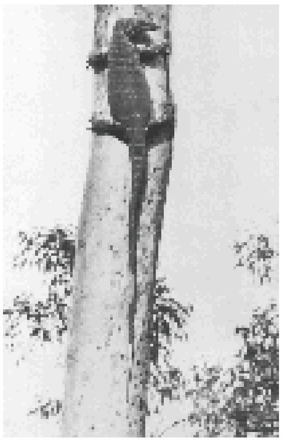
Financial Analysis of Woodchipping in South East NSW



September 2007

Foreword

This analysis is based on a submission I made to the NSW Treasurer, Mr. Michael Costa, in April 2007 to increase royalty rates on hardwood pulpwood from native forests in NSW. Since that submission was made new information has become available via FOI requests, parliamentary questions and the 2006 SEFE Financial Report. This has enabled some estimates in that submission to be replaced by actual figures. This has resulted in some minor changes to the cost figures in the royalty submission and some other figures have been updated.

For example, estimated losses by Forests NSW on the supply of pulplogs to the Eden chipmill have changed from $3.9 million to $3.5 million for 05/06.

Royalty Submission

The royalty submission of 19 April 2007 asked the NSW Treasurer to increase pulpwood royalty rates on the South Coast to an average rate of $26/tonne, compared to the 05/06 average royalty rate of $12.85/tonne. A response from Treasury saying that the submission was passed onto the Minister for Primary Industries was received. The submission was subsequently passed onto Forests NSW.

I have had a verbal response from Forests NSW saying they would love to increase royalty rates but cannot as there is nowhere else for the pulplogs to go. This suggests that an alternative approach be taken. For example, close down the chipmill and convert it into a business technology park - where Forests NSW could be a partner. Another approach would be to stop supplying the chipmill with pulplogs and develop the business technology venture on another site. The pulplogs to be left in the forest. Alternative strategies then need to be developed to produce more income for Forests NSW and sawmills and to increase employment in the community. I have made some suggestions and more can be made but I would not wish to usurp the suggestions of others.

Photo Credits
Lace Goanna Stanley Breeden
Stand of Blackbutt South East slopes Time Life circa early 1960's
Logs photographer unknown
Badja State Forest after logging and burning Photographer unknown

This report has been compiled and written by Terrence Digwood, 19 September 2007.
Updated for new information on 1 October 2007.

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Appendices

Data Problems

1) Annual Report and FOI data are not on the same basis

Data on tonnes of pulpwood in Forests NSW Annual Reports and in Forests NSW FOI responses are not on the same basis. This does cause some problems.

Data in the FOI responses are compiled from sales records.
In the Annual Reports the data are compiled from delivery docket records.
This causes timing differences and the figures are affected.

Example 05/06 Hardwood Pulpwood - tonnes

	A R	FOI
Native forest	504,259	525,594

2) Historical pulpwood figures for Eden from FNSW were understated by about 1.7 million tonnes compared to data submitted to the RFA process for the period 1969/70 to 1996/97

Forests NSW advised that the difference was something to do with Narooma figures. If that was the reason then the problem may have been made worse. In consultation with Forests NSW I advised I would use the RFA data for the period 1969/70 to 1996/97 not the FOI data.

The South Coast

I have used South Coast to mean: Eden region plus South Coast-Southern sub region.

Disclaimer

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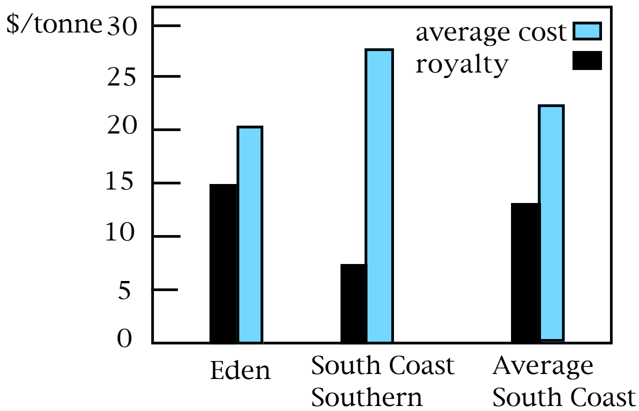
Summary

Pulplogs are Supplied at a Loss to the Chipmill

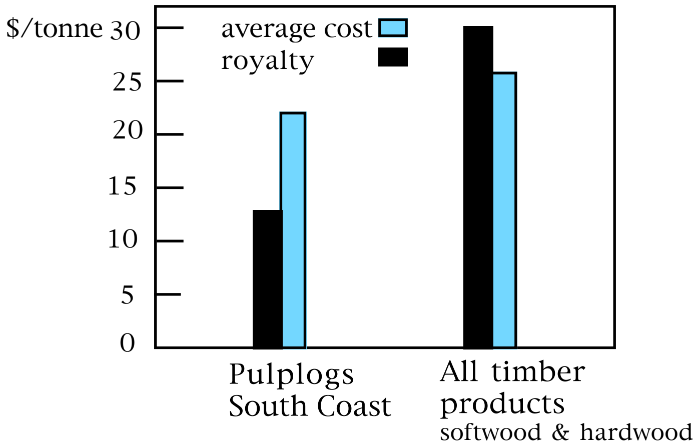
* It is estimated that Forests NSW made losses for supply of pulplogs to the Eden chipmill of $3.5 mn in 05/06, about $8.80/tonne. Forests NSW does not agree. It says that pulplogs are supplied at marginal cost not average cost. If this is the case then sawlogs in the South East would be running at a loss of at least $2.1 mn.
* It cost FNSW about $21.65/tonne (estimated average cost) to supply pulp logs to the chipmill which paid FNSW $12.85/tonne in 05/06.

* FNSW does not make losses over all its timber products
  - Average cost to supply timber was $25.72/tonne (estimated) in 05/06
  - Average royalty was $29.52/tonne (estimated) in 05/06.

Pulplogs: Average Cost & Royalty Rates: South Coast 05/06



Pulplogs Vs All Timber Products Average Cost & Royalty Rates 05/06



Future Directions

* FNSW would like to put up royalty rates but cannot as there is nowhere else for the pulplogs to go. It is basically locked into the chipmill.
* Desired Outcomes
  a) Increase revenue for FNSW
  b) Increase revenue for sawmills
  c) Increase employment in the South East
* Strategies
  i) Redevelop the chipmill site, or use another site, to establish a business technology park with Forests NSW as a partner. Leave pulplogs in the forest.
  ii) Expand existing passive uses of the forest to increase income.
  iii) Combine sawmill waste with green waste to produce organic mulch - sells for about $25/cubic metre. Use sawmill waste to produce dyed chips for landscaping - sells for about $60/cubic metre.

Forest Management

* The SE forests around Eden are managed predominantly for the chipmill - but the chipmill isn't paying for it. →

Pulp: % of log output 05/06

Eden - 87.1%
S C- Southern - 46.6%
South Coast - 72.6%

* Mature/mixed forest has been changed into regrowth to benefit the chipmill. About 155,00 ha in NSW since 1970, some of which is now in National Parks.
* Pulp is not a marginal activity. Planning for field work and operational activities for pulplogs & sawlogs are integrated in a holistic way to comply with ESD principles.

Forest Productivity

* It was said in 1995 that logging for pulp makes the forest more productive by enabling production sawlogs to be brought forward. The opposite has actually occurred. Since 03/04 the production of sawlogs in Eden has fallen from 45,026 cubic metres to 38,780 cubic metres in 05/06. Since 1993 the production of sawlogs in Eden has fallen from 51,543 cubic metres to 38,780 cubic metres in 05/06. Part of the fall from 1993 would be due to losses in the area of State Forests available for logging.

* Pulp output has also fallen and the minimum supply under the 1999 RFA of 345,000 tonnes per annum in Eden has not been supplied since 1996/97. Eden pulp output was 307,669 tonnes in 05/06.

Economics

* Woodchipping mainly benefits SEFE employees, Forests NSW employees and logging contractors. Indirect benefits also occur in the wider economy through their expenditure. However, alternative employment options would provide similar or greater benefits.

* The chipmill's foreign owned profits were equivalent to 90 jobs going offshore for year ended 31 December 2006 - Balance of Payments effect.

* The chipmill generates about half as much employment as similar sized manufacturing concerns in NSW - wages 6.0% of total income, NSW manufacturing 15.2%.

* The losses on the supply of pulplogs from FNSW and Vic Forests - estimated at $9.0 mn in 05/06 - were equivalent to the wages & employee benefits of all chipmill staff plus 35% of the wages of loggers/drivers.

* Of every export dollar received ($86.33/tonne in '06) about half is spent on logging contractors and most of this is to run trucks and heavy equipment, most of which are imported. The net export price was $71.08/tonne - after allowing for losses from FNSW & Vic Forests and foreign owned profits.

* Links in the value added chain are limited because the processing of woodchips is undertaken overseas. However, repairs and maintenance and 'other expenses' at the chipmill are 2 avenues that generate additional benefits for the local community. Expenditure on these 2 items was about $5.5 mn in 05/06. An alternative business venture on the chipmill site would also do this. Fuel is also sold at the chipmill. If it is bought from local suppliers there would also be benefits to local fuel suppliers, although there are costs here in terms of greenhouse gas emissions.

