

PART - I

Summary of Facts on which the proposals are based.

CHAPTER – I

The tract Dealt with

1. NAME AND SITUATION

This plan deals with the forest of Dalbhum Forest Division created on 2nd January 1937. It is confined to entire Dalbhum civil sub-division and a part of Seraikella civil sub-division. In the north-east of this division lies the state of division. In the north-east of this division lies the state of West Bengal (Manbhum and Midnapur District) and the south of it is bounded by the state of Orissa (Mayurbhanj district). In the west is situated the Saraikella civil sub-division of the state of Bihar. The limits of the longitude are 86°10' to 86°54' E and of the latitude 22°20' to 22°50' N. The topographical maps which cover the Dhalbhum forest division are 73J/1, 2, 3, 4, 5, 6, 7, 10, 11, 12, 14, 15 and 16 in scale 1"=1 mile.

2. The forest dealt with are state-owned and of two legal classification, namely reserved forests and protected forests.

3. These forests in large compact blocks are confined to the North and South of the Division and a hill range in almost in the middle tending to join the forests of the north and the south. The forest in the plain are scattered and form smaller blocks.

CONFIGURATION AND GROUND

4. Majority of the forests nearly 70% are chiefly confined to hills situated in the northern and southern side of the Division. The rest of the forests lie on undulating and plain ground between these two main hill ranged. The forest thus occur from 300'

M.S.L to 3060' M.S.L. hills are generally steep rocky and rugged and same time from fine plateaux at the top. Notable plateaux are on Pursadma Pahar (near Dhanguria village) and on Lakragora hill both south of and not far from Kalikapur. There are 4 peaks over 2000' in altitude. They are:-

1. Dalma Pahar (933m) in Athjisu Taraf, near Jamshedpur.
2. Mankagera Pahar (704m) at the common boundary between Dhalbhum and Malyurbhanj.
3. Chandan Pahar (686m) in Athkhori Taraf.
4. Charai Pahar (650m) in Dhalbhum 6 to 7 mile south of Kalikapur.

The forests occurring on undulating and plain grounds are largely confined to Chakulia and Ghatsila Ranges of the Division.

5. The steep slope of the hills aided by misuse of forest cover, has considerably eroded soil from the hills. Rocky ground is therefore invariably found in most of the hills. This situation causes frequent floods by both smaller and bigger streams during rains and lie dry during the summer. Erosion of soil is also discernible in the forests of Plain. Often blocks of laterite strike the vision while passing through such forests. Wherever soil appears on the ground, its depth is hardly a few feet. The condition of the ground described above, leads to high rate of run-off during rains which in turn forms gulleys. Such gulleys are often found in the foot of the hills. Similarly the plain and undulating forests have clear evidence of sheet eroding forming rills though deep gulleys are not very many.

6. The forests areas fall entirely in the catchment of the Subarnrekha river. The Subarnrekha which takes its origin near Nagri in Ranchi district enters Dhalbhum area near Jamshedpur where its main tributary Kharkhai joins. This point is popularly known as Rivers Meet where people go for outing. The river Subarnarekha, right from this point bisects Dhalbhum tract running south-easterly throughout the territory. Quite a few other local rivers which originate from the hills of the north and the south of the

Division join the river Subarnarekha at different points. some of the important local rivers are -

1. Burr – origin near village kuyali.
2. Sankh – origin near puljhor.
3. Sapghara –origin near Suklara.
4. Bagalduba-origin near Boko.
5. Loubhang Nala – origin near Jojobera.

GEOLOGY ROCK AND SOIL

7. Airport made available by the coutesey of Geological survey of India, Calcutta is reproduced below-

8. Dhalbhum is the eastern sub-division of the Singhbhum, which is the richest mineral bearing district of the area Chotanagpur division. The topography of the area. A hill tract passed through the central part of the area and separates the plains of the south west from the plains in the north and east of Dhalbhum. Subarnarekha river enters in the Dhalbhum sub-division through the northern hill tract, north-west of Jamshedpur and flows to the south-east. The drainage of the whole area is mainly collected by the Subarnarekha river.

