

## **Important Features**

### **District Boundary**

**B**ardhaman district extends from 22°56' to 23°53' North latitude and from 86°48' to 88°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.

### **Topography**

**B**ardhaman district with its varied tectonic elements and riverine features, is a transitional zone between the Jharkhand plateau which constitutes a portion of peninsular shield in the west and Ganga-Brahmaputra alluvial plain in the north and east. In general the Jharkhand plateau consists of the metasedimentary rocks of precambrian age, Gondwana sedimentary rocks, Rajmahal basalts and upper tertiary sediments. Laterite has developed on these older rocks as well as on early Quaternary sediments. Towards south, the alluvial plain merges with Damodar-kasain-Subarnarekha deltaic plains.

The western half of the district resembles a promontory jutting out from the hill ranges of Chotonagpur plateau and consists of barren, rocky and rolling country with a laterite soil rising into rocky hillocks, the highest being 227 m. These diversify the otherwise monotonous landscape and lend a special charm to the skyline around Asansol subdivision.

Ajoy-barakar divide is a convex plateau, the average altitude being 150 m. The gradient is westerly to the west and to the east it is northerly towards Ajay and southerly towards Damodar below the latitude. The Ajoy- Damodar inter-stream tract is made up of several stows consisting of vales and low convex spurs which run in almost all directions except north-east and thus lends a very complicated character to local relief.

### **Rivers**

**T**he river system in Bardhaman includes the Bhagirathi-Hooghly in the east, the Ajoy and its tributaries in the north and the Dwarakeswar, the Damodar and its

branches in the south-west. Besides, there are innumerable Khals and old river beds all over the area.

The notable rivers and khals are Damodar, Bhagirathi, Barakar, Ajay, Dwarakeswar, Nonia, Singaram, Tamla, Kukua, Kunur, Tumuni, Khari, Banka, Chanda-kanki nala, Behula, Gangur, Brahmani, Khandesvari, Karulia nala, Dwaraka or Babla, Koiya nala, Kandarkahal, Kanadamodar, Kananadi, Ghea, Kakinadi etc.

### Soil

Different types of soil are encountered in different topographical biological and hydrological as well as geological condition within the Bardhaman district. In the west coarse gritty soil blended with rock fragments is formed from the weathering of pegmatites, quartz veins and conglomeratic sandstones, where as sandy soil characteristic of granitic 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.

### Minerals

Bardhaman is one of the premier districts in India in terms of value of mineral. The Raniganj coalfield was the birth place of the Indian coal industry. Besides coal ,important minerals found in the district are ,iron ores, calcium carbonate, abrasives, silica bricks and moulding sands, glass sands, building materials, Manganese, Bauxite, laterite etc.

### Water Resources

There are many tanks, wells, canals, swamps and bils are found all over the district. Within the Damodar Valley region, there are around 17000 tanks. The Durgapur barrage and Mithon dam have formed two large reservoirs at the south-western and western periphery of the district.

### Forest

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.

## Flora

The flora of the district is characterized by the arborescent species such as *Simul* (*Salmaal*ia malabarica Schott. & Endl.), *Neem* (*Azadirachta indica*), *Amlaki* (*Phyllanthus embica*), *Lannea coromandelica* Merr., *Narikel* (*cocos nucifera*), *Khejur* (*Phoenix dactylifera* L.), *Tal* (*Borassus flabellifer* L.), *Bat* (*Ficus bengalensis* L.), *Asvattha* (*Ficus religiosa* L.), *Palas* (*Butea frondosa*), *Krishnachuda* (*Caesalpinia Pulcherrima*), *Am* (*Mangifera indica* L.) and shrubby species such as *ashsheoda* (*Glycosmis pentaphylla* Corr.), *Pianj*, *Rasun*, *Rajanigandha* (*Polyanthes tuberosa* Willd.), *Ghentu* or *Bhat* (*Clerodendron infortunatum* Gaertn.), *Kurabaka* (*Barleria Cristata*), *Gulan*cha (*Tinospora cordifolia*), *Tulsi* (*Ocimum sanctum*), *Solanum torvum* SW., *S. Verbascifolium* L., *Trema orientalis* Bl., *Shiora* (*Streblus asper* Lour.) and *Dumur* (*Ficus hispida* L.).

The uplands of Asansol subdivision and the laterite area of the district are in places covered with *Sal* (*Shorea robusta* Gaertn.), *Mohua* (*Madhnea latifolia*), *Palas* (*Butea monosperma*), *Bans* (*Bambusa arundinacea*), *Shireesha* (*Albizia lebbek*), *Arka* (*Calotropis gigantea*), *Kend* (*Diospyros melanoxylon*), *Arjun* (*Terminalia Arjuna*) and *Ashan* (*T. tomentosa*). The common plants in hedges and wastelands are *lal-bharenda* (*Jatropha gossypifolia* L.), *Ban-okra* (*Urena lobata* L.), *Heliotropium strigosum* Willd., *Hati-soond* (*H. indicum* L.), *Ulu* (*Imperata arundinacea*), *Sida veronicifolia* Lam., *S. cordifolia* L., etc.

