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PREINVESTMENT SURVEY OF FOREST RESOURCES

EAST GODAVARI (A. P.)

ACCESSIBILITY AND COST STUDIES



सत्यमेव जयते

GOVT. OF INDIA
MINISTRY OF AGRICULTURE
NEW DELHI

1972

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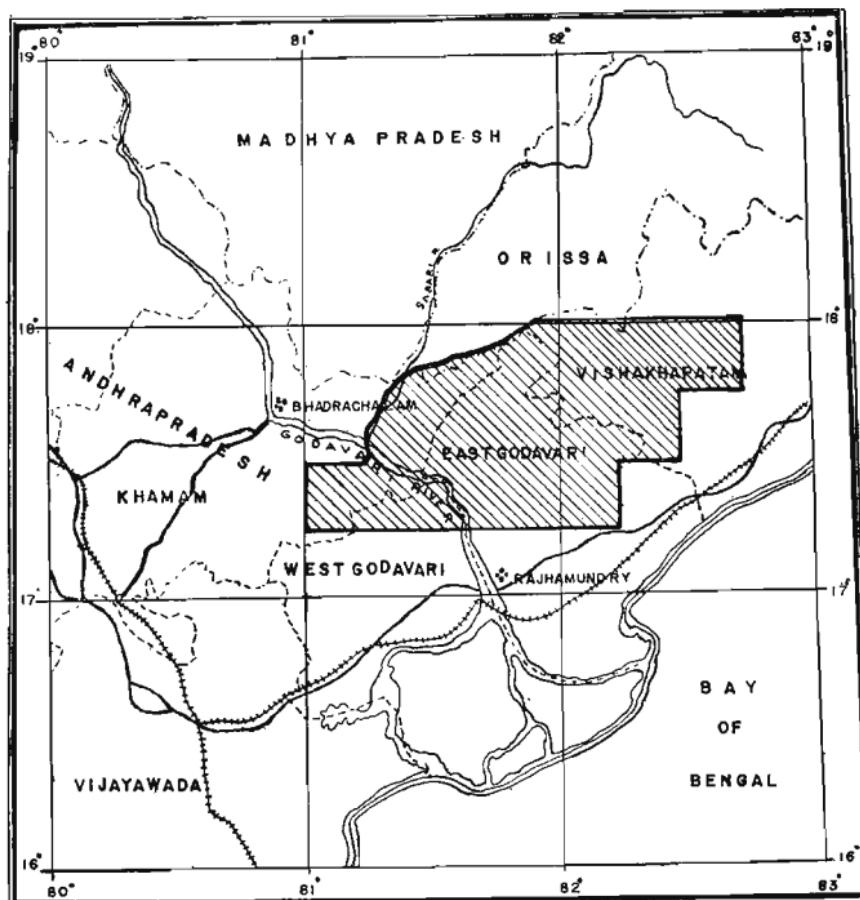
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MAP SHOWING THE LOCATION OF SURVEYED AREA OF EAST GODAVARI. (A. P.)

SCALE : 1 INCH = 32 MILES



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SURVEYED AREA.	■
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ACCESSIBILITY AND COST OF THE RAW MATERIAL
DELIVERY IN EAST GODAVARI CATCHMENT OF
ANDHRA PRADESH

1. INTRODUCTION.

An integrated forest resources survey, besides ascertaining the industrial raw material surplus, aims at determining the economic accessibility of the standing volume as well as the potential annual cut.

1.2. The object of the cost study in East Godavari region of Andhra Pradesh is to determine the accessibility and cost of delivery of the standing volume as well as the potential annual cut at two alternative delivery sites, viz., Rajahmundry and Bhadrachalam. These two sites were chosen on the basis of existing infrastructure in consultation with the State Forest Department.

Rajahmundry, situated on the bank of river Godavari, has an existing paper mill which is being expanded based on the availability of raw material from the present catchment. The mill authorities are naturally interested to know the nearness of the resources from their mill and the cost of delivery of wood material. The selection of Bhadrachalam as future industrial site is purely on the basis of facilities and nearness of the existing raw material resources. The method adopted for finding out the accessibility and cost also results in determination of cost of delivery at two or more points simultaneously.

The area where the present investigation was carried out lies between $17^{\circ} - 18^{\circ}$ latitude and $81^{\circ} - 82^{\circ} - 45'$ longitude. The

The area is bound in the north by river Sileru, on the west by Sabari, Whereas in the south, the area lies on both the sides of Godavari river which is an important transport link in the zone.

Nearness or the remoteness of the standing forest raw material from the utilization points is one of the important factors which influence economic accessibility. The terrain condition is another factor which influences the accessibility. Accessibility is a relative term. It is the economic accessibility which is decisive. This is what determines whether or not the resource can be utilized economically.

In this study the economic accessibility of the field grids has been worked out in relation to some more scale variables viz. terrain, off-road and on-road distances, and river distances from the mill sites. The cost of delivery of raw material has been worked out in relation to the present extraction pattern and existing infrastructure in terms of roads and rivers.

CHAPTER - 2

2. PRESENT TIMBER EXPLOITATION AND FACTORS INFLUENCING LOGGING & OTHER TRANSPORT IN THE ZONE.

At present, timber extraction in the area is mostly carried out by private contractors although for the last few years departmental extraction has been stepped up with sub-contracts for various phases of operations. The factors influencing the timber extraction are detailed below:-

2.1. Terrain

The terrain in the Zone is gently undulating to mountainous. The elevation ranges from 200 metres above sea level to 1500 metres. The forests are mostly located in the mountain slopes which are steep. The slopes are steep and valleys narrow. The ground survey results have revealed that 22.5% of the total forest area has slopes less than 10%, 30% has slopes 10-30%, 45% has slopes 30-100% and 2.5% has slopes more than 100%.

2.2. Rivers

The area has two important floatable rivers namely Sabari and Godavari. Sabari forms the western boundary of the present area whereas Godavari river, the main transport link, flows through the area flanking most of the northern portions and a portion of the southern boundary of the Zone. The bulk of the forest area, however, lies in the northern portion of the zone. In river Sabari due to shortage of water, sometimes timber has to be manually dragged for onward transportation in Godavari river. Logs and bamboos are usually transported in the main Godavari river with the help of towing boats which are power driven and are plying in this river ever since timber exploitation started in this region.

2.3. Roads

Roads suitable for heavy transport are in existence in the southern portion of the zone and along the Godavari river from Polavaram. The road from Mareduhalli to Rajahmundry is excellent and timber is transported by heavy trucks on this road. The road

along the Sileru river upto Chinturu is also good and is used by the trucks for transporting timber to Chinturu wherefrom it is floated in the Sabari River and then in Godavari river before it reaches Rajahmundry. On the eastern side of the zone excellent road from Ramavaram to Rajahmundry passes through Adathigila and the other existing road from Chintapalli to Rajahmundry provides transport facilities. A link road connecting Chintur with Maredumilli exists and before long this will provide the life line of transport of timber from the north-east and north-west part of the zone to Rajahmundry. A vital bridge over the river Palmeluru and a few more culverts are required before this could be used for heavy transport. In fact, construction of few culverts has already been started. For the purpose of determining the accessibility, this road has been taken into consideration for timber transport as it is felt that by the time this report is ready, this road will be opened up for timber transport. This assumption is important as opening up of this road will accelerate the transport facilities, in the zone and river transport may not be required once this road is used for timber transport. There are plans to develop roads in this area. Road transport is being relied upon heavily now as transport by river is seasonal. For round the year movement of timber, it is essential for any mill to rely on such transport methods which provide for timber delivery all the time. This brings down the storage requirement at the mill considerably as various transit road depots may be built up. For the intensive development of the Rampa Agency area the revised Working Plan of Rajahmundry and Kakinada forest divisions

have proposed the following roads within the areas:

Rajahmundry Division:

Gajjumamidi vals-a-Lankapakla	22.4 kms.
Kokavaram Goddada	
Valamur to Nellore to	14.4 "
Satlavada-Bodaluru	
Vakalur-Bodlanka Barkunda	51.0 "
Kullur Aklur Road	12.0 "
Tulasipakla Nellur Track	10.0 "
Rampachodavaram to Sirmetta (via) Kote	27.0 "

Kakinada Division

Bayapalli to Jamgaltota	15.0 kms.
Choududibbalur to Chodavaram	34.0 "
Ramavaram to Bodalanka	51.0 "

The above roads are proposed to exploit the vast virgin forests of Rampa agency. One of the reasons for which the area has hitherto remained inaccessible is due to lack of roads and the construction of the roads mentioned above will open up the areas largely.

2.4. Climate

The climate of the area is typically tropical, although there are cool areas on the ridges. Heavy monsoon showers from June to September restrict forest working. Usually the extraction work starts after the monsoon and is carried out till the summer of next year.

Thus the climatic condition limits the exploitation work to about 7 months in a year. Floating is also restricted due to climatic reasons to two distinct phases viz. December to March when there is fairly adequate quantity of water in the Sabari River and April to June when the water is just sufficient to float down the rafts.

2.5. Transport And Felling Equipment

No mechanized equipments are used in the area for felling and extraction of timber. Felling is carried out by axes. Sometimes saws are used for felling. After felling, trees are converted into logs by cross cutting with saws. For transport of timber large number of trucks are employed which are easily available. River transport is also done. In the departmental extraction tractors are being used though on a limited scale for off-road transport.

2.6. Present Logging And Transport

Logging methods adopted in the area are:

The present logging methods in the area are adopted for the extraction of very few number of available species in demand which amounts to the removal of 10 - 12 cum. per hectare within the logging area. The trees are marked and coupewise auctions are done, each coupe covering an area of about 100 ha. or more. Contractors usually spend about 1 to 1.5 months for extracting the contracted product.

Laying out of coupes and marking of trees over 90 cm. diameter is done by State Forest Service personnel in accordance with the prescriptions laid down in the Working Plan. Most of the coupes are then auctioned to contractors who undertake the entire

logging operation upto the delivery point. Alternately the department carries out its own felling, extraction and transport to the saw mill at Rajahmundry. In some areas, however, sub-contracts are given to private parties by calling tenders for delivery of logs to Rajahmundry saw mills. In this case the marking of timber is normally done in January to March by the department and in April coupes are handed over to these sub-contractors who employ their own labour for felling and extraction when starting the logging operations. A camp is established in the coupe area for labourers. In peak seasons, the number of labourers may rise to 60-70 in a coupe. Private contractors employ sub-contractors for various phases of operations.

In departmental logging operation difficulty is felt in the overall planning of the logging operations because employment of different contractors for different operations affects the efficiency of logging within the areas.

2.7. Methods Of Logging

Felling is carried out with axe and saw both. In departmental working for large-sized trees, two men saws are used for felling and cross-cutting although there is considerable scope for using power saws. Probably, a concerted effort by the forest department may yield good results. Felling and cross cutting is carried out by saw though felling by axe is the general practice. Axe is used for delimiting and debarking the latter operation by both axe and wedge. Payment is generally done on job

basis irrespective of species and dimensions. The rates, however, vary for logs, poles or fuel wood.

Delimiting:

Delimiting is done by axe.

Debarking:

Debarking is done by axe.

Conversion:

Conversion of logs directly into sleepers and scantlings is not practised. Logs are converted into different sizes locally known as Palka, Karra, Dalam and Basu whose mid girths are over 60" (150 cm.); 40 - 60" (120-150 cm.), 36-40" (90-120 cm) and 24" - 36" (60-90 cm.) and lengths vary from 1 m. to 6 m. respectively.

Conversion of logs into these various sizes is usually done to facilitate the first link in the transportation chain i.e., manual carrying and secondly for transportation in the river as well as by trucks.

2.8. Off-Road Transportation:

In easily accessible terrain transport of timber is generally carried out by truck all the way from stump to mill site. It is made possible by constructing a simple accessible road from a suitable existing road to the coupe area which is then covered by a dense net of extraction paths. Thus there is no clear off-road transport in the case but it is replaced by a truck transport of reduced standard towards stump site. But in other coupes definite "off road" transport is being carried out manually or by animals.

On steep slopes drag paths are usually made by clearing the bushes and off-road transport of converted logs (10-22 in length about body length of the lorry) is usually carried out with the help of a pair of buffaloes. Two buffaloes usually drag one log. The usual off-road lead is about 400 metres to one and half kilometers. Sometimes dragging is done to longer distances. Tractors are also used whenever they can go to the valley. Over short distances logs are usually rolled down or manually carried.

A significant feature of the off-road transport is that no mechanical equipments, excepting tractors in a small departmental working area, are used.

