CHAPTER 1

THE FOREST

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CHAPTER I

THE FOREST

Introduction

It might seem inappropriate to begin our enquiry into the agricultural production of the region from the forest. At first sight forest represents the exact anti-thesis of agriculture - one a part of nature - the other the result of painstaking human labour. It is this anti-thesis which lay at the basis of the often quoted saying of the Mundas "we cleared the forest, we snatched the land from the jaws of tigers and fangs of snakes...". Forest was the preserve of wild beasts who often destroyed carefully nurtured crops, and less often perhaps, killed the intrepid pioneers.

But this is only an apparent anti-thesis. So deeply is the forest imbricated in the society and economy of the region that it could even be taken as its distinguishing feature. To start with, the whole of Chotanagpur region was known in the medieval times as Jharkhand - the land of forests. It perhaps testified to the dense forests which once covered the whole plateau. The remnants of this primeval forest were to be seen even in the open cultivated regions of the present day Ranchi district in the middle of the last century. Preserved by a time immemorial custom of the tribes, a portion of the original jungle was kept

1. This saying of the Mundas was reported by Father Hoffman. EM p. 1664.

2. In many of the villages in the forested tracts of Chotanagpur, one would find huge vertical menhirs (Mundas call it birdiri) erected in memory of those who were killed by wild beasts. In a village Jojohatu, on which a Census monograph was written in the 1961 census, there were many such stones erected in the memory of persons who went out to the forest reven to return. See "Jojohatu - A Munda Village" Census of India 1961 Vol. IV, Part VI No. 1, Patna, 1963, p. 20.
intact in each village - as the site of the local deity "the Birbonga" or the "Jaerburi". It is in these Sarnas that Captian Depree, saw some of the "noblest Sal" trees of the region in 1864. Gradual human occupancy did not, thus, necessarily mean complete banishment of forest. The forest was of far more significance to the people of the region than mere nostalgic value or superstitious fears.

Part I: Forest in the life of the people of Chotanagpur

The first and the most important role of forests lay in providing food. This may be of some significance to our enquiry - since however accurate our measurements may be it is doubtful if it can capture the total amount of food supply that came gratis to the agriculturist from the jungle. It is also a matter of some importance that till the last decades of the 19th century there were no record of generalised famine in Chotanagpur plateau. Droughts there were of course, but those great waves of famines that afflicted the plains with unrelenting regularity throughout the 19th century, were marked by their absence in the plateau.

The first famine of some significance which affected parts of the lower regions of the plateau (below 500 feet) in Manbhum and Singhbhum was that of 1866. During this famine Vincent Ball, the geologist who was in Manbhum then observed in his typically perspicacious manner the differences in

3. Depree's Report (1888), p.20. The strictest taboo is maintained against cutting trees of the Sarna. It is said that not even the sound of axe should be heard in the Sarna. Felling of trees in the Sarna was considered a grave enough crime to merit expulsion.

4. A famine affected every 4 years the plains of North Western Provinces and every 11 years the plains of Bengal and Bihar. See Report of Indian Famine Commission, 1880, Appendix A. In contrast, Hazaribagh and Ranchi had no record of famine prior to 1897. See. Ranchi SR, p. 6. Hazaribagh SR, p. 7. and Basu (1890) p. 140.
the incidence and intensity of famines in the open cultivated villages of the plains and the villages situated in the midst of jungles.

"I am inclined to believe that people living in jungle villages are more independent and less affected in every way by the famine, than those who reside in the centre of cultivation, and have no access to jungles. Were a Census to be taken, it would probably be found that the relative proportion of deserted houses of villages, the result of the famine, to those still inhabited would be much greater in the open cultivated area than in the dense jungles...... indeed the jungles may be regarded to a certain extent as the saving of the lower races of population".

Finally when the famines had become a regular phenomena in Chotanagpur in the last decades of the 19th century the officials were often astonished by the lack of correspondence between the severity of distress and the number of people willing to join relief work. The usual famine procedure, was for the Government to open test works to ascertain the severity of distress, where the rates were kept deliberately low. In Chotanagpur not only were test works often a failure but even the relief works with full famine rates failed to attract people who the officials were certain were otherwise under severe distress.

One of them wrote:

"To the opinion that amongst jungly aboriginal tribe, test works at severe rates, qua-test of necessity fail, I still firmly hold. In Bihar and other non-jungly districts soundings can be taken by means of test works with almost mathematical precision but in jungly districts there is an under current that carries the lead away".

This undercurrent he concluded, was nothing but the regular tendency of the people to resort to the jungles.

5. This quotation is from a report of V.Ball in the Journal of Asiatic Society of Bengal published in 1867, cited in SAB, Vol. XVI. p. 47.
What did the jungle provide that made the tribal population so unwilling to join the relief works? The first and most important of all was the mahua tree (*Basillia Latifolia*).

"This useful tree is met within all the parts of the division, growing in equal profusion in cultivated tracts as well as forest tracts. The flower is in season in March and April when it is gathered in large quantities as it falls ripe from the trees, by the women and children and after being sundried is usually prepared for food by boiling". So important was mahua for the food supply of the region that it was a regular practice for district officers to send in their estimates of the state of harvest of these flowers along with that of other food grains in order to apprise the Government of the position regarding food availability. Its failure or success was watched with as much anxiety in Chotanagpur as the Rabi harvest was in other districts of Bihar. The contribution of mahua was variously estimated to be 2 to 4 months of the annual food supply of Chotanagpur during the closing decades of the 19th century.

Important though mahua was, it was not the only product which the tribal people of the region used. There was an amazing variety of tubers, roots and corns, wild plants used as pot herbs, plants eaten raw, fruits of various trees, and flowers used as vegetables. Attempts at cataloguing of the various kinds of edible products provided by the jungle have not really been exhaustive. Father Hoffman listed some 147 kinds of edible products gathered from the jungle. In another list prepared by F.A. Slacke, 81 kinds of edible jungle products are enumerated.

7. Letter of A.H. Forbes, Commissioner Chotanagpur division to Secy GOB, Rev. Deptt. dt. 8th Jan. 1897 (Famine), 44-5.


9. Appendix Chotanagpur SR
In a list appended to the famine report of the Ranchi District in 1900, there were 155 types of products which were eaten by the people. There were 34 fruits, 21 kinds of tubers and roots, 19 kinds of flowers, 15 types of mushrooms, some 80 types of leaves or sags and 5 types of barks and stems. Of these 5 types of fruits, 5 barks and stems and 6 leaves were eaten only during the famine as a last resort. The rest 140 varieties were consumed throughout the year. But of these 155 types, only about 40 varieties were eaten by all classes of people while 115 types were eaten only by the tribal people of the region.

