Chapter 7
The Damodar Valley: Territory and People
TERRITORY

The Damodar Valley region covers approximately a total area of 57,000 sq. km. Of this, D.V.C.'s command area is approximately 24,235 sq. km. The upper valley of the Damodar covers three districts entirely (Hazaribagh, Bokaro and Dhanbad) and four districts partially (Ranchi, Santhal Parganas, Palamau and Giridih) in the state of Bihar. The lower valley accommodates three districts entirely (Burdwan, Hooghly and Howrah) and two districts partially (Bankura and Purulia) in the state of West Bengal. Economically and socially, the Damodar Valley Corporation plays a significant role in the history of Eastern India, with some primary objectives, such as, (i) effective flood control, (ii) setting up, expansion, operation of irrigation, water supply, navigation and drainage systems, (iii) generation, transmission and distribution of electricity, (iv) extensive afforestation and control of soil erosion through the valley region, (v) to ensure agricultural, industrial, economic and general well-being of the valley and its hinterland. It is often identified as the heart of India from the point of view of geographic – cultural complex, and it is rich with root culture of the tribals and transitional contents.

The Damodar Valley is divided from the point of view of physical features into four parts. The first part comprises extensive plateau and hills in the largest and highest physiographical region. Of this, the Ranchi plateau is dotted with flat topped low hills and a gneissic degradational plain. The Hazaribagh plateau, slightly lower than Ranchi, is a typical ghat landscape leading to the Barakar valley and the Kodarma plateau. The
1991 CENSUS
LOWER DAMODAR VALLEY

<table>
<thead>
<tr>
<th>NAME OF THE DISTRICTS</th>
<th>SCHEDULED TRIBE POPULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>BURDWAN</td>
<td>2,78,192</td>
</tr>
<tr>
<td>HOOGHLY</td>
<td>1,41,047</td>
</tr>
<tr>
<td>HOWRAH</td>
<td>7,280</td>
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<tr>
<td>BANKURA</td>
<td>2,50,590</td>
</tr>
<tr>
<td>PURULIA</td>
<td>2,48,375</td>
</tr>
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</table>

UPPER DAMODAR VALLEY

<table>
<thead>
<tr>
<th>NAME OF THE DISTRICTS</th>
<th>SCHEDULED TRIBE POPULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>HAZARIBAGH</td>
<td>2,27,099</td>
</tr>
<tr>
<td>BOKARO</td>
<td>1,77,123</td>
</tr>
<tr>
<td>Dhanbad</td>
<td>1,71,741</td>
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<tr>
<td>Ranchi</td>
<td>9,64,422</td>
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<tr>
<td>Santhal Pargana</td>
<td>6,21,484</td>
</tr>
<tr>
<td>Palamau</td>
<td>3,17,834</td>
</tr>
<tr>
<td>Giridh</td>
<td>1,48,342</td>
</tr>
</tbody>
</table>

LEGEND:
- Reservoir & Dams
- Thermal Power Stn.
- Hydel Stn.
- Switching Stn. & Substn.
famous mica belt of the Kodarma plateau is much lower in elevation.

The second part is the central upland, a flat, degrational plain carved out from Archaean gneiss. With laterisation of older soil and abrupt upsurge of lateritic hillocks the ground slope of this area gradually descends eastward. Along with these hills, the physiography of the region also has open country with stretches of cultivated fields. Accordingly, the central upland is designated by various names, such as Madhupur upland, Bagodar upland.

The third division is the central rolling plain characterised by raised terraces. The effect of this change can be seen in the natural vegetation or shrubs. The soil becomes reddish and the ground assumes a rolling character with a maximum rise of 50 m. contour line. This region is devoid of marshes and is characterised by broad undulations.

The fourth complex is the low alluvial tract consisting of a group of riverine plains, low lands and marshes, extending between the Bhagirathi and the Hooghly in the east. The physiographic feature of this area is dominated by the Banka-Damodar plains, and the Rupnarayan – Hooghly doab. Agriculturally, this is the most productive land of the valley.1

TOPOGRAPHY

The topography2 of the valley varies from the rough hilly sections in the upper portion of the drainage area to the flat deltaic plains of the lower regions. The highest peak in the upper region is Paresnath, which rises to a height of 4,480 feet above mean sea level. Survey of India topographic maps to a scale of 1 inch : 1 mile with contour intervals of fifty feet, are available for the entire area. Another series of survey of India maps, scale
1 inch : 4 miles, with contour interval of 250 feet, is also available. For the area between the lower Damodar and Hooghly rivers, a map with two feet contour interval, scale 1 inch : 3 miles, is available. In addition, some detailed maps of a few of the dam sites and reservoir areas were obtained during investigations.

**PHYSIOGRAPHIC FEATURES**

Three important physiographic breaks are noticeable in the region covering the Damodar valley. The first is a mixture of recent and older alluvium, and the second comprises older alluvium and laterite together and the third break is seen between laterite and Archean granite-gneiss. As to the geomorphic features, three major relief features of India are found in this region, – namely, peninsular shield of Archean age, the Gondwana basin, and the third is the Bengal basin, which was filled with alluvium during Tertiary and quaternary times. Broadly speaking, there are three morphogenic units, aggradational and degradational flat plains in the east, and degradational and dissected uplands in the middle, the uplifted peneplained surface in the west, shown into irregular ridges, giving a colour of reddish brown and bedded laterite.

The lower portion of the valley below the confluence of Barakar and upper Damodar river has a heavy deposit of alluvial soil due to the frequent overflows during flood. About 51 miles below the confluence of the Damodar and Barakar rivers, the left-bank of the Damodar river is protected from overflow during flood by an embankment or bandh which stretches from this point to the mouth of the Damodar river. The entire area is filled with alluvial soil, fertile uncommonly, and well-suited for paddy cultivation.

The area at present commanded by the irrigation system served by the Damodar and Eden canals is about 186,000 acres and this is only
partially irrigable on account of the restricted rainfall and dry weather and consequent limited water-flow in the Damodar.

The Damodar and the Barakar rivers, both emerging from the western side, flow for some time independently through the core area, forming two basins. The head waters of these rivers descend through steep slopes and flow over the gneissic flat plain. The upper reaches of the Damodar are characterised by terrace-like formations of gravels, forming the region almost into a vast peneplain. The river in the eastern march receiving water from various streams, enters the Gondwana basin. The Damodar then flows through the woody, sandstone and grits of the Gondwana hilly landscape and on the way receives some more small streams. It then passes through the Hazaribag plateau in a meandering course through the Archaean gneiss. Near the western end of the modern Panchet Dam, the Barakar meets the Damodar and forms the Bengal basin.

The Damodar in its eastward march in the flat alluvial terrace receives the Sali, and turning southwards, the river faces a number of spill channels of which the Mundeswari happens to be the most important. The river at this stage is drained by several streams, the Khari, the Banka, the Behula, the Kunti, all entering the Hooghly.

Besides the Barakar and Damodar basins, two other basins, namely the Ajoy in the north and the Dwarakeswar in the south, are important. A low divide separates the Dwarakeswar basin from the river Damodar. The Dwarakeswar bending southwards joins the Mundeswari, one of the tributaries of the Damodar to form the Rupnarayan River and thus the Rupnarayan valley also becomes part of the greater Damodar complex.

The river system in Damodar valley region can be delineated into five distinct basins. These are: (i) Central basin of the Damodar – Barakar
and its tributaries, (ii) Old delta having old distributaries like the Kunti, the Behula, the Banka and the Khari etc., (iii) Southern basin having the S. Koel, the Subarnarekha and the Dwarakeswar and its tributaries, (iv) Northern basin having the Ajoy and its tributaries, (v) Western basin traversed by several smaller streams like the Sakri and the Lilajan etc.

