

An Appraisal of the Forest Resource base in Burdwan District

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Abstract:- Forest is an important resource for natural as well as social environment. It helps to maintain the global balance of natural environment, like maintenance of hydrological cycle, development of ground water storage and also mild the range of temperature etc. Forest provides the scenic beauty and the zone of biodiversity that helps human being to alive in the earth with developing particular cultural landscape for their own. Burdwan District is one of the diversified regions in terms of physical as well as cultural resource base in West Bengal. This paper is an attempt to analyse the forest resource base with its present scenario in Burdwan District.

Index Terms:-Environment, Hydrological cycle, Ground water storage, Biodiversity, Cultural Landscape.

I. INTRODUCTION

The history of Burdwan is known from about 5000 BC and belonging to the Mesolithic or Late Stone Age. The name Burdwan is an anglicized form of the Sanskrit word *Vardhamana*. The first epigraphic reference to the name occurs in a 6th. Century AD copper -plate found in the village of *Mallasarul* in Galsi Police Station. The forest areas of the district are chiefly situated in the lateritic and red soil high lands in the Aushgram PS of Sadar Subdivision and in the Asansol subdivision. In Ausgram P.S. the forest areas are interspersed with paddy fields. The Durgapur forests are continued in the Birbhum district beyond the Ajay while the forest area in the Asansol subdivision forms a part of the forest area of Dumka District of Jharkhand. But in recent times, rapid rise in population in the last one century, and its developmental needs have lead to the conversion of large tracts of forests to agricultural land and to other land uses. As a result the forest cover in Burdwan is sparse. By considering this kind of hazard, the present geographical account focused on the critical analysis of forest resource with its change detection in temporal basis in the district of Burdwan, West Bengal.

II. RESEARCH ELABORATIONS

OBJECTIVES: -

The main goal of this geographical study is to find out the glimpses of stresses on forest resource base in each corner of Burdwan district. So to achieve that goal the following objectives are considered:

- To find out particular land use pattern of the study area
- To assess the forest resource base in Burdwan district.
- To find out the temporal change of forest resource with its possible causes.
- Development probable measures for the betterment of forest resource in the study area.

STUDY AREA: -

Burdwan district extends from 22⁰ 56' to 23⁰53' North latitude and from 86⁰ 48' to 88⁰ 25' East longitudes. Lying within Burdwan Division, the district is bounded on the north by Dumka (of Jharkhand), Birbhum and Murshidabad, on the east by Nadia, on the south by Hooghly, Bankura and Purulia and on the west by Dhanbad (of Jharkhand) districts. The river Barakar forms the State boundary to the west; the Ajay separates Birbhum and Dumka to the north with exception of a portion of Katwa subdivision; the Damodar forms a southern boundary with Purulia and Bankura, while Bhagirathi forms the main eastern boundary with a few exceptions. The maximum length from east to west is 208 Km while the maximum breadth from north to south is 112 KM. In shape the district resembles a hammer. (Figure 1)

