

CHAPTER -2
THE FORESTS

COMPOSITION AND CONDITION OF THE CROP

1.2.1 Speaking generally the composition of the crop at any place is influenced by various factors, namely, the climatic, topographical, edaphic and biotic factors. The first three factors unravel their effects in a gradual and long term manners. The biotic factors can play havoc with any forest in a very short while. This is exactly what has happened in Koderma division. The biotic factor has wreaked havoc with the forests and has not allowed the other factors to come into play.

1.2.2 Till 1946, most of the forests were under private ownership. These forests were mismanaged and exploited resulting in their deterioration. Apart from this these forests were heavily right burdened and were exploited mercilessly by the mica mine owners for use in their mines.

1.2.3 In the 50's the forests were taken over by the government and management under regulated working plans was introduced. Though the various working plans were implemented, these had not reckoned with the increased population and the resultant pressure on the forests. The increasing population and the unregulated growth of the cattle population created havoc on the forests. Heavy grazing by cattle did not allow the regeneration to establish itself. Increasing demand for fire wood was met from the forests over and above removal of forest produce from the coupes. Young saplings continued to be converted into firewood and over a period of time the forests started attaining a more and more open nature leading to the invasion of lantana which suppressed whatever regeneration was struggling to establish itself, The ever increasing area under the rehabilitation working circle is a clear pointer to the state of affairs presently obtaining in the forests.

1.2.4 According to Champion and Seth's classification the forests of this division belong to the sub-group 5B, i.e. Northern Tropical Dry Deciduous Forests. The sub types are:

	Sub Type	Sub type no.
1.	Dry peninsular Sal	5B/CIC

- | | | |
|----|---|-------|
| 2. | Northern dry mixed
Deciduous forests | 5B/C2 |
| 3. | Dry deciduous scrub forests | 5/DS1 |
| 4. | Boswellia forests | 5/E2 |

1.2.5 Dry peninsular Sal: - (Shorea robusta) is the major species and occurs both on plains as well as on the hills in well drained localities, the best of the ranges Sal is found in the Koderma reserve. In rest of the ranges Sal is found in very small patches of much inferior qualities. The density of Sal forests in the reserve is mostly 0.5 to 0.6. In the other areas it is around 0.3.

1.2.6 The main associates of Sal are Assn (*Terminalia tomentosa*), Bija (*Pterocarpus marsupium*), Salai (*Boswellia serrata*), Dhaura (*Anogeissus latifolia*), Piar (*Buchnaniania cumini*), Jhingan (*Lannea coromandalica*) etc.

1.2.7 The middle storey consists of Dudhkhorija (*Holarrhena antidysenterica*), Kachnar (*Bauhenia variegata*), Aonla (*Emblica officinalis*) etc.

1.2.8 The ground flora consists of Harsingar (*Nyctanthes arbor-tristis*), Ber (*Zizyphus mauritiana*), Masonsdha (*Croton oblongifolius* etc. Putus (*Lantana camara*) is now a menacing presence which is spreading rapidly.

1.2.9 The main climbers are Mahulan (*Bauhenia vahlii*), Latpalas (*Buraea superba*), Gaj (*Milletia auriculata*).

1.2.10 Northern dry mixed deciduous forests: - The forests of this sub-type are more xerophytic as compared to the sub-type described above. They occur on comparatively more degraded areas.

1.2.11 The top storey consists mainly of Khair (*Acacia catechu*), Salai (*Boswellia serrata*), Bhelwa (*Semicarpus anacardium*), Piar (*Buchnaniania lanzan*), Sidha (*Lagerstroemia parviflora*), Kend (*Dispyros melanoxylon*), etc. Sal occurs occasionally. The density is generally low mostly varying between 3 and 4.

1.2.12 The under storey consists of Dudhkhoriya (*Holahhrena antidysenterica*), Ber (*Zizyphus mauritiana*), Kanoda (*Carissa opaca*), Harsingar (*Nyctanthes arboritristis*) etc.

1.2.13 Dry deciduous scrub forests: In areas near to habitation where the biotic effect is most intensely felt the areas have been almost stripped of vegetation leaving behind open areas mostly supporting scrub. The conditions are becoming drier and the only species which are thriving are the comparatively xerophytic species like Khair (*Acacia catechu*), Euphorbia, Flacourtia, Zizyphus, Carissa etc.