2.9. Transporting Of Timber

Three alternate modes of transporting timber to delivery points are in vogue, in the area:

1. Transport by road from coupes to floating base and floating to Rajahmundry.

2. Off-road transport to Truck Road and transport by truck to floating base and floating to Rajahmundry.

3. Off-road transport to permanent roads and transport by truck to Rajahmundry.

Usually, the timber lying in the northern, eastern and western boundaries of the zone is transported by truck on established roads to the floating base at Chinturu from where the timber is floated in the Sabari and Godavari River to Rajahmundry. Transport

of logs on River upto Rajahmundry is a well-established mode of transport. The timber from Bhadrachalam Division, Khammam Division as well as parts of Vizag Division, is being transported by Road to Chinturu and therefrom floated to Rajahmundry. Transport of logs in the river starts in the month of November and continues till April. The main launching sites are Chinturu, Konayuram, Devipatnam, Kondmalu, Polavaram, Bhadrachalam and Gediguppa. At the Revus (launching sites) logs are made into rafts. Rafts are of different sizes and are joined with one another. On the Sabari River the rafts are handled by labourers but once the rafts reach the main Godavari river they are towed by steam launches. It takes 15-20 days for the rafts to go from Chinturu to Rajahmundry which is a distance of about 150 km.

Lifting of timber from the Godavari river at Rajahmundry is usually done manually. On the ancient banks of Godavari river this lifting of timber appears to be an endless process of drudgery and monotony where 6 men are generally employed to lift a large sized Teak log on their shoulders to the temporary depot on the other side of the embankments. There is a considerable scope for modernising the handling process in the river transport at the receiving end. Some kind of crane may be installed to lift the timber from the river.

2. In the transport alternative substantial amount of off-road transport is involved. Terrain condition limits the truck reaching the coupes. The rest of the transport is exactly the same as

described above.

3. Large quantity of timber is transported by road particularly in the southern part of the zone. It has been presumed that trucks with a capacity of 5 tonnes are used and each truck carries about 4.5 cum. of timber. Loading and unloading is usually done manually. River transport is also used extensively in the areas where road transport is done depending upon the existence of roads. In the near future, however, road transport is likely to be improved as new roads are being constructed. This is mainly because the road transport is certain and is not seasonal as in the case of river transport.

4.10. Labour

The labour employed for various logging operations in the area under consideration, comes mainly from outside. With the exception of labour engaged in river transport and truck transport operations, labourers are temporarily engaged and have no specialised training and mostly have limited experience in the logging work.

C H A P T E R . 3

COST AND ACCESSIBILITY INVESTIGATIONS

3.1. The object of the cost investigations in the zone as has been brought out in the introductory remark is to determine the economic accessibility of the standing volume. In order to do this it is important to obtain the cost figures for the different variables which will influence the economic accessibility.

The cost study pattern developed for this area is based on the methods of accessibility and cost studies developed in the Scandinavian countries by Samset Von Segebaden, etc. The method aims at classification of terrain with respect to its logging conditions, delineation of forest areas which are inaccessible under the existing logging conditions and at classifying the forest with respect to these cost factors that are influenced by the location of the forests in relation to the sites for timber delivery and to population centres.

The basis of all cost studies is to determine the economically accessible quantity of wood. These involve the calculation of the size and condition of wood quantities that can be expected under certain assumptions with regard to silviculture (it is a pure gross estimate, the result of which is allocated to the individual sample plot according to a certain pattern) and calculation of the specific logging costs for each plot. From these it is possible to work out the quantity of wood that can be delivered to a certain place at certain logging cost per volume.

The cost study has been done separately for timber, pulpwood (fuelwood) and bamboos.

The following premises have been adopted:-

- 1) The cost structures have been evaluated for materials to be delivered at Rajahmundry and Bhadrachalam, being the two alternative industrial sites.
- 2) After having detailed discussions with the officers of the Forest Department and also taking into consideration the exploitation and transportation rates in operation in different localities, an rate for the different operations was arrived at.
- 3) The entire study is based on the existing road net work and also some prominent roads proposed. The off-road and on-road distances have been determined with reference to these roads. Road map is appended.

The cost data has been directly related to the inventory sample grids and to the geodetic net work adopted for the survey. The centre of the grid has been taken as a point for location of the produce.

- 5) Terrain has been classified according to the ground inventory into plain, gently rolling, hilly and very hilly. For calculation of the off-road distances the following factors have been applied to get the actual off-road distances:-

Plain & gently rolling	1 = 1
Hilly	1 = 2
Very hilly	1 = 3

3.2. Exploitation And Transportation Rates Of Timber, Pulpwood And Bamboo

After detailed discussion with the officers of the Forest Department and enquiries made at different markets in the survey area, the following cost structure for exploitation and transportation of timber, pulpwood and bamboo have been adopted:

1) Logging Cost Of Timber

i)	Felling and cross cutting	Rs. 8.65 per m ³
ii)	Dragging to loading site	Rs. 8.65 per m ³
iii)	Loading in Truck	Rs. 7.00 "
iv)	Unloading from Truck	Rs. 3.50 "
v)	Letting and stacking at Depot	Rs. 3.50 "
vi)	Supervision etc.	Rs. 3.70 "
		<u>Rs. 35.00 per m³</u>

2) Transportation Of Timber By Road

The transportation charges for timber depend mainly on the lead upto the market and to some extent on the terrain and types of roads over which the trucks ply. The following is the rate pattern:-

Lead upto	80 km.	Rs. 42/- per m ³
Lead over	80-95 "	Rs. 49/- "
" "	95-110 "	Rs. 56/- "
" "	110-130 "	Rs. 63/- "
" "	130-160 "	Rs. 70/- "
" "	160-190 "	Rs. 77/- "
" "	190-220 "	Rs. 84/- "
" "	220-250 "	Rs. 91/- "

For calculation a flat rate of 0.50 paise per m³ per km.
has been taken.

3) Transportation Of Timber By River

	Rate in Rupees per cubic meter per km.
Transport by river to Rajahmundry.	0.20
Throwing in the river	1.75
Transport from river to Depot	7.00
Raft making	7.00

4) Exploitation Of Pulp Wood

The costs of exploitation for pulpwood per tonne are:

i)	Felling and conversion and stocking.	Rs. 5.25 per tonne.
ii)	Handling in the coupe and bringing to the loading sites.	Rs. 0.75 "
iii)	Loading in truck	Rs. 1.50 "
iv)	Unloading from truck	Rs. 0.75 "
v)	Supervision charges etc.	Rs. 3.75 "
		<u>Rs. 12.00 per tonne.</u>

5) Transportation Of Pulpwood

The following is the cost pattern:

Lead upto	80 km.	Rs. 20/- per tonne
" "	80-95 "	Rs. 25/- "
" "	95-110 "	Rs. 26/- "
" "	110-130 "	Rs. 30/- "
" "	130-160 "	Rs. 34/- "
" "	160-190 "	Rs. 38/- "
" "	190-220 "	Rs. 42/- "
" "	220-250 "	Rs. 45/- "

6) Exploitation Of Bamboos:

The following is the cost pattern:

i)	Felling, billetting and bundling in $\frac{7}{8}^{\text{th}}$ length and stacking in the coupa area.	Rs. 24.00 per tonne.
ii)	Loading in the truck per tonne	Rs. 2.00 "
iii)	Unloading from the truck at Mill site.	Rs. 0.50 "
iv)	Supervision charges.	Rs. 7.00 "
		<u>Rs. 33.50 or</u> <u>Rs. 34.00 per tonne.</u>

7) Transportation Of Bamboo

Rate in Rupees per tonne
per km.

i)	Transport of bamboo by truck	0.30
ii)	Transport by River.	0.20

3.4 Cost Of Delivery Of Timber, Pulpwood And Bamboos At The
Alternative Sites

The cost of delivery includes the logging and transportation charges. The area under consideration has hilly topography. At present the road density in the hilly tract is poor. No of roads have been proposed for construction. For determining the transport cost it will be necessary to measure the off-road distance from the grid centre to the delivery points.

3.4. Determination Of Distances Of Grid Centres From Rajahmundry
And Bhadrachalam Sites

For the variable off-road distance to the nearest loading point, the mid point of each $2\frac{1}{2}' \times 2\frac{1}{2}'$ grid on 1 : 63,360 topo-

graphical map was taken as a basis and the distance from this grid centre to a given loading point on the most suitable existing road or river for final transport to the destination points was measured. Conversion factors depending on the terrain have been applied to convert the measured distance on the map to the probable length of extraction routes. The on-road distance from the loading point to the alternative delivery sites was measured.

The conversion factors adopted for the different kinds of terrain are:

Flat & Gently sloping = 1 : 1

Hilly = 1 : 2

Very hilly = 1 : 3

These conversion factors have been worked out from the present roads, existing in the hilly and very hilly terrain. The horizontal distances from one place to another have been measured on the map and compared with the actual road distances, which work out to the above ratio.

3.5. Calculation Of Transportation Charges

After calculating the off-road and on-road distances from the individual grid centre to the delivery points, the transportation cost for each grid was calculated by multiplying the measured distance with the transportation rates for timber, pulpwood and bamboos. Gridwise transportation charges and logging charges for timber, pulpwood and bamboos for Rajahmundry and Bhadrachalam sites were tabulated.

3.6. Laying Down Of Cost Classes

Logging and transport cost varies from grid to grid depending upon the distances from the grid centre to Rajahmundry and Bhadrachalam sites. The cost so obtained for different grids has been divided into 4 broad strata viz:-

(A) Low Cost (B) Medium Cost (C) High Cost and (D) Very high cost.

The cost classes for timber, pulpwood (fuelwood) and bamboos are fixed as shown below:-

Delivery Cost For Timber Per m³

<u>Low cost class</u>	<u>Medium cost class</u>	<u>High cost class</u>	<u>Very high cost class</u>
Upto Rs. 90/-	Rs. 90-110	Rs. 110-130	Over Rs. 130/-

Delivery Cost For Pulpwood Or Fuelwood Per Tonne

Upto Rs. 40/-	Rs. 40-50	Rs. 50-60	Over Rs. 60/-
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Delivery Cost Class For Bamboo Per Tonne

Rs. 45 - 60	Rs. 60 - 75	Rs. 75-90	Over Rs. 90
-------------	-------------	-----------	-------------

For both the alternative sites i.e. Bhadrachalam and Rajahmundry the same cost classes have been fixed, the idea is to find out which of the sites will be more economical in terms of availability of raw material. A definite picture will emerge about the suitability of Mill site, its economic Catchment and the availability of volume in that economic Catchment.

Based on the field inventory data and different cost classes, a sketch has been prepared showing graphically broad stratification of Cost Classes, with reference to the two alternate mill sites viz; Rajahmundry and Bhadrachalam.

The sketch only gives a general idea about the areas that can be exploited within different cost limits, without, however, indicating the volume classes within the area.

For better precision, study should have been done on volume maps, but as they were not available, the present method was adopted. The blanks are non-forested or non-bamboo areas.

3.7. Assessment Of Volume (under-bark) Under The Different Cost Classes

The break-up of volume under the four cost classes for Rajahmundry and Bhadrachalam sites will be:

RAJAHMUNDRY

TOTAL VOLUME (Volume in '000 m³)

Volume Strata	COST CLASSES				
	A	B	C	D	Total
Low volume	3070	2170	518	370	5928
Medium volume	5485	4388	2689	2362	15104
High volume	14075	12191	1441	3768	31475
Plantation	116	58	29	-	203
Shifting cultivation	742	337	-	68	1147
Cultivation	1941	643	347	373	3304
Blank	278	306	28	389	1001
Water	-	-	-	-	-
	25707	20093	5032	7330	58162

BHADRACHALAM

Volume strata	TOTAL VOLUME		(Volume in '000 m ³)		
	A	B	C	D	Total
Low volume	900	900	1429	2699	5928
Medium volume	2531	3291	1603	7679	15104
High volume	6095	11859	3214	10307	31475
Plantation	-	58	58	87	203
Shifting cultivation	315	742	45	45	1147
Cultivation	540	810	836	1118	3304
Blank	26	222	111	640	1001
Water	-	-	-	-	-
	10409	17882	7296	22575	58162

Thus it is seen from the above tables that the total volume (under-bark) available in different cost classes in both the catchment is:

3.8. COST CLASSES

	Cost Classes (Volume in '000 m ³)			
	A	B	C	D
Rajahmundry	25707	20093	5032	7330
BhadraChalam	10409	17882	7296	22575

RAJAHMUNDY		BHADRACHALAM	
Timber	Pulpwood	Timber	Pulpwood
A	15424	10283	6245
B	12056	8037	10729
C	5019	2013	4378
D	4398	2932	18545

RAJAHMUNDY

Volume strata	Volume Of Forest Area (Vol. in '000 m ³)				Total
	A	B	C	D	
Low volume)					
Medium volume)	22630	18749	4627	6501	52607
High volume)					
Shifting cultivation	742	387	-	68	1147
	23372	19086	74627	6569	53654

BHADRACHALAM

Volume strata	Volume of Forested Area (vol. in '000 m ³)				Total
	A	B	C	D	
Low volume)					
Medium volume)	9527	16049	6246	20685	52507
High volume)					
Shifting cultivation.	315	742	45	45	1147
	9842	16791	6291	20730	53654

BREAK UP OF VOLUMES IN TIMBER AND PLYWOOD IN DIFFERENT COST CLASSES

	Volume in '000 m ³			
	RAJAHMUNDY		BHADRACHALAM	
	Timber m ³	Pulpwood m ³	Timber m ³	Pulpwood m ³
A	14023	9349	5905	5937
B	11452	7634	10075	6716
C	2776	1854	5775	2518
D	3941	2628	12458	8292
	32192	21865	32193	21461

Thus by comparing the cost analysis results of Rajahmundry and Bhadrachalam it is quite evident that the availability of hardwood resources are more favourable to Rajahmundry site than Bhadrachalam.