* The chipmill also provides a means for sawmills to dispose of waste from sawlogs. This represents about 9% of the inputs to the chipmill from NSW and Vic. For NSW we are talking about 35,000 tonnes per annum - about 4% of the total input to the chipmill. (Assuming that Vic and NSW sawmills supply sawmill chips at the same rate.) However, other options for the use of sawmill waste can be implemented which would enable sawmills to make better economic returns.

* FNSW strongly supports low royalty rates on the basis of employment. FNSW is concerned about its own staff, chipmill staff and contract loggers/drivers. FNSW has 104 staff on the South Coast. The regional economy would be better off if FNSW did not make losses on the supply of pulplogs to foreign interests but used its staff on activities to benefit domestic interests and expand employment.

(The chipmill is technically an Australian resident Co. - but it is 100% foreign owned)

1. Background

Hardwood pulpwood logs from native forests are used to make woodchips which are exported abroad to make paper and cardboard. The major woodchip mill in NSW is at Eden. In calendar year ‘06, the mill's inputs came from public native forests, about 97.6% and private forestry operations, about 2.4%, in NSW and Vic - either as logs, about 91-92% or as sawmill chips, about 9-10%. NSW logs come from Eden, South Coast-Southern and Tumut.

1.06 million tonnes of woodchips were exported - year ended 31 Dec 06.

FNSW supplied 402,057 t as logs to 30 June 06	- Tumut	2,534 tonnes	**Average Royalty 05/06 - $12.85/t**
	- SC-Southern	91,854 tonnes	
	- Eden	307,669 tonnes	
		402,057 tonnes	

In addition to this amount, sawmill waste - in the form of chips - also goes to the chipmill. For NSW it isn’t clear how much goes to the chipmill. It is thought to be about 35,000 tonnes. There are also inputs from private landholders - for NSW about 10,000 tonnes of logs. The total NSW input for 05/06 was about 447,000 tonnes - about 45% of production for financial year 05/06.

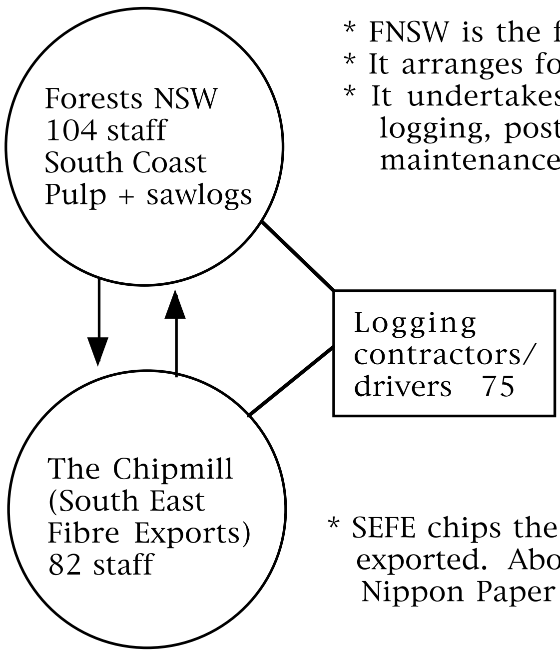
Note that SEFE’s accounts are on a calendar year basis and Forests NSW figures financial year. SEFE also sells fuel. It is not possible to estimate SEFE’s production on a financial year basis with exact precision. Production is not the same as exports.

Pulp is the Major South Coast Forest Output

Eden region - about 87% of log output is pulp
South Coast-Southern - about 47% of log output is pulp
South Coast as a whole - about 73% of log output is pulp

These figures exclude sawmill chips & private forestry operations

2. Organisational Roles in Woodchipping in NSW



* FNSW is the forest manager
* It arranges for pulplogs to be supplied to the chipmill
* It undertakes planning, prelogging work, supervision of logging, post logging work, silviculture, road maintenance and general forest management.

* Logging is undertaken by contractors in NSW and Vic
* In Eden they are contracted directly to the chipmill
* They are required to be supervised for at least the equivalent of 1 day for every week of logging.

* SEFE chips the pulplogs into woodchips and they are exported. About 75%-80% to SEFE’s parent company Nippon Paper Industries

3) The Eden Mill is run by South East Fibre Exports Pty. Ltd. (SEFE)

100% foreign owned - 62.5% by Nippon Paper Industries
- 37.5% by Itochu Corporation

Employs 82 persons and another 75 loggers/drivers supply logs to it.
Profit before tax, 31 Dec 06 $9.291 mn after tax $6.840 mn
After tax profit equivalent to 90 jobs going offshore, 2005 104 jobs
Total sales 31 Dec 06 $101.6 mn Woodchips $91.5 mn, fuel $10.1 mn
Average woodchip price $86.33/tonne
Royalty Payments to FNSW 05/06 to 30 June 06 about $5.2 mn
Subsidised log inputs - about $8.80/tonne

FNSW also received $0.9 mn in royalties for North Coast hardwood pulplogs.
FNSW total hardwood pulpwood royalties 05/06 - about $6.1 mn.

4) Estimated Losses on Supply of Pulplogs to Chipmill, NSW - $3.5 mn 05/06

It cost Forests NSW about $21.65/tonne (estimated average cost) to supply the Eden chipmill with pulplogs in 05/06. During 05/06 402,057 tonnes of pulplogs were supplied to the chipmill by Forests NSW at an average royalty of $12.85/tonne, (**Source:** FNSW, FOI). This is a loss of about $3.54 million. Forests NSW does not agree with this assessment - see page 17 point 11.1.

Forests NSW is making a loss on the pulplogs it supplies to the chipmill which enables foreign interests to make windfall profits. Forests NSW sees things differently. It views pulp logs as an activity which can be undertaken at marginal cost, hence low royalty rates are appropriate.

Forests NSW does not make losses over all its timber products. The average cost over all its timber products in 05/06 was about $25.72/tonne (estimated) and the average royalty payment was about $29.52/tonne.

5) The Chipmill Makes Windfall Profits

The Eden chipmill has made windfall profits for 35 years as a result of paying low royalty rates for its pulplogs. All of these profits are foreign owned and are a negative item in the Current Account in the Balance of Payments.

Table 1: Profits & ROE: SEFE & FNSW, 2006-2001

	2006	2005	2004	2003	2002	2001
			$000's			
SEFE - EBIT	9,492	11,547	9,127	10,469	8,737	9,249
SEFE - Net Profit	6,840	7,968	5,963	7,266	6,264	6,447
			%			
ROE - SEFE	15.2	20.0	17.2	23.8	23.6	26.1
ROE - FNSW	1.71	2.00	1.78	1.26	1.42	0.35

EBIT: earnings before interest and tax
ROE: return on equity: SEFE, ROE year 1 = net profit yr1/((equity yr1 + equity yr0)/2)
Sources: South East Fibre Exports Pty. Ltd. Financial Reports as at 31 December: 2001 to 2006
FNSW Annual Reports 2004/05 and 2005/06

6) The Cost of Supplying Pulpwood logs to the Chipmill is Greater than the Royalty Received **

The Costs of Supplying Pulplogs to the Eden Chipmill

Two methods were used to estimate FNSW costs of supplying pulpwood logs to the chipmill at Eden. Average cost was used not marginal cost.
Method 1 - Data from FNSW Annual Reports for 03/04, 04/05 & 05/06.
Method 2 - FNSW answer to parliamentary question 0167 on the costs of operating offices and workshops in the South Coast for 05/06.

	03/04	04/05 $/tonne	05/06
Method 1	19.96	24.73	22.56
Method 2	na	na	21.65

The $21.65/t is the best estimate → A loss of $8.80/t → $3.54 mn in 05/06

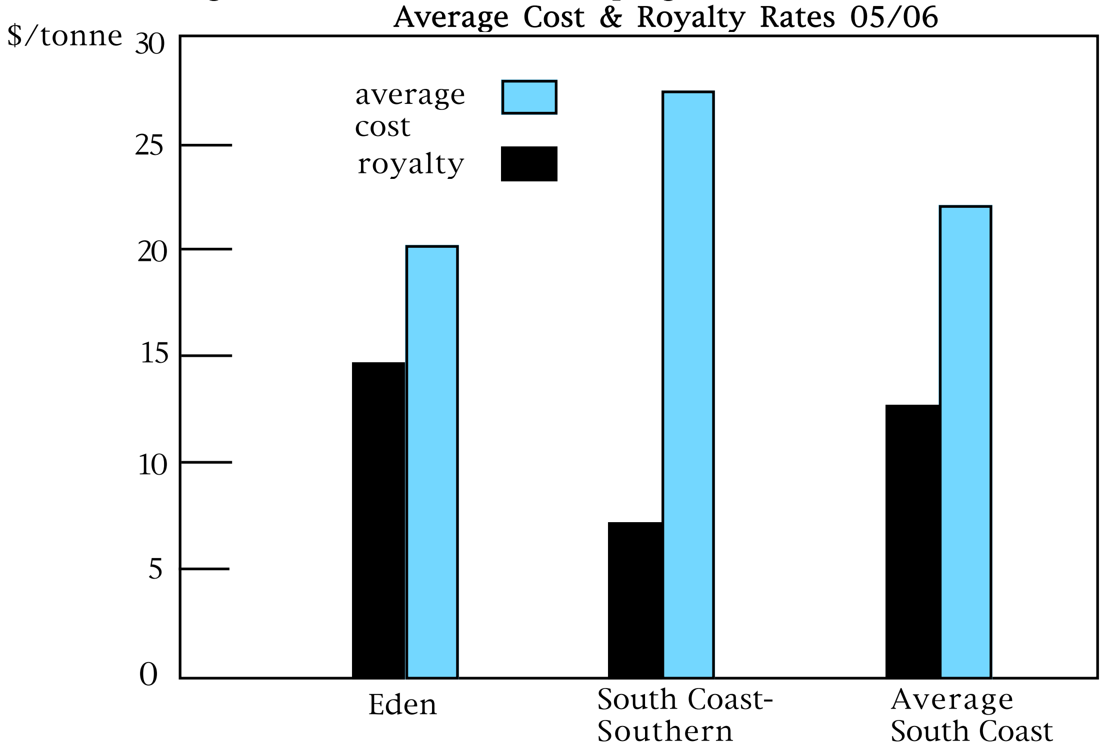
See pages 35-38 and page 15 for details of calculations

** Forests NSW does not agree that losses are made on pulplogs

FNSW says that marginal cost is used to price pulplogs. Forest management has to be undertaken in any case - hence marginal cost, not average cost is appropriate.