It is thus clear that jungle products were not resorted to only during the famine. It was a regular part of the dietary habit of the population, both tribal and non-tribal. An idea of the importance of the jungle in the dietary pattern of the population during the closing decades of the 19th century can be had from the observation of the Civil Surgeon of the Hazaribagh district, that about half the population of the district regularly resorted to the jungle to supplement their diet:

"In an ordinary year the diet of an ordinary low caste proprietary cultivator with a small holding or a daily labourer will be as follows: From August to November, he eats Makai, Gundli, Marua (i.e. the Bhadoi harvest). From November to February mainly rice but varied with the above inferior grains aided by 'ber' 'sag' and pulse of the 'sem' plant which surrounds the house enclosure...From March to June, rice is taken only very occasionally and the meal consists mainly of mahua corolla and sal seed mixed with rice. ...... Vegetables are taken throughout the year, partly from the small patch of cultivation around the labourer's cottage but chiefly wild from the jungle... and known generally as sags".

10. 'Statement of Jungle products used as food by the people during the year of Famine in Ranchi district' Annexure B'. GOB, Rev. Deptt. (Agri), (1-2), September 1901.

And this, it may be noticed is a district where the so-called 'aboriginals' were not the preponderant population. We need not stress the overwhelming dependence of majority of the population of the region on jungle for securing food during lean months of the agricultural calendar. As for the tribals and other poor sections of the population 'owners of petty holdings and the agricultural labourers' the existence of jungle was often crucial for their very survival. Take the case of Mangra Majhi, an owner of 4 acres of holding in Palamau in 1917. The food that he could produce on his holdings was sufficient only for less than 6 months. When enquired about his mode of survival his answer was,

"my family and I depend for subsistence largely upon my daily labour and jungle produce. The jungle produce on which we subsist is chakore, saag, kurpati, koinar, kurcha, genhari, amti leaves, sarvat, kane patri, surai, piar etc. I have to go to other villages to get all this".

The Assistant settlement officer commented, "It is not difficult to realize how much the custom, which enables him to take free jungle products of neighbouring villages means to him". Instances of this kind could be multiplied. The jungle stood between life and death for many small holders and agricultural labourers. The jungle was truly the 'saving of the lower races of the population'.

Apart from supplying food and fuel, jungle provided the populace with all the necessary means of labour in the agrarian economy. Almost all the agricultural implements were fashioned from trees of the jungle. It was with the charcoal prepared from the timber of the jungle that the village blacksmith forged the iron shares, the kodali, khurpi and sickle and numerous other implements. W. Schlich who wrote an early

12. Note by Maulavi Abdus Quadir Khan, Assistant Settlement Officer, Palamau SR, p. 117.
report on the forest administration of Chotanagpur in 1885 listed the local consumption for agricultural implements and other uses as follows:\(^\text{13}\):

<table>
<thead>
<tr>
<th>Implements</th>
<th>Trees used</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sagar (Cart) Wheel</td>
<td>Sal and others</td>
</tr>
<tr>
<td>Oilmills</td>
<td>Sal, Mahua and others.</td>
</tr>
<tr>
<td>Plough shares</td>
<td>Sal, Mahua and others.</td>
</tr>
<tr>
<td>Plough shafts</td>
<td>Sal, and others.</td>
</tr>
<tr>
<td>Yokes</td>
<td>Sal, and others.</td>
</tr>
<tr>
<td>House building and rafters</td>
<td>Sal, and others.</td>
</tr>
<tr>
<td>Rice Pounders</td>
<td>Sal</td>
</tr>
<tr>
<td>Rice Pestles</td>
<td>Mahua and others.</td>
</tr>
</tbody>
</table>

According to his calculation 12 maunds of timber and wood per head per annum was the average local consumption\(^\text{14}\).

From the description given below by W. Schlich we can gather a fair idea about the state of forests in Chotanagpur during the last quarter of the 19th century.

"In a general way Hazaribagh and Ranchi plateau contain now comparatively little forest. What remains in these two districts, is chiefly along the northern edge of Hazaribagh, in the southern half of Palamau on the hills rising between Palamau and Lohardagga (later Ranchi district) proper in the Damodar valley and along the southern edge of Lohardagga district. The western half of Singhbhum district may be described as one enormous forest, in which only limited areas have been cleared for cultivation. Hewitt, the Commissioner of Chotanagpur described the forest along the border of Singhbhum and Bonai as the finest forest ever seen in India"\(^\text{15}\).

Even though deforestation was general wherever human occupancy was existensive, it did not mean that the forest had vanished completely. Thus even in the same report where Schlich mentions extensive deforestation due to human occupancy, we find the following remarks:

"Generally it should be mentioned that smaller areas, covered principally with sal are found scattered over the whole.

\(^{13}\) U. Schlich, (1885), p. 5.

\(^{14}\) ibid. p. 7.

\(^{15}\) ibid. p. 5.
However, the definition of forest adopted by the colonial Government was quite different from the popular notion of the forest. From the standpoint of the colonial officials, the forest meant an extensive tract of virgin forest, where human occupancy had done little to modify natural growth. Furthermore, to the colonial Government and the officials, forests meant largely a reserve of trees for commercial purposes. To the villagers the forest did not necessarily mean the same. It first of all signified an area which was covered with trees and timber which could be useful for them. Thus a dense and virgin forest was not necessarily the ideal type of the village forest. This difference of perception between the Government and the local population, one emphasising the commercial value and the other the use value of forests can be gauged from the following extract of a report describing the sal forests of Hazaribagh in 1848-49.

"The young trees are in such general request for house posts, rafters, ploughs, boat masts as never to be allowed to exceed the size required for these and similar light purposes for which alone the tree is grown and extensively cultivated. The use of the saw being quite unknown in these districts it follows that if the tree is allowed to exceed a certain size, it must necessarily become quite useless. The only implement of the carpenter here known is the axe, consequently the labour of reducing a large tree to useful dimensions by such imperfect means would be more than the object is worth. The practice therefore is to encourage only growth of saplings and suckens, extensive groves of which may be seen spreading over large tracts of the country......." 17

16. ibid. p.5.

These small groves growing saplings and poles of sal around the village, were a common sight in the last century. In Ranchi they were known as patras; their function was to provide the surrounding villages with firewood, agricultural implements and edible products. Thus in 1892 when the Government enquired anxiously about fodder and fuel reserves on account of extensive deforestation, it was assured that the question had not reached critical levels in Chotanagpur, since there were large tracts "which contain an inexhaustible supply of wood fuel". The reference no doubt is to the existence in Ranchi, Palamau and Hazaribagh of large areas of village forests of the kind mentioned above. In many of the mountainous regions, where cultivation in the valleys and water channels and along the hill slopes was taken up, it was often found that the upper portion of the hills remained fully forested. Thus Dalton wondered if the tribal cultivators knew the value of forests in affecting the rainfall since he found that the tops of hill slopes were often left covered with forest.