Availability Of Bamboo Under Different Cost Classes

The total Bamboo growth available under different cost classes in the surveyed area for both the alternative mill sites is as shown below:

(Volume in '000 tonnes).

Mill sites	C O S T C L A S S				Total
	A	B	C	D	
Rajahmundry	465	667	252	137	1501
Bhadrachalam	88	370	393	650	1501

Thus by comparing the above two results it is quite obvious that the availability of raw material is more in economic cost classes at Rajahmundry than Bhadrachalam. Therefore the Mill at Rajahmundry is more suitable than at Bhadrachalam.

APPENDIX - I.

Existing Black topped Road

S.No.,	Name of the Road	Distance
1.	Devipatnam to Chodavaram	26 Kms.
2.	Gokavaram to Maredumilli	51 Kms.
	Gokavaram to Rajahmundry	30 Kms.
3.	Gokavaram to Peddapuram	18 Kms.
	Gokavaram to Peddapuram	18 kms.
4.	Addaviguda to Eleswaran and beyond	35 Kms.
5.	Eleswaran to Koyyuru	60 Kms.
6.	Koyyuru to Narsipatnam Road	40 Kms.
	-do-	20 Kms.
7.	Krishna Devipeta to Sarchhonopalam	15 Kms.
8.	Narsipatnam to Dhajokonda	65 Kms.
	-do-	15 Kms.
9.	Lothivgudda to Junction of Chintapalli Narsipatnam Road	16 Kms.
10.	Opposite bank of Paripatnam to Polavaram to Kovvu	40 Kms.
<u>Total length</u>		<u>469 Kms.</u>

APPENDIX - II.

Existing Metalled Road

S.No.	Name of the Road	Distance
1.	Chinturu to Upper Sileru	90 Kms.
2.	Lokkavaram to Maredumilli	40 Kms.
3.	Sudinkonda to Mallavaram	10 Kms.
4.	Timmapuram to Junction of Road of Sudikonda Jagganpet	22 Kms.
5.	Road starting from Timmapuram Sudikonda road and to Kalvjolla	10 Kms.
6.	Loddodi to Eleswaram Road	40 Kms.
7.	Addetegala to Ramavaram (partly black topped)	30 Kms.
8.	Pansapalam to Merakota	13 Kms.
9.	Merripakkal to Junction of road Ramavaram Addetegala road,	32 Kms.
10.	Vattangi to Rajavamangi	20 Kms.
11.	Rajavamangi to Nayudu palem via Kontalam Nadavorru	48 Kms.
12.	Kontalam to Krishna Devipeta	10 Kms.
13.	Lembosighi to Ventemonedi	5 Kms.
14.	Kimerla to Vaddadi -do-	50 Kms. 22 Kms.
15.	Vantalamamidi towards Palderu	6 Kms.
16.	Addetegala to Seethapalii	32 Kms.
<u>Total Length</u>		<u>480 Kms.</u>

APPENDIX - III.

Existing Kutchha Road (Fair Weather)

S.No.	Name of the road	Distance
1.	From Junction of Ashwarampet - Khamnam road towards Anapredipalli via Dammmapet and Malliavaram	20 Kms.
2.	Malkavaram towards Amvavaram via Tirmalkonta, Durdapadu, Machalludeli	32 Kms.
3.	Ashwaracopeta to Kirraka	34 Kms.
4.	Ashwarampeta to Aspaka via Narayapur	30 Kms.
5.	Asvinayakapuram to Buddipeta	23 Kms.
6.	Chinturu to Jeediguppa	30 Kms.
7.	Kundikluru to Lakkavaram	16 Kms.
8.	Tekkaluru to joining of Kundikluru Lakkavaram road	6 Kms.
9.	Kanlapuram to Koruturu	65 Kms.
10.	Geddepalli to Tekuru	12 Kms.
11.	Chodavaram to Kotajerla	26 Kms.
12.	Maredumilli to Bodalanka	26 Kms.
13.	Vaddodi to Goppuru	28 Kms.
14.	Kondamadulu to Kannapuram	25 Kms.
15.	Kondamadulu to Devipatnam	78 Kms.
16.	Kondamadulu to Gujjimadivoh	26 Kms.
Total Length		372 Kms.

APPENDIX - IV

Cost Study for East Godavari for Timber & Pulp

Delivery Point: Rajahmundry

Map Sheet No.	Grid No.	TIMBER			PULP			Cost Class
		Transport cost per m ³ in Rs.	Total cost including felling etc per m ³ in Rs.	Transport cost per tonne in Rs.	Total cost including felling etc per tonne in Rs.			
1.	2	3	4	5	6	7		
65 G/3	0008							
	0007							
	0008	89.50	104.50	34.75	46.75			B
	0009	71.00	108.00	35.50	47.50			B
	0010	76.50	111.50	38.25	50.25			C
	0011	80.50	115.50	40.25	52.25			C
	0106							
	0107							
	0108	68.00	103.00	34.00	46.00			B
	0109							
	0110	75.00	110.00	37.50	49.50			B
	0111	79.00	114.00	39.50	51.50			C
	0206							
	0207	65.50	98.50	31.75	43.75			B
	0208							
	0209							
	0210	70.50	105.50	35.25	47.25			B
	0211							
	0306							
	0307	80.00	116.00	30.00	42.00			B
	0308	63.00	97.00	31.00	43.00			B
	0309	65.50	100.50	32.75	44.75			B
	0310	68.00	104.00	34.50	46.50			B
	0311	71.50	106.50	35.75	47.75			B
	0406							
	0407							
	0408							
	0409	65.50	98.50	31.75	43.75			B
	0410							
	0411	70.50	105.50	35.25	47.25			B
	0506	58.50	91.50	28.25	40.25			B
	0507							
	0508	62.00	97.00	31.00	43.00			B
	0509	65.00	100.0	32.50	44.50			B
	0510	69.50	104.50	34.75	46.75			B
	0511	74.00	109.00	37.00	49.00			B

1	2	3	4	5	6	7
65 C/5	0018					
	1018	31.50	82.50	43.75	55.75	A
	1019	32.00	83.00	45.00	57.00	A
	1118	33.50	84.50	44.75	56.75	A
	1119	34.50	85.50	45.25	57.25	A
65 C/6	0612					
	0613					
	0712	18.40	69.40	27.60	39.60	A
	0713	22.50	73.50	31.25	43.25	A
	0714	25.00	76.00	32.50	44.50	A
	0715	23.50	74.50	34.50	46.50	A
	0716					
	0812	18.00	69.00	25.00	37.00	A
	0813	19.50	76.50	25.75	37.75	A
	0814					
	0815	25.50	78.50	28.75	40.75	A
	0816	24.90	75.90	34.85	46.85	A
	0912	19.00	70.00	25.50	37.50	A
	0913	20.50	71.50	26.25	38.25	A
	0914	22.50	73.50	27.25	39.25	A
	0915	25.00	76.00	28.50	40.50	A
	0916	32.00	83.00	44.00	56.00	A
	0917					
	1012	15.60	66.60	23.40	35.40	A
	1013	22.00	73.00	27.00	39.00	A
	1014	27.50	78.50	29.75	41.75	A
	1015	34.50	85.50	45.25	57.25	A
	1016					
	1017	33.00	84.00	44.50	56.50	A
	1112	14.20	65.20	21.30	33.30	A
	1113	20.10	71.10	22.65	34.65	A
	1114	20.10	71.10	22.65	34.65	A
	1115	36.50	87.50	46.25	58.25	A
	1116	38.00	89.00	47.00	59.00	A
	1117	33.00	84.00	44.50	56.50	A
65 C/7	0606	51.00	86.00	25.50	37.50	A
	0607					
	0608	55.50	90.50	27.75	39.75	B
	0609	58.00	93.00	29.00	41.00	B
	0610	61.00	96.00	30.50	42.50	B
	0611					
	0706					
	0707	51.00	86.00	25.50	37.50	A
	0708	57.50	92.50	28.75	40.75	B
	0709	61.00	96.00	30.50	42.50	B
	0710	17.80	68.80	27.70	38.70	A
	0711					
	0806					
	0807					
	0808	56.00	91.00	28.00	40.00	A
	0809	60.00	95.00	30.00	42.00	B

1	2	3	4	5	6	7
	0810	17.40	68.60	26.10	39.10	A
	0811	16.40	67.40	24.60	36.60	A
	0906	56.00	71.00	18.00	30.00	A
	0907	38.50	73.50	19.25	31.25	A
	0908	56.50	61.50	23.25	40.25	B
	0909	60.00	95.00	30.00	42.00	B
	0910	15.60	66.60	23.40	35.40	A
	0911	15.20	66.20	22.80	34.80	A
	1006	40.50	75.50	20.25	32.25	A
	1007	46.50	61.50	23.25	35.25	A
	1008	47.50	82.50	27.75	35.75	A
	1009	52.50	87.50	26.25	38.25	A
	1010	14.60	65.60	21.90	33.90	A
	1011	14.40	65.40	21.60	33.60	A
	1106	41.50	76.50	20.75	32.75	A
	1107	46.00	81.00	23.00	35.00	A
	1108	48.50	63.50	24.25	36.25	A
	1109	50.00	65.00	25.00	37.00	A
	1110	14.60	65.60	21.90	33.90	A
	1111	14.20	65.20	21.30	33.30	A
65 G/9	1218	37.50	88.50	46.75	58.75	A
	1219	36.50	87.50	46.25	58.25	A
	1318	37.50	88.50	46.75	58.75	A
	1319	39.50	90.50	47.75	59.75	B
	1418	40.00	91.00	48.00	60.00	B
	1419	40.00	91.00	48.00	60.00	B
	1518	45.00	80.00	50.50	62.50	A
	1519	43.50	94.50	49.75	61.75	B
	1618	46.50	97.50	51.25	63.25	B
	1619	46.50	97.50	51.25	63.25	B
	1620	46.50	97.50	51.25	63.25	B
	1718	63.50	98.50	31.75	43.75	B
	1719	63.50	98.50	31.75	43.75	B
	1720	54.00	105.00	55.00	67.00	B
65 G/10	1212	15.00	66.00	19.50	31.50	A
	1213	14.60	65.60	21.90	33.90	A
	1214	15.60	66.60	33.40	35.40	A
	1215	40.50	91.00	48.25	60.25	B
	1216	39.00	90.00	47.50	59.50	B
	1217					
	1312	57.50	92.50	28.75	40.75	B
	1313	15.20	66.20	36.48	48.48	A
	1314	15.60	66.60	23.40	35.40	A
	1315	55.00	90.00	27.50	39.50	A
	1316	62.00	97.00	31.00	43.00	B
	1517	61.50	96.50	30.75	42.75	B
	1612	55.00	90.00	27.50	39.50	A
	1413	54.50	89.50	27.25	39.25	A
	1414	52.00	87.00	26.00	38.00	A
	1415	52.50	87.50	26.25	38.25	A
	1416	56.00	91.00	28.00	40.00	B