Average cost Vs marginal cost is examined on pages 17-23

Figure 1: South Coast Pulplogs
Average Cost & Royalty Rates 05/06



See page 15 for data

7. Forests NSW Does Not make losses over all its Timber Products

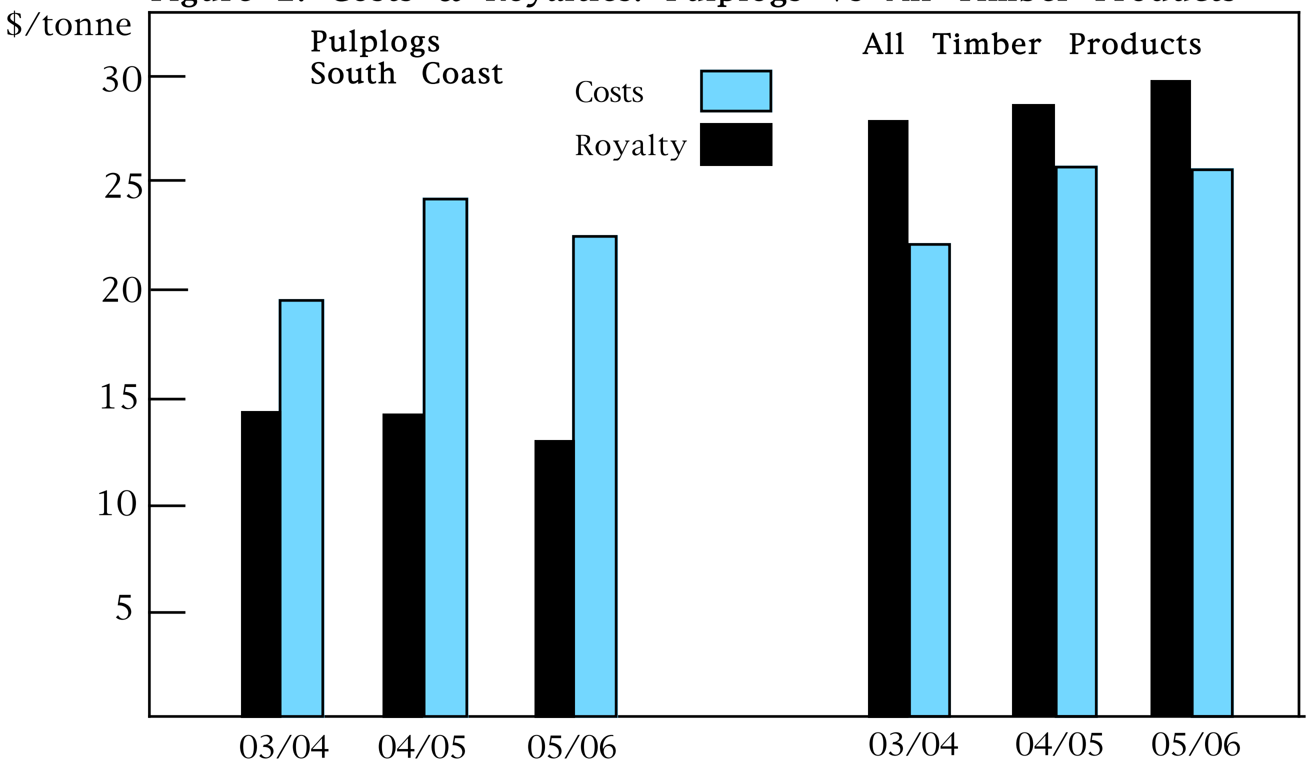
Table 2: Costs & Royalties: Pulp Vs All Timber Products*

	Pulplogs: South Coast			All Timber Products*		
	03/04	04/05 $/tonne	05/06	03/04	04/05 $/tonne	05/06
Costs	19.96	24.73	22.56	22.10	25.70	25.72
Royalty	14.26	14.00	12.85	28.14	28.49	29.52

* All Timber products includes softwood and hardwood products

The cost figures are derived using method 1. They are about 4% higher than the cost estimate derived using method 2.
Royalty rates for pulp are from two FNSW FOI responses, costs are estimated.
Costs and royalties for all timber products are estimated from FNSW Annual Reports and FNSW Ecological Sustainable Management Plans

Figure 2: Costs & Royalties: Pulplogs Vs All Timber Products



8) South Coast Native Forests: Log Output and Revenue

Table 3: South Coast Native Forests: Log Output & Revenue

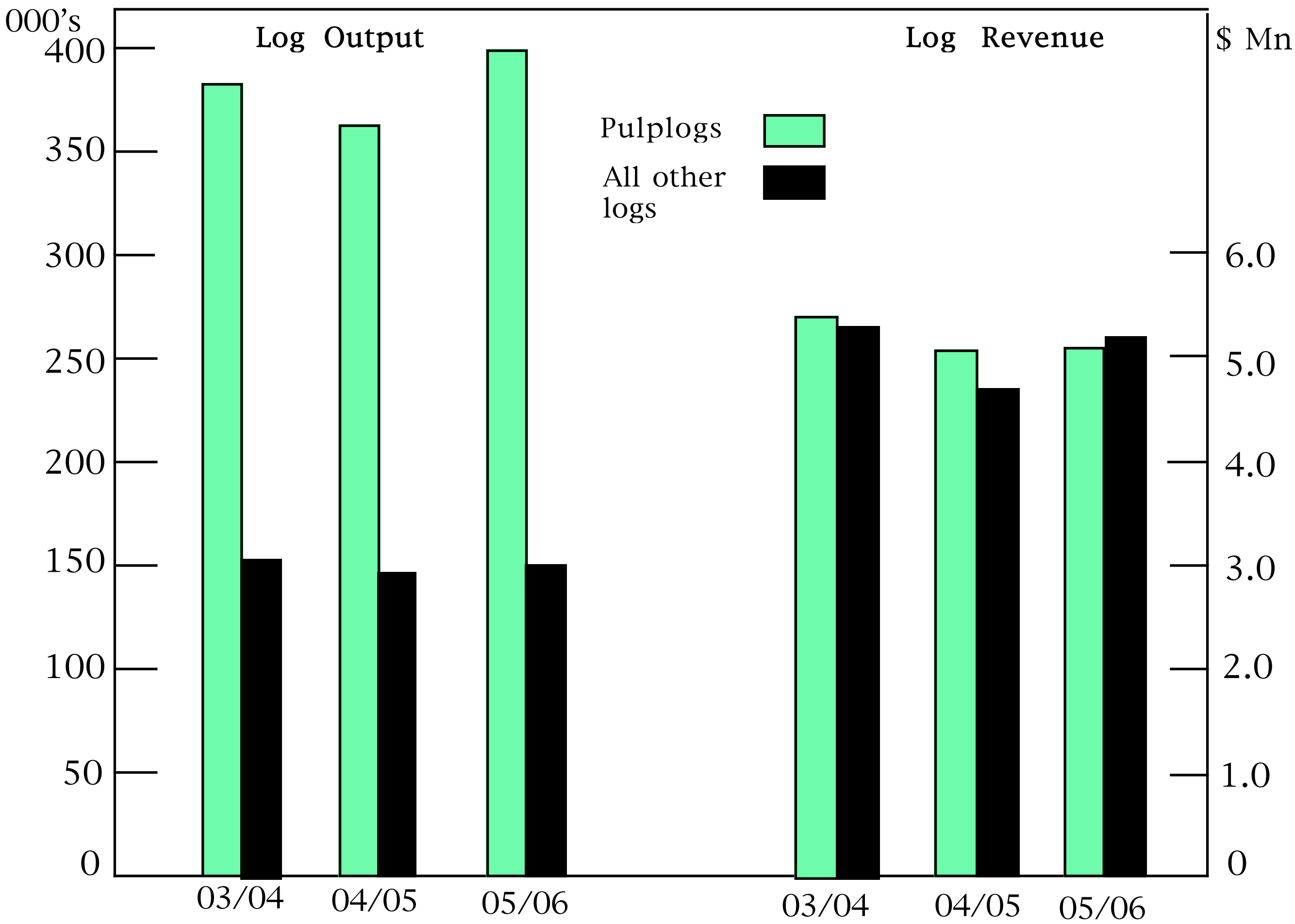
	03/04		04/05		05/06	
	tonnes	*$mn*	*tonnes*	*$mn*	*tonnes*	*$mn*
Pulplogs	380,892	5.43	361,130	5.06	399,523	5.13
All other logs	155,395	5.34	145,834	4.83	150,618	5.20
Total	536,287	10.77	506,964	9.89	550,141	10.33
% Pulplog - output	71.0%		71.2%		72.6%	

Source: FNSW FOI response 17 5 07
All other logs includes: graded sawlogs, salvage logs, veneer logs, poles, piles, & girders.

