Name and Situation

The forest dealt with in this working plan from part of two forest divisions namely Daltonganj South and Palamau Project Tiger Division. These forests are Reserved, Khalsa reserved and Protected forests. Most of the forest of these divisions have been included in Palamu wild life Sanctuary and Mahuadanr Wolf Sanctuary. Rest of forests will be dealt with in this working plan. These forests are situated in territorial limits of Barwadih, Garu, Mahuadanr block of newly, created Latehar District. All the forests of the division lie between 23^0 27' N and 24^0 15' North Latitudes and 83^0 50' E and 84^0 25' East Longitudes.

Forests are almost in compact blocks except few blocks of vested protected forest, which are fragmented and sparsely located. Almost all forest blocks are on hilly terrains except few compartments in Baresand block. As stated above, forest areas of two forest divisions, namely Daltonganj South Div. and Palamau Project Tiger Div. are inclosed in this plan. This working plan is meant only fro those forest areas, which are sitrated outside the sanctuaries. Total forest area of Project Division is 52617.46 ha. of which only 10451.93 ha. is included in this plan. In the same way, total forest area of Daltonganj South Division is 72678.87 ha. of which only 12279.59 ha. areas are include in this working plan. Thus only 22731.49 ha. areas of above two divisions are included in this plan and the rest areas of both the divisions declared as a part of sanctuaries will be treated under management plans formulated by wildlife wing of the Forest and Environment Department.

The parent Daltonganj South Division was split in to two parts known as Palamau Project Tiger Division and Daltonganj South Division. Vide Bihar Govt. Notification No. 35/96 dated 15.01.1997

The tract dealt with is bounded on North by Daltonganj sadar subdivision of present Palamau district on the east by partially Latehar district and Lohardaga, District, on the South by Gumla district and on the west by Surguja district of Chhatteisgarh Sate and Garhwa district.

CONFIGURATION OF THE GROUND:- The forests occupy mostly hilly tract of terrain , the elevation of which varies from 700' in the North and 3750' in the south on the Netarhat Plateau. The most important topographical feature is the plateau of Netarhat with its out lying spurs and which on account of its pleasant climate was at on time considered as a site for provincial hill station. This plateau is a northern prolongation of the Pakripat plateau in Lohardaga district and

is separated in the West by the isolated cup like valley of Chhechhari from plateau of similar altitude in Surguja district of Chhattisgarh. On the East it separated by the valley of North Koel river from smaller North out lying spurs of the Plateau slope steeply down the North Koel river. By far the major Portion of the forests dealt with are situated between the open valley of North Koel and Auranga river and along with small villages. The usual direction of Metamorphic hill ridges in the latter tract is from East to West. Several isolated hills of Godwana origin also occur.

RIVER SYSTEM :-

The general drainage is from South to North towards the river Sone, which froms a part of the State boundary on the North West. The area is drained by three major river system viz. The North Koel, the Auranga and the Burha or Burhaghagh. The latter two are the main tributaries of the North Koel. Smaller river like Aksi also adds to the general water supply of these areas. The river beds are generally very rocky and carry volumes of water in the rains, but during dry months they almost dry or sometime they completely dry up in some Places.

NORTH KOEL :-

The North Koel rises in Ranchi district and enters Latehar district belwon Netarhat. After flowing north for about 22 k.m.s. it sweeps west for about 30 kms. Turns north through a gorge at Kutku and continue a generally northern direction until its junction with the Sone 250 kms. From its course. Its mains tributaries are the Burha and the Auranga rivers, which join it at Bage champa and Kechki respectively. The Koel bed is rocky for some distance of its course above the junction with Auranga river, but its higher reaches with in the Palamau district are sandy. They Koel carries a large volume of water in rains but for about six months of the year there is very modest flow, which in dry season often ceases altogather in places above its junction with the Burha river.

AURANGA :-

The Auranga river rises near Saheda in pass leading down from the Chhotanagpur plateau. It purses its winding course in a north westerly direction until its junction with the Norht Koel. The riverbed is very rocky in some places and sandy above the junction with the North Koel. Like the North Koel it carries a large volumes of water in rains but during the summer dries up completely.

BURHA :-

The river Burha or Burhaghagh drains the Chechhari valley and some places it froms the state boundary of Jharkhand and Chhatisgarh. If froms a perennial water sourse and carries a large volume of water during rains like other rivers. On its upper reachers it falls down from a height of 150 mtrs and forms a beautiful scene during the rains. It has highest fall of the state and probably it is second highest water fall of the India. The name of water fall is Lodh fall or Burhaghagh fall . It froms a beautiful and picturesque scene in a beautiful forest during the rains. The river bed is rocky like other rivers. From Lodh to Bage Champa it flows through beautiful forests and above kutku at Bagechampa it flows into the North Koel.

AKSI :- This is a small river in comparison to other rivers, but carries a large volume of water during the rains and feed the Burha river with a lot of vigor. It caters the need of Aksi and many villages of Mahuadarn valley to a large extent. It is not a perennial like Burhariver and dries up during the summer.

EROSION :-

Above tributaries do not pass through the forest areas only but a many places they cover village blank areas also in varying proportion. The cathment of these rivers include mainly forest. Till recently bulk of forests were private properties and subjected to mal treatment. Forests clearing for cultivation purpose was unrestricted and even steep slopes have not been spared. The light shallow soils of area are very grazing and repeated fires have been responsible for enhancing the pace of denudation. The situation has assumed a serious proportion. Proper protections of catchments area inform of strict regulation of grazing and fire protection is essential for welfare of future generation. The entire forest area falls in Ganga basin and forms upper catchment of the river North Koel which drains in to the river Sone further down Mohmadganj. It has now become more essential to protect upper catchment of North Koel, above Kutku, to prolong the life of Kutku dam under construction.