1	2	3	4	5	6	7
	1417					
	1512	46.00	81.00	23.00	35.00	▲
	1513	50.00	85.00	25.00	37.00	▲
	1514	46.00	81.00	23.00	35.00	▲
	1515	51.00	86.00	25.50	37.50	▲
	1516	57.50	92.50	28.75	60.25	B
	1517	54.50	89.50	27.25	39.25	▲
	1612	36.00	71.00	18.00	30.00	▲
	1613	46.50	81.50	23.25	35.25	▲
	1614					
	1615	44.00	79.00	22.00	34.00	▲
	1616	51.00	86.00	25.50	37.50	▲
	1617	52.50	87.50	26.25	38.25	▲
	1712	35.00	70.00	17.50	29.50	▲
	1713	38.00	73.00	19.00	31.00	▲
	1714	42.50	77.50	21.25	33.25	▲
	1715	45.00	80.00	22.50	34.50	▲
	1716	51.50	86.50	25.75	37.75	▲
	1717	55.50	88.50	26.75	38.75	▲
65 G/11	1806	28.50	63.50	14.25	26.25	▲
	1207	30.50	65.50	15.25	27.25	▲
	1208	48.50	83.50	24.25	36.25	▲
	1209	50.50	85.50	25.25	37.25	▲
	1210	11.20	46.20	16.80	28.80	▲
	1211					
	1306	39.50	64.50	14.75	26.75	▲
	1307	31.50	66.50	15.75	27.75	▲
	1308	52.00	87.00	26.00	38.00	▲
	1309	10.40	61.40	15.60	27.60	▲
	1310					
	1311	10.60	61.60	15.70	27.70	▲
	1406	7.40	58.40	11.10	23.10	▲
	1407	8.80	59.40	13.20	25.20	▲
	1408					
	1409	9.60	60.60	14.40	26.40	▲
	1410	10.40	61.40	15.60	27.60	▲
	1411	53.00	88.00	26.50	38.50	▲
	1506	6.60	57.60	9.90	21.90	▲
	1507	7.20	58.20	10.80	22.80	▲
	1508	9.60	60.80	14.40	26.40	▲
	1509	10.00	61.00	15.00	27.00	▲
	1510	49.00	84.00	24.50	36.50	▲
	1511	53.00	88.00	26.50	38.50	▲
	1606	6.80	57.80	10.20	22.20	▲
	1607					
	1608	37.80	72.00	18.50	72.00	▲
	1609					
	1610	36.50	71.50	18.25	30.25	▲
	1611	36.50	71.50	18.25	30.25	▲
	1706					
	1707	25.50	60.50	12.75	24.75	▲
	1708	32.00	67.00	16.00	28.00	▲
	1709					

1	2	3.	4	5	6	7
65 G/13						
1710	33.50	68.50	16.75	28.75	A	
1711	34.00	69.00	17.00	19.00	A	
1818	59.50	94.50	28.75	41.75	B	
1819	60.50	95.50	30.25	42.25	B	
1820	62.00	97.00	59.00	71.00	B	
1821	61.00	96.00	58.50	70.50	B	
1918	61.50	96.50	30.75	42.75	A	
1919	62.50	97.50	31.25	43.25	B	
1920	64.00	99.00	32.00	44.00	B	
1921	62.00	97.00	59.00	71.00	D	
1922						
2018	62.00	97.00	31.00	43.00	B	
2019	65.00	100.00	32.50	44.50	B	
2020	65.00	100.00	32.50	44.50	B	
2021	65.00	100.00	32.50	44.50	B	
2022	144.00	179.00	72.00	84.00	D	
2118	62.50	97.50	31.25	43.25	B	
2119	65.00	100.00	32.50	44.50	B	
2120	65.00	100.00	32.50	44.50	B	
2121	65.00	100.00	32.50	44.50	B	
2122	142.00	177.00	71.00	83.00	D	
2218	65.00	100.00	32.50	44.50	B	
2219	65.00	100.00	32.50	44.50	B	
2220	65.00	100.00	32.50	44.50	B	
2221	65.00	100.00	32.50	44.50	B	
2222						
2223	144.00	179.00	72.00	84.00	D	
2318	65.00	100.00	32.50	44.50	B	
2319	65.00	100.00	32.50	44.50	B	
2320	65.00	100.00	32.50	44.50	B	
2321	65.00	100.00	32.50	44.50	B	
2322	65.00	100.00	32.50	44.50	B	
2323	141.00	176.00	70.50	82.50	D	
65 G/14						
1812	35.50	79.50	17.75	29.75	A	
1813	40.00	75.00	20.00	32.00	A	
1814	44.50	79.50	22.25	34.25	A	
1815	43.00	78.00	21.30	33.50	A	
1816	49.50	84.50	24.75	36.75	A	
1817	53.00	88.00	26.50	38.50	A	
1818	54.50	89.50	17.25	29.25	A	
1913	39.00	74.00	19.50	31.50	A	
1914	62.50	97.50	31.25	43.25	B	
1915	50.00	85.00	25.00	37.00	A	
1916	52.50	87.50	26.25	38.25	A	
1917	51.50	86.50	25.75	37.75	A	
2012						
2013	62.00	97.00	31.00	43.00	B	
2014	58.50	93.50	29.25	41.25	B	
2015	62.50	97.50	31.25	43.25	B	
2016	62.50	97.50	31.25	43.25	B	
2017	60.00	95.00	30.00	42.00	B	
2112	51.00	86.00	25.50	37.50	A	
2113	58.00	93.00	29.00	41.00	B	

1	2	3	4	5	6	7
	2114					
	2115	62.50	97.50	31.25	43.25	B
	2116	62.50	97.50	31.25	43.25	B
	2117	62.50	97.50	31.25	43.25	B
	2212					
	2213	50.50	91.50	28.25	40.25	B
	2214	50.00	95.00	30.00	42.00	B
	2215	57.00	92.00	28.50	40.50	B
	2216	61.00	96.00	30.50	42.50	B
	2217	63.50	98.50	31.75	41.75	B
	2312	50.00	85.00	25.00	37.00	A
	2313	51.50	86.50	25.75	37.75	A
	2314	53.50	88.50	26.75	28.75	A
	2315	54.00	89.00	27.00	39.00	A
	2316					
	2317	63.00	98.00	31.50	43.50	B
650/15	1806					
	1807	20.00	55.00	10.00	22.00	A
	1808	24.00	59.00	12.00	24.00	A
	1809	30.00	65.00	15.00	27.00	A
	1810	28.00	63.00	14.00	26.00	A
	1811	30.50	65.50	15.25	27.25	A
	1908					
	1907	18.50	53.50	9.25	21.25	A
	1908	20.00	55.00	10.00	22.00	A
	1909	22.00	57.00	11.00	23.00	A
	1910					
	1911	31.00	66.00	15.50	27.50	A
	2006					
	2007	17.00	52.00	8.50	20.50	A
	2008	20.00	55.00	10.00	22.50	A
	2009	28.00	63.00	14.00	26.00	A
	2010					
	2011	33.00	68.00	16.15	28.50	A
	2106					
	2107					
	2108					
	2109					
	2110					
	2111					
	2206					
	2207	23.00	58.00	11.50	23.50	A
	2208	23.50	65.00	15.00	27.00	A
	2209	30.00	68.00	16.75	28.75	A
	2210	33.50	68.50	16.50	28.50	A
	2306	24.00	59.00	12.00	24.00	A
	2307					
	2308	27.50	62.50	13.75	25.75	A
	2309	30.00	65.00	15.00	27.00	A

1	2	3	4	5	6	7
2310	37.00	72.00	18.50	30.50	A	
2311						
0018	65.00	100.00	32.50	44.00	B	
0019						
0020	69.00	104.00	34.50	46.50	B	
0021	135.00	170.00	67.50	79.50	D	
0022	131.00	166.00	65.50	77.50	D	
0023	129.00	164.00	64.50	76.50	D	
0118	65.50	100.50	32.75	44.75	B	
0119						
0120						
0121	136.50	171.50	68.25	80.25	B	
0122	151.00	166.00	65.50	77.50	D	
0123	127.50	162.50	53.75	65.75	D	
0218	64.50	99.50	32.25	44.25	B	
0219	66.00	101.00	33.00	45.00	B	
0220	69.00	104.00	34.50	46.50	B	
0221						
0222	125.00	160.00	62.50	74.50	D	
0223	125.50	160.50	62.75	74.75	D	
0318						
0319	67.50	102.50	38.75	50.75	B	
0320	69.00	104.00	34.50	46.50		
0321	106.50	141.50	53.25	65.25	D	
0322	107.50	142.50	53.75	65.75	D	
0413	110.50	145.50	55.25	67.25	D	
0418	69.00	104.00	34.50	46.50	B	
0419	104.50	139.50	52.25	64.25	D	
0420	102.50	137.50	51.25	63.25	D	
0421	105.50	140.50	52.75	64.75	D	
0422	109.50	144.50	54.75	66.75	D	
0423	112.50	147.50	56.25	68.75	D	
0518	64.00	99.00	32.00	44.00	B	
0618	107.50	142.50	53.75	65.75	D	
0520	105.50	140.50	52.75	64.75	D	
0521	106.00	141.00	53.00	65.00	D	
0522	108.50	143.50	54.25	66.25	D	
0523	110.00	145.00	55.00	67.00	D	
65 K/2						
0012	43.50	78.50	21.75	33.75	A	
0013	45.50	80.50	22.75	34.75	A	
0014	50.50	85.50	25.25	37.25	A	
0015	52.00	87.00	26.00	38.00	A	
0016	60.50	95.50	30.25	42.25	B	
0017	62.00	97.00	31.00	43.00	B	
0112	45.00	80.00	22.50	34.50	A	

1	2	3	4	5	6	7
0113	50.50	85.50	25.25	37.25		A
0114	51.50	86.50	25.75	37.25		A
0115	55.50	90.50	27.75	39.75	B	
0116	58.00	93.00	29.00	41.00	B	
0117	59.50	84.50	29.75	41.75	B	
0212	48.50	83.50	24.25	36.25		A
0213						
0214	53.50	88.50	26.75	38.75		A
0215	58.00	93.00	29.00	41.00	B	
0216	59.50	94.50	29.75	41.75	B	
0217	61.50	96.50	30.75	42.75	B	
0312	50.00	85.00	25.00	37.00		A
0313	55.00	90.00	27.50	39.50		A
0314	55.50	90.50	27.75	39.75	B	
0315	61.00	96.00	30.50	40.50	B	
0316						
0317	63.50	98.50	31.75	43.75	B	
0418	48.00	83.00	24.00	36.00		A
0413						
0414						
0415	56.00	91.00	28.00	40.00	B	
0416	58.00	93.00	29.00	41.00	B	
0417	60.00	95.00	30.00	42.00	B	
0518	51.00	96.00	25.50	37.50		A
0513	51.00	86.00	25.50	37.50		A
0514	53.00	88.00	26.50	38.50		A
0515	55.00	90.00	27.50	39.50		A
0516	58.00	95.00	28.00	40.00	B	
0517	59.00	94.50	29.75	41.75	B	
65 K/3	0006	36.50	71.50	18.25	30.25	
	0007					
	0008	37.00	72.00	18.50	30.50	A
	0009	39.00	74.00	19.50	31.50	A
	0010	40.50	75.50	20.25	32.25	A
	0011					
	0106					
	0107					
	0108	32.50	67.50	16.25	28.25	A
	0109	35.00	70.00	17.50	29.50	A
	0110	37.50	72.50	18.75	30.75	A
	0111	44.00	79.00	22.00	32.00	A
	0206					
	0207					
	0208	32.50	67.50	16.25	28.25	A
	0209	35.00	70.00	17.50	29.50	A
	0210	38.50	73.50	19.25	31.25	A
	0211	42.50	77.50	21.25	33.25	A
	0306					

1	2	3	4	5	6	7
0307	51.50	66.50	15.75	27.75		A
0308	34.00	69.00	17.00	29.00		A
0309	35.00	70.00	17.50	19.50		A
0310	35.00	70.00	17.50	19.50		A
0311	40.00	75.00	20.00	32.00		A
0406	31.50	66.50	15.75	27.75		A
0407						
0408	39.00	74.00	19.50	31.50		A
0409						
0410	42.50	77.50	21.25	33.25		A
0411						
0506						
0507						
0508	42.50	77.50	21.25	33.25		A
0509	40.50	75.50	20.25	32.25		A
0510	41.00	76.00	20.50	32.50		A
0511	43.50	78.50	21.75	33.75		A
0618	80.50	115.50	40.25	52.25	C	C
0619	82.50	117.50	41.25	53.25	C	C
0620	101.00	136.00	50.50	62.50	D	D
0621	101.50	136.50	50.75	62.75	D	D
0622	104.00	139.00	52.00	64.00	D	D
0623	106.50	141.50	53.25	65.25		
0718	81.00	116.00	40.50	52.50	C	C
0719	85.50	118.50	41.75	53.75	C	C
0720	95.50	130.50	47.75	59.75	D	D
0721	98.00	133.00	49.00	61.00	D	D
0722	104.50	138.50	52.25	64.25	D	D
0723	106.50	141.50	53.25	62.25	D	D
0818	68.50	103.50	34.25	46.25	B	B
0819	97.50	132.50	48.75	60.75	D	D
0820	95.50	130.50	47.75	59.75	D	D
0821	96.50	131.50	48.25	60.25	D	D
0822	96.50	131.50	48.25	60.25	D	D
0823	99.00	134.00	49.50	61.50	D	D
0918	69.50	104.50	34.75	46.75	B	B
0919	91.50	126.50	45.75	57.75	C	C
0920	90.00	125.00	45.00	57.00	C	C
0921	91.00	126.00	45.50	57.50	C	C
0922	90.00	125.00	45.00	57.00	C	C
0923	95.50	130.50	47.75	59.75	D	D
1018	91.50	126.50	45.75	57.75	C	C
1019	91.50	126.50	45.75	57.75	C	C
1020	85.00	120.00	42.50	54.50	C	C
1021	80.00	124.00	44.50	56.50	C	C
1022	91.50	126.50	45.75	57.75	C	C
1023						
1118						
1119		87.50	122.50	45.75	55.75	C
1120						