Note: Tumut supplied 2,534 tonnes of pulp in 05/06 - about $0.03mn
Added to the $5.13 mn in Table 3 above = $5.16 mn - as given in the box at page p10.

South Coast means Eden + South Coast-Southern

Figure 3: South Coast Native Forests, Log Output & Revenue



9) Eden and South Coast-Southern Compared

Table 4: South Coast, Pulplogs as a Percent of Log Output

	2003/04	2004/05	2005/06
		%	
Eden	85.9	85.8	87.1
South Coast-Southern	37.0	39.8	46.6
Average - South Coast	71.0	71.2	72.6

Source: FNSW FOI response 17 5 07

Figure 4: Pulplogs as a Percent of Log Output

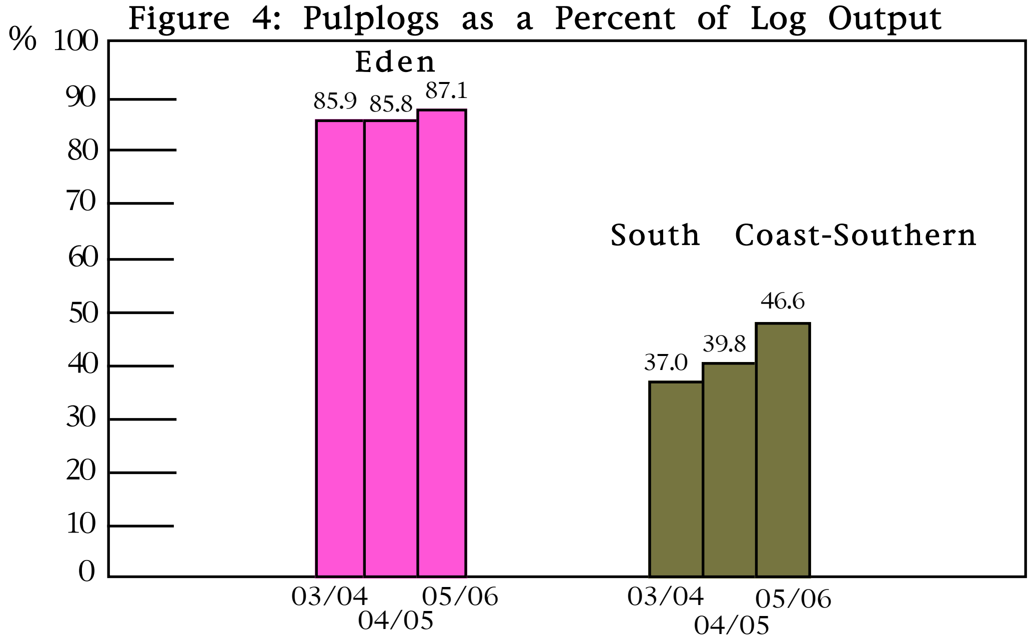
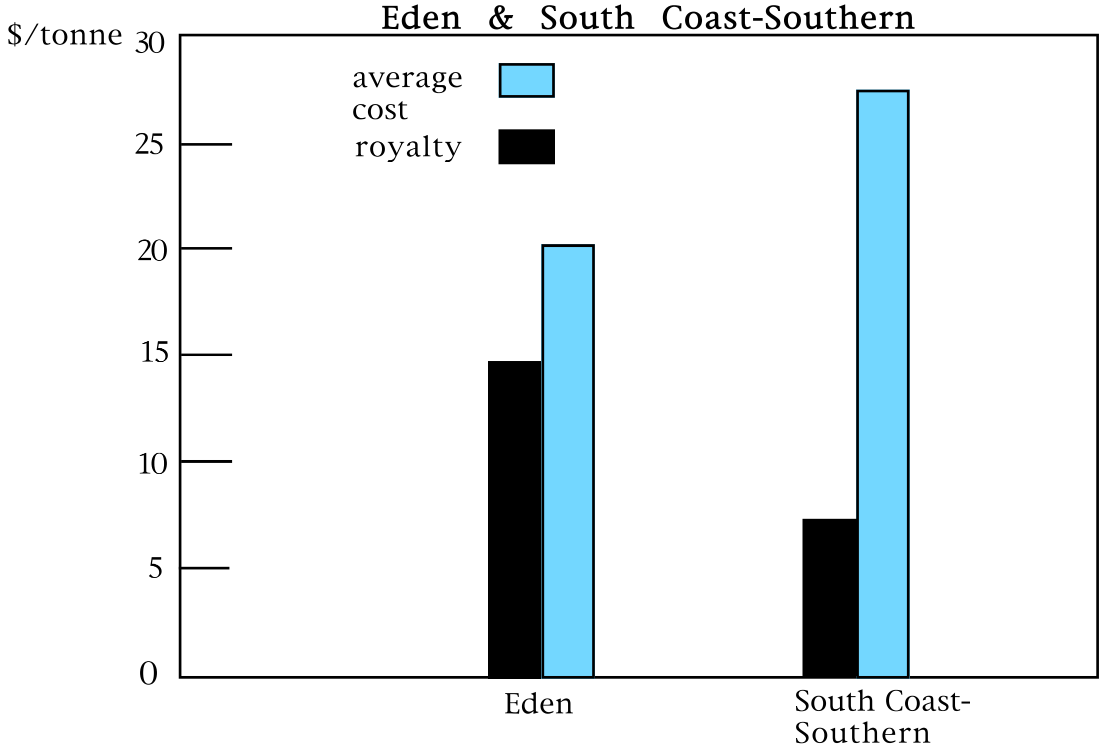


Figure 5: Pulplogs: Average Cost & Royalty Rates 05/06
Eden & South Coast-Southern



9) Eden and South Coast Southern Compared (Cont'd)

Table 5: Eden and South Coast-Southern Compared

Table 5A: Broad Characteristics - hectares

	Eden	SC-Southern	Total
Size	807,691	1,830,555	2,638,246
Forest	533.414	1,235,602	1,769,016
Dedicated Reserves**	255,300	561,084	816,384
State Forests - Native	156,963	200,542	357,505
of which reserves	*19,453*	*61,424*	*80,877*
Available for logging	123,795	102,200	225,995

** does not include reserves in State Forests
Source: FNSW Ecological Sustainable Forest Management Plans, Eden & SC-Southern, Sept. 2005

Table 5B: Output Characteristics 05/06

	Eden	SC-Southern	Total
Log output - tonnes	353,042	197,099	550,141
Pulp - %	87.1	46.6	72.6
Loggable area - ha	123,795	102,200	225,995
Staff numbers	48	56	104
Area logged - ha	4,786	5,095	9,881
% of loggable area	3.9%	5.0%	4.4%
Area, soil & water - ha	12,804	10,989	23,793
Rotation period - net	29.6 years	23.9 years	26.8 years
- gross	9.0 years	9.0 years	9.0 years
Yields			
Output/ha - tonnes	2.85	1.93	2.43
Average yield - t/ha	73.8	38.7	55.7
note: the average yield is conceptually the harmonic mean			
Pulp yield - t/ha	90	80	87.5
Sawlog yield - t/ha	33	27	28.8

Rotation period: net is based on area logged over last 3 years
gross is based on area assessed for soil & water over last 3 years.

Table 5C: Unit Costs 05/06 - see Appendix 1

	Eden	SC-Southern	Average
Average log cost - $/tonne	20.00	27.20	22.58
Average operational cost/ha	451	423	438
Average cost/ha - $/ha **	551	488	522

Includes an allowance for head office costs and a reduction for the costs of other activities not related to forest management for timber production.
Eden includes an allowance for overhead costs of the Southern Regional Office.
** Cost/ha is based on the area assessed for soil and water.

Table 5D: Pulplog Royalty Rates and Costs 05/06 - see Appendix 1

	Eden	SC-Southern	Average
Average royalty rate/t	14.60	7.00	12.85
Average pulp cost/t	20.00	27.19	21.65*
Loss/tonne	5.40	20.20	8.80
Loss - $ million	1.66	1.86	3.52**

* The average pulp cost is not $22.58 because of the effect of the weighted average where the proportion of pulp is significantly different in Eden and SC-Southern.
** There is an additional loss of $0.02 mn on account of the supply from Tumut.