The rivers in the Central basins of the Damodar-Barakar are nothing but the tributaries from the southern and northern slopes. The southern tributaries, i.e., the Chati, the Dainkata, the Saphi, the Batuka, the Nalkari, the Dhobdhab etc. flow over the granite-gneissic surface of northern Ranchi plateau. The northern tributaries are the Ghaghra-Haharo, the Barki-Garhi, the Ramghat-Haharo and the Marmarhar. In the old delta, the Khari, the Banka, the Behula, and the Kunti meet the Hooghly by serving as the important drainage system. Of other river basins, the Ajoy, the Dwarakeswar and the Subarnarekha are important. On the North-Western part of the valley, the Sakri, the Mohani, the Lilajan flow through the valleys creating various types of gullies.

### SOIL-CHARACTERISTICS

The soil of the Damodar Valley is of four types: (i) the red loam soils in the upper middle Damodar Valley region; (ii) Laterite and lateric over the degradational and dissected uplands in the middle Damodar Valley region; (iii) Calcareous dark grey coloured top soils occurring as irregular patches in the upper Damodar Valley region; (iv) Riverine alluvial soil in the lower Damodar Valley region.

Red soil has developed on an extensive area in the Damodar Valley.
region where the country rock is either granite or gneiss or schist. This soil is found over the plateaues and uplands in Ranchi, Hazaribagh, Palamau and Dhanbad districts in Bihar and Burdwan, Birbhum, Purulia and Bankura districts in West Bengal.

Laterites and lateritic soils are mostly concentrated in the degradational and dissected uplands to the east and in the pát (Parta) region to the extreme west of the Damodar Valley region. Those soils are found on the higher pát land of Ranchi and Palamau districts of Bihar and on the plateau-fringes in Birbhum, Burdwan, and Purulia districts of West Bengal.

Calcaneous soils are found in patches in the Upper Damodar Valley region. These soils are rich in calcium carbonate and have originated from the basic rocks like Hornblende schist on weathering.

Riverine alluvial soils are extensively found in the Lower Damodar Valley and along the narrow stretch of the riverine valley in other parts of the Damodar Valley region. The entire area has the following geological successions.

<table>
<thead>
<tr>
<th>Geological formations</th>
<th>Geological periods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alluviums</td>
<td>Recent</td>
</tr>
<tr>
<td>Laterites, Lateritic soils, bauxite</td>
<td>Tertiary</td>
</tr>
<tr>
<td>Gravels</td>
<td>Late Tertiary</td>
</tr>
<tr>
<td>Trap and Inter-trap</td>
<td>Upper cretaceous to Lower Eocene</td>
</tr>
<tr>
<td>Dubrajpur formations supr-panchet, Panchet, Raniganj</td>
<td>Upper Gondwana</td>
</tr>
<tr>
<td>Barren Measures</td>
<td>Lower Gondwana</td>
</tr>
<tr>
<td>Barakar</td>
<td>Lower Gondwana</td>
</tr>
<tr>
<td>Karhorbari</td>
<td>Lower Gondwana</td>
</tr>
<tr>
<td>Talchir</td>
<td>Lower Gondwana</td>
</tr>
<tr>
<td>Vindyana</td>
<td>Purana</td>
</tr>
</tbody>
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LAND-USE PATTERN\textsuperscript{10} (in thousand of acres)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Lower valley and adjoining areas</th>
<th>Upper valley and adjoining areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Forest area</td>
<td>–</td>
<td>5,950</td>
</tr>
<tr>
<td>2. Areas not available for cultivation</td>
<td>879.7</td>
<td>2,251</td>
</tr>
<tr>
<td>3. Other uncultivated land excluding current fallow</td>
<td>509.1</td>
<td>2,274</td>
</tr>
<tr>
<td>4. Current fallow</td>
<td>393.7</td>
<td>4,422</td>
</tr>
<tr>
<td>5. Net area sown</td>
<td>2,774.4</td>
<td>5,381</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4,556.9</strong></td>
<td><strong>20,278</strong></td>
</tr>
</tbody>
</table>

Agriculture in the area by the end of the 1940's was particularly in a depressed state and presented all the features of backwardness. The lower part of the basin was more productive compared to the upper part. But even in this region productivity was low. In the lower valley only 6.7% of the net area sown was used for cultivating more than one crop.

The main crop under cultivation is Aman paddy which, in Bengal, is generally a crop transplanted from a seed-bed. Cultivation of Aman paddy requires an even distribution of rain from the end of June to October which the area is lacking. Of a total area of 1,400 sq. miles approximately 120 sq. miles are located within the catchment basin of Damodar river and 1,280 sq. miles are located outside this catchment basin. Of 120 sq. miles, the western region is mostly composed of marginal land, that is, the lands from where production of crop is commensurate with the investment in labour.
and capital. The low lands of upper Damodar are suitable for agriculture provided there is sufficient provision of irrigation facilities.

The land categories formed in the area, where agriculture has flourished, are of four types, namely Tora, Baid, Kanali and Bohal.

(i) **Tora** : The land existing in the higher level of the undulating surface mostly in the western part, is called Tora or Dangaland. This type of land represents coarse-texture dry soil with the water table far below the surface. Sheet erosion is a common phenomenon and on this type of land cultivation is practised on considerable difficulty.

(ii) **Baid** : The Baid land is found adjacent to the Dangaland. It is of better quality in comparison to the Dangaland. Soils are coarse-texture, but containing more moisture than the Dangaland. A low percentage of paddy grows in this type of soil.

(iii) **Kanali** : Lands just below the Baidland are known as Kanali, which have a fine soil. Water-table is more or less near the surface. Paddy cultivation is practised here without much difficulty.

(iv) **Bohal or shoal** : Adjacent to Kanali land, shoal or Bohal lands are found in the lowest elevations. Soil is fine in texture, darker in colour with water-table close to the surface. Land of this type gets sufficient water and this is highly suitable for two crops in one season.

**FLORA**

The Damodar Valley region has only a little less than 20% of the total area under vegetation mantle. The vegetation cover or woodlands in
upper, middle and lower Damodar valley region show striking contrast in its spatial extant. The vegetation types found are savanna woodlands with secondary growth or shrubs and vines. In general, deciduous and semideciduous vegetation is dominant. Of all species of vegetation, the *sal* (shorea robusta) is the most important. Next comes the *asan* (*I*erminawa tomentosa), *Kend* (*Diospyros melanoxylon*), *gamahr* (*Gmelina arborea*) and *simul* (*Bombax malabaricum*). On the steeper slopes with thin soil-cover having drier climate trees with lower stature dominate over the *sal*. Of these species *dhak aonla* (*Phyllanthus emblica*), *harra* (*Armossa rohitulua*), *piar* (*Buchanania latifolia*) and bamboos are common. Associated with the *sal* in the mixed forest other species like *mahua* (*Bassua Lafolia*), *jamun* (*Euguenia Jamobalana*), *kusum* (*Scheichera trjnga*) are common. Numerous species of grasses are also found in the moist deciduous forest. The most common of this species are *sabai* grass and spear grass. Tropical dry deciduous vegetation namely *salai*, is very common of all species in the Palamau forest. The economic value of most of these species is immense. By far *sal* is the best of all timbers. Bamboo is required as raw-material in the paper-industry and for house-building and other uses. The *kusum* is used as a host-tree for lac culture, the *khair* is utilised for dye-stuffing and as ingredient for pan. In recent years sabai grass has become an important raw material for paper-industry and rope making.

**FAUNA**

The common animals, both wild and domesticated, which are generally found in West Bengal are available in the area of the Damodar Valley. Of wild animals, tiger, bear, deer, hyena, fox, wild-cats etc. infest the deep forest region of uplands of the upper Damodar Valley. In the late 50's of the century *Chita* was considered as very prominent, but human
greed for tiger's skin, bone, and flesh has ultimately led to the extinction of this species. Common birds of Bengal are all available. Long beaked herons are the objects of graze on the marshy region of lower Damodar. Of the domesticated animals, buffalos, cows, cats, dogs etc. are frequently referred to by the people of the locality in their religious rituals also.