The relation of the local population with the forest was governed by usage and custom. The whole village exercised certain customary rights. Typically these rights included:

1) rights to collect mahua and edible products

2) grazing rights

18. Extract of commissioner of Chotanagpur division's report on fodder and fuel reserves in Letter of Mr. Finsecane Secretary, Revenue Department to the Secretary Board of Revenue, dated 3rd May, 1892. GOB Rev. Deptt. July 1892. See also Letter from J.F.K.Hewitt, Commissioner Chotanagpur to Secretary Board of Revenue, dated 11th Jan. 1884. Rev. Deptt. (Famine) September 1887.

These kind of villages situated on the spurs are a sight common enough even today. A geographer remarking on the advantages of location of such villages writes, "From here the settlers usually practice a double economy. They exploit the forest above and cultivate the field below." See Prasad (1973), p. 230.
3) cutting trees for agricultural implements and house building

4) rights of reclamation for expansion of cultivation. This last named right was only reserved in most areas for the resident raiyats only. Excepting this the rest of the rights were exercised in common.".

Part II : Forest Commercialization versus Customary Rights

The advent of railways and the opening of mines in the neighbouring district, gave a great impetus to the commercialization of forests. By 1866, in Manbhum extensive deforestation had occurred due to commercialization. "Already contractors and their agents have reached the hills in the Dhalbhum Frontier and at the rate at which sal is now being cut for railway sleepers, the supply cannot last for many years."  

By 1920 almost all the jungles had disappeared from Manbhum excepting in a few places. The settlement officer noticed that "the difficulties of transport alone have resulted in some jungle being still left on these hills."  

In 1885, Schlich reported that all the forests which were owned by zamindars in Ranchi district had been leased out to timber traders. From Tamar forests alone, in the south eastern part of the district, between 1880 and 1885, 1 lakh sleepers were cut and transported to various points of East India Railway. This, we should remember, was before

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20. During Ranchi Settlement, a legal problem arose about the exact nature of the rights of villagers over forest on whether it was a mere 'easement' or profit 'a prendre'. The Government Pleader of Singbhum wrote "Easements are so to speak, private rights belonging to particular persons while customary rights are public rights annexed to the place in general. Selections from the Ranchi Settlement Papers, p. 122.


22. ibid
the actual entry of railways into Chotanagpur itself. J. Reid, the settlement officer of Ranchi comparing the amount of deforestation caused respectively by the cultivators and the opening of railways placed, the blame unambiguously on the latter. "The opening of Purulia Ranchi Railway recently and of the main BNR line, which fringes the southern portion of Gumla has already had or is tending to more complete and thorough deforestation than the present needs or even the wanton destruction caused by all the raiyats of the districts combined." It is difficult to quantify the extent of deforestation caused respectively by tenants extending their cultivation or exercising their customary rights compared to that caused by the wholesale depredation of timber traders, contractors, and the railways. In 1885 Schlich had estimated that around 9,00,000 sal sleepers were to be required for 450 miles of railways within Chotanagpur division. Apart from that, some 1,00,000 sleepers were required annually for replacements. The timber requirements of the coal mines for pitprops, which witnessed an amazing growth after 1900 is of course another matter about which we cannot form any estimate. Similarly, the demand from urban centers both within and outside the region must have greatly accelerated the felling of forests for commercial purposes. Some idea of this can be had from the following figures of export of wood from Chotanagpur by the

23. Schlich (1885), Appendix II "Memorandum on the Sypply of Sleepers to the Bengal Nagpur Railways". Bengal Nagpur Railways opened opened their lines through Chotanagpur in 1891. The Purulia - Ranchi line opened in 1908.


25. Schlich (1885), Appendix II. By 1912 the open railway mileage in Chotanagpur had increased to 612 miles, thus the requirements for sleepers would have been more than what Schlich estimated. Secondly, the jungles supplied sleepers even to areas outside the division of which we have no account or estimate.
railways. These figures do not include the amount exported as railway sleepers. Nor do they represent the total export of wood, a part of which presumably was taken out of the division by means of carts.

Table 1.1

<table>
<thead>
<tr>
<th>Year</th>
<th>Mls. in 1000 tons</th>
<th>Value in 1000 rupees</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900-1905</td>
<td>6.38</td>
<td>1830</td>
</tr>
<tr>
<td>1906-1910</td>
<td>7.22</td>
<td>2979</td>
</tr>
<tr>
<td>1911-1915</td>
<td>15.83</td>
<td>4607</td>
</tr>
</tbody>
</table>


We have stated earlier, that the relation of the local population with the forest was one governed by customary notions. These no doubt were contrary to the interests of the landlords who tended to privatise, individualize and commercialize the forest. The growing commercialization of forests brought into open the latent conflict of interest between the landlords and tenants all over the division. The closing decades of the 19th century saw a rising incidence of such conflicts. Again not unnaturally the conflict over forest rights got inextricably linked with the land question. The landlords tended to restrict the exercise of customary rights through various means, primary amongst which was an imposition of tax on use of forests (variously known as bankar, tangikar) grazing fees, and in some regions demanded salami from the tenants for their customary practice of extending cultivation without permission. Simultaneously, the tendency to reserve forests and lease them out for quick pecuniary gains also gathered momentum amongst
landlords. So destructive and short-sighted was such practice by the landlords that Schlich wrote in 1885 that, "zamindars are rapidly consuming not the interests legitimately derivable from the forest but the capitals as well". In 1881, Government even seriously considered the prospects of managing the private forests of zamindars on their behalf, in order to stop the reckless felling that went on.

One of the earliest conflicts of this kind arose in Manbhum, where the commercialization of forests was the most advanced. In the Tundi estate, in the north east corner of the district bordering Hazaribagh and Santhal parganas, Santhal raiyats of 52 villages complained bitterly about zamindari oppression in the form of imposition of a forest cess as well as a cess on thatching grass. There were protracted battles in and out of courts between the landlord and the Santhals (at one point the landlord had to flee the estate to escape the fury of raiyats). The Government had to intervene in 1871 and arrange for a compromise that allowed the raiyats the exercise of customary rights in jungles with some restrictions on cutting down certain species of valuable timber. The vagueness of the terms of compromise led to further struggles as to what trees tenants could cut and what the zamindar could preserve for his own income. In 1881, a further compromise was hammered out with a clearer definition of customary rights on jungles as well as demarcation of the forests into two parts, one solely for the use of the zamindar and the other (area not to be less than 3 times the village rice land area or more than 500 bighas) solely for the exercise of customary rights but with restrictions as to the type

26. ibid, p. 5. See also GOB, Rev. Deptt. (Forest) August 1888.