9. The major part of the area is covered by the rock groups of the Archeans. The great geo-anticline of highly metamorphosed schist extends to the east. Near Jamshedpur, it turns south-east and continues towards the Mayurbhang border. A shear or thrust zone with which the well known Singhbhum copper belt is associated has formed along the southern limb of the geo-anticline. This zone trends east-south east from narainpur ($22^{\circ}45' : 86^{\circ}00'$) to Rangamati Pahar ($22^{\circ}40' : 86^{\circ}18'$) and then takes a turn to the south-east through Rakhamines ($22^{\circ}38' : 86^{\circ}27'$) and Badia ($22^{\circ}29' : 86^{\circ}28'$); it becomes obscured in the schists further south-east. Within the thrust zone the rocks

have been severally sheared and mylonised over width varying from a few metres to even 5 kilometres. A major syncline consisting of rock of the Iron-ore series and the Dalma Lavas lies on the northern side of the geo-anticline. The southern boundary of the Dalma lava follows the folding of the schists to the north in a number of places. The northern boundary of the Dalms Lavas is overfolded and forming a part of another geoanticline.

10. The sequence in the two parts of the area, viz. area north of the shear zone and area south of the shear zone may be summarised as follows:-

North of the shear zone	South of the shear zone
Alluvium	Alluvium
Laterite	Laterite
Tertiary grits and gravels	Tertiary grits and gravels
Newer Dolerite	Newer dolerite soda granite
Chotanagpur granite	Singhbhum granite
Dalma Lavas	Dhanjori Lava and conglomerate
Iron-ore series and basic intrusive	Iron-ore series and basic intrusives

11. Area North of the shear zone

The mica schists and hornblends schists of the central geo-anticline area the oldest member of the Iron-ore series i.e. the Chaibasa stage. The outcrops of the mica schist and hornblende schists are so intimately associated that they are not separately mappable. Phyllites; varying in places to mica schists constituting the Iron-ore stage form persistent series of parrallel ridges on the northern side of the geo-anticline. These phyllites and mica schists are in genral more chloritec than the mica schists of the Chaibasa stage. The ridges forming the Iron-ore stage rise from mica-schist plains of the Chaibasa stage. An imperistent zone of quartzites occurs on the

southern side of the Dalma hill and is separated from the Dalma traps by zone of phyllites of variable width. It is first found in the Subarnarekha river NW of Jamshedpur from where it strikes east. It gradually thickens and also becomes duplicated by folding along its easterly trend. The quartzites are perfectly conformable with the phyllites below and above it.

12. The Dalma lava flows consist mainly of epidiorites varying to hornblende schists. They are in places sheared to form talc schists and chlorite schists. Along the northern side of the Dalma Hill ($22^{\circ}53' : 86^{\circ}17'$). The lavas are full of amygdules consisting mainly of quartz and apophyses. A wide belt of volcanic agglomerate extends from western margin of the Dhalbhum sub-division to east of Dalma Hill for nearly 32 kilometers. Within this belt the granite is definitely gneissic and banded along the western edge of the hornblende schists and phyllites country north-west of Baghmuri ($22^{\circ}29' : 86^{\circ}07'$). The essential minerals of Singhbhum granite are quartz, plagioclase and orthoclase feldspar, biotite and hornblende. The south-eastern part of the Singhbhum granite towards the Subarnarekha river is generally biotite granite. South of Kalikapur ($22^{\circ}37' : 86^{\circ}17'$) around the edge of Singhbhum granite, there is an area over which diorite occurs. Feldspars constitute the greater part of this rock; the principal ferromagnesian mineral is hornblende augite is present in the more basic types. Rocks of the Newar Dolerite suite form a regular system of reticulating dykes within the Singhbhum granite. Some of the dykes are more than 400 meters wide and persist for a strike distance of several kilometers. There are two main sets of dykes which strike approximately NW-SE and NW-SW respectively.

13. Granophyre occupies the rugged, jungle clad hills south of Butgora ($22^{\circ}33' : 86^{\circ}20'$) and extend to Garumahisiani ($22^{\circ}20' : 86^{\circ}17'$) and Satbakra ($22^{\circ}19' : 86^{\circ}26'$). Typical granophyre consists of radiating graphic intergrowth of quartz and feldspar. In some cases, the whole rock consists of such intergrowths, but commonly the intergrowths are localised along quartz and feldspar nuclei.

14. East of Subarnarekha river, from the neighbourhood of Dhalbhumgarh ($22^{\circ}30'$: $86^{\circ}33'$) towards south-east, the area is occupied by gravels, pebbly grits, sands and rare mitted generally semiconsolidated clays. These beds extend towards east beyond the boundary of Dhalbhum into Midnapur. In the lower reaches of the river Subarnarekha recent alluvium from river wash assumes a considerable spread and thickness.