1.2.14 Salai forests: These forests are mostly found in hill slopes and drier localities where the soil depth is shallow and has poor moisture retention capacity. Continuous biotic interference is creating conditions for the proliferation of this species at the cost of other species.

1.2.15 The most common species found in this sub type are Salai (*Boswellia serrata*), Piar (*Buchnanian lanzan*), Galgal (*Cochlospermum religiosum*), Dhura (*Anogeissus latifolia*), Jhingan (*Lannea coromandalica*), Kehar (*Garuga pinnata*) etc.

1.2.16 Salai has recently been heavily exploited by the state trading organization for supply to coal India Limited in the form of mining timber. Trees up to a girth of 90 cms and above are not uncommon. Salai is also found as a mixed crop along with Sal and other miscellaneous species. The proportionate incidence of Salai is determined by the local edaphic conditions available at the site.

1.2.17 The main climbers found in these forests is Smilax, *Acacia pinnata* and Latpals (*Butea superba*). Bamboo (*Dendrocalamus strictus*) is also found in these forests.

1.2.18 Khair: With ever increasing pressure on the forests the site conditions are becoming more and more favorable for the growth of Khair as it prefers open areas with loose soil. Heavily grazed open lands are ideal for the establishment of this species. However this species is not very beneficial in financial terms as it is being subjected to heavy illicit felling. The rise of the market price of "Katha" a wood extract of this species, has led to a flourishing illegal trade which is proving to be beyond control. This illicit felling is fast depleting trees capable of producing katha. Hence though the area in which Khair is found may be

increasing in real terms the availability of Khair trees for exploitation is bound to go down with passage of time.

1.2.19 Bamboo: - The only species of bamboo found in this division is *Dendrocalamus strictus*. It occurs widely scattered in most parts of the division. The status of Bamboo is extremely poor in the division. Though a system of supply of bamboo at subsidised prices to turies is in force it has not stopped them from indiscriminate hacking by them. Since the turies make their livelihood by making baskets from bamboo it is difficult to motivate them to stop this indiscriminate hacking. In a much degraded state.

INJURIES TO WHICH THE CROP IS LIABLE

FIRE

1.2.20 Fire is one of the deadliest enemies of the forests and Koderma is no exception. With increasing activity and resulting opening of the area, more and more people are settling down to live here. Improved communication systems have made the forests more accessible making them more vulnerable.

1.2.21 As can be expected the summer months are the most critical as far as fire is concerned. The collection of "Mahua" flowers is the most important cause of fire. The local people clear the ground to facilitate collection of Mahua by burning the leaf litter under the trees. These fires are lit and left unguarded. The better ignition and combustion conditions prevailing during the Mahua collection season leads to a great number of fires which spread over large areas.

1.2.22 Secondly, with increasing movement of people through the area, chances of ignition careless throwing of cigarettes and biris is greatly enhanced.

1.2.23 The nature of the fuel available does not lead to any large conflagrations. Since the only fuel available is leaf litter and some branches the fire is generally in the form of a ground fire. However this fire can cause devastation in newly worked coupes which are trying to establish a new crop.

1.2.24 In view of the above circumstance fires occur regularly in the forests. The fire fighting mechanisms have also lost their vigor with the passage of time. Though there is a legal provision that the local people are bound to help the forest staff on request fight the fire, help is seldom forthcoming. This makes the job of controlling fires more difficult.

1.2.25 Fire has a detrimental factor on the vegetation due to various factors some of which are mentioned below:

1. Fires kill or badly damage the new seedlings leading to problems in re-stocking areas which have been worked over.

2. The humus and the leaf litter are burnt, as a result of which the soil nutrients are lost and beneficial micro organisms are killed. This leads to an all round deterioration of the site conditions.

3. The destruction of leaf litter and humus on the surface leaves the soil open to direct impact of the rains making it more liable to erosion.

4. The ground surface becomes harder making it difficult for the seeds to germinate and establish themselves. The harder surface inhibits seepage of water, thus decreasing the moisture retention capacity of the soil. This also another adverse factor for re-establishment of vegetation.