PEOPLE

THE TRIBAL PEOPLE

The majority of the original inhabitants of the Damodar Valley region, especially of the areas in Bihar and the districts of West Bengal adjacent to Bihar and the Orissa, belong to the tribal category. Of these, some well-known tribals include the Santals, Mudas, Hos, Oraons, Birhors, Paharias etc.\(^1\)

(i) **The Santals** : The Santals form the largest tribal group of the eastern region, concentrated mainly in the Santal Pargana district. They have migrated and settled down in Manbhum and Hazaribagh areas, besides Burdwan, Bankura, and Purulia in the Damodar Valley. Clearing the vast tract of jungles they turned their habitat into cultivable land. Irrigation techniques were introduced and the village-life was systematically organised.

(ii) **The Mudas** : The most ancient aboriginal tribes of the Chhotonagpur Plateau, the Mudas, concentrated in Ranchi, Singbhum, Hazaribagh, Manbhum and Palamau districts. In spite of their
conservativeness, they also moved out of their original homeland as agricultural and industrial labourers.

(iii) **The Hos**: Hailing originally from the Singbhum area, the Hos migrated in large number to the adjoining industrial areas, especially the coal mines and steel complexes. Agriculture was their main-stay. The Ho society is headed by the community chief and the rest of the community is known as Parjas or subjects.

(iv) **The Oraons**: The Oraons came from the southern part of Ranchi and displaced the Mundas. The Oraons are now settled in the districts of Ranchi, Palamau, Singbhum, Santal Parganas, Hazaribagh and Manbhum areas. In the field of agriculture and cultural contacts they are acquainted with advanced techniques.

(v) **The Birhors**: The Birhors are mostly found in Hazaribagh and Ranchi districts in Bihar and in the Baghmundi area of Purulia district in West Bengal. There are two distinct types amongst the Birhors – Uthulu or Bhulia Birhors and Jaghi Birhors. Uthulu groups lead a life of food-gatherers and hunters gathering wild forest produce including honey and beeswax and build their hutments temporarily. On the other hand, Jaghi Birhors are more organised and settled. Some of them have even taken to slash-and-burn cultivation producing millet, maize and beans.

(vi) **The Paharias**: The Paharias are divided into two groups, Sauria and Malpaharias. The Sauria Paharias live in inaccessible and hilly tracts. As they are comparatively less exposed, they retain their traditional tribal ties. They practise shifting cultivation and also grow sabai grass used for largescale paper-manufacturing. On the other hand, the Mal-paharias raise dry crops on table-land of the plateau, employing plough and bullocks. As a result of the adoption of the food production technique, they are definitely
more advanced than their Sauria brethren. Both the groups live in and around Santal Pargana. The Sauria Paharias are found settled in Godda Rajmahal and Pakur sub-divisions.

(vii) **The Bhumis**: The Bhumis have settled in Midnapur, Bankura and Hooghly districts in West Bengal. Many of them are adopting surname of 'Singh' avoiding their totemic exogamous clan names.

**CLASSIFICATION OF THE TRIBES**

The tribes of the Damodar Valley may be classified into two major groups from ethno-linguistic point of view. The languages of the tribes like the Mundas, the Santals, the Hos, the Mahalis and a section of the Koras belong to the Mundari family with a slight admixture of Hindi, Bengali and Urdu elements. The Oraons, the Malpaharias or the so-called Malers speak in dialects akin to Dravidian group of languages. The Kurukh language of the Oraons, the Malto of the Malpaharias or Malers bear close affinity to the southern languages like Tamil, Telegu, Malayalam, Kanarese etc. – all of Konkani family. The Koras have different strains, while the majority of them speak in Mundari language, some transact their business in different types of Dravidian dialects. Recently, the nomenclature 'Kora', being applied to all those who have adopted earth-digging as a profession, actually represents a unified form of diverse elements coming from different linguistic groups.

Physical anthropologists generally put stress on physical characteristics of the tribes and classify them into great human races. Human beings of the world – the Homosapiens are generally divided into three broad races, namely, the Negroids, the Europoids and the
Mongoloids. The African Negroids and the oceanic Australoids are two classes of the great human race identified as Negroids. The southern Africans, central Africans, the Sudanese and east Africans belong to the African Negroid group. The Andaman Negroids, Melanesians, Australian aborigines, Quril Ainus and the Veddoids of Srilanka and Gond are the sub-groups of the Oceanic Australoid people. To the great human race known as Europoid belong the Indo-Mediterraneans of Southern Europe and Atlanto-Baltics of Northern Europe. The South-Indian Dravidians, the third eastern aborigines and the people of Mediterranean Balkan region, the intermediary group of Atlanto Black-sea region and the intermediate ethnic groups of Eastern Europe are the sub-groups of Indo-Mediterraneans Europoids. Atlanto Baltic peoples and white-sea Baltics are examples of the sub-groups belonging to North European Atlanto Baltic races. The Mongoloids are the third numerous people of the world. They are generally divided into two races, Southern Mangoloids and the American Red-Indians. Southern Mangoloids live in Asian-Pacific regions. Southern Asians and the Polynessians are two sub-groups of Southern Mongoloids. Northern Americans, (not the Colonialists but the original inhabitants), Central Americans and Pantagonians are three sub-groups of American race of Mongolid stock.

 PHYSICAL CHARACTERISTICS OF THE TRIBES

The tribes like Mundari speaking peoples, the Dravidian speaking people etc. are actually the vestiges of two great human races like Negroids and Europoids. The Mundari speaking peoples bear strains of Negrito elements mixed with Australoid stock. The Veddoids, the Ainus, the Melanesians and the Andamani Negritos are similar in appearance with
the Mundari speaking peoples, now identified with the Santals, Hos, Kols, Mahalis etc. The Oraons, Malpaharias or the Malers are the off-shoots of the southern stock of people of India, broadly classified as the Dravidians. Perhaps, they had distant ethnic relationship with the people of the Indus Valley region of the century before Christ and as such similar to the Indo-Mediterranean Europoids. The physical characteristics of the Mundari speaking people may be referred to as under: a colour of the body deep black, hair either straight or slightly waving. Hair on face and body are scanty, though sometimes profusely spread in some individuals as exceptions. The cheek is narrow, nose not uplifted, but generally flat. The end of nostrils are broad in opening. Upper jaw is slightly elevated. Lips are thick, particularly the cavity is broad. The lower part of the body is longer than the upper part. Since the colour of the body, eye and hair is black, they are called 'Niger', a Latin word for black.

The Dravidian speaking tribes of the Damodar Valley have certain characteristics, which are not always uniform but diverse and vary from sections to sections, indicating a direction that there had been much admixture in the past. The colour of the body of these groups are generally blackish brown, sometimes with trends towards burnt amber. The facial complexion assumes reddish, when brightened with sun-rays. The hair is soft, sometimes curling, but not thick. The body-hair is profusely spread and is very thick on chest and leg. The cheek without being narrow, stands on the midway to swollen or puffed up, assuming a very romantic and smooth shape, because it provides a dreamy shape to entire facial structure with broad eye. The forehead looks like a flat valley ending with the elevated eye-brow. The intermediary part from the nose-end to the upper lip is elevated. The nasal track is narrow and the nose as a whole appears to be elongated. Lips are soft and thin. The height of the body is medium and the skull is dolicocephalic.
ETHNIC ASSIMILATION

The difference in physical traits of both the Mundari speaking peoples and the Dravidian speaking peoples are not so prominent as to indicate clear categorisation between Australoid and Indo-Mediterranean groups. The apparent view would be such that both the groups bear similar traits and pose themselves as if belonging to a singular origin. The complexion of both the Dravidian and the Mundari speaking peoples is black. The height is more or less same. The cephalic index is more or less of the same standard. The nasal shape never likens that of the north-western people, particularly the people of the Punjab, Haryana, Sindh or Afghanistan, amongst whom the physical characteristics of the Indo-Aryan people are prominent. The general features of the equatorial races are visible amongst both the Dravidians and the Mundari groups, as a result of which it would not be unreasonable to assume a common ethnic bond that perhaps developed in the pre-historic age itself. Nesturkh in his Treaties on Human Race has remarked that all the races of mankind had a common close ethnic bond in their past, the differences arising out of the diverse natural environments. They had to live under diverse circumstances. Man is man and mankind is a single race and nothing beyond that would be the view point of an ethnographer, he emphasised. Nesturkh’s concept of oneness of man, even though stigmatized as unscientific, had certain validity, if we observe the close resemblance of the physical features of the Mundaris and Dravids. Minor differences are so insignificant that we may safely deduce that they arose out of the adaptation with diverse natural circumstances.