	2	3	4	5	6	7
1121	90.00	125.00	45.00	57.00	G	
1122	92.50	127.50	46.25	58.25	G	
1123	98.00	133.00	49.00	61.00	D	
65 K/6	0612	46.50	81.50	23.25	37.25	A
	0613	50.50	85.50	25.25	37.25	A
	0614	52.00	87.00	26.00	38.00	A
	0615	55.00	90.00	27.50	39.50	A
	0616	56.00	91.00	28.00	40.00	B
	0617	57.00	92.00	28.50	40.50	B
	0712	58.50	85.50	25.25	37.25	A
	0713	55.00	88.00	26.50	38.50	A
	0714	58.00	93.00	29.00	41.00	B
	0715	58.00	95.00	29.00	41.00	B
	0716	61.50	96.50	30.75	42.75	B
	0717	62.50	100.50	22.75	44.75	B
	0812	51.50	86.50	25.75	37.75	A
	0813	54.50	89.50	27.25	39.25	A
	0814					
	0815					
	0816					
	0817	66.00	101.00	33.00	45.00	B
	0912					
	0913	66.50	101.50	33.25	45.25	B
	0914					
	0915	66.00	101.00	33.00	45.00	B
	0916	64.50	99.50	32.25	44.25	B
	0917	65.50	100.50	32.75	44.75	B
	1012					
	1013	66.00	101.00	33.00	45.00	B
	1014					
	1015	67.50	102.50	33.75	45.75	B
	1016	67.50	102.50	33.75	45.75	B
	1017	72.50	107.50	36.25	48.25	B
	1112					
	1113					
	1114					
	1115					
	1116					
	1117					
65 K/9	1218	80.50	115.50	40.25	52.25	C
	1219	85.50	117.50	41.75	53.75	C
	1220	91.50	126.50	45.75	57.75	C
	1221	93.50	128.50	46.75	58.75	C
	1222	95.00	130.00	47.50	59.50	C
	1223	106.50	141.50	53.25	65.25	D
	1318	80.00	115.00	40.00	52.00	C
	1319	82.00	117.00	41.00	53.00	C
	1320	85.00	120.00	42.50	54.50	C
	1321	85.00	120.00	42.50	54.50	C
	1322	95.00	130.00	47.50	59.50	C

1	2	3	4	5	6	7
1323		105.00	140.00	52.50	64.50	D
1418		81.00	116.00	40.50	52.50	C
1419		82.50	117.50	41.25	53.25	C
1420		85.00	120.00	42.50	54.50	C
1421		85.00	120.00	42.50	54.50	C
1422		85.00	120.00	42.50	54.50	C
1423		107.50	142.50	53.75	65.75	D
1518		134.00	169.00	67.00	79.00	D
1519		91.50	126.50	45.75	57.75	C
1520		92.50	127.50	46.25	58.25	C
1521		95.50	130.50	47.75	59.75	D
1522		97.00	132.00	48.50	60.50	D
1523						
1618						
1619		84.00	119.00	42.00	54.00	C
1620		90.00	125.00	45.00	57.00	C
1621						
1622		97.50	132.50	48.75	60.75	D
1623		97.50	132.50	48.75	60.75	D
1718						
1719		82.50	117.50	41.25	53.25	C
1720		95.50	130.50	47.75	59.75	D
1721		98.00	133.00	49.00	61.00	D
1722		98.00	133.00	49.00	61.00	D
1723		105.50	140.50	52.75	64.75	D

APPENDIX - V.COST STUDY OF EAST GODAVARY CATCHMENT FOR BAMBOO

Delivery point : Raishmundry

Map Sheet No.	Grid-No.	Cost of transport per tonne	Cost of working per tonne	Total cost	Cost class
1	2	3	4	5	6
65 G/3	0010	45.90	33.50	79.40	C
"	0011	48.30	"	81.80	C
	0108	40.80	"	74.70	B
	0110	45.00	"	78.50	C
	0111	47.40	"	80.90	C
	0207	38.10	"	71.80	B
	0211	48.90	"	82.80	C
	0408	35.40	"	68.90	B
	0506	27.50	"	61.00	A
	0508	37.20	"	70.70	B
	0509	39.00	"	72.50	B
	0510	41.70	"	75.20	C
65 G/5	1118	31.50	"	64.80	B
"	1119	31.90	"	65.40	B
65 G/6	0812	17.20	"	50.70	A
"	0912	17.80	"	51.30	A
	0913	18.70	"	52.20	A
	0914	19.90	"	53.40	A
	1012	19.00	"	52.50	A
	1013	19.60	"	53.10	A
	1014	22.90	"	56.40	A
	1015	31.90	"	65.40	B
	1017	31.00	"	64.50	B
	1112	17.00	"	50.50	A
	1113	17.10	"	50.60	A
	1114	17.40	"	50.80	A
	1115	33.10	"	66.60	B
	1116	34.00	"	67.50	B
	1117	31.00	"	64.80	B
65 G/7	0606	30.60	"	64.10	B
	0608	33.50	"	66.80	B
	0609	34.80	"	68.50	B
	0610	36.60	"	70.10	B
	0707	30.80	"	64.10	B
	0708	34.50	"	68.00	B
	0709	33.60	"	67.10	B
	0710	34.00	"	67.50	B
	0806	31.00	"	64.50	B
	0807	32.10	"	65.60	B
	0808	33.60	"	67.10	B
	0809	36.00	"	69.50	B
	0810	36.50	"	70.00	B
	0811	27.00	"	60.50	A

1	2	3	4	5	6
0907	23.10	33.50	56.60		A
0908	33.90	"	67.40		B
0909	36.00	"	69.50		B
0910	37.00	"	70.50		B
0911	26.00	"	59.50		A
1006	24.30	"	57.80		A
1007	27.90	"	61.40		B
1008	28.50	"	62.00		B
1009	31.50	"	65.00		B
1010	14.60	"	48.10		A
1011	14.40	"	47.90		A
1106	24.90	"	58.40		A
1107	27.60	"	61.10		B
1108	29.10	"	52.60		A
1111	14.20	"	47.70		A
1218	33.70	"	67.20		B
1318	33.70	"	67.20		B
1319	34.90	"	68.40		B
1418	35.20	"	68.70		B
1419	35.20	"	68.70		B
1518	38.20	"	71.70		B
1519	37.50	"	70.80		B
1618	39.10	"	72.60		B
1619	39.10	"	72.60		B
1620	39.10	"	72.60		B
1720	43.50	"	77.10		C
1212	13.60	"	47.50		A
1213	37.00	"	70.50		B
1214	35.00	"	69.00		B
1215	35.50	"	69.00		B
1216	34.60	"	68.10		B
1312	34.50	"	68.00		B
1314	55.00	"	69.50		B
1315	53.00	"	66.50		B
1316	57.20	"	70.70		B
1317	56.90	"	70.40		B
1412	53.00	"	68.50		B
1413	52.70	"	66.20		B
1414	51.20	"	64.70		B
1513	50.00	"	63.50		B
1514	27.80	"	61.10		B
1515	50.40	"	64.10		B
1517	32.70	"	66.20		B
1612	21.60	"	55.40		A
1712	21.00	"	54.50		A
1713	22.80	"	56.30		A
1714	25.50	"	59.00		A
1715	27.00	"	60.50		B
1717	32.10	"	65.60		B

65 G/10.

	1	2	3	4	5	6
65 G/11						
	1206	17.10	33.50	50.60	A	
	1207	18.30		51.80	A	
	1208	29.10		62.60	B	
	1209	30.30		63.80	B	
	1210	25.50		59.00	A	
	1306	17.70		51.20	A	
	1307	18.90		52.40	A	
	1308	31.20		64.70	B	
	1309	30.30		65.80	B	
	1311	31.20		64.70	B	
	1406	7.40		40.90	A	
	1407	8.80		42.50	A	
	1408	9.60		45.10	A	
	1410	10.40		43.90	A	
	1411	31.80		64.30	B	
	1506	6.60		40.10	A	
	1507	7.20		40.70	A	
	1508	7.60		41.10	A	
	1509	10.60		44.10	B	
	1510	29.40		62.90	B	
	1511	31.80		65.30	B	
	1608	22.20		55.70	A	
	1611	21.90		55.40	A	
	1707	15.30		48.80	A	
	1708	19.20		52.70	A	
	1821	47.80		81.30	C	
65 G/13	1920	48.00		81.50	C	
	1921	48.40		81.80	B	
	2018	37.20		70.70	D	
	2021	39.00		72.50	D	
	2022	86.40		119.90	D	
	2122	85.20		118.70	D	
	2223	86.40		119.90	B	
	2322	39.00		72.50	B	
	2323	84.60		118.10	D	
65 G/14	1812	21.30		54.80	A	
	1813	24.00		57.50	A	
	1912	20.70		54.20	B	
	1915	30.00		63.50	B	
	2013	30.50		64.00	B	
	2112	30.60		64.10	B	
	2113	34.80		68.50	B	
	2114	35.40		68.90	B	
	2213	33.90		67.40	B	
	2214	36.00		69.40	B	
	2215	34.80		67.70	B	
	2216	36.60		70.10	B	
	2217	38.10		71.60	B	
	2313	30.90		64.40	B	
	2314	32.40		65.80	B	
	2315	32.40		65.90	B	
	2317	37.80		71.30	B	

1	2	3	4	5	6
65 G/15	1807	12.00	38.50	45.50	A
	1809	18.00	"	51.50	A
	1810	16.80	"	50.30	A
	1811	18.30	"	51.80	A
	1907	11.10	"	44.80	A
	1908	12.00	"	45.50	A
	1911	18.60	"	52.10	A
	2008	12.00	"	45.50	A
	2009	18.80	"	50.30	A
	2010	17.40	"	50.90	A
	2010	20.10	"	53.80	A
	2211	29.80	"	53.30	A
	2306	14.40	"	47.90	A
	2309	18.00	"	51.50	A
65 K/1	0018	39.00	"	72.50	B
	0020	50.00	"	88.00	C
	0021	77.00	"	110.50	D
	0022	77.00	"	110.50	D
	0023	77.40	"	110.90	D
	0122	78.80	"	112.10	D
	0123	76.50	"	110.00	D
	0222	77.00	"	110.50	D
	0223	75.30	"	108.80	D
	0323	76.00	"	109.50	D
	0418	41.40	"	74.90	B
	0422	65.70	"	99.20	D
65 K/2	0012	26.10	"	59.60	A
	0014	30.50	"	65.80	B
	0015	31.20	"	64.70	B
	0016	36.30	"	69.80	B
	0017	37.20	"	70.70	B
	0112	27.00	"	60.50	B
	0113	28.00	"	61.50	B
	0114	30.00	"	63.50	B
	0115	33.50	"	66.80	B
	0116	34.80	"	68.20	B
	0117	35.70	"	69.20	B
	0212	29.10	"	62.60	B
	0214	32.10	"	65.60	B
	0215	34.80	"	68.30	B
	0216	35.70	"	69.20	B
	0312	30.00	"	63.50	B
	0315	33.00	"	68.50	B
	0314	33.50	"	66.80	B
	0315	36.60	"	70.10	B
	0316	33.00	"	66.50	B
	0412	28.80	"	62.30	B
	0415	33.60	"	67.10	B
	0416	34.80	"	68.30	B
	0417	36.00	"	69.50	B
	0513	30.60	"	64.10	B
	0516	34.80	"	68.50	B

1	2	3	4	5	6
65 K/3	0008	22.50	33.50	56.00	A
	0009	23.40	"	56.90	A
	0010	24.30	"	57.80	A
	0108	19.50	"	53.00	A
	0109	21.00	"	54.50	A
	0110	22.00	"	55.50	A
	0208	19.50	"	53.00	A
	0209	23.00	"	54.50	A
	0210	21.00	"	54.50	A
	0211	22.00	"	55.50	A
	0308	20.40	"	53.90	A
	0309	21.00	"	54.50	A
	0310	22.00	"	55.50	A
	0311	24.00	"	57.50	A
	0508	50.00	"	55.50	B
	0510	52.00	"	55.50	B
65 K/5	0621	60.90	"	94.40	D
	0718	48.60	"	82.10	C
	0818	41.10	"	74.60	B
	0819	58.50	"	92.00	D
	0820	57.50	"	90.00	D
	0821	57.90	"	91.40	D
	0822	57.90	"	91.40	D
	0823	59.40	"	92.90	D
	0918	41.70	"	75.20	C
	0920	54.00	"	87.50	C
	0921	54.60	"	88.10	C
	0922	54.00	"	87.50	C
	0925	57.30	"	90.80	C
	1018	54.90	"	88.40	C
	1019	54.90	"	86.40	C
	1020	51.00	"	84.50	C
	1021	53.40	"	86.90	C
	1022	54.90	"	88.40	C
	1122	55.50	"	89.00	C
	1123	56.80	"	92.30	D
65 K/6	0614	31.20	"	64.70	B
	0615	33.00	"	66.50	B
	0616	33.60	"	67.10	B
	0617	34.20	"	67.70	B
	0712	30.30	"	63.80	B
	0714	34.80	"	68.30	B
	0715	34.80	"	68.30	B
	0716	36.90	"	70.40	B
	0717	39.50	"	72.80	B
	0817	39.60	"	73.10	B
	0915	39.60	"	73.10	B
	0916	38.70	"	72.20	B
	0917	39.30	"	72.80	B
	1016	39.80	"	73.50	B
	1017	64.50	"	77.00	C