27. GOB, Rev. Deptt., (Forests), 120-24 November 1880 also Rev. Deptt. (forest), 3, February 1881.
of trees to be cut. In 1890, a further proclamation prohibited cutting of all sal and mahua trees altogether by the raiyats. But the tussle between landlords and tenants led to serious deforestation of Tundi jungles with tenants cutting trees not only for domestic consumption but also for sale. The landholder, on the other hand, set out to reimpose the jungle cess on the tenants wholesalę.

A struggle of similar nature over the zamindar's claims of ownership rights and rights to impose jungle cess against the customary rights of tenants, arose in various places all throughout the division during the last quarter of the 19th century. In Palganj estate, adjoining Tundi, in Hazaribagh district a serious conflict arose between Santhal raiyats and the landlord, on the jungle question. In 1873, a compromise similar to the Tundi one was effected by Government intervention guaranteeing the exercise of customary rights free of charge. But even here by 1908, the practice of levying of fees and curtailment of customary rights had become prevalent. In another estate (Jagodih) in Northern Hazaribagh, it was found that till 1870 the tenants as a body exercised their customary rights freely over the whole jungle. But after 1870, gradually a jungle cess and other restrictions had been imposed on the tenants.

Another type of conflict, involving the Government rather than the zamindar arose with the application of various forest acts by which the Government demarcated reserved forests


29. "Note by J.D.Sifton on Jungle rights in Palganj Estate" in Selections from Hazaribagh Settlement Papers, pp. 66-68.

30. Letter from J.D.Sifton to Director, Deptt. of Land Records, Hazaribagh, 31st March 1913, Enclosure No. 27, in ibid p. 74.
and protected forests\textsuperscript{31}. The history of State intervention in the forest question is a fascinating study in itself, to which we cannot do full justice here. But suffice it to say that the struggle between State and the tribal inhabitants was continuous throughout the last decades of the 19th century. The issues of struggle were not much different from that of private forests. It involved additionally, the question of compensation for ousted tenants from reserved forests, and various other stringent measures imposed in the interest of "scientific forestry", e.g. imposition of collective fines in cases of wilful breach of forest rules like firing the forest and unauthorised grazing etc.\textsuperscript{32}. It is perhaps not out of place to note that Birsa Munda launched his legendary career by leading a protest against protected forest rules at Chaibasa\textsuperscript{33}.\\n
Thus by the beginning of the century, the customary forest rights were under attack from landlords and the colonial state. The degree and intensity of erosion of rights were the result of two factors, one economic and the other non-economic. Forest rights were invariably restricted wherever the commercialization of forest had advanced beyond a certain point and deforestation had become extensive. Thus in Manbhum by 1920, it was found that raiyats had no rights at all excepting grazing

\textsuperscript{31} The difference between the two categories lay in that in the former the Government was the absolute proprietor and all rights of zamindars and tenants on it were abolished. While in the protected forests, rights of tenants for use of forest with restrictions were allowed.

\textsuperscript{32} As we mentioned earlier, it is not possible to delineate here the impact of "scientific forestry" on the local population. For an expose of the pseudo scientific basis of colonial forest policy and the commercial motivations underlying it. See Ramachandra Guha's (1986), unpublished Ph D. Thesis.

\textsuperscript{33} See Bengal Police Abstract of Intelligence, Vol. VIII, Calcutta, Oct. 17, 1894, No. 40, Para 2087, p. 357.
rights in certain seasons in the zamindar's reserve forest (rakhat) and even mahua trees were found to have been reserved by landlords, which were given out on lease to tenants\(^2^4\). Similarly the rights of reclamation without permission had been invariably restricted outside the 52 Santhali villages of Tundi. It was found that tenants had to pay substantial salami for getting leases for reclamation\(^2^5\). The rights of taking firewood, thatching grass and edible products free of charge were found to be exercised only in the katat jungles which were kept open for raiyats.\(^3\) Even there, landlord's permission was necessary for cutting down trees above a certain girth. No tenant however, had any right to take either timber or wood for sale\(^3^6\).\(^3\) Thus it was found that for preparing agricultural implements and for house building purposes, "practically everybody outside Tundi and Baghmundi has to purchase timber from the nearest hat, where it is bought for sale either from the landlord's rakhat jungles or from outside the district\(^3^7\)". This situation had come about because the total forest area left in Manbhum by 1920 was only 731 square miles or about 17.5 per cent of the total district area most of which was to be found in the southern corner of the district.

The other factor which determined the degree of erosion of customary rights was the relative strength of landlords and tenants. The operation of this factor could be seen in particular in Palamau district, which inspite of being amply forested was perhaps the least protected in so far as tenant's rights were

\(^{34}\) Manbhum SR, p. 69.

\(^{35}\) ibid. p. 71.

\(^{36}\) ibid. p. 69.

\(^{37}\) ibid. p. 68.
concerned. It was found that the tenants were forced to pay rent for mahua trees even on those growing on their own holding. "Recent years have seen determined attempts by landlords to encroach on old privileges". In case of trees which grew lac, i.e. on kusum and palas the "landlords have in majority of cases for more than 12 years broken down, the once customary privileges of the tenancy" and were charging exorbitant rent even for trees grown on the tenants own holding.

There were, thus, considerable variations from village to village, and between the districts. It ranged from certain villages in Porahat in Singhbhum where the cultivators had the rights to cut and sell timber from the jungles to Palamau villages where landlords had got hold of trees grown on the tenant's own land. The variation in customary privileges can be illustrated by the following example of Tamar estate of Ranchi district. Tamar was located in the south eastern portion of Ranchi district.

"In the inaccessible country north of Chaklu not only the residents of the village but all neighbours as well enjoy unrestricted rights in every kind of forest produce. Southwards the railways give the big tree a commercial value; and eastwards the proximity of the plains, stripped clear of forests, has led to the imposition of a charge for fuel on non-residents. To the east of Baranda, even villagers have to pay for thatching grass. Thus the thana of Tamar alone disclosed almost every stage of the forest question, and wherever enquiries can be pushed back they always exhibit the same story of gradual restriction on old customary right."  

38. Letter of T.W. Bridge, settlement officer to Director of Land Records and Surveys, Bihar and Orissa, dated 1st March 1919, No. 23, in the Selections from Palamau Settlement Papers, p. 43.