MINERAL DEPOSITS

15. Dhalbhum is very rich in mineral wealth. Copper ores occur along the thrust belt extending from Narainpur to Badis. Well defined lodes of copper ore are found in Rakha, Musaboni, the ore channels contain one or more solid veins of sulphides. Deposits of apatite also occur within the shear zone in this part of the Singhbhum district. The apatite veins are located at intervals along the portion of the copper belt between Dhadkidih ($22^{\circ}45':86^{\circ}06'$) and Khejurdari ($22^{\circ}24':86^{\circ}34'$). They occur mostly on the hanging wall side of the copper lodes. The important deposits are at Nandup, Pathargara, Badia, Kanyaluka and Kyanite occurs along the northern flanks of the copper belt. Important deposits in Dhalbhum are at Ghagidih, Rakhamines, Badia and Kanyakluka.

16. Asbestos occurs near Patakocha ($22^{\circ}36':86^{\circ}01'$) and several other localities in this area. A number of deposits are located in the vicinity of Dhalbhumgarh.

17. Iron-ore in the form of hematite occurs on the top of the Garumahisani Pahar. Magnetite occurs as seggregations and veins near Kudada, Kotwar Pahar, around Dublabera and Lango villages. It occurs as veins upto 0.3 metre in thickness. The vanadium content of these magnetites is generally low.

Other mineral deposits in Dhalbhum forest division include gold, uranium, clays and building materials which occur in different localities.

18. Soil of Dhalbhum tract has been partly dealt before soil is generally sandy loam and clayey-loam in Horizon 'A'; whereas in Horizon 'B' it is primarily clayey-loam and clayey. The depth of soil greatly varies. Often pure laterite and murrum have taken place of top soil. Pan formation is occasionally encountered in Chakulia Range. Loam soil mixed with murrum is found in various plantation areas.

19. On the hills and their slopes, soil is generally missing. Erosion has exposed the rock which appears in various forms. In valleys, however, clayey loam and clay do occur which sustain better quality forests. Wherever soil occurs it is generally shallow and mixed with rock and pebbles.

Nutrient status of soil is generally low and deficiency of N & P is pronounced.

CLIMATE AND RAINFALL

20. (a) Climate : The climate conforms to general tropical climate. It is warm and humid. There are usual three seasons viz. the cold weather, the hot weather and the rains corresponding to the months November to about middle to March, from middle of March to middle of June and from middle of June to September. October can be treated as link-month between rainy season and cold weather. Cold season is not very cold. This is however the healthiest season. Ghatsila, Narsingharh, are well known health resort of middle class people particularly from Calcutta. They generally come in October and stay till December when it becomes too cold for them. Water of Ghatsila is reported to have curative effects in stomach disorders. Summer is humid and quite oppressive. Often cases of sun-stroke are reported. July and August are wettest months.

Rainfall

South east Monsoon brings in rains in this tract. Though July and August are the wettest month, pre monsoon summer appear by the end of May. these summers are availed of in raising plantation particularly of Bamboo. By June monsoon sets in the but generally remains weak in the beginning. The entire agricultural economy depends on the rain. If it fails particularly when must required near femine conditions appear in the tract and this condition often arises after three to four years.

About 50% of the total rain falls in July to August with the result the rivers often come in floods during this period. During winter and early part of summer, rain fall is almost negligibile and no agricultural crop can be tried with any degree of confidence if one has to depend ending on rain. This part, the distribution during wettest months is also erratia. Often rains come in high intensity causing more of damage too. Even within the tract of Dhalbhum rain fall varies from place to place. A some idea can be had from this statement of rain fall recorded at different stations.

Statement showing month and yearly average rain fall and the corresponding number of rainy days at the recording stations mentioned here in :-

(A) Average rainfall and corresponding no. rainy days

Months	Recording Stations			
	Ghatsila		Bahragora	
	Rainfall in mm	No. of rainy days	Rainfall in mm	No. of rainy days
January to December	117.8	6.6	121.4	6.4

(B) Average Temperature with Relative humidity, Rainfall and corresponding no. 7 of rainy days at Jamshedpur.

Month	Temperature in C°		Relative Humidity		Rainfall in mm	No. of rainy days
	Max.	Min.	At 08.30 hrs.	At 7.30 hrs		
January to December	33.01	19.1	69.8	55.6	106.6	5.91

WIND

During the hot weather dry westerly wind known as “Loo” blows which causes desiccation of soil and renders Plantation difficult to survive. Minor cyclones and thunderstorms sometimes occur during may and June.