1	2	3	4	5	6
65 K/B	1218	40.30	33.50	81.80	C
	1219	50.10	"	83.60	C
	1220	54.90	"	88.40	C
	1221	56.10	"	89.60	C
	1319	49.20	"	82.70	C
	1320	51.00	"	84.50	C
	1419	49.50	"	83.00	C
	1420	51.00	"	84.50	C
	1421	51.00	"	84.50	C
	1519	50.00	"	83.50	C
	1520	55.50	"	89.00	C
	1521	57.30	"	90.80	D
	1522	58.20	"	91.70	D
	1619	50.40	"	83.90	C
	1620	54.00	"	87.50	C
	1623	58.50	"	92.00	D
	1710	43.60	"	77.10	C
	1723	63.50	"	96.00	D

APPENDIX - VICOST STUDY FOR EAST GODAVARY FOR TIMBER AND PULP

Delivery point : BHADRACHALAM

Map sheet no.	Grid No.	Timber		Pulp		Cost Class
		Transport cost per m ³ in Rs.	Total cost including felling etc. per m ³ in Rs.	Transport cost per tonne in Rs.	Total cost including felling etc. per tonne in Rs.	
1.	2.	3.	4.	5.	6.	7.
65 G/3	0006					
	0007					
	0008	31.50	66.50	15.75	27.75	A
	0009	23.50	58.50	11.75	23.75	A
	0010	23.00	58.00	11.50	23.50	A
	0011	16.00	51.00	8.00	20.00	A
	0108					
	0107					
	0108	28.00	63.00	14.00	26.00	A
	0109	23.50	58.50	11.25	23.75	A
	0110	27.50	62.50	10.75	25.75	A
	0111	31.00	66.00	15.50	27.50	A
	0206	36.00	69.00	18.00	30.00	A
	0207	47.00	82.00	23.50	35.50	A
	0208					
	0209	29.00	64.00	14.50	26.50	A
	0210	28.00	63.00	14.00	26.00	A
	0211	32.50	67.50	16.25	28.25	A
	0306					
	0307	35.00	68.00	16.50	28.50	A
	0308	31.50	66.50	15.75	27.75	A
	0309	34.00	66.00	15.50	27.50	A
	0310	31.50	66.50	15.75	27.75	A
	0311	33.00	68.00	16.50	28.50	A
	0406	64.00	99.00	32.00	44.00	B
	0407					
	0408					
	0409	32.50	67.50	16.25	28.25	A
	0410	33.00	68.00	16.50	28.50	A
	0411	66.50	101.50	33.25	45.25	B
	0507					
	0508	36.00	71.00	18.00	30.00	A
	0509	36.50	71.50	18.25	30.25	A

1.	2.	3.	4.	5.	6.	7.
	0510	34.50	71.50	18.25	30.25	A
65 G/5	0918					
	1018	37.50	72.50	18.75	30.75	A
	1019	40.00	75.00	20.00	32.00	A
	1118	40.00	75.00	20.00	32.00	A
	1119	42.50	77.50	21.25	33.25	A
65 G/6	0612					
	0613					
	0712	57.00	92.00	28.50	40.50	B
	0713	51.50	86.50	25.75	37.75	A
	0714	45.50	80.50	22.75	34.75	A
	0715	44.50	79.50	22.25	34.25	A
	0716					
	0812	48.50	83.50	24.50	36.50	A
	0813	47.00	82.00	23.50	35.50	A
	0814					
	0815	42.00	77.00	21.00	33.00	A
	0816	36.00	71.00	19.00	31.00	A
	0812	45.50	80.50	22.75	34.75	A
	0813	47.00	82.00	23.50	35.50	A
	0914	46.50	81.50	23.25	35.25	A
	0915	40.50	75.50	20.25	32.25	A
	0916	40.50	75.50	20.25	32.25	A
	0917					
	1012	58.50	93.50	29.25	41.25	B
	1013	57.00	92.00	28.50	40.50	B
	1014	54.50	89.50	27.25	29.25	A
	1015	48.50	78.50	21.75	33.75	A
	1016					
	1017	37.00	72.00	18.50	30.50	A
	1112	86.50	101.50	33.25	45.25	B
	1113	63.50	98.50	31.75	43.75	B
	1114	59.50	94.50	29.75	41.75	B
	1115	53.50	88.50	28.75	40.75	B
	1116	49.50	84.50	24.75	36.75	A
	1117	44.00	79.00	22.00	34.00	A
65 G/7	0606	73.50	108.50	36.75	48.75	B
	0607					
	0608	73.00	108.00	36.50	48.50	B
	0609	75.50	110.50	37.75	49.75	B
	0610	77.50	112.50	38.75	50.75	C
	0611					
	0706					
	0707	72.00	107.00	36.00	48.00	B
	0708	74.50	109.50	37.25	49.25	B

	1.	2.	3.	4.	5.	6.	7.
	0709	79.00	114.00	39.50	51.50	C	
	0710	79.50	114.50	39.75	51.75	C	
	0711						
	0806	95.50	130.50	47.75	59.75	D	
	0807	97.50	132.50	48.75	60.75	D	
	0808	101.00	136.00	50.50	62.50	D	
	0809	102.50	137.50	51.25	56.25	D	
	0810	84.50	119.50	42.25	54.25	B	
	0811	82.50	117.50	41.25	53.25	B	
	0906	99.50	134.50	49.75	61.75	D	
	0907	98.00	133.00	49.00	61.00	D	
	0908	95.00	130.00	47.50	59.50	D	
	0909	99.00	134.00	49.50	61.50	D	
	0910	100.00	135.00	50.00	62.00	A	
	0911	44.50	79.50	22.25	34.25	A	
	1006	88.50	123.50	44.25	56.25	C	
	1007	92.00	127.00	46.00	58.00	C	
	1008	95.50	130.50	47.75	59.75	D	
	1009	100.00	135.00	50.00	62.00	D	
	1010	106.50	141.50	53.25	65.25	D	
	1011	53.50	88.50	26.75	38.75	A	
	1106	86.50	121.50	43.25	55.25	C	
	1107	92.50	127.50	46.25	58.25	C	
	1108	85.00	130.00	47.50	59.50	C	
	1109	97.50	132.50	48.75	60.75	D	
	1110	100.50	135.50	50.25	62.25		
	1111	51.00	86.00	25.50	37.50	A	
65 G/9	1218	43.00	78.00	21.50	33.50	A	
	1219	44.00	79.00	22.00	34.00	A	
	1318	45.00	80.00	22.50	34.50	A	
	1319	96.50	131.50	23.25	35.25	A	
	1418	49.50	84.50	24.75	36.75	A	
	1419	50.50	85.50	25.25	37.25	A	
	1518	54.00	89.00	27.00	39.00	A	
	1519	50.00	88.00	25.00	37.00	A	
	1618	55.00	90.00	27.50	39.50	A	
	1619	52.50	87.50	26.25	38.25	A	
	1620	56.00	91.00	28.00	40.00	B	
	1718	62.00	97.00	31.00	43.00	B	
	1719	56.50	91.50	28.25	40.25	B	
	1720	57.50	92.50	28.75	40.75	B	
65 G/10	1212	59.50	94.50	29.75	41.75	B	
	1213	57.00	92.00	28.50	50.50	B	
	1214	47.00	82.00	23.50	35.50	A	
	1215	49.00	84.00	24.50	36.50	A	
	1216	46.00	81.00	23.00	33.00	A	

1	2	3	4	5	6	7
1217						
1312	70.50	105.50	35.25	47.25	B	
1313	57.00	92.00	28.50	40.50	B	
1314	52.50	87.50	26.25	39.25	A	
1315	50.00	85.00	25.00	37.00	A	
1316	48.00	83.00	24.00	36.00	A	
1317	45.00	80.00	22.50	34.50	A	
1412	64.00	99.00	32.00	44.00	B	
1413	57.00	92.00	28.50	40.50	B	
1414	53.00	88.00	26.50	38.50	A	
1415	50.50	85.50	25.25	37.25	A	
1416	48.50	83.50	24.25	36.25	A	
1417						
1512	63.00	96.00	31.50	43.50	B	
1513	60.50	95.50	30.25	42.25	B	
1514	54.00	89.00	27.00	39.00	B	
1515	52.50	87.50	26.25	38.25	A	
1516	51.50	86.50	25.75	37.75	A	
1517	51.00	86.00	25.50	37.50	A	
1612	62.50	97.50	31.25	43.25	B	
1613	62.50	97.50	31.25	43.25	B	
1614	57.00	92.00	28.50	40.50	B	
1615	58.00	93.00	29.00	41.00	B	
1616	53.00	88.00	26.50	38.50	A	
1617	55.50	90.50	27.75	39.75	B	
1712	62.50	97.50	31.25	43.25	B	
1713	50.00	95.00	30.00	42.00	B	
1714	58.50	93.50	29.25	41.25	B	
1715	60.50	95.50	30.25	42.25	B	
1716	65.50	100.50	32.75	44.75	B	
1717	69.00	104.00	34.50	46.50	B	
65 G/D						
1206	104.50	139.50	52.25	64.25	D	
1207	94.00	129.00	47.00	59.00	C	
1208	96.00	131.00	48.00	60.00	D	
1209	97.00	132.00	48.50	60.50	D	
1210	100.00	135.00	50.00	62.00	D	
1211						
1306	104.50	139.50	52.25	64.25	D	
1307	105.50	140.50	52.75	64.75	D	
1308	100.00	135.00	50.00	62.00	D	
1309	98.00	135.00	49.00	61.00	D	
1310						
1311	70.00	105.00	35.00	47.00	B	
1406	110.00	145.00	55.00	67.00	D	
1407	112.00	147.00	56.00	68.00	D	

1.	2.	3.	4.	5.	6.	7.
1408						
1409	101.00	136.00	50.50	62.50	B	
1410	70.00	105.00	35.00	47.00	B	
1411	67.00	102.00	33.50	45.50	B	
1506	106.50	141.50	53.25	65.25	D	
1507	109.00	144.00	54.50	66.50	D	
1508	77.00	112.00	38.50	50.50	B	
1509	74.00	109.00	37.00	49.00	B	
1510	72.50	107.50	38.75	50.75	B	
1511	68.50	103.50	34.25	46.25	B	
1606	66.00	111.00	43.00	55.00	C	
1607						
1608	78.00	113.00	39.00	51.00	B	
1609						
1610	73.50	108.50	36.75	48.75	B	
1611	67.50	102.50	33.75	45.75	B	
1706						
1707	79.50	114.50	39.75	57.75	B	
1708	77.50	112.50	38.75	50.75	B	
1709						
1710	68.00	103.00	34.00	46.00	B	
1711	64.00	99.00	32.00	44.00	B	
65 G/13						
1818	67.00	102.00	33.50	95.50	B	
1819	64.00	99.00	32.00	44.00	B	
1820	66.00	95.00	30.00	42.00	B	
1821	59.50	94.50	29.75	41.75	B	
1918	74.50	109.50	37.25	49.25	B	
1919	65.50	100.50	32.75	44.75	B	
1920	67.50	102.50	33.75	45.75	B	
1921	64.00	99.00	32.00	44.00	B	
1922						
2018	76.00	111.00	38.00	50.00	B	
2019	69.50	104.50	34.75	46.75	B	
2020	65.00	100.00	32.50	44.50	B	
2021	69.50	104.50	34.75	46.75	B	
2022	67.00	102.00	33.50	45.50	B	
2118	75.00	110.00	37.50	49.50	B	
2119	71.00	106.00	35.50	47.50	B	
2120	69.50	104.50	34.75	46.75	B	
2121	68.00	103.00	34.00	46.00	B	
2122	69.50	104.50	34.75	46.75	B	
2218	76.00	111.00	38.00	50.00	B	
2219	77.00	112.00	38.50	50.50	B	
2220	78.50	113.50	39.25	51.25	B	
2221	87.00	122.00	43.50	55.50	C	
2222						