LINGUISTIC CHARACTERISTICS OF THE TRIBES

The languages of the tribes under study may be divided into two
broad categories. Firstly, the Mundari language, consisting of the dialects of the Santals, the Mundas, the Hos, the Birhors, the Bhumijis, is very rich in diversified vocabularies and also in literary compositions. Secondly, the Dravidian language, consisting of dialects of the Oraons, the Malpaharias and a section of the Koras, has never faltered in the pace of development with other Davidian languages like Tamil, Telegu, Malayalam etc. The language of the Oraons is called the Kurukh which means "man". It is supposed to be a branch of the great Konkani family of modern India. The Malta language of the Malpaharias and the Kurukh language of the Oraons are virtually two forms of the same language. In Malta external influences, particularly Semitic influences, are more pronounced. It has been held by the lexicographer that the Malta speaking peoples were perhaps exposed to Islamic contact, sometime in the thirteenth and fourteenth century.

The Mundari group of languages have amalgamated certain terminological characteristics of the Indo-Mongoloid group. Virtually it represents a linguistic fusion of the languages spoken by various peoples of Austro-Asian territories and, as a result, it has been elevated to the most suitable form of communication among a vast number of people living in eastern India.

The languages of the Kora tribe of the Damodar Valley is interesting from the point of view of acculturation. We may rather call it a synthesised language arising out of the mixture of Mundari Dravidian and Indo-Aryan groups of languages. The study of the Kora language is significant, if we consider it a 'turning stage', a springboard wherefrom the basic Bengali dialects evolved, assimilating the Indo-Aryan, Dravidian and Austric elements. There is much re-assemblage of these languages with the phonetic characteristics of the earliest form of Bengali language in literature known in Charyyācharyya of the ninth, tenth and eleventh centuries.
ANTiquity of the damsDar valley

In the high plateau-region of the Damoda, which is in fact, another part of the Chhotonagpur plateau, the remains of the rich palaeolithic culture have not only been confirmed by modern researchers, but some areas like Singhbhum have emerged as epi-centres. If these discoveries have anything to do, the hill-girt forested upland of the Damodar region must have been an ideal habitat of the Palaeolithic people.

Stray finds of tools found from this region clearly indicate that human settlement goes back to the Palaeolithic age. From 1865 to 1874, Ball reported as many as four specimens of Palaeolithic tools. The distribution is rather widely spread. One handaxe made from quartzite has been picked up in Jharia, the second, a 'pebble tool' made from mica icons quartzite, was found on the Bokaro coal field; the third specimen made of quartzite was discovered at Beharinath hill area, and the fourth one was found at Raniganj coal field. Anderson in 1917 reported again of some Palaeolithic sites located in this region. Since then there has been no systematic investigation, though casual references may have been made to some finds. Our knowledge in this regard has been enriched by recent researches which have revealed a large number of hand-axes and cleavers from this place.

Human population appear to have increased in the central upland of the Damodar region in the beginning of the Holocene period. With the adequacy of games, fruits, raw material for tools, the region provided natural shelter for protection against the elements and enemies, and plentiful water-resources for easy living. This was the time when there was a marked diminution in the size of stone tools, the period being labelled variously as Late Stone age, Mesolithic or Microlithic age. Interestingly, the
evidence of this stage is found in both the central upland and in the central rolling plain. Perhaps the Mesolithic people extended their settlement and occupied new ecological niches, taking advantage of the new landscape. In the Holocene period, this vast region was perhaps intensely inhabited. During this period, the forests were teeming with wild life and produced a large variety of edible roots and fruits, and water resources gave plenty of fish and tortoise. Particularly the tortoise multiplied so immensely that it became a part and parcel of the Mesolithic culture. The discovery of the high percentage of finished and unfinished tools found scattered in the region leave no scope of doubt that the region was a nuclear area of the Mesolithic man. But here too the excavated evidence is meagre. The only excavated site in this region is Birbhanpur on the Damodar river, where the microlithic deposit overlies a layer of silty sand mixed with laterite pallets. Pre-microlithic strata at this site was produced under conditions of heavy rain with a downward percolation of water. On the evidence of the deposit it is clear that the occupation was neither seasonal, nor of short duration. The large number of materials laid bare in different clusters found around the Birbhanpur site clearly indicate that there was a sudden and quick spurt in population, expansion of human settlement and more intensive exploitation of this new ecological zone. It seems that the new technology proved itself to be superior to the tool technology of the Palaeolithic age and, within a short span of time, it was diffused over the entire region, and probably supplanted the older technology. The adoption of bow and arrow as a hunting tool must have greatly improved the efficiency in hunting and thereby increased the food supply. The technology is essentially based on blade and bladelets which were produced in abundance by pressure technique. The tool-kits that have been exposed in the site are dominated by flakes and blade tools comprising thin parallel-sided blades, points, scrapers, lunates borers and burins.

On the west of Birbhanpur, Bankathi is located. Bankathi provides
interesting evidence of a factory and possibly a camp site. In addition to quartz and chert, the people living in this area had extensively used fossil-wood as a raw material.

The western district of Bankura, Birbhum, Midnapur and Purulia seem to have been the ideal habitat for the Neolithic man. Archaeological records are found from Ranchi, Singbhum and Santal Parganas, where the existence of a cluster of a large number of Neolithic men practising shifting cultivation is proved from the available tools like axes, adzes, hoes, chisels, hammer-axes, hammer-stones, ring-stones, pounders, grinders, saddle querns and scrapers. In the east of the rolling plain, i.e. from the Asansol plateau a new picture emerges. Here the village units which should be called Neolithic in the sense of being self-sufficient, had a distinctive blade-industry and a little copper almost right from the beginning. Even in the areas where the ground and stone industry dominated the blade industry, the metal using culture became amalgamated with the basic Neolithic tradition. The phase of culture has been appropriately termed by Krishnaswami as 'Neolithic-Chalcolithic'.

The stretch of land starting from the point where the Damodar touches upon the Burdwan district at its junction with the river Barakar, and then heading in a south-easterly direction, passing Raniganj and Andal, and extending up to the town of Burdwan, happens to be the sub-centre of the Chalcolithic people. In general, the morphological division of this region includes eastern-most limit of the Chhotanagpur fringe area in the west, the old deltaic plain in the centre and the rich Gangetic alluvium in the east. Of these the first two geographical clusters provided the natural setting for the prehistoric peasants. The soil-formation of this region is formed of lateritic residues consisting of red loam, generally non-lached in character.
Bharatpur located on the river Damodar is most important for its Chalcolithic remains. On the basis of the report published in the *Archaeological Review* a general picture of the history of this site can be traced. In the bottom layer of this site the Chalcolithic assemblage is found together with a noticeable deposit of bone and stone tools and a limited use of copper. The economy of Bharatpur started basically as one of herdsmen with domestic oxen (the bones of bovine animals), were found at the site who were not perhaps sufficiently acquainted with agriculture, living in small huts, using handmade potteries and later on developed as a fully formed Chalcolithic culture using stone, bone and copper, for making tool kits. The potteries available from this region are diversified both in forms and shapes. Some of the geometric motifs on the paintings on pottery are sufficiently distinctive to suggest comparison with Chirand in Bihar and Pandurraj Dhibi in Bengal. The beautiful bone-objects including decorated combs, varieties of spiral bangles in copper, a large hoard of beads of semi-precious stones, stable remains of continuous habitation and house-remains provide a general impression of affluence. There is no doubt that an effective rural agricultural base was created during this period and the villages were securely established. The available C-14 data suggest a date for this phase around the middle of the 15th century B.C. Located on the Khari, a tributary of Damodar, Baneswardanga presents another important Chalcolithic site, situated on a high way, heading towards Katwa, the place which grew up in a sprawling manner at the confluence of the Bhagirathi and the Ajoy in the early historic period. The site represents three phases of development. Period I represents Chalcolithic culture and reveals various forms of black-and-red ware including the knife-edged, carinated or channel-spouted bowls, the dish on stand, basins with flaring mouth, convex-sided vases, cups with sagger-base and high beakers. The period II reveals a large number of iron slags along with Chalcolithic materials. Floors of beaten 'moorum' or composed of lime plaster evidently belonging to huts with walls of wattle and daub have been noticed in the
successive layers of the deposit. The evidence of fish-bone and skeletal remains of bovine-like animals, pigs, indicate the food habits of the people living in this region. Period II of Baneswardanga reveals a continuation of Chalcolithic potteries along with a new ceramic tradition.

