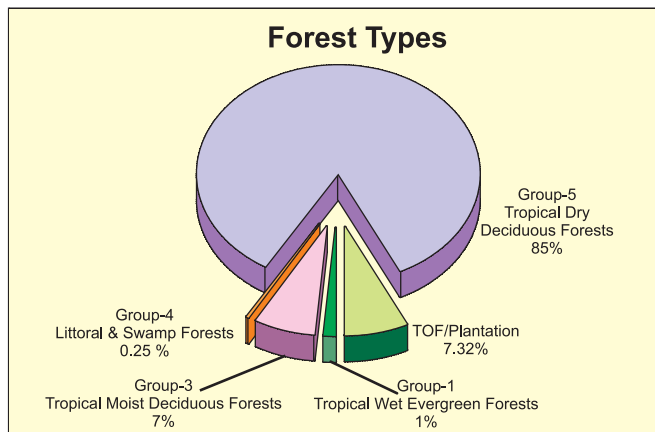
(based on SRTM Digital Elevation Model)

### 7.4.7 Forest Cover in different Forest Types

As per Champion & Seth Classification, the State has 10 forest types which belong to four forest type groups viz. Tropical Wet Evergreen, Tropical Moist Deciduous, Littoral & Swamp Forest and Tropical Dry Deciduous Forests. Distribution of forest cover in different forest type groups found in the State is given in the pie diagram.

### 7.4.8 Tree Cover

Tree cover of the State has been estimated using sample data of TOF inventory collected over a period of six years i.e. 2002-08. The estimated tree cover in the State is 2,495 km<sup>2</sup> which is 2.65% of the



geographical area of the State. Four districts of the State (Banka, Gaya, Katihar and Munger) have been inventoried. The forest and tree cover of the State is presented in the Table 7.4.5.

**Table 7.4.5: Forest & tree cover**

(area in km<sup>2</sup>)

Category	Area	% of Geographical area
Tree Cover	2,495	2.65
Forest Cover	6,804	7.23
<b>Forest &amp; Tree Cover</b>	<b>9,299</b>	<b>9.88</b>