DROUGHT

1.2.26 Drought is a recurring phenomenon which occurs in almost a cyclical pattern. Drought causes damage to seeding and saplings which are trying to establish themselves.

1.2.27 Even in summer months the availability of moisture is very less and this can inhibit growth of the plants. The occasional showers and thunderstorms, though welcome do not precipitate sufficient rains to be of very great benefit.

WIND

1.2.28 Sometimes storms may uproot some trees, but barring this there no damage due to wind.

CLIMBER

1.2.30 Forest is generally not known to occur in this division. They may sometimes occur in valley bottoms but so far no great damage due to forest has either been reported or noticed.

1.2.31 The main climbers found in this division are *Bauhenia wahlia*, *Milletia auriculata*, *Butea monosperma*, *Acacia pinnata* etc. these cause some damage in more moist localities where good conditions for their proliferation exist. This occurs mostly in Sal forests. However, since some of these climbers are useful for making ropes these are cut and taken away by the villagers sparing the forest from damage.

INSECTS

1.2.32 Damage due to insects has not been noted.

FUNGUS

1.2.33 *Fomes carvophyllii* and *polyporus shorea* are the two main types of fungus which can damage Sal forests. However their occurrence is rare and the damage, if any, is insignificant.

EROSION

1.2.34 Erosion is a serious problem in this division. The open nature of the forests and the undulating terrain offer conditions for high run-off during the rains resulting in the washing away of the top soil. Gully formations take place leading to the degradation of the land. Though efforts to check this erosion have been made over a period of time by the forest department and the Damodar Valley Corporation, a lot needs to be done to check this menace.

GRAZING

1.2.35 The rampant growth of useless cattle population is one greatest dangers faced by the forest. These stray cattle move through the forests trampling the young seedlings

as well as grazing them. They do not allow the coupes top regenerate and grater areas are being laid bare with each passing year. Even the regeneration areas, which are supposed to be protected from grazing, are not free from this menace. Conditions trampling also make the ground hard thus reducing its moisture retention capacity.

THEFT

1.2.36 This is currently the single most detrimental factor for the forests. Theft for meeting the daily needs of firewood and theft for profit, both are causing irreparable damage to the forests. It is not an uncommon site to see a large number of women carrying split saplings on their heads, which are later converted into firewood. It is also not uncommon to see a large no of firewood bundles stacked on the roadside on the Ranchi-Patna highway which are picked up by the passing trucks and buses. This outturn of firewood cannot be really estimated and may be the damage done to the forest due to this is much more than that of the feeling done for profit.

1.2.37 The flourishing illegal trade of "Katha" is a major source of destruction of the forests. Armed gangs masquerading as extremists offer protection to the people involved in this nefarious trade. The unarmed forest staffs are just no match to them when it comes to a confrontation and slowly a policy of drift has been adopted in this matter. Raids are conducted by the department as when information becomes available but this hardly makes a dent in the operation of the smugglers. No sustained operation has been launched to curb this trade.

1.2.38 Thus with all the above mentioned factors playing their part, the forests are rapidly deteriorating and becoming more and more open. Unchecked grazing and fire are damaging the forests very badly. However it is the human beings who are creating the maximum damage and unless the trend is reversed and local people do not realize the importance of forests and protected the future of the forests is not very bright.

CHAPTER – 3

UTILISATION OF PRODUCE

AGRICULTURAL CUSTOMS AND WANTS OF THE POPULATION

1.3.1 The villages around the forests are fairly well populated. The total population living within the area of Koderma division is 4, 04,543 in a total area of 1595. 42 sq km this works out to a population density of 254 people per sq km.

1.3.2 The population consists of 1, 99,851 males and 2, 04,692 females. The population of the scheduled casts is 76,845 which are about 19% of the total population. The scheduled casts population numbers 2,006 which works out to about 0.5% of the total population.

1.3.3 A population of 38,705 consisting of 20, 875 males and 17,830 females is classified as living in urban agglomeration. Thus it is clear that the population of the division is predominantly rural.

1.3.4 The main occupation of the rural people is agriculture, which is mostly rain fed. The main crop raised is rice. Other crops like gram, til, surguja etc. are also raised where suitable conditions exist.

