



sappi

Project Grow

Challenges faced by small growers to harvest and deliver timber.

Challenges

- Most growers can not harvest their own timber.
 - The long interval between harvests does not warrant the cost of equipment.
 - Lack equipment and training.
 - Scheduling transport and capacity are problematic.
 - Labour is scarce within families.
- Growers need to rely on contractors.
 - There is a high failure rate with new contractors.
 - There is a lack of dedicated contractors.
 - Growers sell their timber standing to timber speculators.

Effect on small growers

- Growers were not realizing the full value of their timber.
- Lead to a lack of interest in forestry.
- Growers were often “conned” out of their timber.

Harvest process

- Plot felled cross cut and debarked manually.
- Steep slopes are hand rolled or carried to roadside.
- Extraction to depot with agricultural tractors.
- Stacked on depot.
- Depots are suitable loading zones.





Extraction

- Agricultural tractors mostly used.
- Loading is done by hand.
- Most tractors are two wheel drives.
- Generally in poor condition.
- Delays are caused by breakdowns.
- Roads are poor or non existent.
- Growers often prepare hand made extraction roads.







Secondary Transport

- Wide range of trucks used 7 to 38 ton.
- Depots are scattered over southern KZN.
- Small volumes on depots.
- Standard rates schedule for depots is used.
- Depot is classified as an area e.g. Hlokozi.
- Loading is generally done by hand.
- Bigger transporters do move Bell Loaders.
- Scheduling is mostly done by the transporters.
- Foresters and growers phone transporters with stock reports.

Secondary Transport

- All trucks are registered on Sappi's TCS.
- Number plate recognition at the mill is used to pay transporters.
- Loading is included in the transport rate.



Sappi Interventions to assist growers and contractors.

- Developed an in-house training course for harvesting and short haul contractors.
- Sappi Tree Farming Guidelines used.
- Translated to Zulu.
- Task determination.
- Tree size.
- Calculate daily production.
- Costing of operations.
- Simple forms developed to assist contractors.

Sappi Interventions

- Training courses are held infield.
- Promote safety in operations.
- Foresters train and mentor new contractors.
- Drive to increase harvesting.
- Growers began to see value in trees.
- No longer willing to sell to speculators.

Daily Chainsaw task in Trees adjusted for local conditions

Operator and pusher

Istoko somsebenzi wokuwisa

Owisayo abe naye o shovayo

	Mean D.B.H	Mean Tree height Ubude besihlahla																			
		9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Ubukulu besihlaha maskalwa maqondana nesifuba	9	556.5	537	517	497	477	457	438	417	398											
	10	487.2	471	455	440	424	407	391	375	359											
	11	459.9	441	422	403	384	365	347	328	309											
	12				370	355	340	326	311	296	281	267	252								
	13					321	312	302	291	281	271	261	251	241	231						
	14					297	286	277	267	256	246	236	226	216	206						
	15						272	263	254	245	236	227	218	208	199						
	16							248	240	232	225	218	210	202	195	188	180				
	17								238	230	222	214	205	197	188	180	172	163			
	18									210	204	198	193	187	181	175	169	164	158		
	19										202	196	189	183	176	170	164	157	151	144	
	20											182	177	173	168	164	159	155	150	146	141

Tree size

Amathani akhishwa isihlahla

	Mean D.B.H	Mean Tree height Ubude besihlahla																			
		9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Ubukulu besihlaha maskalwa maqondana nesifuba	9	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03											
	10	0.02	0.02	0.03	0.03	0.03	0.03	0.04	0.04	0.04											
	11	0.03	0.03	0.03	0.03	0.04	0.04	0.04	0.04	0.05											
	12				0.04	0.05	0.05	0.06	0.06	0.06	0.06	0.07	0.07								
	13					0.06	0.06	0.06	0.07	0.07	0.08	0.08	0.08	0.09	0.09						
	14					0.07	0.07	0.08	0.08	0.08	0.09	0.09	0.10	0.11	0.11						
	15						0.08	0.09	0.09	0.10	0.10	0.10	0.12	0.12	0.13	0.13					
	16							0.10	0.10	0.11	0.12	0.12	0.13	0.14	0.14	0.15	0.16				
	17								0.12	0.12	0.13	0.14	0.15	0.16	0.17	0.17	0.18	0.19			
	18									0.14	0.15	0.16	0.17	0.18	0.19	0.19	0.20	0.21	0.22		
	19										0.17	0.17	0.19	0.20	0.21	0.22	0.23	0.24	0.24	0.26	
	20											0.20	0.21	0.22	0.23	0.24	0.25	0.26	0.27	0.28	0.29