40. For the custom of sale of timber of village jungles by residents in Porahat, See Porahat SR (1) p. 69.

41. "Report on the grievances of Mundas in other than intact Khutkatt villages in Ranchi district" enclosure no.5 of the Selection from Ranchi Settlement Papers p. 97.
According to contemporary observers these variations in customary privileges were explainable purely by the operation of the law of supply and demand. Where the jungle was abundant or inaccessible and thus had little commercial value, the customary privileges of tenants were wider in scope and exercised without any restraint. But in more accessible areas where jungle was scarce, the imposition of the tax on use of forests was common. This spatial variation in the customary privileges were often explained by being translated onto a temporal sequence. So that, of Ranchi district it was said:

"As a matter of historical fact the residents in a newly founded village enjoy the right to cut fuel, to cut timber for building or repairing their houses and for their agricultural implements and to collect miscellaneous articles, such as jungle fruits, roots and grass for thatching, all free of the charge. It is only at a later stage in the development of the country that these commodities begin to possess a market value. At first the residents continued to remove the produce from the jungle for sale without interference from the landlord. But when the difference between value of labour expended on the collection and their selling price at the market becomes pronounced, interference from the landlord arises and that interference is naturally directed at first, not against customary rights of residents to collect produce for their personal use, but against the removal of produce for the purpose of sale." 42.

42. ibid. p. 97. A similar explanation for difference in customary rights found in villages of Palamau was given by P.W. Murphy, Director of Land Records to R.G. Kilby, the Deputy Commissioner of Palamau. From this explanation Mr. Kilby concluded that if the "so-called" "customary rights" are indeed so variable and dependent on the landlord's wishes, then in actuality they are no rights but rather concessions at best and thus they can not be given statutory recognition. See Letter of R.G. Kilby, Deputy Commissioner of Palamau to the Commissioner of Chotanagpur. Letter No. 96 dt. Dalton Ganj, 23rd August, 1917, Serial No. 299, Collection XXXIX File 1 (a) of 1917. in 'Palamau Settlement Papers' (Commissioner's Record Room, Ranchi).
The above view, though partially correct, takes too benign a view of the law of supply and demand, as if this manifestly abstract economic law functioned independently of all circumstances and institutional relations. For instance, it assumes the absolute proprietary right of landlords on the jungle as a matter of fact, while it was precisely the question of ownership which was in furious dispute in many areas of Chotanagpur between the landlords and tenants. Secondly, the struggle over ownership of the jungle was also crucially determined by the intervention of colonial state. So what appears as merely the result of operation of an abstract law was in reality deeply determined by the struggle between various contending groups for control over resources. This question we leave for detailed discussion in the next chapter. But to take one example of Bandgaon estate, the tenure holder there, was found to have arrogated extensive rights over the jungle by 1903. He had managed to impose tax on mahua and kusum and palas trees. The villagers, all of them mundari khutkattidars had to seek permission from him to exercise their customary rights. On top of this, he had cut and sold all the valuable timber of the villages including the sal trees of sacred groves (sarna) of the villages. It was found that prior to 1891, all his attempts at exercise of proprietary rights over jungles had been firmly repulsed by the mundari khutkattidars. It was not that the law of supply and demand suddenly started operating after 1891. What happened of course, was a fortuitous intervention of the colonial state in favour of the landholder. He was granted absolute proprietorship and the title of "hereditary zamindar" (which mistakenly assumed that the tenure holder had reclaimed and settled the estate) by the Government. But that was not enough. On top of this, he was even allowed to manage the forests of the estate under the
protected forest rules. It was the combination of these two factors, by which the landholder managed to have the executive authority of the State behind him, which enabled him to destroy the pre-existing rights of ownership over forests of the mundari khutkattidars and thus clear the way for the operation of the so-called law of "supply and demand."\(^2\)

Part III: Forest Rights and the Colonial State

The colonial policy and land laws were not so much in favour of any class as it was in favour of individual property. Thus it constantly ignored the actual context of community appropriation of forests viewing it as either an infringement of individual property or at best a right against it. The munda (headman) of Rabo villages in the khutkatti region of Ranchi, sold the village jungle for Rs. 150/- to a timber contractor in clear violation of the community property rights in the forest. When the other mundari khutkattidars, who were co-parceners of the village appealed against this act in the court of law they were told that the forest belonged to the munda (headman) and he had absolute right to do as he pleased with the property\(^4\). This incident, typical of many such which occurred in Chotanagpur, showed in clear terms how the forest was treated as 'individual property' even where the customary proprietorship had a long tradition. The destruction of community property in favour of individual property was aided and abetted by colonial policy and took place in a context of growing commercialization of forest.\(^4\)

43. The above is taken from Porahat SR (1), pp. 228-234. It seems the colonial state showed exceptional leniency to this particular tenure holder for his role in capturing Birsa in 1895 and 1900.

44. "Note on constitution of Khutkatti and other villages in South Tamar and Khunti for the information of Assistant Settlement Officer. Selections from Ranchi Settlement Papers, p. 76."
During the Survey and Settlement operations, under the Chotanagpur Tenancy Act, the existing customary rights of tenants in the jungles were recorded in a separate khatian (jungle khatian no. II) and were thus sought to be safeguarded. Additionally, in order to check destruction of forests by the tenants their rights were limited only to personal use. The settlement officer in Ranchi added that this additional clause limiting the tenant's rights did fall short of existing facts in many cases:

"...for the right to sell fuel and big timber is enjoyed without question in large areas, even by residents of neighbouring villages... but it would be a mistake of policy to facilitate the sale of timber and fuel, in as much as this would understandably result in the complete destruction of the jungles".  

But even this limited concession to customary rights over forests was viewed with great alarm by both the landlords and their supporters in the official circles. Thus by 1913-20, Settlement operation in Palamau district, it had become an established opinion in the Government circles that the forest rights granted to tenants in Ranchi district had been a mistake. Strenuous effort was made by both the then Commissioner of the division and the Deputy Commissioner of Palamau district to persuade the Government to stay the recording of customary privileges in khatian II. It required an equally impassioned and courageous effort by the settlement officer

45. ibid, p. 98.  

46. The opinion of Inspector General of forests of India was that the action of the Settlement Department of Bihar and Orissa was absolutely unique in whole of India in regard of forest question. The extraordinary rights granted to the tenants had led to extensive deforestation. He also recommended to the Commissioner of Chotanagpur Mr. B. Foley to do his best to stop 'further destruction of forests by the Bihar and Orissa Settlement Department.' Letter No. 581 TR from B.Foley Commissioner of Chotanagpur to secretary, Board of Revenue Bihar and Orissa. Ranchi 5th August, 1917, in 'Palamau Settlement Papers', (Commissioner's Record Room Ranchi).
T.W. Bridge to have these customary privileges of tenants recorded at all, even though with some modifications. It was generally assumed that the granting and recording of customary privileges in the Settlement operation had led to an unholy competition between landlords and tenants in cutting down jungle and was leading to deforestation on a scale hitherto unprecedented.