9) Eden and South Coast Southern Compared (Cont'd)

Table 5E: Costs and Revenues

Total - Southern Regional Office 05/06

	Revenue	Costs ** $mn	Net
Pulp	5.13	8.65	-3.52
Sawlogs	5.20	3.77	+1.43
Misc.	0.03	0.02	+0.01
Other	2.50	1.82	+0.68
Total	12.86	14.26	-1.40

** includes $1.99 mn for head office overheads
excludes Tumbarumba forest centre and Bombala workshop

Eden

	Revenue	Costs ** $mn	Net
Pulp	4.49	6.15	-1.66
Sawlogs	1.68	0.91	+0.77
Misc.	nil	nil	nil
Other	0.55	0.40	+0.15
Total	6.72	7.46	-0.74

** includes $1.28 mn for HO overheads

South Coast-Southern

	Revenue	Costs ** $mn	Net
Pulp	0.64	2.50	-1.86
Sawlogs	3.52	2.86	+0.66
Misc.	0.03	0.02	+0.01
Other	1.95	1.42	+0.53
Total	6.14	6.80	-0.66

** includes $0.71 mn for HO overheads

To estimate the costs of miscellaneous activities I assumed costs were 73% of revenue.

Note 1: the costs of the Southern Regional Office for Eden and South Coast-Southern in 05/06 were about $12.27 million, (excludes Tumbarumba forest centre and Bombala workshop). To this amount has been added $1.99 million for head office overheads.

Note 2: The Southern Regional Office - for Eden and South Coast-Southern - runs at a modest profit, however, when head office costs are taken into account it runs at a loss.

Method - to estimate the Costs of Eden and South Coast-Southern

1) For South Coast-Southern I wanted to split the 56 staff into 2 components - a) management staff for SC-Southern & Eden and b) operations staff for SC-Southern. Eden has 48 staff and South Coast-Southern 56 according to FNSW ESFM plans. Using the net loggable area of each region and assuming that State Forest reserves use 50% of the resources per hectare as the net loggable area for forest management, I estimated that 8 staff were used on regional management activities. This amounted to $840,000 of recurrent expenditure which I split equally between Eden and South Coast-Southern.

2) I divided the remaining workshop cost (after excluding Bombala) by 2, assuming that the cost of the workshops at Batemans Bay and Eden were about the same.

3) An allowance for head office overheads of $3.61/tonne was made using data at p35.

Revenue figures were derived from royalty rates in FNSW FOI responses, pulp royalty rates were estimated from FOI responses and ESFM plans.

10) The Supply of Pulpwood Logs is Not a Marginal Activity

Forests NSW considers pulpwood a marginal activity - an adjunct to sawlogs - hence low royalty rates based on marginal cost pricing are appropriate, (Source: FNSW verbal communication). If contractors are in the forest getting sawlogs why not get pulplogs at the same time and be thankful for the lower royalty?

That scenario simply does not accord with: i) the high volume of pulp output
ii) the RFA agreements

If something is marginal it means it's at the margin - within about 5%, perhaps up to 10%. If something is 87% of your output it isn't marginal. If it's 47% it's not marginal. Forests NSW does not view the word marginal in this way. I understand that use of the word marginal with respect to pulplogs by FNSW is associated with costs not output.

Table 6: Pulplogs, Percent of Log Input into Chipmill 05/06

Region/sub region	Pulplogs - % of Log Output 05/06	% of NSW Pulplog Input to Chipmill 05/06
	%	%
Eden	87.1	76.5
South Coast-Sth'n	46.6	22.8
Total South Coast	72.6	99.3
Tumut	7.0	0.6

Components may not add to 100% due to rounding
Table 6 does not include sawmill chips or logs from private landholders.

11) Marginal Cost or Average Cost to Price Pulplogs?

11.1) Marginal Cost

I understand that pulplogs are considered a marginal activity in as much as the management of the whole forest estate has to be undertaken in any case. Pulplogs are considered an adjunct to sawlogs. In 1995 it was considered that sales of pulpwood would increase returns on forest management with only marginal increases in costs for roading, planning and supervision. Hence marginal cost/opportunity cost is currently used to price pulplogs.

In Eden about 95% of the trees cut down are for pulplogs. The main objective is to produce pulplogs. It isn't marginal.

In South Coast-Southern pulp was about 47% of log output in 05/06.
Between 03/04 and 05/06 pulp increased by 52.5% from 60,211 tonnes to 91,854 tonnes, however the average yield - sawlogs and pulplogs - only went up 3.8%.when it should have gone up 9.2%.
Hence, the time spent on planning, supervision and post logging burns would have increased by more than what a marginal cost approach would imply.

If pulplogs are considered to be supplied at marginal cost, then sawlogs make losses of at least $2.1 mn. Use Table 5E at page 16 to derive this figure.

11.2) Average Cost
I don't consider marginal cost to be the appropriate base to use to develop pulplog royalty rates. The reasons for this are:

* If pulp is priced at marginal cost, sawlogs make losses of about $2.1 mn.
* Pulplogs are a high proportion of log output - about 87% around Eden and 47% in South Coast Southern (05/06)
* Logging for pulplogs is more intensive than for sawlogs resulting in more time spent on forest management per hectare, (after allowing for overhead costs of the Southern Regional Office to be allocated to Eden).
* Field work and office work are necessary in order for logging to occur - marginal cost for pulplogs isn't appropriate for these activities
* Forest management in the Eden region is directed to achieving a regrowth forest which benefits the chipmill. This isn't marginal.
* Integrated logging operations are overlaid by ESD principles - which suggest a holistic approach rather than a marginal one.
* One of the forces driving prices is the desire of Forests NSW to keep SEFE internationally competitive
* The marginal argument suggests there may be excess forest management resources which Forests NSW wishes to keep employed rather than redeploying them elsewhere or making them redundant. There is some evidence to support this view but more investigation is needed.

11.3) Field Work Planning, Pricing and ESD Principles
There is a considerable amount of administrative, planning and co-ordinating work involved in the office as well as field work for areas that are being logged by outside contractors. Most of the work is done in the office. Logging for sawlogs and pulplogs is integrated - but the parameters are not the same. For example, pulplogs have a higher yield per hectare, about 85-90/tonnes, than sawlogs, about 30. Environmental regulations affect sawlogs differently to pulplogs as sawlogs are more likely to found in gullies - which have environmental restrictions. Hence planning is more complicated and needs to be considered as a unified whole in order to comply with ESD principles rather than as a series of marginal events, which are kept separated for pricing purposes. This marginal approach would lead to the improper application of ESD principles during field work.

11.4 FNSW Activities to Supply Pulplogs to the Chipmill
The activities FNSW undertakes in order to supply pulplogs to the chipmill are those activities associated with the management of native forests. These include:

pre harvest planning & mapping
pre logging soil and water surveys
mark up of trees
feral animal surveys
wildlife surveys
  e.g. threatened & endangered species
supervision of logging
environmental compliance
safety compliance
post logging burns
management of cultural heritage
education programs
pest and weed control
fire fighting & fire prevention
silviculture activities

office administration
management of sales & delivery dockets
supply of data to head office
mapping
research
coupe management
road management & maintenance
liaison with the chipmill
liaison with the public
liaison with logging contractors
liaison with other South Coast offices
  e.g. Eden with Batemans Bay
liaison with head office
management of workshops
technical matters

11.5) Sawmill Waste

It is often said that without the chipmill sawmills would be less profitable and even completely unviable. There are 2 reasons.

i) Sawmill waste is chipped and sent to the chipmill.
ii) Sawmills are able to process a lower quality sawlog - and still make a profit - because the additional waste is sent to the chipmill.

The chipmill currently pays Forests NSW $12.85/tonne for pulplogs - in Victoria the rate is even lower. Sawmill waste is first chipped and then sent to the chipmill. SEFE is unlikely to pay a much higher price for sawmill chips than pulplogs. The price they do pay is not known. Say it was $15/tonne - about $17.50/cubic metre.

An alternative treatment for the waste is to combine it with green waste then chip it to produce an organic mulch. Mulches like this sell for about $25/cubic metre. In this way the sawmills would be even better off. Demand for such a product would need to be assessed as the estimated level of sawmill chips from NSW is about 35,000 tonnes/annum.

There may be other uses for sawmill waste which would provide economic returns to sawmills. For example. dyed chips for landscaping sell for about $60/cubic metre

11.6) Woodchipping Maximises the Productivity of Regrowth Forests?

In Eden the output of sawlogs has fallen from 45,026 cubic metres in 03/04 to 38,780 cubic metres in 05/06.

In Eden pulp output has not reached the 1999 RFA minimum of 345,000 tonnes per annum since 1996/97. It has fallen from around 335,000 tonnes in 1999/00 to 307,669 tonnes in 05/06.

In Eden, sawlog output comes from 2 sources i) the pulp output - (ESFM Eden p35)
iii) Eden sawlog output

Sawlogs are also supplied to Eden from Tumut (Ingebirah SF). However, I am not clear as to whether or not the FOI figure for Eden included the logs from Tumut.
A small amount was also to come from SC-Southern, but I don't know if this is occurring now.

I don't know the breakup of these sources, however, if it were known it would shed more light upon this issue.

In Eden the average yield per hectare has fallen from 89.8 tonnes/ha in 03/04 to 73.8 tonnes/ha in 05/06.

All of this shows a fall in productivity not an increase.

In South Coast-Southern productivity has also fallen. Pulp output increased by 52.5% from 2003/04 to 2005/06 however, average yield only went up 3.8% when it should have gone up 9.2%.

12) Eden

12.1) Output, Pricing and Royalty Rates

Is it true, that in Eden, pulp logging only generates marginal increases in costs for roading, planning, supervision and environmental compliance?