Exploration on the terraces of the Khargeswari stream, another tributary of the Damodar, at Santaldanga very near Baneswardanga, has brought to light remains of a proto-historic cemetery-site along with grave goods like bowls, basins of black and red ware with flanged or convex rim. Human skeletons are found in north-south orientation in the matrix of hardened silty sand. It is possible that Santaldanga was used as a cemetery by the people living in Baneswardanga.

From the evidences unearthed by archaeological excavations, the cultural format of the area is revealed. It leaves no room of doubt that there was a unified historical pattern, both in the core and in the peripheral region of the Damodar complex from the Chalcolithic period onwards. Moreover, it can also be proved that in the entire area a form of village-life evolved, that possessed a history dating back to around the sixteenth century B.C., if not earlier.

DAMODAR VALLEY IN EARLY INDIAN TEXTS

The entire area excepting the first part of the valley is known in ancient geography of Bengal as Raḍha. If we consult the Jain text, we shall find the references of this tract of land frequently. Raḍhā in the Jain Ācārānga Sūtra is identified with Sumbha by Nilkantha, the great commentator of the Mahābhārata. In a scripture of 6th Century A.D., the Bhavisya Purāṇa, Nārikhaṇḍa or Raḍhikhaṇḍa has been described as a district
abounding in thicket. "It lies West of the Bhāgīrathī, north of the Dwārakeswārī river. It extends along the Pañchakuta hills on its west and approaches Kikata on the north. The forests are very extensive, chiefly of Sakhota, Arjuna and Shala trees with a plentiful addition of brush-wood. The district is celebrated for the shrine of Baidyanatha. The deity is worshipped by the people from all quarters and is a source of every good in the present age. In the division of Birbhum is located no less eminent form of the same divinity named Bakreswara. Three-fourths of the district are jungle, the remaining fourth is cultivated. The soil of a small part of it is very fertile, but for the greater portion is saline and unproductive. There is no want of water and numerous small streams run through the forest, the principal of these is the Ajoy. In many places there are iron-mines.

The people are in general small, black and of immoral propensities and ignorant of religious duties. A few only are attached to the name of Vishnu. They are dexterous bowmen and industrious cultivators. In that part of the district called Bīradesha is the city of Nagara and other towns."

In the Digvijaya Prakāśā Rādhā has been identified as under:

"Gauḍasya Paśchime bhāge
Bīradeśasya Pūrbataḥ,
Dāmodaro uttarabhāge
Rādhā desha Prakīrtitih"

In the Āchārāṇga Sutta Rādhā was the pathless country through which Mahāvīra travelled with his mission of religious preaching and where he met with a horde of barbaric race. The dogs of its peoples ran at him and he was insulted by the natives. From the same source in which the story is related we come to know that Lādhā had two parts, Vajja Bhumi and Sumbha Bhumi. In Vajja Bhumi the Jains had to live on filthy diet.
According to the Prajñāpanaā\textsuperscript{34} another Jain text, Rādhā-Janapada was adjacent to Vānga and had its capital at Kotivarsha which is supposed to lie in West Dinajpur district. Dāmodaro Paṭṭoli (fifth and sixth century) describes Kotivarsha to be a part of Pundra-Vardhana-bhukti. The Dīpavamsa and the Mahāvamsa, the Ceyloness chronicles, throw light on the legend of Vijaya who went to Ceylon from Lāḍhā and his father Sīhabāhu founded a town named Sihapur in Lāḍhā. Sihapur has been identified with Singur in Hooghly district.

Again, in the 9th Century A.D. this Rādhā is said to have had two parts, (i) Uttara Rāḍha, and (ii) Dakshina Rāḍha. The Tirumalai inscription of Rajendra Chola specifically refers to the lands of Takkana Lāḍham and Uttira Lāḍham in connection with his conquest. The Belava CP inscription of Bhoja Varman mentions a village named Siddhalgrama, the birth place of Bhābadeva Bhaṭṭa situated within Uttara Rāḍhā. The so-called Bhubaneswar inscription\textsuperscript{35} has stated that Bhavadeva Bhaṭṭa was an inhabitant of Siddhalagrāma in Rāḍhā and this place was dry and infested with jungles. He had a tank excavated for the welfare of the people of this locality.

The ancient name of Rāḍhā or atleast a part of it might have been Sumbha. The Mahābhārata (Sabhā-Parvah) has told the story that Karna and Bhīma extended their conquest to the territories of Sumbha, Pundra and Vānga. Bhīma had captured also Mudgagiri and Tamralipti in addition to Karna’s annexation. Patañjali’s Mahabhāṣya has mentioned several important eastern states named as Anga, Vānga, Sumbha and Pundra. In the Daśakumāracharita, Sumbha and Tamralipti are not held to be separate. On the contrary, Tamralipti is recognised as a part of Sumbha. Raghu in the Raghuvamśa had conquered the Sumbhas, a people living on the seashore. He followed the course of the Gaṅgā-Bhagirathī and marched towards the south in the direction of the sea. The southern tract was called
Sumbha. Dhoyi in his Pavanduta gives the information that Sumbha was on the bank of the Ganges and the Yamuna was within it. The capital of Lakshmana Sena was to be reached crossing through Triveni. The above evidences are prone to indicate that Sumbha was on the western bank of the Ganges and that it lay on the southern territory on the western side of the Ganges, thus corresponding to a part of the territory of Rādhā of later texts. Moreover, in the medieval literature, Ichhai Ghosh who had his center of power on the southern bank of the Ajai has been designated as the Adhipati of Sumbha. Nīlkanṭha, the commentator of the Mahābhārata, has explained that Sumbha and Rādhā are the names of the same territory. A fact revealed from the above is that during the age of the Mahābhārata the name Rādhā was not prevalent and the region called in the later texts as Rādhā was within Sumbha territory. But at a later period with the rise of Rādhā, the name of Sumbha was applied to the southern part of Rādhā which included Tamralipti and the sea-shore.

INTRODUCING THE DAMODAR VALLEY CORPORATION

The river Damodar enjoys a rare love-hate relationship with the people on its banks and beyond. From the myths and folklores to media and official memoranda everywhere Damodar’s erraticism and potentialities have been recorded with due weightage.

Continuous popular agitation climaxing after the 1943 flood led the men at the helm of affairs to seriously undertake the task of taming the river and harnessing the valley. A ten-men Enquiry Committee was formed including two of the most distinguished men in the country, Dr. Meghnad Saha and the Maharaja of Burdwan. On the basis of their recommendations, the model of Tennessee Valley Authority of the USA was adopted.
The TVA had successfully turned the Tennessee river into a multifaceted source of prosperity and power. The Central Government inducted a TVA expert, W.L. Voorduin\textsuperscript{36} to prepare the preliminary Memorandum. The Damodar Valley Corporation, the D. V. C., formally came into being on July 7, 1948 by an Act of Constituent Assembly. It was independent India’s first multipurpose river valley project. The D. V. C., in fact, pioneered what was a nationwide movement to develop an integrated infrastructure for the progress and growth of agriculture, industry, trade and commerce.

With the D. V. C.’s dams, barrage, and canals, security was restored to a great extent for the rural population of the valley. But the D. V. C.’s task was more than mere restoration of security. Right from its inception, the D. V. C. was committed to an all-round prosperity of the valley. Industrialisation was the call of the day. Vital input was natural power. The D. V. C.’s concentration was stressed on this front.