1.3.5 Agriculture does not provide sufficient employment all round the year to the people. They work as laborers in the mica mines which abound in the area. Forestry operations like plantation works, logging, road repairs etc are also a source of employment. Collection of minor forest produce, primarily Kehdu leaf, also provides employment for a month. However, in spite of all this a large number of people are underemployed and indulge in feeling of forest and selling the firewood as a mean of livelihood.

1.3.6 The needs of the people are mostly connected with house building, agriculture implements and fodder for their cattle. The main requirement and preferred species are:

	PURPOSE	SPECIES PREFERRED
1.	HOUSE CONSTRUCTION	
a)	Beams and posts	Sal, Asan and Mahua
b)	Ridge piece	Sal, Asan Kend and Sidha
c)	Rafters	Sal, Asan, Dhunta, Sidha
d)	Door leaves	Sal, Jamun, Paisar, Mahua, Karam
e)	Door frames	Sal, Asan, Karam, Dhaunta
2.	FURNITURE	
a)	Bed frames	Sal, Karam, Pandan
b)	Chairs, Tables, Stools	Paiser, Gamhar, Karam, Sal
3.	AGRICULTURAL IMPLEMENTS:	
a)	Plough	Sal, Khair
b)	Eis	Sal
c)	Juwath	Gamhar, Salai, Piar
d)	Patta	Sal
e)	Latha	Sal and Bamboo
f)	Khambha	Sal, Asan, Salai
g)	Tool handles	Dhaunta, Siadha, Bamboos
4.	CARTS	
a)	Axles	Pandan, Dhaunta, Sal
b)	Wheels	Pandan, Dhaunta, Sal
c)	Spokes	Pandan, Dhaunta, Sal
d)	Hubs	Pandan
e)	Yokes	Gamhar, Karam, Kend
f)	Body frames	Sal, Dhaunta

MARKET AND MARKETABLE PRODUCE

1.3.7 Currently, the entire operation of logging and marketing of forest produce is undertaken by the state trading. Most of the produce consists of people which are supplied to the mining industry for use as pit props

1.3.8 Sal and Salai are the main timber species. A considerable quantity of this is supplied to the mining industry as tramlines and coggings. Most of the timber produce is consumed locally and there is hardly any surplus left for export to other areas.

1.3.9 Khair is another major forest produce. This is also exploited by the state trading and sold to liscensed "Katha" manufactures in and outside the side.

1.3.10 Bamboo has become badly degraded in the forests of Koderma division. The local Turies are provided with Bamboo at nominal cpost. They make a livelihood by weaving baskets and other products and selling them.

1.3.11 the rates of various forests produce are determined by the Chief Conservator of Forests, State Trading every year. The currently prevailing rates are as below:

SCHEDULE "B"

DEPOT RATES FOR ROUND LOGS IN RUPEES PER CU.M

1) Name of the species: Sal (Shorea robusta) Abbreviated symbol SAL						
Length class in CMs		Mid girth class in CMs				
More	Upto	More than 60	More than 90	More than 120	More than	& upto
90	& upto 120		& upto 150	150		
1	2	3	4	5	6	
-	244	2200	2700	3300	4400	
244	366	2500	4000	4600	5200	
366	488	2700	4600	5200	5700	
488	610	3000	5400	6000	6600	
610	-	3800	5800	6600	7200	
2) Name of the species: TEAK (Tectona grandis) TE. A						
-	244	4000	6000	7100	7800	
244	366	4500	7000	8100	9500	
366	488	5000	8100	9300	11200	
488	610	5700	9400	11000	12600	
610	-	6800	10500	12400	13400	