The answer to that question is 'No' for 4 reasons.

i) Pulp output is the the predominant forest output
ii) The RFA agreement for Eden demonstrates that pulp is the driving force of forestry in the Eden region
iii) The Eden forests are now less productive than previously
iv) If pulp is at marginal cost, then sawlogs make a loss of at least $0.89 mn.

i) Pulp is the Predominant Output

In the Eden area pulplogs are around 87% of log output by tonnage. In the late 1990's that figure was around 93%. In terms of trees actually logged that 87% would be even higher - probably closer to 95%. Pulplogs are the major forest output. Sawlogs are the minor component.

ii) The RFA agreement

Quota sawlogs were a minimum supply of 24,000 cubic metres/annum compared to pulp of 345,000 tonnes/annum. In addition 23,000 cubic metres of sawlogs/annum can be obtained from the pulp output. To rectify shortfalls in supply an additional 20,000 cubic metres of sawlogs can be supplied from Tumut. The RFA recognises that pulp is the dominant driving force not sawlogs.

iii) The Eden Forests are less Productive

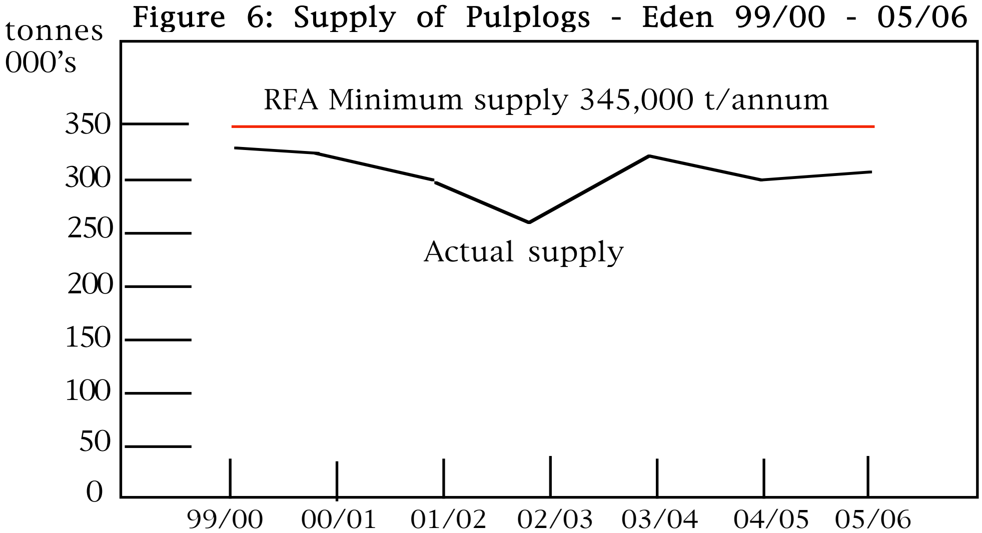
Sawlog and pulp output have fallen over time. Pulplog output has fallen from around 335,000 tonnes in 99/00 to 307,669 tonnes per annum in 05/06. The minimum 1999 RFA quantity of 345,000 tonnes has not been supplied since 96/97. Sawlog output has fallen from 45,026 cubic metres in 03/04 to 38,780 cubic metres in 05/06.

The average yield has fallen from 89.8 tonnes/ha in 03/04 to 73.8 tonnes/ha in 05/06. Productivity is falling not increasing. This adds to costs.

iv) Sawlogs Make a Loss of at least $0.89 mn if Pulp is at Marginal Cost

The loss of at least $0.89 mn can be derived from Table 5E at p16.

Figure 6: Supply of Pulplogs - Eden 99/00 - 05/06



Source: FNSW FOI response 17 5 07 See Appendix 2 page 45 Table 22 for figures

Royalty Rates, Eden
The average South Coast royalty rate has fallen since 03/04 indicating that pulp logs are being sourced from more distant sources of supply.

In Eden royalty rates are higher than in South Coast-Southern. Based on an average rate of $7 per tonne for South Coast-Southern for 05/06 the average royalty rate for Eden was estimated to be $14.60 per tonne for 05/06. The average pulplog cost for Eden was estimated to be $20 per tonne.

12.2) Forest Management Activities - Eden

One of the objectives of forest management in Eden is to have a situation by 2016 where all sawlog and pulplog output can be met by regrowth forest. Regrowth pulplogs benefit the chipmill at Eden operated by the company South East Fibre Exports because regrowth logs are considered to be higher quality. Forests NSW benefits by way of volume but not from higher prices. Under these circumstances it seems fair that the costs of forest management should be passed onto the user.

1) Pre logging Work
Field work and office work are required. These include flora and fauna surveys in the field, mark up of trees, identification of seed trees and roading as appropriate. Office work involves mapping, using data bases, harvest planning and administrative functions. Marginal cost is not appropriate for these activities given the high volume of pulp and the overlay of ESD principles which require a unified holistic approach to be taken.

2) Field Supervision
Logging activities are required to be supervised for at least the equivalent of 1 day for every week of logging. How much supervision is actually done I don’t know. Given that 95% of the trees actually logged are for pulp it is not appropriate to use marginal cost to cost this activity for pulplogs.

3) Post Logging Work
Post logging work involves post logging burns and clean up activities.

4) General Management
General management activities are undertaken to monitor forest health and to take steps to promote growth where it has been identified that this is required. General maintenance of forest infrastructure is also required. Marginal cost is not appropriate for pulplogs for these activities.

12.3) Yields and Costs of Forest Management, Eden

In Eden logging is more intensive than in South Coast-Southern. The average yield was 73.8 tonnes per hectare compared to 38.7 in South Coast-Southern for 05/06. However, the cost of forest management per hectare is higher in Eden - after allowing for overhead costs of the Southern Regional Office.

Operational costs of forest management are estimated to cost $451/ha compared to $423/ha in SC-Southern (based on area assessed for soil and water). This indicates that the more intensive logging in Eden results in higher forest management costs. This suggests that pulp is not simply a marginal cost activity.

Table 7: South Coast, Output & Yields, 03/04 to 05/06

Table 7A: Eden, Output & Yields 03/04 to 05/06

	2003/04	2004/05 tonnes	2005/06
Pulplogs	320,681	297,080	307,669
All other logs	52,680	49,018	45,373
Total - logs	373,361	346,098	353,042
Area harvested	4,160	3,580	4,786
Average yield	89.8	96.7	73.8

Comment: The 04/05 figure for the area logged looks unusual because of the odd movement in the yield figure. However, FNSW have confirmed that the figures are right.

13) South Coast-Southern

13.1) Output

South Coast-Southern has different operational characteristics to Eden. Logging is less intensive. Average yield/hectare is about half that in Eden due to the lower proportion of pulp. Individual yields for pulp and sawlogs are estimated to be about 10%-15% lower than in Eden.

Another aspect to the operational characteristics is the lower rotation period in South Coast-Southern than in Eden. Based on the average area harvested over the last 3 years the rotation period in South Coast-Southern is about 24 years compared to 30 years in Eden. Based on the area assessed for soil and water - the gross area to be logged - the rotation period in both Eden and South Coast-Southern is about 9 years.

The average cost per tonne is higher in South Coast-Southern than in Eden, but the cost per hectare is lower (see Table 5C p15). This is due to the lower yield.

13.2) Is Pulp Marginal in South Coast-Southern?
By marginal it is meant that pulp logging has little impact on costs

The FOI data provided by Forests NSW shows that the area assessed for soil and water does not bear a direct relationship with the amount of logging. In both Eden and South Coast-Southern the total loggable area will be assessed in 9 years at the current rates of assessment. This appears to be a management decision rather than one connected with the amount of logging. Under these circumstances the notion that pulp costs are marginal becomes less tenable.

The area actually logged went up 17% and output only 21% from 03/04 to 05/06 even though pulp output - which has a much higher yield than sawlogs - went up 53%. Average yield only went up 3.8% when it should have gone up 9.2%. This indicates that pulp logging does add significantly to costs. Productivity is falling. The extra costs of supervision, mark up and planning are not simply marginal.

It also appears that staff resources are being used to implement an accelerated program of soil and water assessment.

As a proportion of output, pulp has been around 40% for some time but rose to 46.6% in 05/06. The maximum permitted under the RFA is 97,000 tonnes per annum. It could be expected that pulp will rise to about 50% of log output in the future.

Sawlogs would make a loss of at least $1.20 mn if pulplogs were at marginal cost. Table 5E on page 16 shows pulp revenue as $0.64 mn and costs of $2.50 mn - using average cost. If marginal cost is used and pulp is making a profit as Forests NSW says it is, then costs would have to be $0.64 mn as a maximum. In this case another $1.86 mn has to be added to the costs of sawlogs. Sawlog costs are $2.86 mn. If we now add the $1.86 mn then sawlog costs would be $4.72 mn. However, sawlog revenue is $3.52 mn. Hence if pulp were priced at marginal cost then sawlogs would be making a loss of at least $1.20 mn.

Another aspect of logging operations is the high proportion of salvage sawlogs. Salvage sawlogs plus pulp constituted 69.7% of log output in 05/06. Looked at in this light pulp and salvage sawlogs don't constitute a marginal cost activity.

13.3) Pricing of Pulp logs

In South Coast-Southern pulplog royalty rates are thought to be around $7 per tonne. The lower rate is based on distance from the chipmill so that the landed cost to the chipmill is kept around $55 per tonne.