During the revisional Survey and Settlement operation, in Ranchi District in 1928-35 the settlement officer went a step further. Armed with actual statistics of destruction of forests he roundly condemned the extravagant exercise of customary privileges by the raiyats as the most important cause of deforestation. Between the two settlements in Ranchi in a period of 25 years, he found that loss in the area of jungles (in both cultivable jungles and uncultivable jungles) amounted to 14.2 per cent. More important than complete deforestation was the quality of the remaining jungles which, in many areas were found to have become "only scrub jungles which is useless for any purpose except fuel, and which is prevented by continual cutting from attaining maturity whereas at the time of the last settlement much of it was reasonably good sal forest. Far more damage has been done to the jungles of Ranchi district by continual cutting which has reduced them to a state of

47. See "Palamau Settlement Papers" for a sample of Correspondence related to forest rights. The conflict between the Settlement Officer and the District officer had reached such an impasse, with the latter championing the case of the landlords rights that a special conference was convened to sort out the differences over procedural wrangle. The Commissioner Mr. B. Fole obviously sided with the Depty Commissioner and thought that the Settlement officer was a 'fanatic'. The Settlement officer though was consistently supported by the Director of Land Records Mr. P.W. Murphy.


impotence, than by complete deforestation for the purpose of cultivation.\textsuperscript{30}

(But of course, part of the destruction of forests was also due to the increase in the arable frontier. Thus in Ranchi district if the area of forest had declined by some 2 lakh acres the arable frontier had also advanced by 1,70,000 acres (See Table 1.2). Even though part of the new land brought into cultivation, was from the village wasteland, the settlement officer admitted that 75 per cent or more of new reclamation in Ranchi district was from the jungles.\textsuperscript{31} As evident from Table 1.2 the areas which saw the maximum deforestation (e.g. Simdega subdivision) also had the maximum increase of population which

<table>
<thead>
<tr>
<th>Thanas</th>
<th>Area of Jungle (in acres) 1902-10</th>
<th>Area of Jungle (in acres) 1927-35</th>
<th>Decrease in area (in acres)</th>
<th>Increase in cultivated area (in acres) 1902-27</th>
<th>Increase of population 1906-31</th>
</tr>
</thead>
<tbody>
<tr>
<td>Khunti</td>
<td>1,95,901</td>
<td>1,69,407</td>
<td>26,494</td>
<td>62,074</td>
<td>15.4%</td>
</tr>
<tr>
<td>Simdega</td>
<td>4,57,563</td>
<td>3,39,136</td>
<td>1,18,427</td>
<td>65,030</td>
<td>42.88%</td>
</tr>
<tr>
<td>Gunla</td>
<td>4,09,672</td>
<td>3,78,863</td>
<td>30,809</td>
<td>13,795</td>
<td>22.8%</td>
</tr>
<tr>
<td>Sadar</td>
<td>3,96,734</td>
<td>3,64,942</td>
<td>31,792</td>
<td>29,509</td>
<td>18.83%</td>
</tr>
<tr>
<td>Dist.</td>
<td>14,59,870</td>
<td>12,52,348</td>
<td>2,07,462</td>
<td>1,70,408</td>
<td>22.17%</td>
</tr>
</tbody>
</table>

Source: For column 1,2,3 and 4 Ranchi Revisional SR, Appendix, for column 5, Census of Bihar and Orissa, 1911 and 1931

Note: The population increase has been calculated by interpolating figures of 1906 from 1901-11 population estimates.

\textsuperscript{50} ibid. p. 60.

\textsuperscript{51} Ranchi Revisional SR, p. 60.
had the twin effect of extension of cultivation as well as increased demand for forest produce\textsuperscript{32}.

Thus it is a bit too one sided to argue that extravagant or uncontrolled exercise of customary privileges by the tenants alone caused deforestation. This was also the view of T.W. Bridge and B.D. Gokhle, the settlement officers respectively of Palamau and Manbhum district. They placed the blame of deforestation on the short term pecuniary gains derived from forests by the landlords.

"The landholders have consistently helped jungle denudation by periodically selling jungles wholesale in order to meet the demands of their extravagant expenditure"\textsuperscript{53}. This habit of landlords was amply testified to by the fact that deforestation due to leasing of jungles to timber traders was of much older standing than the settlement operation itself. "Their whole idea is to raise money and spend it feverishly until the next period of management of their estate under the Encumbered Estate Act."\textsuperscript{54}. A.D. Tuckey, the Director of Land Records and Surveys, replying to the request of the Commissioner of the Division not to renew the "harmful classes of entries in regard to jungle rights" in the

\textsuperscript{52} It is strange to find Taylor the settlement officer of Revisional Settlement of Ranchi discounting the commercial exploitation as a cause of deforestation. His argument being that the areas where maximum deforestation took place (viz Simdega subdivision) was not very accessible and because in any case there was not much timber of value left for commercial exploitation. J. Reid the Settlement officer in 1902-1910 settlement had specifically mentioned that the opening of Bengal Nagpur Railway along the Southern side of Gumla subdivision had led to a great increase in demand for Sleepers. Secondly, the absence of good timber itself testified to the fact that ruthless a exploitation of forests had already denuded the region of forest prior to the Survey and Settlement operation during the last decades of the 19th century.

\textsuperscript{53} Manbhum SR, p. 75

\textsuperscript{54} ibid.
Manbhum Settlement so as not to bring about a race between landlord and tenants to exterminate jungle, did not agree with the Commissioner that the mere recording of rights in any case caused the competition for deforestation but admitted that

"Any crystallisation however in a written record of the somewhat indefinite rights of maliks and raiyats in jungles is apt to have the effect both of disclosing to them that their interests clash...and also of stereotyping into permanent and irreconcilable rights, customary rights which otherwise change as cultivation extends, communication improve and jungle produce become scarce".

At the heart of the forest question lay the conflicting interest of tenants and landlords as well as the Colonial State. For the tribal cultivators of the region, as we have tried to show earlier, the jungle was absolutely crucial for their survival. It ensured not just physical survival from year to year for the majority of them but also for reproduction of their conditions of labour. As long as the main source of income of landlords lay simply in the extension of cultivation and the physical reproduction of the cultivating population they were liberal in granting forest rights. But when forests became a lucrative source of income through their commercial exploitation they tended to curtail the tenant's rights over forests. If there was a competition to denude forests in order to gain quick income between the landlords and tenants there is no doubt as to who started it in the first place. The purely "use value" aspect of forest produce is gradually replaced by the "exchange value" and the notion of absolute private property impinges upon the age old customary and communal notions of forest rights. This is the crux of the furious battle over customary rights that raged in the last

55. ibid.
decades of the 19th century throughout the Division. The settlement proceedings and the enactment of Chotanagpur Tenancy Act could not have done more than accentuate and bring into open this conflict of interests.