The common aquatic and marsh weeds found in the jheels and swamps in the eastern parts of the district are *Keshe* (*Saccharum spontaneum*), *Bena* (*Andropogon squarrosus*), *Caesulia axillaries* Roxb., *Ganj* or *pata-sola* (*Vallisneria spiralis* L.), *Jhangi* (*Hydrilla verticillata* Lasp.), *Pond weed* (*potamogeton indicus* Roxb. and *P. crispus* L.), *Kesar-dam* (*Jussiaea repens* L.), *Kush* (*Eragrostis cynosuroides*), *common Jhangi* (*Utricularia stellaris* L.F. and *U. flexuosa* Vahl.), *Pana* (*Lemna panicostata* Hegelm), *Wodffia arrhiza* Wimm., *Mootha* (*Cyperus rotundus*), *Ceratopteris thalictroides* Brogn., *Monochoria hastaeifolia* and *M. Vaginalis* Presl., *Water hyacinth* (*Eichornia crassipes*), *Ottelia Alismoides pers.*, *Bara-pana* (*Pistia stratiotes* L.), *Sagittaria guayanensis* H.B.K., *Najas graminea* Del., *Hogla* (*Typha angustata* Chub. & Bory), *Hygrorhiza aristata* Nees, *Leersia hexandra* Sw and *Padma* (*Nelumbium speciosum*).

## Fauna

The carnivora of the district comprise leopard, wolf, hyaena, jackal and other smaller species, but hyaenas and leopards are not common. Tigers were formerly common in the district, especially in the jungles of the Asansol subdivision adjoining the Jharkhand, but have now entirely disappeared. Wolves are scarce, and are mostly met with in the jungles north of Kanksa. Wild pigs are numerous throughout the district and monkeys also abound including the variety known as Hanuman. In the hilly areas an occasional python is met with. Poisonous snakes are very common and include several kinds of cobra, the karait and the deadly Russell's viper. Other most frequently seen varieties are the Dhamna and various species of harmless grass snakes.

The common avifauna of the district are pea-fowl, jungle-fowl, jungle crow, house crow, treepie, common babbler, common jora, gold-fronted chloropsis, red-vented babul, red-whiskered bulbul, red spotted bluethroat, brown-backed robin, Shama, Tickell's blue flycatcher, paradise flycatcher, wood shrike, black drongo, tailor bird, streaked fantail warbler, golden oriole, common mayna, pied mayna, white-backed

munia, white-throated munia, spitted munia, red munia, yellow-throated sparrow, house sparrow, woodpecker, India cuckoo, pied crested cuckoo, koel, parakeet, nilkantha, bee-eater, kingfisher, hornbill, hoopoe, horned owl, spotted owlet, jungle owlet, griffon vulture, long-billed vulture, scavenger vulture, laggar falcon, small spotted eagle, brahminy kite, pariah kite, sparrow hawk, various types of pigeon and dove, goose, duck, teal, lapwing, white necked stork and several varieties of egret and heron. The low-lying swampy areas of Bardhaman being in line of migration provide a very good sheltering place for the migratory birds in winter.

### Fishes

Of the rivers and rivulets which pass through the district of Bardhaman, the Ganges (Bhagirathi), the Damodar, the Banka, the Ajoy and the Khari constitute the fisheries of some importance. Out of these rivers, only the Ganges maintains the flow of water throughout the year. The flow of Damodar depends entirely upon the discharge of water by DVC from its barrages. The other rivers practically dry up in hot months when fishes accumulate in depressions here and there to be caught indiscriminately by the fisherman.

Principal catches from the above rivers are as follows :- Rohu (*L. rohita*), Mrigla (*C. mrigala*), Katla (*Catla catla*), Kharke Bata (*C. reba*), Bhangar Bata (*L. bata*), Shrimps (*Metapeneus* spp.) Murala (*A. mola*), Pabda (*C. pabda*), Tengra (*Mystus* spp.), Bele (*G. gurius*), Chela (*C. bacaila*), Punti (*Barbus* spp.), Boal (*Wallage attu.*), Aid (*Mystus seenghala*), Galda (*Palaemon* spp.), Vacha (*E. vacha*), Chital (*N. chitala*), Pholoi (*N. notopterus*), Khaira (*Gadusia chapra*), Fensa (*E. telara*), Silon (*S. silondia*), Bhola (*Sciaenidae coitor*) etc.

### Climate

The district experiences a climate which is transitional between  $CWg_3$  and  $AW_1$  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', ' $g_3$ ' for 'eastern Ganges type of temperature trend' and ' $AW_1$ ' for 'tropical savanna climates'. Average temperature in hot season is  $30^{\circ}C$  while at the cold season is  $20^{\circ}C$ . And average rainfall is 150 millimetre.

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.