3) Name of the species BIJA (<i>Pterocarpus marsupium</i>)						BIJ
GAMHAR (<i>Gmelina arborea</i>)						GAM
-	244	2200	3300	4400	4900	
244	366	2400	4600	5200	5700	
366	488	3100	5200	5800	6300	
488	610	3400	5800	6400	7200	
610	-	3700	6900	7500	8100	
4) Name of the species: SISSOO (<i>Dalbergia sissoo</i>)						SIS
-	244	2000	2700	3600	4000	
244	366	2300	3100	4000	4400	
366	488	2500	3500	4400	4800	
488	610	2700	3800	4800	5200	
610	-	3000	4400	5200	5700	
5) Name of the species: ASAN (<i>Terminalia tomentosa</i>)						LAU
TOON (<i>Cedrela toona</i>)						TOO
-	244	1600	2200	2300	2500	
244	366	2000	2600	2700	3000	
366	488	2200	2700	3000	3300	
488	610	2400	3000	3300	3600	
610	-	2700	3300	3600	3800	
6) Name of the species: KARAM (<i>Adina cordifolia</i>)						
-	244	2000	2400	2500	2700	
244	366	2200	3300	3800	4200	
366	488	2700	3800	4200	4400	
488	610	3000	4400	4600	4900	
610	-	3300	4500	4900	5300	
7) Name of the species: KAJ (<i>Bridelia retusa</i>)						KAS
-	244	1600	2400	2600	3000	
244	366	1700	2600	2900	3100	
366	488	1800	2800	3000	3400	
488	610	1900	3200	3500	3500	
610	-	2200	3600	3700	4000	
8) Name of the species: SIRIS (<i>Albizzia lebbek</i>)						KOK
ANJAN (<i>Ougenia dalbergioides</i>)						SAD

-	244	1400	2200	2400	2700
244	366	1500	2400	2600	2900
366	488	1600	2500	2200	2500
488	610	1800	3000	3200	3200
610	-	2000	3300	3400	3600

9) Name of the species: Jamun (*Syzygium cumini*) JAM

DHAURA (*Anogeissus latifolia*) AXL

& other species

-	244	1200	1500	1800	2000
244	366	1400	1800	2000	2300
366	488	1700	2000	2200	2500
488	610	1800	2200	2400	2700
610	-	1900	2400	2600	3000

10) Name of the species: JHINGAN (*Lansea grandis*) JHI

SALAI (*Boswellia serratta*)SAA

-	244	1100	1300	1500	1600
244	-	1200	1400	1600	1900

11) Name of the species: KEKAR (*Garuga pinnata*) GAU

-	244	1300	1600	1700	1800
244	-	1500	1800	1900	2200

SCHEDULE "C"

Depot rates of poles Rate per piece in rupees

Length class in CM Diameter in CM Sal/Asan Miscellaneous

More than up to

1	2	3	4	5
244	366	10	19	13
366	426	10	23	16
426	488	10	29	23
	244	12.5	23	16
		15	35	24
		17.5	39	26
		20	41	29
		22.5	53	37
244	304	12.5	32	22

		15	37	25
		17.5	53	37
		20	73	51
		22.5	92	66
		<hr/>		
304	364	12.5	37	25
		15	64	44
		17.5	69	48
		20	92	66
		22.5	114	106
		<hr/>		
364	424	12.5	50	28
		15	83	61
		17.5	88	64
		20	114	81
		22.5	143	101
		<hr/>		
424	484	12.5	46	34
		15	88	64
		17.5	94	66
		20	143	100
		22.5	171	122
		<hr/>		
484	544	12.5	61	42
		15	112	79
		17.5	139	97
		20	182	129
		22.5	206	143
		<hr/>		
544	604	12.5	117	81
		15	146	101
		17.5	152	107
		20	206	133
		22.5	218	152
		<hr/>		
604	664	12.5	142	99
		15	154	101
		17.5	165	123
		20	221	154
		22.5	232	163
		<hr/>		

664	724	12.5	167	119
		15	223	157
		17.5	232	163
		20	239	169
		22.5	290	210
724	784	12.5	222	155
		15	257	182
		17.5	284	200
		20	299	210
		22.5	330	226
784	844	12.5	256	190
		15	321	215
		17.5	329	232
		20	344	237
		22.5	394	282
844	904	12.5	284	200
		15	330	220
		17.5	344	237
		20	395	282
		22.5	458	322
904	964	12.5	312	218
		15	343	242
		17.5	413	294
		20	477	337
		22.5	584	410

SCHEDULE "D"

Fuel wood

Rs 150/- per stacked Cu m

SCHEDULE "E"

Bamboo:

1. Sarhi Rs 2.00 Per lagga
2. Barhi Rs 4.00 Per lagga

3.	Terra	Rs 4.75 Per lagga
4.	Chaubansa	Rs 5.25 Per lagga
5.	Panchbansa	Rs 5.50 Per lagga
6.	Charbansa	Rs 6.00 per lagga

SCHEDULE "F"

1.	Charcoal	Rs 660.00 per stacked Cu m
2.	Fencing Post	Rs 12.00 per fencing post

METHODS OF EXPLOITATION

1.3.12 As mentioned earlier, the exploitation of the coupes have been taken over by the state trading after abolition of the contract system in 1981. Fallings are done by axe and saw. More and more use of saw should be encouraged to prevent wastage. Now with the feeling restricted to trees of diameter over 8" the use of saw should be encouraged further.