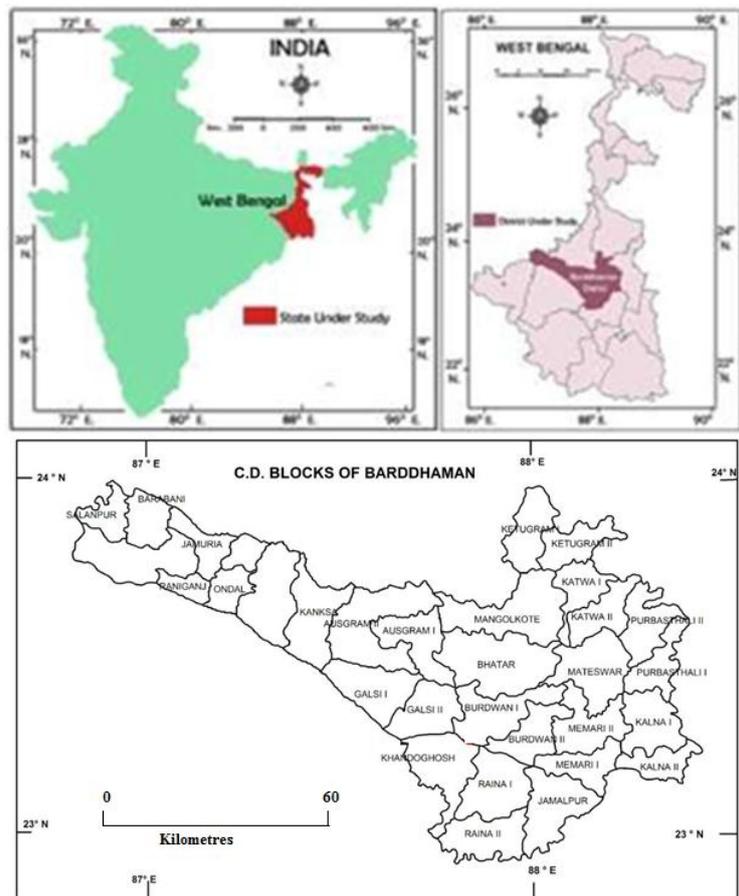


Figure 1: Location of the Study Area

The district experiences a climate which is transitional between CWg and AW types, where 'C' stands for 'warm temperate rainy climates with mild winter', 'W' for 'dry winter not compensated for by total rain in the rest of the year', 'g' for 'eastern Ganges type of temperature trend' and 'AW' for 'tropical savanna climates'. Average temperature in hot season is 30 C while at the cold season is 20 C. Average rainfall is 1496 mm. The cold season starts from about the middle of November and continues till the end of February. March to May is dry summer intervened by tropical cyclones and storms. June to September is wet summer while October and November is autumn.

Different types of soil are encountered in different topographical biological and hydrological as well as geological condition within the Burdwan district. In the west coarse gritty soil blended with rock fragments is formed from the weathering of pegmatite, quartz veins and conglomeratic sandstones, where as sandy soil characteristic of granite rocks and sandstones. This soil is of reddish colour, medium to coarse in texture, acidic in reaction, low in nitrogen, calcium, phosphate and other plant nutrients. Water holding capacity of this soil increases with depth as well as with the increase of clay portions. Towards the east alluvial soil attains an enormous thickness in the low level plains to the east. This alluvial soil is formed of alluvium brought down by the Ajay, Damodar, Bhagirathi and numerous other rivers. These soils are sandy, well drained and slightly acidic in nature.

III. THE GENERAL LAND USE OF THE STUDY AREA

Burdwan district occupies a place of pride in agriculture. The district has two principal cropping regions: Alluvial on the Eastern Part and Lateritic on the Western on an average fifty eight percent of total population lives on agriculture. (Figure 2)(Table I)

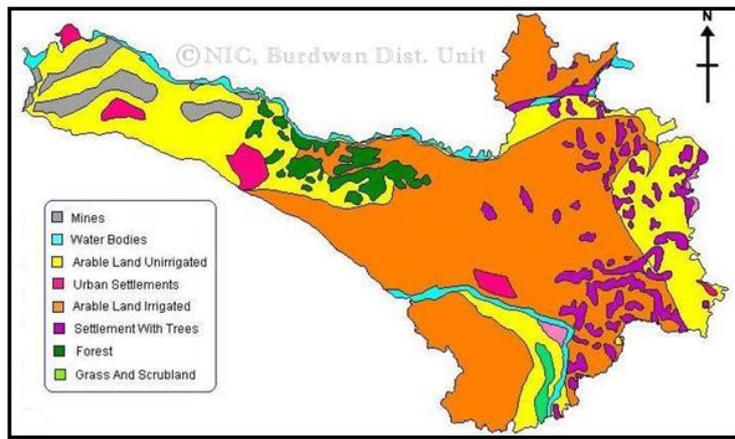


Figure 2: Land use map of Burdwan District

Classification of land use statistics ('000 hec)

Table I: General land use of the study area

Forest area	Non agri. use	Barren land	current fallow	Waste land	Net cropped area
22.27	182.62	2.38	11	9.4	479.4

Geographical area-702.4

IV. FOREST RESOURCE BASE OF BURDWAN DISTRICT

Total recorded forest land in the district is 277 sq.km, of which 3 sq.km. is Reserved Forest, 192 sq.km. is Protected Forest and 82 sq.km. is Unclassed State Forest, thus constituting 3.94% of the geographical area of the district. The forest cover including the forests created outside the recorded forest area is 29.6% of the geographical area as assessed by the GIS Cell of the W.B. Forest Department in the year 2006 on the basis of Satellite Imagery procured from NRSA, Hyderabad in digital data format. (Figure 3)(Table II and III)

Table II: Recorded forest area in Burdwan District

Burdwan District	Geographical Area Sq.km	Recorded Forest Area Sq.km	% of recorded forest area
	7024	277	3.94

Source:-State Forest Report (2006-2007)

Table III: District area under forest cover

Burdwan District	Total Area(km ²)	Reserved Forest Sq. km	Protected Forest Sq km	Unclassed Forest and others Sq.km	% of Forest Area		
					R.F.	P.F.	U.F.
	277	3	192	82	1.08	69.31	29.60