GEOLOGY, ROCK AND SOIL :-

The characteristic geological formation of the area dealt with in brief, is gneiss of which all the more important hill ranges are composed. It is of varied constitution and includes granites hornblende and calcareous gneisses associated with lime stone. Schists are uncommon. The Gondwana formation is represented by the Talchir, Mahadeva and Barakar groups composed of Sandstones and shales.

PETROLOGY:-

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I- Laterite - Hight level laterite and bauxite.

II- Quartzite - Quartzite, microcline, epidosite, Biotiteschist diopsidite, pegmatite, Biotitehillimaniteschist.

III- Gneiss - Hornblende- granulists, hornblende Gneiss, diopsidite, biotite gneiss, Microcline and quartzaplite, tufa, Olivine, epidosite and pegmatite.

IV- Amphibolite- Amphibolite, pyroxene granulite, Hypersthena gneiss, hornblende Granulite and quartz.

V-Gondwana - Barakar and Mahadeva Sandstones, grits, shales, haematite, condgomerate

VI- Alluvial -

The general charateristies of these patrological groups may be briefly described as follows :-

Group I- A very homogenous rock formation occurring on plateau and hills above 3, 000 feet in elevation. The laterite consists of altered trap (or sandstone) while beneath the laterite cap lies granitoid gneiss which formerly capped the hills. The soil is a typical high level laterite clay or clayey loam. In general except on gentle slopes it is very shallow. This group is relatively unimportant as it is inaccessible.

Group II- As a rule, this group is represented on hills of regular outline and sharply defined ridges which fall away on both sides at steep gradients, but where felspathic granite constitutes the main rock (e.g. on northern slopes below Naterhat plateu) the configuration of the hills is less regular. The group is represented on some of the highest hill ranges where there is no laterite or just below the laterite. The group is also represented in certain plain forests e.g. round

Chhaipadohar. The range in the character of the soils typical of this group is fairly considerable but typical feature is that they contain quartz pebbles. The soil superficially gives the appearance of a sandy loam but it is more truly a loam mixed with quartz peebles and with and in the surface layers. Except in valleys and on uneroded plains the soil is fairly shallow.

Group III- This is a group, the constituent rock of which require further study. They group occupies hilly ground but is never found on the upper slopes of the highest hills which are invariably group I or II. It is well represented on the lower slopes of the kari-Henar valley. They soil is a some what coars sandy loam which on hill slopes is usually shallow but deep pockets occur. In valleys it attains a considerable depth.

Group IV- A homogeneous group of restricted distribution which merges into group III. It occupies low broken hilly ground. The soil is a coarse sandy calcareous loam which is usually fairly shallow but deep pockets occur which grown large sized timber. The soil attains a fair depth in valleys.

Group V- This group really consists of two-sub-groups in one of which Mahadeva sandstones are dominant and in the other Barakar sandstones. The Talchir formation also occurs only as a narrow fringe. The difference between the Mahadeva and Barakar sand stone is that the moisture content of the former is much higher and this has its influence on the flora. This group is typically represented by low hills with definite scarps. The soil is typically shallow sandy loam or loam which becomes moreclayey when shale is present. This group is of low value from the point of view of timber production.

Group VI- Apart from Kundri block (now in Daltonganj North div.), this group is limited to the flat valleys of the Koel and charo rivers. The soil is a sandy loam or loam of considerable depth. The group contains the most fertile soil of the division but it is of very restricted extent.

The Climate :- General – The area enjoys a tropical climate three distinct season, viz, the winter, the summer and the rainy seasons. The winter sets in early November and lasts till about the middle of March. The winter is dry and biting. Forest and fog have been observed in the valleys of the North Koel., The Auranga and theBurha rivers and also in Henar, Teno and similar localities, during the latter part of December and January. The loo usually blows from 10 A.M to 5 P.M. and causes some deaths annually. It becomes very difficult to work in the field causes some deaths annually. It becomes is immense due to desiccation of the soil. The Monsoon breaks out towards the end of June and continues till the end of September. Three is in most of years a

further short period of rainfall about the end of December or early in January which is of considerable value to Rabi crops. By and large, the health of the people within the forest area in generally good.

Rainfall:- The rainfall varies greatly according to the locality. It also varies from place to place and some times from to year. Rainfall is the heaviest in July and Augest. Occasional showers continue till about the end of December or early January. Practically al the rainfall in this areas is from the south- west- monsoon. The rain fall is heavier in the southern side of the division because of higher hills and more extensive forests. The rainfall varies between 46.65" at Daltonganj, which is situated in the north just outside the division and 72.19" at Naterhat which lies on the southern border. The following table gives a picture of the rainfall pattern of this division.

Table-1

Sl. No.	Stations.	No years under consideration	Average rainfall (in inches)	Remarks
1.	Daltonganj	45	46.65	Situated in the north outside the division
2.	Kerh	22	52.45	It lies in the Northern periphery
3.	Garu	37	62.96	It lies in the central part of division
4.	Naterhat	28	72.19	It is situated at the border of the division
(Based on the records up to 1940 as per information available from Meteorological department.)				

By far the major portion of the precipitation occurs between July and September within a period of about three months. The area does not experience a regular pre-monsoon shower. This factor alone might be responsible for scanty natural regeneration of sal. The seed fall of sal coincides with the pre-monsoon showers in

other localities. The forest areas are only moderately supplied with perennial streams and many of these dwindle to the minimum during hot weather.

The following tables show the annual and monthly rainfall recorded at various stations situated in the division.