1.3.13 Extraction of the forest produce is almost completely done by departmental trucks. Occasionally, in exceptional Circumstances trucks are hired to extract forest produce.

CHAPTER – IV

STAFF AND LABOUR SUPPLY

STAFF

1.4.1 The headquarters of the Division forest Officers is at Koderma. The Division is divided into 4 ranges. The sanctioned strength of Koderma division is as follows

Divisional forest Officer IFS	1
Asstt. Conservator of Forests BFS	1
Range Officers of forests	4
Foresters	16
Forest guards	73
Orderly peon	5
Chaukidar	6
Sweeper	1
Ministerial Staff	11

LABOUR

1.4.2 There is no shortage of labour for carrying out the exploitation work by State Trading and afforestation works most of people living in the vicinity of the forests are dependent on agriculture. Due to this some labour shortage is felt at the time of planting as the villages are engaged in agricultural operations.

1.4.3 The minimum daily wages as fixed by the Govt. under the Minimum Wages Act is Rs 21/- per man-day

1.4.4 The wages for different operations in State Trading with effect from 1.1.91 are as follows:-

Sl.	Description	Rate
1.	Boundary line clearance	Rs.23.50/-
2.	Feeling, Conservation and Stacking of timber	Rs.105.80/-

3.	Props 8' -12'	4"	Rs.2.60 each
		5"	Rs.3.50 each
		6"	Rs.4.00 each
		7"	Rs. 5.00 each
		8"	Rs. 5.90 each
4.	Poles 12'-20'4"		Rs. 3.50 each
		5"	Rs. 4.70 each
		6"	Rs. 5.50 each
		7"	Rs. 6.50 each
		8"	Rs. 7.00 each
	Poles 20' & above	4"	Rs. 4.00 each
		5"	Rs. 5.00 each
		6"	Rs. 6.00 each
		7"	Rs. 7.30 each
		8"	Rs. 8.20 each
5.	Tram lines	i	Rs. 0.70 each
		ii	Rs. 1.40 each
		iii	Rs. 2.00 each
		iv	Rs. 2.70 each
6.	Coggins	i	Rs. 0.80 each
		ii	Rs. 1.60 each
		iii	Rs. 2.40 each
		iv	Rs. 3.20 each
7.	Fencing Posts		Rs. 0.80 each
8.	Coppicing		Rs. 210.0/ Hec
9.	Firewood		Rs. 10.00 m3
DEPOT			
1.	Timber, Poles, TL, Coggings		21.00/M3
	Fencing.		
2.	Stocking of firewood (32m3)		63.00/Stool

3. Lot preparation 19.70/m3

SAW MILL

1. Sawing of timber Rs. 3.25/Cft.
2. Tram lines Rs. 0.30 Each
3. Cogging Rs.0.35 Each
4. Handling and restacking
Of T>L> coggings & Timber Rs 21.10/m3

KHAIR WORKING

Felling, logging and stocking in coupoe:-

(a) Khair billet (2M long & girth 60 cms & above)
6.10/each
(b) --do-- (2m long & girth 45-49 Cm)
4.00/each
(c) --do--(2 M long & Girth 30-44 Cm) 2.10/each
(d) Stacking of Khair firewood 11.70/m3

BAMBOO COUPE

(a) Cleaning of Bamboo clumps 0.40/clump

LAGGAS

(1) Sarhi 18.30/hundred
(2) Barhi 21.40/,,
(3) Tera 27.50/,,

TONA BAMBOO

(1) 2 METERS & ABOVE 3.30/Bundle of
20 kg
(2) 1 metre to 2 metres 1.60/,,