		1	2	3	4	5	6	7
2223		70150	105.50	35.25	47.25	B		
2318		80190	115.00	40.00	52.00	B		
2319		79160	114.50	39.75	51.75	C		
2320		79160	114.00	39.50	51.50	C		
2321		76150	111.50	38.25	50.25	C		
2322		80100	115.00	40.00	52.00	O		
2323		74100	109.00	37.00	39.00	B		
65 G/14								
1812		67.00	102.00	33.50	45.50	B		
1813		69.50	104.50	34.75	46.75	B		
1814		66.50	101.50	33.25	45.25	B		
1815		61.50	96.50	30.75	42.75	P		
1816		65.00	100.50	32.75	44.75	B		
1817		68.50	103.50	34.25	46.25	B		
1912		69.00	104.00	34.50	46.50	B		
1913		71.00	106.00	35.50	47.50	B		
1914		66.00	101.00	33.00	45.00	B		
1915		64.50	99.50	32.25	44.25	B		
1916		70.00	105.00	35.50	47.50	B		
1917		72.00	107.00	36.00	48.00	B		
2012		72.50	107.50	36.25	48.25	B		
2013		68.50	103.50	34.25	46.25	B		
2014		67.00	102.00	33.50	45.50	B		
2015		70.00	105.00	35.00	45.00	B		
2016		74.00	109.00	37.00	49.00	B		
2112		74.00	109.00	37.00	49.00	B		
2113		72.50	107.50	36.25	48.25	B		
2114		70.00	106.00	35.00	47.00	B		
2115		78.00	113.00	39.00	51.00	C		
2116		81.00	116.00	40.50	52.50	C		
2117								
2212		78.50	113.50	39.25	51.25	C		
2213		72.50	107.50	36.25	48.25	B		
2214		76.00	111.00	38.00	50.00	C		
2215		81.00	116.00	40.50	52.50	C		
2216		81.50	116.50	40.75	52.75	C		
2217		80.00	115.00	40.00	52.00	C		
2312		78.50	113.50	39.25	51.25	C		
2313		74.00	109.00	37.00	49.00	B		
2314		75.00	110.00	37.50	49.50	B		
2315								
2316		88.00	123.00	44.00	56.00	C		
2317								
65 G/15		1806						
		1807	80.50	115.50	40.25	52.25	C	

1.	2.	3.	4.	5.	6.	7.
1808		75.50	110.50	37.75	49.75	C
1809		72.00	107.00	36.00	48.00	B
1810		69.00	104.00	34.50	46.50	B
1811		71.00	106.00	35.50	37.50	B
1906						
1907		80.00	115.00	40.00	52.00	C
1908		75.00	111.00	37.50	49.50	B
1909		71.50	106.50	37.00	49.00	B
1910						
1911		74.50	109.50	37.25	49.25	B
2006						
2007		78.50	113.50	39.25	51.25	C
2008		78.00	113.00	39.00	51.00	C
2009		76.50	111.50	38.25	50.25	C
2910						
2011		75.00	110.00	37.50	49.50	B
2106						
2107						
2108						
2109						
2110						
2111						
2206						
2207		88.00	123.00	44.00	56.00	C
2208						
2209		81.50	116.50	40.75	52.75	C
2210		83.50	118.50	41.75	53.75	C
2211		79.00	114.00	39.50	51.50	C
2306		90.50	125.50	45.25	57.25	C
2307						
2308		90.00	125.00	45.00	57.00	C
2309		84.50	119.50	42.25	54.25	C
2310		85.00	119.00	42.50	54.50	C
2311						
65 K/1						
	0018	108.00	143.00	54.00	66.00	D
	0019					
	0020	104.00	139.00	52.00	64.00	D
	0021	100.50	135.50	50.25	62.25	B
	0022	100.00	135.00	50.00	62.00	D
	0023	98.50	133.50	49.25	61.25	D
	0118	115.00	150.00	57.50	69.50	D
	0119					
	0120					
	0121	101.00	136.00	50.50	62.50	D
	0122	98.50	134.50	49.25	61.25	D
	0123	96.50	131.50	48.25	60.25	D
	0218	109.00	144.00	54.50	66.50	D
	0219	104.50	139.50	52.25	64.25	D

	1.	2.	3.	4.	5.	6.	7.
0220							
0221							
0222	97.50	132.50	48.75	60.75	D		
0223	94.00	129.00	47.00	59.00	C		
0318	108.50	143.50	54.25	66.25	D		
0319	107.50	142.50	53.75	65.75	D		
0320	101.50	136.50	50.75	62.75	D		
0321	98.50	133.50	49.25	61.25	D		
0322	98.00	133.00	49.00	61.00	D		
0323	95.00	130.00	47.50	59.50	C		
0418	110.50	145.50	55.25	67.25	D		
0419	105.50	140.50	52.75	64.75	D		
0420	102.50	137.50	51.25	63.25	D		
0421	99.50	134.50	49.75	61.75	D		
0422	103.50	138.50	51.75	63.75	D		
0423	101.50	136.50	50.75	62.75	D		
0518	110.00	145.00	55.00	67.00	D		
0519	107.00	142.00	53.50	65.50	D		
0520	104.00	139.00	52.00	64.00	D		
0521	106.50	141.50	53.25	65.25	D		
0522	110.00	145.00	55.00	67.00	D		
0523	113.50	148.50	56.75	68.75	D		
65 K/2							
0012	92.00	127.00	46.00	58.00	C		
0013	93.50	128.50	46.75	58.75	C		
0014	95.50	131.50	48.25	60.25	D		
0015	94.00	129.00	49.50	61.50	D		
0016	108.50	138.50	51.75	63.75	D		
0017	104.50	139.50	52.25	64.25	D		
0112	91.50	126.50	45.75	57.75	C		
0113	92.50	127.50	46.25	58.25	C		
0114	95.50	130.50	47.75	59.75	D		
0115	99.50	134.50	49.75	61.75	D		
0116	104.00	139.00	52.00	64.00	D		
0117	104.50	139.50	52.25	64.25	D		
0212		129.00			C		
0213					D		
0214		133.50			D		
0215					D		
0216					D		
0217	119.50	145.50	55.25	67.25	D		
0312	108.00	144.00	54.50	66.50	D		
0313	112.00	147.00	56.00	68.00	D		
0314	98.50	133.50	49.25	61.25	D		
0315	105.00	140.00	52.50	64.50	D		
0316					D		
0317	108.00	143.00	54.00	66.00	D		
0412	108.50	143.50	54.25	66.25	D		

APPENDIX - VII.

COST STUDY OF EAST GODAVARY CATCHMENT FOR BAMBOO

Delivery Point : Bhadrachalam

Map sheet No.	Grid No.	Cost of transport per tonne	Cost of working per tonne	Total cost	Cost class
1	2	3	4	5	6
65 G/3	0010	15.80	33.50	47.30	A
	0011	9.80	"	43.10	A
	0108	16.80	"	50.30	A
	0110	16.50	"	56.00	A
	0111	18.60	"	52.10	A
	0207	20.20	"	61.70	B
	0211	19.50	"	53.00	A
	0408				
	0508	21.80	"	55.10	A
	0509	21.80	"	55.40	A
	0510	23.70	"	57.20	A
65 G/5	1118	24.80	"	57.50	A
	1119	25.50	"	59.00	A
65 G/6	0912	29.10	"	62.60	B
	0913	27.80	"	60.80	B
	0914	28.20	"	61.70	B
	1012	27.90	"	61.40	B
	1012	35.10	"	63.60	B
	1015	34.20	"	67.70	B
	1014	32.70	"	66.20	B
	1015	26.10	"	59.60	A
	1014	22.20	"	55.70	A
	1112	39.80	"	73.40	B
	1113	36.10	"	71.60	B
	1114	35.70	"	69.20	B
	1115	52.10	"	65.60	B
	1116	29.70	"	63.40	B
	1117	26.40	"	59.60	A
65 G/7	0606	43.80	"	77.30	C
	0608	43.80	"	77.30	C
	0609	45.30	"	78.80	C
	0610	46.50	"	80.00	C
	0707	45.20	"	76.70	C
	0708	44.70	"	78.20	C
	0709	47.40	"	80.90	C
	0710	47.70	"	81.20	C
	0806	57.30	"	90.80	D
	0807	58.50	"	92.00	D
	0808	60.80	"	94.10	D
	0809	61.50	"	95.00	D
	0810	50.70	"	84.20	C
	0811	49.50	"	83.00	C

1	2	3	4	5	6
	0907	58.60	3.50	92.30	D
	0908	57.00	"	90.50	D
	0909	59.40	"	92.90	D
	0910	60.00	"	93.50	D
	0911	26.70	"	60.20	B
	1006	53.10	"	88.70	C
	1007	55.20	"	90.80	D
	1008	57.30	"	95.50	D
	1009	60.00	"	97.40	D
	1010	63.90	"	65.60	B
	1011	52.10	"	85.40	C
	1106	51.90	"	69.00	C
	1107	55.50	"	90.50	D
	1108	57.00	"	64.10	B
	1111	30.60	"	59.00	A
65 G/9	1210	25.50	"	60.50	B
	1318	27.00	"	61.10	B
	1319	27.60	"	62.20	B
	1418	29.70	"	63.80	B
	1419	30.30	"	65.90	B
	1518	32.40	"	63.50	B
	1519	30.00	"	66.50	B
	1618	33.00	"	65.00	B
	1619	31.50	"	67.10	B
	1620	33.60	"	68.00	B
	1720	34.50	"	69.20	B
65 G/10	1212	35.70	"	67.70	B
	1213	34.20	"	61.70	B
	1214	28.20	"	62.90	B
	1215	29.40	"	61.10	B
	1216	27.60	"	75.00	C
	1312	42.30	"	65.00	B
	1314	31.50	"	63.50	B
	1315	30.00	"	62.30	B
	1316	28.60	"	60.50	B
	1317	27.00	"	71.90	B
	1412	38.40	"	67.70	B
	1413	34.20	"	65.30	B
	1414	31.00	"	68.00	B
	1513	36.80	"	65.90	B
	1514	32.40	"	65.00	B
	1515	31.50	"	64.10	B
	1517	30.60	"	71.00	B
	1612	37.50	"	71.00	B
	1712	37.50	"	69.50	B
	1713	36.00	"	63.60	B
	1714	38.10	"	69.00	B
	1715	36.30	"	73.90	B
	4717	40.40	"		

1	2	3	4	5	6
65 G/11	1206	82.70	33.50	98.20	D
	1207	56.40	"	89.90	C
	1208	87.60	"	91.10	D
	1209	58.20	"	91.70	D
	1210	60.00	"	93.50	D
	1306	62.70	"	96.20	D
	1307	63.50	"	96.60	D
	1308	60.00	"	93.50	D
	1309	58.00	"	92.50	D
	1311	42.00	"	75.50	G
	1406	66.00	"	99.50	D
	1407	67.20	"	100.70	D
	1409	60.60	"	93.90	D
	1410	42.00	"	75.50	C
	1411	40.20	"	73.70	B
	1506	65.90	"	97.40	D
	1507	65.40	"	98.90	D
	1508	46.20	"	79.70	C
	1509	44.40	"	77.90	C
	1510	45.50	"	77.00	C
	1511	41.10	"	74.60	B
	1608	46.80	"	80.30	C
	1610	44.10	"	77.60	C
	1611	40.50	"	74.00	B
	1707	47.70	"	81.20	C
	1708	46.50	"	80.00	C
66 G/13	1821	35.70	"	69.20	B
	1920	40.50	"	74.00	B
	1921	36.40	"	71.90	B
	2018	45.60	"	79.10	C
	2021	41.70	"	75.20	C
	2022	40.20	"	73.70	B
	2122	41.70	"	75.20	C
	2223	42.30	"	75.00	C
	2323	48.00	"	81.50	C
	2323	44.40	"	77.90	
65 G/14	1812	06.80	"	73.70	B
	1815	41.70	"	75.20	B
	1912	44.40	"	74.90	B
	1915	38.70	"	72.20	B
	2013	43.50	"	77.00	C
	2112	44.40	"	77.90	C
	2113	43.50	"	77.00	C
	2114	"	"		
	2213	47.10	"	80.60	C
	2214	45.50	"	77.00	C
	2215	45.60	"	79.10	C
	2216	46.60	"	82.10	C
	2217	08.90	"	82.40	C
	2313	47.10	"	80.60	C
	2314	44.40	"	77.90	C
	2315	35.00	"	78.50	C
	2317	52.80	"	86.30	C