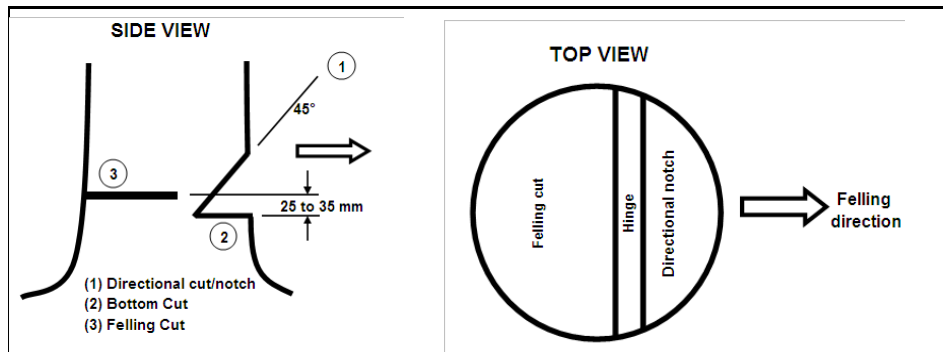
Daily Stripper task in Trees adjusted for local conditions

Strip and Stack

Istoko somsebenzi wokuxebula

Kuxebula nokutaga

	Mean D.B.H	Mean Tree height Ubude besihlahla																			
		9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Ubukulu besihlaha maskalwa maqondana nesifuba	9	92	87	81	76	70	65	60	54	49											
	10	85	80	75	70	65	60	55	50	46											
	11	78	73	68	62	57	52	47	41	36											
	12				55	51	48	45	41	39	35	32	28								
	13					50	48	45	43	40	38	36	33	31	28						
	14					47	45	42	40	38	35	33	31	29	26						
	15						44	42	40	38	36	33	31	29	27	25					
	16							39	37	36	34	32	31	29	27	25	24				
	17								39	36	34	32	31	29	27	25	22	21			
	18									32	31	30	29	27	26	25	23	22	21		
	19										32	31	29	27	26	25	23	22	20	19	
	20											27	27	26	25	24	22	22	21	20	19



Indlela yokuwisa



Izingodo ezigobe kakhulu



Ikwalithy edingekayo

Ubude 1.8m 3.0m

Ubukhulu 5cm 45cm

Ubudala wengodo

Angangeni emshinini ngaphambi kwa masonto amatatu
Angadluli amasonto awu 16

Izingodo ezigobe kakhulu azithathwa
Izingodo ezinama qhuzu azithathwa
Izingodo ezishile
Izingodo zingabi nomusi wokusha

Zingabi namagxolo

Zingabi nodaka

Izingodo zixebuleke kahle

Sappi

Harvesting Cost Model

	Tree size			DBH			HT		
	a	b		c	d		e		
	Number	Rate		Task	Tree Size	Tons			R/Ton
Chainsaw Operator						axcxd		axb÷e	
Strippers						axcxd		axb÷e	
Supervisor								axb÷e	
Overhead Cost								axb÷e	
Harvesting Cost/ton									
Profit/ Ton									

Sappi

Short Haul Cost Model

Hours Worked /day									
Load Size			Tons	Time per Load			Minutes		
	a	b		c	d		e		
	Number	Rate		Task Loads	Load Size		Tons		R/Ton
Tractor Cost per day						axcxd		axb÷e	
Loaders						axcxd		axb÷e	
Supervisor								axb÷e	
Overhead Cost								axb÷e	
Short Haul Cost/ton									
Profit/ Ton									

	a	b	c	axbxc=d	e	dx e=f	g	f÷g
	Length	Height	Width	Volume	Air Space Factor	Volume	Conversion Factor	Tons
Load Measurement					0.67		1.47	

Further Interventions Required

- Training for critical skills.
 - Chainsaw Operators.
 - First Aiders.
 - Drivers.
- Legal compliance.
 - WCC
 - UIF
 - Protective Clothing.
- Support.
 - Financial assistance for purchasing equipment.
 - FIETA funding of training courses.

THANK YOU