When the D. V. C.’s power system\textsuperscript{37} came into being it was the major source of power in the area and was virtually responsible for industrial growth of the region. Hydro-electric Power generation came as a natural off-shoot of flood control. Appreciating the unlimited potential for industrial growth, the need for stronger inputs of a major motivator, electricity was felt.

The D. V. C’s first Hydel and Thermal Power stations came up at Tilaiya and Bokaro within the first five years of establishment.

**Bokaro 'A' Thermal Power Station**

The first one installed with capacity to generate 190 MW (3 x 50 MW & 1 x 40 MW) was commissioned in 1953 in Bihar. Three units have
at present capacity of 50 MW each and the fourth unit has been derated to generate 40 MW. It was the first Power Station to have a captive coal mine.

**Tilaiya**: The first Hydel station was installed with capacity to generate 4 MW (2 x 2 MW). In 1953, the D. V. C.'s first Hydel power station started functioning at Tilaiya. The complex is located on the river Barakar in the district of Hazaribagh, Bihar.

**Durgapur Barrage**: Inaugurated in 1955, it took three years to build and subsidiary structures were completed by 1958. In 1956, water was required to irrigate 11,000 acres only.

**Maithon**: A breakthrough was installed with capacity to generate 60 MW (20 x 3 MW). It was underground and first of its kind in Asia at the time of commissioning in 1957 and the second Plant in the D. V. C. Hydel facility that went on stream on the bank of the river Barakar in Burdwan, West Bengal.

**Panchet**: Another Hydel source was installed with capacity to generate 80 MW (2 x 40 MW). Right on the river Damodar in the Dhanbad district of Bihar came the Panchet hydroelectric station alongside the Panchet Dam in 1959.

**Chandrapura**: Thermal Power station – biggest in system was installed with capacity to generate 780 MW (3 x 140 MW, 3 x 120 MW). This 780 MW station has six units which were constructed in two phases between 1964 and 1979. Located in the heart of the richest coalfields in the country, CTPS was a natural growth-centre and today is one of the most dependable sources for electrical energy in the region.
**Durgapur** : Thermal Power Station was installed with capacity to generate 350 MW (1 x 140 MW, 1 x 210 MW). Located in the district of Burdwan in West Bengal, the DTPS was set up in the 60's, with two 75 MW units and one 140 MW units in the first stage. Subsequently another 210 MW unit was added to the plant in the early eighties.

**Bokaro 'B' Thermal Power Station [630 MW(3 x 210 MW)] :**

It was created in response to the growing demand for power in the valley. The complex, located on the banks of the Konar river from which it draws water at the rate of 1.08 MG per hour, was commissioned in between 1987 to 1993.

**Panchet Reversible Turbine** : In 1991, the Panchet Hydel pump storage station comprising a water turbine - cum - pumping set of 40 MW capacity is already operational. It is another from the D. V. C., in which the reversible turbine could be used as a conventional hydel turbo-generator and as a pump motor unit to pump the water back into the main dam during low demand period.

**Maithon - Gas Turbine** : 82.5 MW (3 x 27.5 MW) – In 1991, a 82.5 MW Gas Turbine was commissioned at Maithon. It has been designated to operate as single unit system on intermittent cycle. The GT is of self-contained modular form. High speed diesel is used for starting and stopping the operation while Naptha is used for running the units.

**Mejia Thermal Power Project** : Installed with capacity to generate 630 MW (3 x 210 MW). It is located at Latiaban village, but covers Benaghari, Chausal, Durlabpur, Baradaha and Nandanpur villages in Bankura. Three
210 MW units will grow on the red laterite soil 15 KMs south of the Damodar river and opposite coal rich Raniganj.

The D. V. C.'s commitment to prosperity does not end with its operation at dam, Power plant, irrigation, canal or navigation Projects. In fact, the human side of the D. V. C. embraces every community, every village and township around its Projects. The ordinary people's humble dreams have become heartwarming realities. Today, cottage and small-scale industries, social forestry are flourishing and have created multi-purpose community centres for educational, family welfare and primary health services. Social Integration Programmes introduced by the DVC have raised levels of "Conscious and responsible action" among the people at large.38

SOCIAL INTEGRATION PROGRAMME

The most important avenue to expose the tribals to the life-pattern of modern age is the Social Integration Programme (S.I.P.) launched by the Damodar Valley Corporation. The Programme was initially introduced in the year 1982 in the name of Social Obligation Programme. It was re-named in 1994 as Social Integration Programme. The D.V.C. undertakes various social and economic development activities in almost in all its sectors, namely, Durgapur, Maithon, Panchet, Konar, Tilaiya, Chandrapura. The sector-wise reports are available each year from the D.V.C. authorities.39 The perusal of the reports would reveal that developmental activities in the sphere of Education, Health & Family Welfare, Civic amenities, self-employment and Vocational training, Minor irrigation, Sports and Entertainment, Supports of DVC Schools and Hospitals for education, medical facilities etc. have ushered in radical change among the beneficiaries, the majority of whom are the tribals. The SIP has always
remained in-built in the DVC's charters of objectives to lay very special emphasis on this and to foster all-round progress amongst the communities residing within the 10 Kms of DVC's main projects. A comprehensive programme with multi-faceted objectives was primarily launched in 1982. At that time, it was started with 25 villages around Maithon, Panchet and Chandrapura to which villages around Durgapur and Panchet were added next year, raising the number of villages to 235 under the scheme. Subsequently, areas around Tiljaiya and Konar were also added and steadily the number of villages under the scheme went up to 90. In 1992-93, this welfare scheme assumed a broader purview. In that year, the Programme was operative in 90 villages with a view to providing inputs for various development issues.

The reports, so far as available, throw light on the quantitative aspect of the programme. The quantitative impact has never been surveyed beforehand by the DVC.

Education (Non-formal education)

Forty non-formal education centres comprising Night schools/Adult education Centres are being conducted at seven DVC Projects. Students are provided with study materials free of cost. So far as the reports of 1996 are concerned, the following information may be cited on the achievement of non-formal education schemes.

In addition to non-formal education schemes, assistance from the DVC was made available for infrastructure development of DVC School and Hospital. In the Programme, the DVC extended assistance for construction of Primary school buildings, and renovation of existing buildings. More than 90 rooms in 55 schools have been constructed and renovated.
Furniture, laboratory materials, library books and other items were provided to different schools. Intending students of near-by villages were encouraged to attend DVC schools in all the DVC formations.

The DVC also did not lack behind the literacy campaign. Literacy drives were undertaken in association with local Literacy Committees at Maithon and Bokaro.

Health

Health awareness camps on mother-and-child care, cancer-detection, stomach-ailments etc. are regularly organised in different villages. Immunisation and Eye-care camps are also regular features. Relief camps at Maithon and CTPS have combated epidemics of diarrhoea and dysentry. Special Family Welfare camps are organised to provide facilities for tubectomy and vasectomy operations. Three mobile clinics are in operation around 45 villages neighbouring Maithon, Chandrapura and Bokaro. 50 to 80 Patients are receiving daily medical supports. The DVC has set up 15 Homeopathic dispensaries in different villages around its major projects. These dispensaries provide free health check-ups and medicines to the villagers. Two sub-health centres at Pipradih and Kumma villages near Chandrapura are providing medical facilities to six surrounding villages. Villagers around the DVC Projects also receive medical care from the DVC hospitals and dispensaries.

Civic Amenities

Link roads, approach roads and village-roads running to a length of 85 Kms. have been constructed by the DVC. Besides, road maintenance, renovation and black topping are also taken up. Culverts, bridges and roadside drains and passenger-shellers in villages near BTPS, Konar and
Tilaiya have also been constructed and renovated. Twelve solar street lights have been installed in different village-roads. Two bruning ghats with rest rooms and three bathing and washing ghats were constructed in different villages. To provide sanitation facilities, four unit 'sulabh sauchalayas' have been constructed in villages around Maithon, Bokaro and Chandrapura.