The logging of pulp logs is a planned activity undertaken with purpose and intent. In South Coast Southern it is used to supplement pulp logging in Eden. However, it will take on a more active role - up to 97,000 tonnes per annum - as the Eden area has not supplied the minimum tonnage under the RFA since 96/97.

Pulp is more than a supplement to sawlogs. It is a high proportion of output. When pulp and salvage sawlogs are combined they are almost 70% of log output in South Coast-Southern. Moreover, productivity is falling. The very sharp increase in pulp output in 05/06 only resulted in an increase in yield of 3.8% when it should have gone up 9.2%.

Average cost in South Coast-Southern is around $27/tonne. This is significantly higher than the pulp royalty rate, which is thought to be around $7/tonne. Pulp royalty rates are kept low due to distance from the chipmill. The pricing decision appears to be a pragmatic one - rather than one based on marginal cost or opportunity cost.

Table 7B: South Coast-Southern: Output & Yields 03/04 to 05/06

	2003/04	2004/05 tonnes	2005/06
Pulp logs	60,211	64,050	91,854
All other logs	102,715	96,816	105,245
Sub total - logs	162,926	160,866	197,099
Area harvested	4,363	3,361	5,095
Average yield	37.3	47.9	38.7

Comment: The 04/05 figure for the area logged looks unusual because of the odd movement in the yield figure. However, FNSW have confirmed that the figures are right. Pulp output has gone up 43% from 04/05 to 05/06 but the average yield has fallen.

14) Forest Management in Eden is Predominantly for the Chipmill

Another reason given by FNSW for low royalty rates is that pulplogs are of poorer quality, hence low royalty rates are appropriate. This simple piece of logic obscures a much bigger picture - forest management in the Eden region is predominantly for the chipmill company South East Fibre Exports (SEFE). For South Coast-Southern there is less emphasis on pulplogs - but they were 46.6% of log output by tonnage for 05/06. Moreover, the Southern Regional Office would need to spend a significant amount of time co-ordinating pulplog and sawlog operations across the Eden region and the South Coast-Southern sub region so that operational goals were met and ecological values were maintained in accordance with ESD principles.

Low royalty rates facilitate changing mature/mixed forest into regrowth forest - to benefit SEFE so it can maximise its sales of regrowth woodchips.

The importance of pulplogs in forest management was made clear at an Administrative Decisions Tribunal Planning Meeting in September 2006.

Forest Management and the Chipmill

> "If SEFE folded as a company, FNSW activity to manage for a more valuable forest resource would sharply decline."

Source: FNSW, document tabled at Administrative Decisions Tribunal Planning Meeting, September 2006

A more valuable forest resource means regrowth forest to make regrowth woodchips which sell for a premium of 32% over mature woodchips. This more valuable forest resource benefits SEFE not FNSW because the royalty rate is the same.

In 1998 State Forests NSW said that by 2016 all pulpwood and sawlog output from the Eden CRA region could be met by regrowth forest. (Source: SFNSW & Bureau of Resource Sciences, Eden Forest Resource and Management Systems Report, executive summary para 6 May 1998.)

In the Eden region sawlog output has fallen by about 70% since 1975, pulp output by 40% from 1976 to 2006. For South Coast-Southern, quota sawlogs have fallen from 80,100 cu metres in 1992 to a minimum of 52,850 cu metres under the RFA, a fall of 34%. Pulp has fallen by 26% from 1995 to 2005, but rose 43% to 91,854 tonnes in 05/06. Maximum pulp output under the RFA is 97,000 tonnes/annum.

There have been changes in land tenure and environmental regulations which have caused falls in output from State Forests. However, in the Eden region, sawlog output has fallen much more than pulp output, suggesting that the high volume of pulp output may be affecting non quota sawlogs.

Since 1970 about 155,000 (estimated) hectares of mature/mixed forest in SE NSW has been changed into regrowth. Some of this has since gone into National Parks. This process continues today. About 65% of the trucks entering the chipmill carry logs from mature/mixed forest.

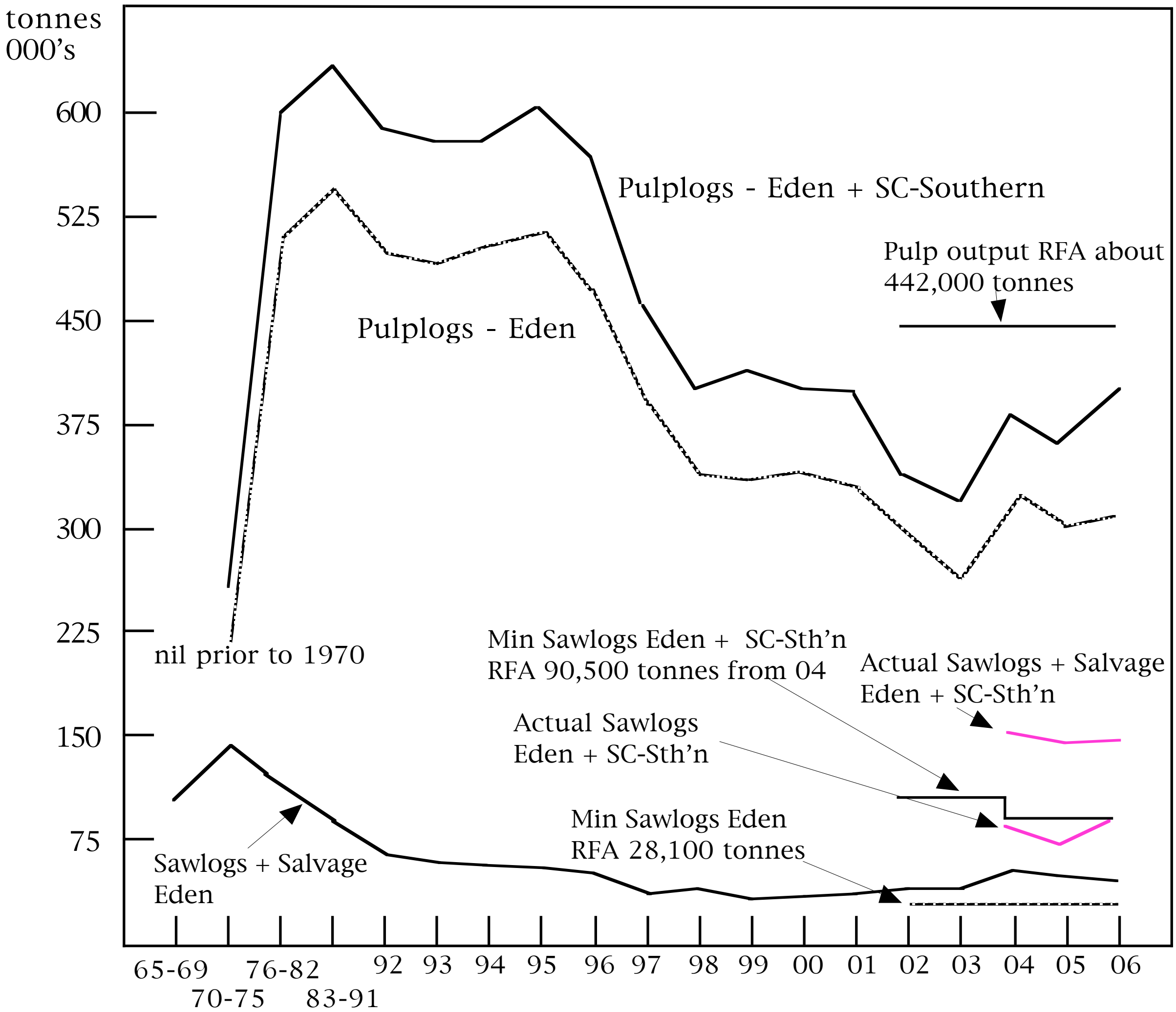
For details of the supply arrangements in Eden see page 46

FNSW Intentions for the South East Forests

"This resource (the SE forests) dating from the early 1970's onwards, will provide for a world wide, regionally based timber processing complex in the future with the potential to manufacture a broad range of timber products for consumption by the expanding domestic and export market."
Source: FNSW, document tabled at Administrative Decisions Tribunal Planning Meeting, September 2006
These objectives are currently not in view. It appears that the current strategy is to promote regrowth forests in order to provide a higher value woodchip for South East Fibre Exports to export to Japan, particularly around Eden.

High quality sawlog output from Eden+SC-Southern under the RFA's is a minimum of 90,500 tonnes from 04. High quality+non-quota is 117,400 tonnes. 05/06 output of high quality was 90,007 tonnes, (149,777 tonnes incl. salvage logs). Pulp output under the RFA's is about 442,000 tonnes - 4.9 times more than high quality sawlogs and 3.76 times more than high quality+non-quota. Hence pulp is about 79% of output under the RFA's in terms of the planning horizon.

Figure 7: Pulplogs & Sawlogs, South Coast, tonnes/annum 1965-06



The volumes given in the RFA's for Eden and South Coast-Southern are minimums, except for pulp from SC-Southern. The minimum pulp output of 345,000 tonnes from Eden is not being supplied, even though the chipmill's exports increased by 24% in 2006. This suggests that 345,000 tonnes minimum is effectively a maximum.

See Tables 18, 22 & 23, pages 41, 45 & 46 for data

One of FNSW's objectives is to ensure that the chipmill receives low price pulplogs. There are 2 main reason for this:

1. To ensure SEFE remains internationally competitive.
2. To protect the employment of FNSW South Coast staff, chipmill staff and private logging contractors.