Source:-State Forest Report (2006-2007)

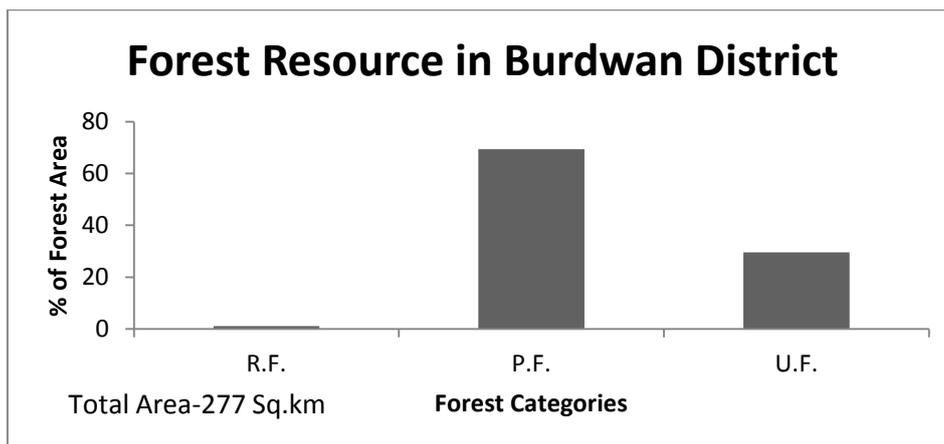


Figure 3: Forest Resource base of the Study Area

V. RESULTS AND FINDINGS

TEMPORAL CHANGE OF FOREST COVERS IN BURDWAN:-

Burdwan district is running in the phase of large scale development. Its identification shifted to modified cultural landscape with modern cultural artifacts. For these reasons the physical resource like forest is somehow neglected. According to State Forest Report 2006-07, the forest area is rapidly fluctuated in short term interval. *e.g.* from 1994 to 1997 the forest area decreases about 0.09% ,whereas , from 2000 to 2001 it is increased 0.73%.But recently the area is decreased about 0.37% (2004-2006).(Table IV)The basic scenario is-

Table IV: Temporal changes of forest cover in Burdwan District

Burdwan District	1988		1991		1994		1997		2000		2004		2006	
	Area Sq. km	%												
	297	4.23	370	5.27	367	5.22	360	5.13	388	5.52	448	6.35	419	5.97

Source:-State Forest Report (2006-2007)

CAUSES OF TEMPORAL CHANGE OF FOREST COVER:-

West Bengal is one of the few states in the country where per capita forest area is the lowest (0.01 ha.) and density of the population around fragmented forests is the highest. Evidently, there is tremendous pressure on forests. Coupled with socio-economic problems of poverty, underemployment and unemployment in the forest fringe areas. The basic causes of temporal change of forest cover are

- The major threat to forest comes from illicit collection of fuel wood, fodder and small timber from the forests by the villagers to sustain their livelihood and for timber industries.
- The easiest way to procure land for different non-forestry activities viz.: creation of human settlements, agriculture, construction of dams, bridges, roads etc. was through diversion of forest land. In Burdwan District the unit of degraded forest land is about 77.08 Sq.km. In which most cases are done by encroachment of human in terms of settlements, industries, agriculture and other purposes. The encroachment of in this area is more in Burdwan and Durgapur belt.(Figure 4)(Table V and VI)

Table V: Population growth of the study area

District	Area Sq.km	Population(2001)			Population(2011)			Decennial growth rate (%)		Population density(person/sq.km)	
		T	M	F	T	M	F	1991-01	2001-11	2001	2011
		Burdwan	7,024	6895514	3588376	3307138	7723663	3975356	3748307	13.96	12.01

Source: Census of India (2001 and 2011)

Table VI: Encroachment of forest area in Burdwan District

Burdwan District	Burdwan Belt	Encroachment (area in ha)
		54.728
	Durgapur Social forestry	641.07