25 drinking-water wells have been constructed and renovated benefitting 75 villages. 25 villages have been provided with more than 100 tap-water points receiving water through the DVC overhead tanks. Special water supply provision during summer is also made through tankers in 6 villages around Maithon. Disinfectants are also supplied to the villages.

Agriculture

34 units of Pumpsets have been provided which irrigate 1360 acres of land benefitting 47 villages. Irrigation wells, two at Konar and five at Panchet are benefitting four villages, irrigating a total area of 160 acres. Reservoir/Pond renovation, two each at Konar and Panchet, have been carried out. Check dams, four at Konar and two at CTPS under SIP scheme, have been constructed. More than 8,000 check dams under the DVC's soil conservation scheme are also benefitting villagers in the upper valley area. Villagers are being trained in advanced methods of farming including use of high-yield seeds, fertilisers and insecticides.

Animal Husbandry

A $oo$-bird farm is functioning at CTPS. Training Programmes on Poultry farming are provided by the DVC. Apiary scheme operates near Bokaro. Bee-keeping boxes are also provided to the villagers. Villagers are sent to KVIC, Ranchi, for training in improved methods of dairy farming with
crossbreed cows.

Self-Employment

Nine centres of sewing, knitting and embroidery have been set up which impart training to 135 ladies every year. After completion of training they are guided to receive bank-loans for setting up their own business. One typing training centre has also been set up at DTPS where 10 educated rural youths can receive training every year. Inputs are provided by the DVC. 17 Women trainees have been trained in leaf-plate making at Panchet.

Machine shop at Jharnadih near CTPS has been set up and fully equipped by the DVC to train tribal villagers. The DVC is also placing orders for machine-Parts required for its Power-Station. Brick kiln and Stone crushing unit have been set up at C.T.P.S. and are now being jointly financed by the DVC and State Bank of India. Products of these units are marketed with the help of the DVC. Two lac demonstration-cum-production centres have been set up near Panchet. One cocoon-reeling centre near Konar has been functioning for providing employment to the local people. One Mushroom cultivation centre near Tilaiya has been established for production of edible mushrooms. Six fish-farming centres near Panchet, Konar, BTPS and CTPS are providing facilities for fish-production.

Recreation And Entertainment

39 Community centres in villagers around six DVC Projects have been constructed which are being used for different purposes. Thirteen rural libraries are sponsored by the DVC. Books, newspapers and periodicals and other inputs are provided by the DVC. A number of youth-clubs have been constituted around different projects. Sports-kits for
playing volleyball, football and indoor games are provided. Play-grounds in the rural areas have been developed. Rural Athletic Camp was organised at Maithon in 1995. Eleven out of 26 participants won medals at State level tournaments organised at Patna. Four of them represented Bihar State National Rural Youth Meet at Ahmedabad. Rural athletic meets are also organised.

All the above Projects undertaken by S.I.P. are made for the development of the local communities, including the tribal peoples. In this context, it would not be unreasonable to mention that the service area of DVC Projects, each being constituted by different villages, the majority of which is predominantly inhabited by the tribal peoples. S.I.P. virtually has opened avenues for total exposure of the tribal peoples to the modern amenities and inputs of development relevant to the style of modern living. Naturally, it is expected that the tribal communities are gradually getting transformed under the impact of the trends initiated through the DVC activities.

**ELEMENTS OF CHANGE BROUGHT ABOUT BY THE D.V.C. DEVELOPMENT PROGRAMMES**

When planning for the D.V.C. was initially visualised, questions arose, whether the amount of money spent over it, would be returned in its due proportion, in the coming days. The answer of the economists of those days were definitely negative. This created a disillusionment in the funding circle of the Government. But, with the emergence of the concept of welfare economy after the Second World War, the whole situation was re-evaluated and it was propounded that the taming of the rivers would
usher in circumstances that will check yearly loss of property and even Government revenue and thereby re-imburse the expenditure made on the D.V.C. complexes. Not only that, large scale employment would be possible with sponsoring of production units, both in agriculture and industrial sectors. The employment of persons would mean additional income of the Government. The expenditure of the D.V.C. were justified on the whole from the long term returns of the various units at production level. This aim was declared candidly by N.V. Gadgil in his speech delivered in the Constituent Assembly in India, on the 12th December, 1947.

Needless to say, the objective has been fulfilled, if the total context of the contribution of the D.V.C. is taken into consideration. The impact of the operations of D.V.C. began to be felt since the 60's of this century. The date, from the Census of India, 1951, may be taken up for making a comparison between the situations prevailing during pre-D.V.C. period, that is, before 1948 and post – D.V.C. operations.

PRE - D.V.C. PERIOD

The Damodar Valley is composed of two distinct landforms depending on variations of climate and soil characteristics. The upper valley was sparsely populated in the 40's. There was considerable encroachment in forest areas mostly due to the land-hunger of the agricultural population and the contractors who supplied timber to the Railways. With the disappearance of vegetation, the rich top soil of hill-slope had been eroded and a desolate waste of thorny shrubs came into existence. Most of the Ranchi and Hazaribagh hills have thus been rendered almost bare. There was hardly any soil-lining left to hold crops or to absorb rainfall.
The lower portion of the Damodar basin, below the confluence of the Barakar and the Damodar, lies in West Bengal. It is a flat fertile stretch of land made of layers of alluvial soil. The agricultural economy of the lower valley, despite of its being based on subsistence farming and characterised by uneconomic holdings, was relatively more productive compared to the agricultural economy of the upper valley. The lower region was situated on the fringes of the Calcutta industrial area. This made the cultivators of this region less inactive. With the growth of the townships within the region, the productive consciousness of the cultivators grew in view of ready markets for surplus agricultural commodities.

Before the establishment of the Damodar Valley Corporation, irrigation facilities in the area were extremely limited. Out of a total farming area of about 3 million acres in the lower valley and its adjoining areas, acreage under the irrigation was around 25 percent. In the upper valley and the adjoining areas roughly 15 percent of the net area sown was irrigated. The scanty supply of suitable manure, lack of knowledge of modern farming practices, traditional cropping pattern and very limited use of chemical fertilizers and improved variety of seeds etc. were also causes of the low productivity of the land. Control of weeds, provisions for adequate storage-facilities and for protection against poverty and diseases were not practised on a large scale in the area. In the lower valley only 6.7 percent of the net area sown was used for cultivating more than one crop. The net area sown in the upper valley and the adjoining areas was 24.15 percent of the total area. About 2.8 million acres of land remained uncultivated in the two areas taken together.

The state of industrial development of the valley was not impressive. This becomes particularly obvious, if one keeps in mind the potential resources of the area. The coal-mining industry was going through many difficulties. The development of coal-mining industry was far short of the
economic need despite an abundance of cheap labour and easily exploit-
able rich deposits.

Before D.V.C., there were only two steel plants, one located near
Asansol, another and largest one at Jamshedpur. The electricity production
was confined to the coal-mining areas. There were 555 factories in the
lower valley employing about 12,000 workers. Out of these 555 factories,
376 were in the district of Howrah, part of which falls within the Calcutta
industrial region. In 1947, Bihar had 281 factories in the organised sector,
of which 64 were seasonal.\(^{43}\)

Transport facilities were also inadequate. The Grand Trunk Road
was the only long distance road in the valley. The village-roads were only
seasonal and almost unusable during the rainy season. The navigability, in
the lower valley, though somewhat better, was not satisfactory during
summer. The transport bottleneck was one of the prime causes of the
economic imbalance within the valley.