WATER SUPPLY

All the river of the tract as mentioned before dry up in the summer. Subarnarekha holds on for longer period but it also so dries up at the peak of the summer. This river has been damed at place to hold water during the summer required, for both industrial and domestic use. The smaller streams dry up shortly after rainy season for want of sub-soil water in the hills. The larger ones hold water till the advent of summer but one can hardly fid flowing water at the height of hot weather. It is common practice to dig “chia” in the river bed for water for domestic consumption. This situation however arisen on account of forest fire, heavy grazing and indiscriminate felling of the forests. This portion of water supply appears paradoxical in view of 31% of the land area under forest. But is is soly on account of misuse of the forests which have almost completely lost the capacity to hold water to make it available though seepage in a regular way. The primary protective function of the forests is completely lost. The present condition of the forests is also responsible for frequent high floods in the river. The floods in subarnarekha are glaring example when muddy water often overtops the banks and flows down in furry. Rains falling on hills instead of getting in the soil, runs off causing floods, the rivers thus do not meet the requirement ofwater for industrial and domestic use. Jamshedpur is fed by Dimana reservoir which in founds clear water as its entire catchment is well wooded. Similar dam has been constructed near Jadugora for supply of water to the township. The number of wells for domestic use has increased in recent part. Tanks remain main source of water supply in Chakulia Ghatsila Range.

DISTRIBUTION AND AREA

The land spread of the Division covers an area of 1225 sq. miles. Area under forest is 381.56 sq. miles. Which forms 31.1% of the total land area? The number of villages in the Division is 1825 and forest occurs in 978 villages. The principal forest areas of the Division are situated almost exclusively at its northern and southern frontiers with wedge tending to join both the frontire. Both eastern and western sides are practically devoid of forests. Smaller blocks of forests lie scattered on plan and smaller hills. Comparatively forest lies tract extends up to Kalikapur in the west and beyond Baharagora in the east.

The forests dealt with comprise of Reserve forest and Protected forests where rights have been entertained in reserve forest, they are called Reserve Forest with Rights for convenience of distribution. In practice therefore forests are designated as R.F., R.F.R. and P.R.

Although the forest appear for general information on the survey of India 1" scale topographical maps, the limits of the demarcated forests are not shown there in nor have maps of 4" to 1 mile scale been yet prepared. The boundary lines have, however been shown by us in manuscript on the 1" to mile topographical map sheets by reduction of the 16" scale cadastral sheets on which the demarcation lines have been actually surveyed and shown.

The list of the forest comparison the Division along with there legal classification and area is given in the appendix.

NATURE OF BOUNDARIES

The boundaries of almost all the forests are shown on the ground by means of pillars. Constructed either with stone of earth which ever is conveniently available. to offer permanency fixity to this points, palm A gave is planted on eitherside of the pillar in the direction of the next and preceding pillars.

A special feature of the original demarcation of reserved and protected forests constituted prior to introduction of B.P.F. Act is that, while demarcating boundaries on the ground attempt was made as far possible to run the boundaries along contours stepping up or down where necessary for excluding the reclaimed lands. In most cases however, forest in varying extent were left out at the time of demarcation by following particular contour. Such forests were subsequently taken over under B.P.F. Act and the boundary line, practically in all cases, followed the fringe of the forests giving a zigzag character to the base boundary lines. In many forests thus there exists two boundary lines one fixed at the time of original demarcation and the other after the publication of B.P.F. Act. In view of different legal status of such forests, both the boundary lines are maintained.

MAINTENANCE OF BOUNDARIES

As stated in the foregoing paragraph the boundaries are shown by means of pillars. In most of the forests the pillars are well built and prominently placed. With the execution of a scheme of "consolidation of boundaries" in recent part, the boundary is well defined, however, the stability of the boundary line still remains to be achieved as excision of forest land of certain category is still under progress. In fact, large areas have been excluded from the Reserve Forest too, which has necessitated the change in the original boundary line. The sooner the stability of the boundary line is achieved the better as it brings forth innumerable problems in the matter of management. The maintenance of the boundary pillars constructed at a huge cost should form an important part of administration and due check, repair and verification of boundary pillars should be ensured.

LEGAL POSITION

The bulk of the forests of the division were the property of the then Dhalbhum state which has since been taken over by government under Bihar Land Reforms Act, in 1952. Prior to the vesting of the estate in government, the then

proprietor of the estate applied under section 38 of I.F. Act. asking for management of the forests by government, Accordingly on the 20th December 1936 government took over the forests for a period of 45 years on terms and conditions incorporated in an agreement which was executed by the parties concerned. According to its terms and conditions the right of management vested in government. The right of management of some other forests, not belonging to Dhalbhum estate, also vested in government in this manner. The forests so taken over were notified under the provisions of I.F.Act and constituting them as Reserve and Protected forests according to the requirements of the local conditions some of the reserves were declared free from right and in other rights were entertained after due enquiry as per provisions of the Act.