1	2	3	4	5	6
65 G/15					
1807	48.50	33.50	81.00	C	
1009	45.20	"	76.70	C	
1010	41.40	"	74.90	B	
1811	42.60	"	76.10	C	
1907	48.00	"	81.50	C	
1908	45.00	"	78.50	C	
1911	44.70	"	78.20	C	
2008	46.80	"	80.30	C	
2009	45.90	"	79.40	C	
2010	50.10	"	83.60	C	
2210	47.40	"	80.90	C	
2211	54.50	"	87.80	G	
2306	50.70	"	84.20	G	
2509	64.80	"	96.50	D	
65 K/1					
0018	84.40	"	97.90	D	
0020	60.50	"	93.80	D	
0021	60.00	"	93.50	D	
0022	59.10	"	92.60	D	
0122	55.10	"	92.60	D	
0123	57.90	"	92.40	D	
0222	58.50	"	92.00	D	
0223	56.40	"	89.90	C	
0525	57.00	"	90.50	D	
0418	63.80	"	99.80	D	
0422	62.10	"	95.60	D	
65 K/2					
0012	55.20	"	88.70	C	
0014	57.80	"	92.40	D	
0015	59.40	"	92.90	D	
0016	62.10	"	95.60	D	
0017	62.70	"	96.20	D	
0112	54.90	"	88.40	C	
0113	55.50	"	89.00	C	
0114	57.30	"	90.80	D	
0115	59.70	"	93.20	D	
0116	62.40	"	95.90	D	
0117	62.70	"	96.20	D	
0212	56.40	"	89.90	G	
0214	59.10	"	92.60	D	
0215	60.60	"	94.10	D	
0216	62.70	"	96.20	D	
0312	65.40	"	98.90	D	
0313	67.20	"	100.70	D	
0314	59.10	"	92.60	D	
0315	63.00	"	96.50	D	
0412	65.10	"	98.60	D	
0415	64.20	"	97.70	D	
0416	73.80	"	107.30	D	
0417	74.70	"	108.20	D	
0513	67.60	"	101.50	D	
0516	73.20	"	106.70	D	
	0008				

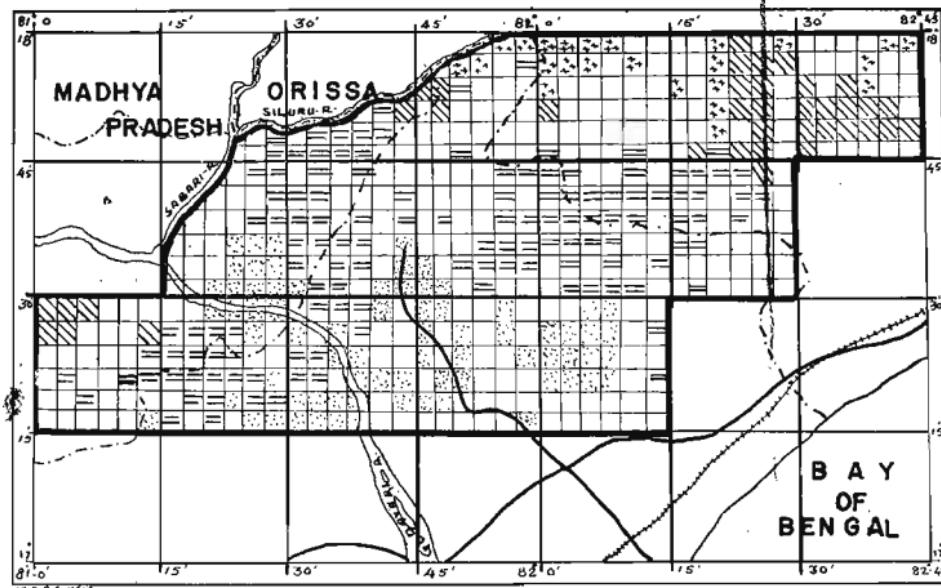
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65 K/3	0009	57.30	33.50	90.80	D
	0010	59.10	"	92.60	D
	0108	58.20	"	91.70	D
	0109	57.90	"	91.40	D
	0110				
	0111				
	0208	56.70	"	90.20	D
	0209				
	0210	63.00	"	96.50	D
	0211				
	0208	62.40	"	98.40	D
	0309	63.90	"	97.40	D
	0310				
	0311	65.40	"	94.90	D
65 K/5	0621	66.00	"	99.80	D
	0718	70.20	"	103.70	D
	0818	72.60	"	106.10	D
	0819	70.20	"	103.70	D
	0820	67.50	"	101.00	D
	0821	68.70	"	102.20	D
	0822	69.60	"	103.10	D
	0823	68.40	"	101.40	D
	0918	74.10	"	107.60	D
	0920	68.40	"	101.80	D
	0921	70.80	"	104.30	D
	0922	69.60	"	103.10	D
	0923	67.50	"	101.00	D
	1018	74.40	"	107.90	D
	1019	73.50	"	107.00	D
	1020	69.90	"	12.40	D
	1021	71.70	"	105.20	D
	1022	74.10	"	107.60	D
	1122	76.50	"	110.10	D
	1123	71.10	"	104.80	D
65 K/6	0614	70.20	"	103.70	D
	0615	72.30	"	105.80	D
	0616	75.30	"	108.80	D
	0617	77.10	"	110.80	D
	0712	73.80	"	107.30	D
	0714	71.40	"	104.90	D
	0715	73.50	"	107.00	D
	0716	76.20	"	108.70	D
	0717	79.50	"	113.00	D
	0817	80.10	"	111.60	D
	0915	77.40	"	111.20	D
	0916	77.40	"	110.90	D
	0917	79.50	"	113.00	D
	0918	79.50	"	113.00	D
	1017	83.10	"	116.60	D

1.	2	3	4	5	6
65 K/9	1218	76.50	30.50	110.00	B
	1219	74.40	"	107.90	B
	1220	76.20	"	109.70	B
	1221	79.50	"	113.00	B
	1319	77.70	"	111.20	B
	1320	77.70	"	111.20	B
	1419	79.50	"	113.30	B
	1420	79.20	"	112.70	B
	1421	79.50	"	113.00	B
	1520	90.90	"	124.40	B
	1521	"	"	"	
	1522	86.10	"	119.60	B
	1619	88.50	"	122.00	B
	1620	91.20	"	124.70	B
	1623	89.40	"	122.90	B
	1719	89.70	"	123.20	B
	1723	96.30	"	129.80	B

COST CLASS MAP—EAST GODAVARI CATCHMENT (A.P)

Raw-Mat : BAMBOO

Delivery point :- RAJAHMUNDY



COST CLASS:-

RS 45 — RS 60

RS 60 — RS 75

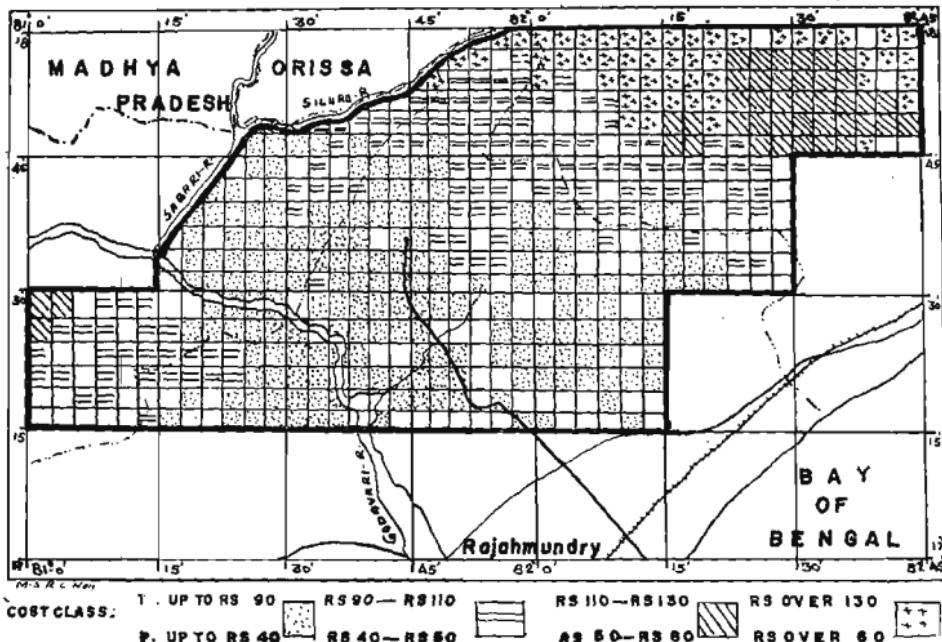
RS 75 — RS 90

RS. OVER 90

COST CLASS MAP - EAST GODAVARI CATCHMENT - (A.P.)

R. MAT :- TIMBER & PULPWOOD

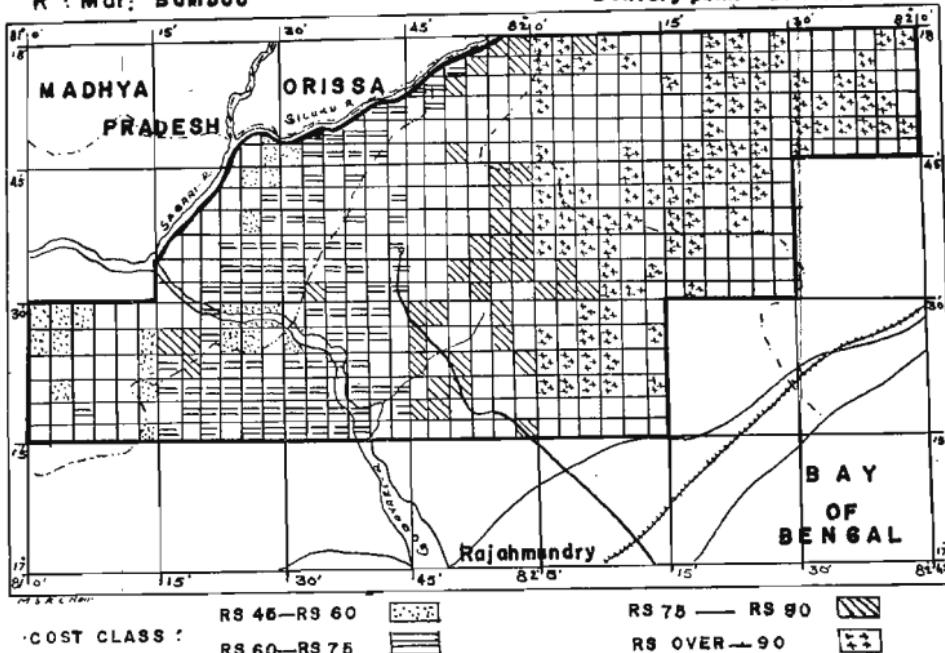
DELIVERY POINT: RAJAHMUNDRY



COST CLASS MAP - EAST GODAVARI CATCHMENT (A.P.)

R : Mat: Bamboo

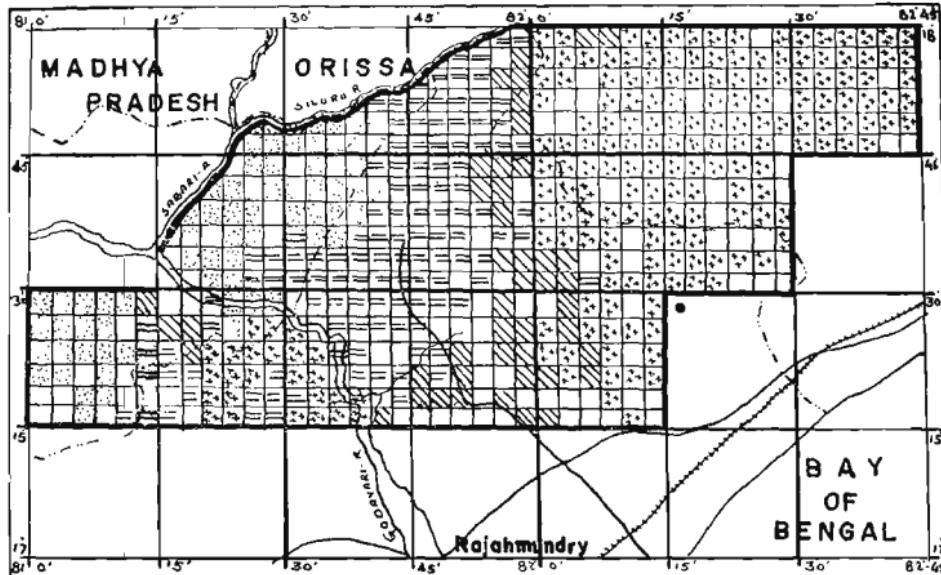
Delivery point Bhadrachalam



COST CLASS MAP EAST GODAVARI CATCHMENT (A.P.)

R. Mot : Timber & Pulpwood

Delivery point Bhadrachalam



COST CLASS	T - UPTO RS 90	RS 90—RS 110	RS 110—RS 130	RS OVER 130
P.	UP TO RS 40	RS 40—RS 60	RS 50—RS 60	RS OVER 60

EXISTING AND PROPOSED ROAD MAP OF EAST GODAVARI CATCHMENT (A.P.)

SCALE 1 CMC INCH = 8 MILES