Part IV: Extent and Effect of Deforestation 1902-1950

While it was difficult to quantify the extent of deforestation in the 19th century due to lack of reliable estimates, after the Settlement operation in Chotanagpur it becomes comparatively easier to measure the extent of deforestation. In Table 1.3, we have the figures of areas of jungles recorded in both the Settlement periods (1902-25) and (1949-1953). We have figures for only 4 districts of Chotanagpur division. The figures of Singhbhum district have not been used for two reasons (a) In 1947 there was an extensive change in the area of the districts due to the addition of Seraikela and Kharswan feudatory estates, (b) due to non-simultaneity of various settlements of the portions of Singhbhum which were held in different periods.

Table 1.3

<table>
<thead>
<tr>
<th>District</th>
<th>Total district area</th>
<th>Area under Jungle during settlement</th>
<th>Col II as a % of Col no. I</th>
<th>Area under jungle during 1949-53</th>
<th>Col IV as a % of Col no. I</th>
<th>Decrease in Area of Jungles</th>
<th>% Decrease of Jungle</th>
<th>Extension of Cultivation Settlement - (1949-53)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ranchi</td>
<td>4557</td>
<td>1460</td>
<td>32.04</td>
<td>1205</td>
<td>(26.44)</td>
<td>255</td>
<td>-17.5</td>
<td>150</td>
</tr>
<tr>
<td>Palanau</td>
<td>3145</td>
<td>1941</td>
<td>61.72</td>
<td>1846</td>
<td>(58.7)</td>
<td>95</td>
<td>-4.9</td>
<td>60</td>
</tr>
<tr>
<td>Hazaribagh</td>
<td>4771</td>
<td>2491</td>
<td>55.71</td>
<td>2252</td>
<td>(50.37)</td>
<td>239</td>
<td>-9.6</td>
<td>35</td>
</tr>
<tr>
<td>Manbhum</td>
<td>2630</td>
<td>5020*</td>
<td>19.08</td>
<td>471</td>
<td>(17.91)</td>
<td>31</td>
<td>-6.2</td>
<td>-45</td>
</tr>
<tr>
<td>Total</td>
<td>14803</td>
<td>6394</td>
<td>43.19</td>
<td>5775</td>
<td>(39.0)</td>
<td>619</td>
<td>-9.7</td>
<td>200</td>
</tr>
</tbody>
</table>

Source: District SR's and for Col. 8 see Chapter 3. The figures for Col 4, are the highest area recorded under the heading of forests in the Indian Agricultural Statistics Vol. II.
While the forest constituted roughly 43 per cent of total area of the 4 districts at beginning of our period it had become 39 per cent of the total area by 1951. The decline in forest area amounted to roughly 10 per cent. Was this decline 'more than that which occurred prior to the Settlement period? We have no way of knowing it since even the most preliminary data about forest area prior to settlement is not available. But we can gain some idea from the comparative extent of deforestation at least in Ranchi district. In 14 villages of the Chotanagpur estate in Ranchi district, the extent of deforestation in 25 years prior to the Settlement of 1902-10, the loss of jungle area amounted to 11 per cent. If we take this figure as representative of the whole district, the loss of 17 per cent of forest area in the district after the settlement in 45 years, does not appear too drastic compared to the earlier figure. In fact since the forest area in 1885 would presumably have been very much higher than in 1906, (calculating backwards the forest area of Ranchi in 1880 would be around 16,22,000 acres) the absolute loss of forest area prior to Settlement would thus be of a higher magnitude than in the post settlement (1902-10) period. Thus between 1885 and 1906 the average loss of forest area would be 6500 acres per year and between 1906 and 1951 the loss of forest area was 5800 acres per year.

This is not to gloss over the fact that the extent of deforestation in Ranchi district alone cumulatively in a period of 70 years (1880-1950) amounted to about 26 per cent of the initial forest area. In the division as a whole between the settlement period (1902-25) and (1949-53) the forest area declined

by 619,000 acres absolutely and in percentage terms by 9.7 per cent. In the same period extension of cultivation amounted to only 200,000 acres, thus at least 419,000 acres of area was deforested without any compensating extension of cultivation.\(^5\)

From the table it is clear that the most serious deforestation without the compensating expansion in the arable frontier occurred in Hazaribagh district. Here 239,000 acres of forest had vanished in a period of 40 years or so, while the extension of arable frontier was about 35,000 acres. The reason for such drastic deforestation without compensating expansion of arable was perhaps that the bulk of deforestation in Hazaribagh took place during the Second World War, when the demand for poles and saplings and wood for defence purpose led to wholesale destruction of forests near the more accessible portions of the district, i.e. along or near the Grand Trunk Road. It is said that due to the demands of the defence department during the Second World War... "these (Hazaribagh) forests being the most accessible receive the full brunt and fury of cutting and felling. Indiscriminate felling went on everywhere and almost all good timber was cut and transported\(^6\). A second round of felling started when the Bihar Private Forest Act of 1946 was passed in the legislature. The landlords led by the Raja of Ramgarh opposed it tooth and nail. The prolonged period during which the Government hesitated take over the private forests, led to a drastic round of felling by both landlords and tenants. "The (Landlord) cut and sold and the tenants cut and stored or even in sheer spite or instigation cut and destroyed\(^7\)."

57. For the calculation of figures for extension of cultivation see section on arable expansion in Chapter III.


59. ibid.
The indeterminacy of proprietary rights over forests set into motion by the Act thus led to a competitive cutting down of forests, reminiscent of much of the time just prior to or after the Settlement when a similar indeterminancy had allegedly given rise to competitive cutting. In a way wherever, customary rights of usage are abruptly restricted throwing the whole relation of the local population with the forest into a state of flux, it often gave rise to a round of destructive felling. Thus, way back in 1888 when the Koderma forest in Hazaribagh was reserved by the residents of the Government villages, who enjoyed unrestricted rights in the forest prior to the reservation, turned up in huge numbers (1000 to 1500) and fell all available sal trees. The thicadars who had farmed the villages from the government also joined the villagers. On being asked by the forest guards to stop they reportedly replied that the Deputy Commissioner, of Hazaribagh had given them orders to do so.

(The most serious effect of deforestation either due to indiscriminate cutting or excessive commercialisation and not compensated by simultaneous expansion of the arable frontier, was large scale soil erosion. The problem was found to be most acute in Hazaribagh district in the catchment areas of Damodar river and in the Koderma Plateau specially in the thanas bordering Bihar. The problem of soil erosion had been noticed in these areas as far back as in 1915 during the settlement period. During the Survey for Damodar valley project, acute problems posed by silting of reservoirs due to deforestation was thoroughly investigated.

60. Report of A.L.Home, Conservator of forests, GOB, Rev. Deptt. (Forest), 182, August 1888. The D.C. of Hazaribagh of course denied giving any such orders. Six persons, the ring leaders' were arrested and sentenced to 3 months imprisonment.