The remaining forests of the division continued as the exclusive property of prevent individuals. Till then management was taken over by government under the provision of B.P.F. Act in 1948. These forests were notified and declared private protected forests under the emergency provision of Section 30 of the Act pending finalisation of the detailed record of rights.

Subsequently in 1952, the proprietary rights of both categories of forests vested in government with the introduction of Bihar Land Reforms Act 1952. The B.P.F. Act. 1947. There after under this Act. were notified under I.F. Act. and constituted as P.F.

In the year 1968 the forest of the division are fully constituted either as Reserve Forest or Protected Forest.

RIGHTS AND CONCESSIONS

In respect of forests taken over by virtue of sec. 38 of I.F. Act., Settlement records were prepared setting forth the rights and concessions which may be exercised there in these records of rights were prepared after thorough enquires as per chapter II of I.F.Act. Similar record of rights were also prepared after due enquiry in respect of

forests taken over originally under B.P.F. Act and subsequently notified under the provisions of I.F. Act. These rights and concession are now recorded in Khatian part II which have been prepared during the recent general settlement.

In this process, reserve forests lying in the interior over extensive area but with comparatively sparse habitation and less of population have been declared free from rights. The list of such forest is given in Appendix.

In the remaining forests almost the same pattern of rights has been entertained without specifying the number of house hold entitled for the exercise of such rights in respect of firewood and house building materials. The number of head of cattle for grazing free has also not been specified except in respect of those forest taken over under sec. 38 of I.F. Act.

Broadly the following rights have been entertained.

1. Right to collect firewood and house building material for bonafide consumption free.
2. Right to graze cattle free.
3. Right of way through the forests.

Apart from their rights which appear recorded in Khatian Part II the following concessions have been permitted by Govt. by their executive orders.

1. Right to collect edible fruits and flowers has been given to all.
2. Right to collect dry, fallen fire wood to be carried by head load has been given to all vide Govt. of Bihar letter no. C/F-5076/54/-67-RT, dated 8th May 1954.
3. Right to take chope (Jangal fibre) has been allowed in all cases.
4. Turis are to be given bamboo at Schedule of rail vide Govt. of Bihar, forest Department letter no. 226/69-1969dated 5/6th June 1969.

The exercise of all these rights are stated to be in accordance with the prescription of Working Plan and depending on the capacity of the forests.

In practice, however the exercise of rights is not confined as scheduled in Khatian Part II. The entire village irrespective of the facts whether the some of the villagers are new settlers, obtain their rights from the right burdened forest. The grazing by cattle is also not restricted to the number fixed. In fact, there is no regulation on grazing either in the matter of heads of cattle or the forests in which grazing is allowed, except that casual restriction is imposed on grazing over freshly felled coupes.

COMPOSITION AND CONDITION OF THE CROP:-

The forests of Dhalbhum Forests division conform to Dry peninsular sal type SB/C/C as classified by Champion & Seth on account of various Biotic and edaphic factors the true character of the forests is differently modified depending on the degree of play of their factors. It is not uncommon to find pure stand of *Hallarthra* of *Combretum* over appreciable areas. The extension of *Parasi* (*Cleistanthus*) over Sal and miscellaneous forests is a later trend indicating the change in this type of forests. Aspect has very strong influence on the composition of the crop lying on hills. Northern slope is generally covered with almost pure Sal whereas Southern slope maintains miscellaneous crop. In the plain, however, pure Sal crop is present. Though the forests of the division may be primarily classified as Sal forests, the miscellaneous crop extends over fairly large tract where principal species is Sal, the usual associates are those found in drier parts of Dhalbhum viz Asam (*Terminalia tomentosa*), Kend (*Diospyros malanaxylon*), Piar (*Buchanania latifolia*), Dhaw (*Anogeissus latifolia*) Sidha (*Lagerstroemia parviflora*), Karam (*Adina cordifolia*), Bija (*Pterocarpus marsupium*), Harra (*Tremanelia chebula*), Bhaera (*T. belitica*), Kusum (*Schleichera*), Doka (*Lannea grandis*), Bhurkend (*Hymenodictyon excelsum*), Telay (*Sterculia urens*), Hupa (*Cochlospermum gossypium*), etc. are found. The undergrowth in Sal forests consists mainly of *Wendlandia*, *Indigofera*, *Nyctanthus*, itself *Bauhinia*. In Sal forests of

Plan the Sal, on account of repeated cutting, has been Laid to form undergro with the stump mortality is not high climber incidence is rather low. In spite of showing inhibitory factors natural regeneration does appear particularly in compratively inaccessible tract and moist Valley. There is strong indication of getting better stocking of natural regeneration provided factor inimical to nature regeneration is minimized if not completely elimiviated, even for 5-10 years.