The public concern for the development of the area came from
the periodic floods of severe intensity caused by the Damodar and its
tributaries. In good situation, the inhabitants were almost indifferent to their
own problem in spite of the fact that there were sufficient reasons for
concern in future. It is known that before D.V.C., the loss, due to flood,
amounted to Rs. 8 crores per year. The loss, however, was enhanced to
Rs. 1.00 crores in the year 1970-71.\(^{44}\)

This was the general picture of the Damodar valley area about the
time the Damodar Valley Corporation was established for developing the
watershed. To start with, this was an improverished region being subject
to the vagaries of nature. This region was also predominately rural and
agricultural, notwithstanding its vast mineral and other resources. Urban
population in the region constituted only 10 percent of the total population according to the 1951 census.\textsuperscript{45} This was a clear index of the backwardness of the region as a whole. Employment in the organised industrial sector was even less, although no firm figures are available. The agricultural economy of the region was characterised by the low productivity and subsistence agriculture. The land hunger of the rural population, particularly in the upper valley, contributed to widespread deforestation and degradation of land. The Damodar Valley Corporation was formed basically in response to the need of a potentially rich but actually poor region in 1948.

\section*{POST - D.V.C PERIOD}

The fundamental consideration for the development of the Damodar region was flood-control. But by the middle of 1950's, it became evident that the projects envisaged by the D.V.C. had an integrated approach. The conception behind the engineering network was that during the rains, the dams would hold in their reservoirs the run-off water from their respective catchment areas and moderate the floods of the Damodar and its tributaries. The stored-up water would be utilised to produce hydroelectricity and irrigate a million acres of land. During the dry-months, the reservoirs would release a regulated supply of water down the river-channel to keep the flow-volume high enough to facilitate through the Durgapur Barrage, the vast network of navigation and irrigation canals in the lower valley. An additional function was assigned to the Konar Dam. It was made to supply through a channel 400 cusecs of water to the Thermal Power Plant at Bokaro for cooling its machines. Besides the Durgapur Barrage, the Damodar Valley Project had originally envisaged eight dams at Tilaiya, Maithon, Balpahari, Bokaro, Konar, Panchet, Aiyar and Bermo.\textsuperscript{46} Due to economic reasons, only four dams at Tilaiya, Maithon, Konar, and Panchet have been constructed. The total planning of the project in summary has
four features:

(i) Four multi-purpose storage dams at Maithon, Panchet, Konar and Tilaiya, with attached hydro-electric Power generation units;

(ii) A Thermal Power generation plant at Bokaro;

(iii) A Power transmission grid running over more or less 800 miles;

(iv) A Barrage at Durgapur with 1,550 miles long navigation canal, which joins the Hooghly, 35 miles above Calcutta.

Reviewing the situation in 1960, ECAFE (Economic Commission for Asia and the Far East) Report remarks that the face of the Damodar Valley has been completely transformed over the past 12 years. The main accomplishments are:

(i) Four sizeable dams have been constructed and made possible flood-protection in the lower valley provided inflows do not exceed 650,000 cusecs.

(ii) One million acres of fertile lands in West Bengal are assured of adequate water for Kharif irrigation and about 100,000 acres for Rabi crops.

(iii) Availability of peaking electric power has been increased by 100,000 KW and energy amounting to 250 million Kwh.

(iv) Inland navigation from Hooghly to Durgapur, a distance of 85 miles is expected to start commercial service in 1962.

(v) Malaria has been brought under complete control.

(vi) The lower river channel is kept free of sand, thereby eliminating further deterioration of the regime.

(vii) Larger quantities of water are available throughout the year for domestic and industrial purposes.

It was noted that the flood-control system in the D.V.C., though not becoming full-proof, contributed much to the lessening of the possibility
of yearly flood in the basin. The schemes for promotion, operation and irrigation system, water-supply and drainage created impact to a level unforeseen hitherto. The primary objective of kharif irrigation was partially fulfilled and ensured a satisfactory output per acre. Regarding the water-requirements for growing Rabi crops, it was noted that the development of Rabi irrigation was rather slow and the introduction of rotation of crops in the year was yet to be achieved. But in spite of that, the improvement cannot altogether be over-ruled. A large number of farmers were benefited with the water-supply, though not adequate in its full standard.48

It has been noticed that, in India, coal-mining areas had failed to attract industries sufficiently, so that instead of industries moving to the coal-areas coal must only too often be moved to distant factories over long-distances through congested railway-lines. It was, therefore, essential pre-condition for the development to harness the Damodar, and for that purpose, the D.V.C. upto 1960, became successful, though partially.

The water requirements for industrial domestic use was much more high than the amount stored in four dams. Water conservation measures should be increased, in order to meet the enhanced demand for water. The summary of ECAFE Report indicated that the wealth creating potentialities in the lower valley would be much greater provided certain changes are introduced. The direct and indirect benefit so far accrued has created opening for further improvement in future.

Generation, transmission and distribution of electric Power has not only created extra facilities in the production sectors, but has also generated a momentum for urbanisation and industrialisation and promotion of public health. Agricultural, industrial, economic and the general well-being of the Damodar Valley and its area of operations,
achieved a new dimension, through initiation of the D.V.C. programmes, even recognising certain problems, stresses and strains. ECAFE study has revealed positive responses towards the development processes in the hitherto neglected area of Eastern India.

At present, the D.V.C.'s command area is approximately 24,235 sq. kms., covering two districts in the state of Bihar entirely (Hazaribagh, Dhanbad) and four districts in the same state partially (Ranchi, Santal Parganas, Palamau and Giridih). Three districts in the state of West Bengal (Burdwan, Hooghly, Howrah) are fully covered by the D.V.C. and two other districts (Bankura and Purulia) of this state are covered partially by it. This geographical piece in the Indian sub-continent is now in the offing of radical change. A balanced development of resources has been envisaged, though not out-and-out, and the dream of the economists is going to be fulfilled on the direction of the prophecy made by N.V. Gadgil in the year 1947: 'If public expenditure is undertaken and some purchasing power is, so to say, injected, the result is not merely proportionate to the purchasing power spent but it goes on multiplying. The wheels of industry move, employment grows and the return may be not only three times or four times but it may be much more. In other words, prosperity begets prosperity. It is infectious and in a sense it is invisible. Therefore, when we look upon this scheme from a point of view in which objectively we may not be convinced that it is paying proposition or a productive scheme, yet I say, Sir, that the returns in terms of invisible dividends are so great that any Government charged with the duty of bettering the lot of its people will not shirk from undertaking it...".

The D.V.C. activities not only brought an industrial look to its dam and reservoir areas but a trend of urbanisation and commercialisation has been ushered in throughout the region due to development in the production-sectors of agriculture, industry and subsidiary occupations.
The urbanisation achieved so far is now touching about 30% of the total population of the area which is a great improvement over 10% of the Census 1951. The D.V.C. played a very crucial role in this development process. It is doubtful whether the subsequent development of both the upper and lower valleys would have been possible without the prior spadework made by the D.V.C. In so far as the upper valley is concerned, it substantially expanded the prospects of industrialisation by supplying essential inputs like assured water for the industrial settlements. It also made possible to further development of the coal and other minerals sector. For one thing, the demand for coal augmented for the D.V.C.'s thermal, which gave a boost to coal production. As to the lower valley, the most substantial contribution of the D.V.C. is in the fields of flood control and irrigation. The Damodar Valley could not possibly have taken advantage of Green Revolution Technology without the D.V.C.'s infrastructure. The D.V.C., in fact, turned out to be a catalyst for industrial growth as the major source of power for the industrial sector. In fine, the D.V.C. is now such a potential unit that its importance cannot be over-emphasised. The vital responsibility of its success led to the development of human resources, which is the dream of all planners of the 20th century political economy.
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21. The description is based on an unpublished report supplied in
1978 by Sri P.C. Das Gupta, the then Director of the State Directorate of Archaeology.


27. Recent research in this area conducted by a group of archaeologists has laid bare remains of a large number of tools and artifacts of this period. Objects are lying in the Museum of the State Directorate of Archaeology and the Museum of the Archaeology Department, Calcutta University.


34. Ibid, P. 10.

35. "Rādhāyāmajalasū jāṅgalpatha
   grāmopakaṃṭhoṣṭhālī,
   Simāsu Śramamagna Pāntha
   Parished Pranashaya Prinanah,
   Yenakāri Jalāśaya Parisar
   Snātavijatanganah.
   Baktrabja Pratibimba Mugdhah
   Madhupī Sunyabjini Kānanaḥ". –
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