Source:-State Forest Report 2006-2007

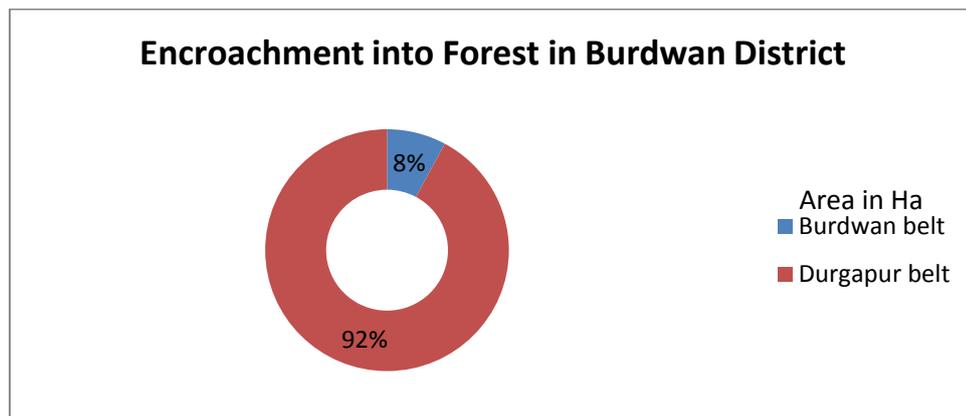


Figure 4: Encroachment into Forest in the Study Area

- In area where there is a problem of organised gangsterism in the field of timber and
- poaching of wildlife, the illegal activities by wood-based industries operating in regions vulnerable to operation of gangsters.
- Forest fire is the most important cause after illicit deforestation which does incalculable harm to the forest area. Apart from destruction of plantations, it damages biodiversity including killing of wild animals thereby causing habitat destruction. Though, forest fire can be natural as well as man made, but carelessness of man is the cause of about 95% of the forest fires. In Burdwan district this case is very few (about 1 case affecting area of 5 hectares).

MEASURES FOR BETTERMENT OF FOREST COVER:-

The problems related to forest protection in Burdwan District as well as West Bengal can be checked by the following ways:

- Afforestation on available forest and private/ vested land including wasteland, and restoration and rejuvenation of Sal forests of South-West Bengal involving local fringe population by forming Forest Protection Committees and extending the same management system, gradually to productive forests of other parts of the State.

- Formation of Forest Protection Committees and through the process of consolidation of Joint Forest Management (Table VII)

Table VII: Forest protection Committee in West Bengal.

Division	Total no. of FPC	Area in Ha.	No. of members
Burdwan	68	17758.04	19591

Source:-State Forest Report 2006-2007

- The National Forest Policy 1988, conservation of Forests has been given priority with special emphasis on fuel wood & fodder development on available wastelands through peoples' participation to avert an ecological crisis and fuel wood and fodder famine.
- Vigilance by departmental protective staff has been intensified in such areas through organization of mobile squads being assisted by 200 men strong specially constituted battalion of State Armed Police. Action has been taken to stop illegal activities by wood-based industries operating in regions vulnerable to operation of gangsters. A post of Inspector General of Police, Forest Protection has been created in the Department of Forests to have the required liaison with the Police Administration to extend their support over district and state level to combat organized gangsterism in illicit operation of timber.
- In order to minimize the incidences of fire, action is being taken in the state under "Integrated Forest Protection Scheme" sponsored by Government of India.
- The Forest (Conservation) Act, 1980 came into force the problem was, however, greatly checked. For diversion of forest land for any developmental purpose, compulsory afforestation on the land made available in lieu, has been made binding.
- Development and application of an interdisciplinary approach integrating satellite remote sensing; geographic information system (GIS) and GPS can solve specific problems of decision making in resource management.
- Development of plans with proper progress and management.

Table VIII: Sanctioned plans for forest area in Burdwan District

Forest division	Working plan in progress	Plan period	Sanction order no	remarks
Burdwan	1st	1989to2009	12-FCWP/WB-BDN dt.15.9.94	CFCC requested for 1 st year PWPR, no response as yet
Durgapur SF	1st	1989to2009	12-FCWP/WB-BDN dt.15.9.94	Included in Burdwan WP: as per WPAC meeting on 26.9.05, CF/CC to write PWPR

Source:-State Forest Report 2006-2007

VI. CONCLUSION

Forestry was considered mostly as activities confined to recorded Forest lands alone, while the people in general, and the forest fringe area people in particular, were considered as aliens in the field of Forest Conservation. However, with the initiation of large scale Social/Farm Forestry Project in South West Bengal, coupled with the on-going Land Reforms measures under which large tracts of vested wastelands were distributed as 'patta', greening of wasteland became a peoples' movement. Forestry and large Farm Forestry plantations created the ambience of forest cover as these were almost similar to the plantations of fast growing species raised by the Forest Department., in adjoining forest lands. Subsequently, with the launching of World Bank aided West Bengal Forestry Project, Joint Forest Management received a booster and around 3500 Forest Protection Committees have been protecting around 400,000 ha. of forest land in South West Bengal. With initiation of afforestation programme through Forest Development Agencies (FDA), with fund from Central Govt., the JFM Support Activities etc. the same is again being restored to previous years' level.

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