61. Hazaribagh SR, p. 4.)
Soil erosion had led to extensive gully formation rendering large areas unfit for cultivation. Similarly in Ranchi district, in the heavily deforested areas of Simdega subdivision the settlement officer noted the extensive soil erosion that had occurred in the 1930's. It is not merely by rendering large areas unfit for cultivation that deforestation and consequent soil erosion affected the agrarian economy (though to what extent we are not sure), it also affected it by the loss of valuable vegetable mould which the forest produced and which regularly fertilized the arable. To some extent extension of cultivation arrested the effects of complete deforestation. It is not an unusual sight even now, (in a period when deforestation if anything has become far more extensive) to find, in the midst of cultivated upland and even on some lowerland fields, a solitary tree left uncut by the cultivator. Most probably it would be a mahua tree (the idea of cutting which was absolutely foreign to the tribal cultivator) or a palas tree on which the cultivator set lac. It had the beneficial effect of arresting soil loss from the fields. But it is doubtful to what extent such practices, local and individual in nature, would have arrested the effect of wholesale deforestation.

Another important effect of deforestation would be that the dependence of the cultivators on the forest from which they got fuel is reduced. It meant simultaneously a diversion of precious cowdung manure for fuel and thus a reduction in the already meagre amount of fertiliser use on the fields. This extreme situation had already been reached in parts of

62. In 1961, it was estimated that almost 17 per cent of the total land area was heavily plagued by gully and sheet erosion. Prasad (1973), p. 462.

63. Ranchi Revisional SR, p. 82.

Manbhum and Hazaribagh district by the end of our period.65. Deforestation also was alleged to have an adverse impact on the rainfall and the amount of precipitation. This had regularly exercised the Colonial Government especially during the early period of forest legislations. In so far as Chotanagpur was concerned, it was alleged by knowledgeable forest officials that deforestation had led to a reduction in the amount of rainfall. Thus H.H.Haines wrote that the driest regions of Chotanagpur also coincided with the least forested areas. This difference in "distribution of rainfall strongly coincides with differences in the character of vegetation which is ascribed to difference in relative humidity"66. Tea cultivation apparently declined due to loss of humidity consequent upon deforestation 67.

F.E.A.Taylor, the settlement officer of Ranchi district, made a special study of the rainfall pattern in the district for the period 1911-1931 to test the hypothesis that deforested tracts show a reduction in rainfall. He found that there was no reduction in the absolute amount of rainfall in the district, though there was a certain shift in the pattern of rainfall from the early monsoon period (May and June) to the unseasonal rainfall during winter (November-July). But this shift was not due to deforestation since "absence of jungle causes failure of precipitation and thereby lessens the amount of rainfall generally and not at any particular period"68.

65. 'In Birni and Dhanwar thanas there has been extensive deforestation. In such locations forest produce is hard to come by and cowdung which could and should have gone to the fields as manure is diverted to the kitchen.' Hazaribagh DG(1), pp. 53, 54.

66. Letter of H.H.Haines, Conservator of Forest to secretary: Govt. of Bihar and Orissa, Rev. Deptt. (Forest), GOB & O. 7 - 12, December 1915.


68. Ranchi Revisonal SR, p. 62.
It would of course require for more sophisticated methods to determine the exact impact of deforestation on the monsoon precipitation and its distribution in the long term.

Part V: Summing up

Before we go on to the next chapter let me briefly recapitulate the discussion so far.

1. Forest was crucial to the production and reproduction of the regional economy. In consonance with its overwhelming importance the relation of the local population (not just the cultivators even the local artisans and agricultural labour) with the forest was governed by customary rules which reflected the communal character of these relations.

2. Two major forces that modified this original and natural relationship was the growing commercialisation of the forests from around the middle of 19th century and the great wave of expansion of arable which coincided with it.

3. This led to intense struggle over the forest between the zamindars and colonial state on one hand and the whole of the population on the other. These were over different aspects of forest rights ranging from question of ownership (like in Singhbhum and parts of Ranchi district) to imposition of taxes on the exercise of forest rights. Colonial state intervened in the struggle at various points of time in order either to further its own commercial interest (in reserving forests for exclusive exploitation by the State) or to regulate the conflicting rights over forest between the landlord and the tenants through a systematic codification of customary rights under the settlement proceedings. Before the enactment of Chotanagpur Tenancy Act, the policy of colonial state favoured the unrestrained exercise of absolute proprietary rights by the landlords. This policy remained latent even after the settlement.
Table 1.4

Extent of Deforestation: Chotanagpur 1902 - 67

<table>
<thead>
<tr>
<th>District</th>
<th>Area of Forest as % of Total District Area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Settlement period</td>
</tr>
<tr>
<td>Ranchi</td>
<td>32.04</td>
</tr>
<tr>
<td>Palamau</td>
<td>61.72</td>
</tr>
<tr>
<td>Hazaribagh</td>
<td>55.71</td>
</tr>
<tr>
<td>Manbhum¹</td>
<td>19.08</td>
</tr>
<tr>
<td>Chotanagpur²</td>
<td>43.19</td>
</tr>
</tbody>
</table>

Source: Settlement and 1946-53 figures are the same as in Table 1.3, for 1967 figures - Bihar Season and Crop Report, 1967

Note: 1. The 1967 figures for Manbhum are only for Dhanbad subdivision. 2. Excluding Singhbhum.

The essential impact of deforestation on a wide scale is difficult to estimate; except in a general manner which we have tried to do. But it might be of interest to compare the extent of deforestation that has taken place since independence with the period of 50 years prior to it. The extent of deforestation has continued unabated as can be seen from Table 1.4. The maximum deforestation has occurred in Palamau where the forest cover has declined from 59 per cent of district area at the end of our period, to about 45 per cent in the next 17 years. In Ranchi which had seen extensive deforestation in the 50 years prior to independence, the rate of deforestation has been the lowest since independence. It is to be remembered that extensive deforestation has occurred even when most of the forest area has been declared reserved area.

Alongside the host of deleterious effects of deforestation, the shrinking of forest cover had a curious impact on the roofs of houses in Chotanagpur. In 1868, Captain Depree
described the typical house in Ranchi plateau, "The houses are small, built of mud and thatched with grass." Depree found tiled roofs only on the houses of mahajans and landowners. In the 1961 census it was found that in Ranchi tile roofed houses accounted for more than 99% of the total houses. This however did not indicate any dramatic leap in the status of the landless labourers or the poor tribals. Unlike in the South Gangetic Plains where tiled roofed house is an index of afluence, in Chotanagpur it was an ecological necessity. For the shrinkage of forest also meant that the once plentiful thatching grass (Khair) had become by now a rarity.

70. Prasad (1973), p. 413