> "On the other hand, FNSW has every reason to desire that SEFE remains competitive in the international woodchip market."

Source: FNSW, document tabled at Administrative Decisions Tribunal Planning Meeting, September 2006

FNSW's concerns about employment would be better met if FNSW staff, chipmill staff and drivers/loggers worked on other activities which benefited the regional economy more. See page 30. This is particularly true in the the light of the estimated losses on the supply of pulplogs to SEFE.

15) Economic Issues

15.1) Employment at the Chipmill Compared to NSW Manufacturing

Employment at chipmill 2006	82
Wages as a percent of total revenue	6.0%
NSW Manufacturing average	15.2%

Source: ABS 8221.1.55.001, SEFE Financial Report 2006

A similar sized manufacturing company as South East Fibre Exports would employ twice as many people as the chipmill. Contract drivers/loggers, 75, are also a major consideration - however, other manufacturing enterprises also have drivers making deliveries and have components and other goods supplied to them by many other firms.

15.2) Employment & Foreign Owned Profits (Affect Balance of Payments)

The chipmill's after tax profit for 2006 was equivalent to 90 jobs going offshore.

Employment at chipmill	82	
Loggers/truck drivers	75	
FNSW staff	64	FNSW has 104 staff in the Eden region & SC-Southern sub region. An estimated 64 of them are used on pulpwood activities.
Vic Forests staff	not known	
Subtotal	221	
Less BOP effect	90	
Net Employment	131	+ unknown amount from Vic Forests.

Balance of Payments Effect
All of the after tax profit of the chipmill is treated as investment income payable abroad in the Current Account - even if the profits stay in Australia, because the chipmill is 100% foreign owned. For the year ended 31 December 2006 the chipmill's after tax profit was $6.840 million - equivalent to 90 jobs going offshore.

15.3) Employment and Losses on Pulpwood Logs

Estimated losses FNSW	$3.54 million	supplies about 39.4% of logs
Estimated losses Vic Forests	$5.44 million	supplies about 60.6% of logs
Total losses	$8.98 million	

Direct Wages at Chipmill	$6.21 million
Employee benefits expense	$0.77 million
Wages of loggers/drivers	$5.63 million
Total	$12.61 million

A recent advertisement for a log truck driver had a wage package of $75,000 pa. This is higher than the figures provided in ABS statistics. I have used the higher figure in the advertisement.

The total losses, estimated at $8.98 mn, are equivalent to the wages of all chipmill staff plus their employee benefits plus about 35% of the wages of loggers/drivers. (Vic Forests is thought to make more losses on the supply of its logs to the chipmill than FNSW. However, information to calculate the losses is not available in detail. It has been assumed that the losses are at the same rate as the estimated losses of FNSW.)

Forests NSW is a very strong supporter of the chipmill on economic grounds. However, the employment at the chipmill is possible because logs are supplied at a loss by domestic interests. In addition, the foreign owned after tax profits are a negative item in the Current Account in Australia's Balance of Payments.

The South Coast region would be better off if Forests NSW used its skills and expertise to benefit domestic interests. Employment could be expanded compared to that provided by the chipmill on a wider economic platform, thereby widening the penetration of economic benefits in the community.

15.4 Exports and the Chipmill - year ended 31 December 2006

Exports for calendar year 05	$91.545 million
Export tonnage	1,060,407
Average price/tonne	$86.33

Exports of Woodchips.

It is not made clear in SEFE's Financial Reports that the sales figure shown in the Revenue Statement includes a significant component for domestic fuel sales.

Para 2 on page 2 of the 2006 Financial Report says that the weighted average price of woodchips fell by 1.8% compared to 2005. The average price in 2005 was estimated to be $87.91/tonne, suggesting that the average price in 2006 was $86.33/tonne.

Hence total sales of woodchips for 2006 were approximately$91.545 million.
See page 51, para 2 for further information about this figure.

SEFE's total revenue = sales of woodchips + sales of fuel + other income + interest received

$103.084 mn = $91.545 mn + $10.090 mn + 0.156 mn + $1.293 mn

Table 8: Breakdown of Woodchip Export Price of $86.33/tonne, 2006

	$/tonne
Average log royalty - Vic & NSW	11.56
Payment to logging contractors	46.89
Processing overheads	6.15
Subtotal: Cost of chips sold	**64.60**
Remuneration of chipmill employees	5.86
Employee benefits expense	0.72
Depreciation	1.67
Repairs & Mtce + Other expenses	5.22
Borrowing costs	0.19
Transfer of plantation expense	0.68
Subtotal - Expenses	**78.94**
Earnings before tax attributable to woodchips/tonne	7.39
Equals: Total woodchip price	**86.33**
Less BOP effect - after tax	(6.45)
Less Losses - FNSW, Vic Forests	(8.80)
Equals Net export price	**71.08**

Source: SEFE, Financial Report year ended 31 December 2006

Table 8 has been compiled on the basis that SEFE's fuel sales to log truck operators are at cost. See page 52 for the effect of changing this assumption. If fuel is sold at a profit then the earnings attributable to woodchips falls.

The economic benefits are narrowly focussed on logging contractors. About half of every export dollar is spent on logging contractors - and most of this is for the cost of running log trucks and heavy equipment, most of which are imported. The actual wage component, of loggers/drivers is about 6.1%.

Of the remaining monies another 6% can be identified on repairs & maintenance and other expenses, which would bring benefits to the local economy. However, an alternative business venture on the chipmill site would also provide similar benefits.

The wage cost of chipmill employees, plus their employee benefits plus the wages of loggers/drivers is about 13.8% of every export dollar and the estimated losses from FNSW and Vic Forests account for 71% of this.

After tax profits for 2006 were $6.840 million. Even if all of these profits remain in Australia they are still treated as investment income payable abroad in the Current Account in the Balance of Payments. This is because the Balance of Payments is compiled on an ownership basis not place of domicile.

16) Future Directions

The South Coast region and Forests NSW would be better off if Forests NSW were to channel its energies and expertise into other endeavours that benefited itself and domestic interests more, rather than supplying pulplogs at a loss to a foreign owned chipmill.

This approach would give more employment than is generated by the chipmill.

A number of endeavours may be appropriate. For example, Forests NSW could be a partner in a business technology development park or similar endeavour focussed around timber and the use of complementary products using the existing chipmill site and staff but utilising the facilities in a different way. Alternatively, another site could be used. A number of different business initiatives could be developed.

Another endeavour could be focussed around the economic use of sawmill waste. For example, it could be combined with green waste and turned into organic mulch which sells for about $25/cubic metre. Another option would be the supply of dyed sawmill chips for landscaping. I understand that these sell for about $60/cubic metre.

The pulplogs to be left in the forest - where they would do more benefit to the forest ecosystem, the health of the community generally and assist with preventing climate change than as woodchips.

Appendix 1: Forests NSW Costs

FNSW Average Product Cost

To estimate the average product cost per tonne (over all FNSW products), I made some adjustments to the cost data as given in FNSW Annual Reports.

Adjustments Made to FNSW Cost Figures

1) I sourced FNSW costs from FNSW Annual Reports for 03/04, 04/05 and 05/06.

2) For 05/06 I made an adjustment to 2 cost items - 'employees & related' & 'Other' using an FOI response from FNSW - to put them on the same accounting basis as in 04/05.

3) I applied revenue from contract harvest & haulage against costs for the same item in the revenue statement and treated the resulting profit as a negative cost.

4) I reduced costs by the grant received for Community Service Obligations. The grant covers about 93% of the costs. The residual costs are considered to be part of prudent forest management and hence attributable to product costs. To remove this item from output costs, I adjusted the original cost items using a prorata method. I removed the expenditure from the cost categories on the basis of the existing percentage distribution for each year, excluding profit on contract harvest & haulage and contractors' costs.

5) I reduced costs by the amount received for other State Government grants - which were received for the Interim Assessment Process and related Comprehensive Resource Assessments. I adjusted the original cost items by removing the grants from employee & related costs, fees and other costs using a prorata method.

6) I also removed the costs associated with the revenue item 'Other Services Rendered' from output costs by calculating costs as 70% of revenue for this item, based on information in the 04/05 Annual Report for FNSW at pages 9 & 22. I adjusted the original cost items by removing the costs from 'employees & related' costs and 'other' costs on a prorata basis.

7) Gains and losses from the performance of the superannuation fund were excluded from costs and revenues as this item is related to the performance of the stock market rather than FNSW operational activities.

8) Contractors Costs. To estimate the costs of supplying hardwood pulplogs I removed contractors' costs from my estimation procedure as they refer to plantations.

9) Research, Education, Training & Cultural Awareness expenditure. FNSW spent $6.9 mn on research, $4.2 mn on education, $2.9 mn on training & conducted 260 cultural heritage surveys in 05/06. This expenditure has not been excluded from costs because it is part of prudent forest management and hence attributable to product costs.

10) Nurseries: I did not remove nursery costs from output costs for 2 reasons.
   i) To estimate hardwood pulplog costs it is not necessary to remove nursery costs providing their cost structure is similar to the rest of FNSW's activities.
   ii) For total product costs, nursery costs are part of the fabric of FNSW and hence are attributable to product costs.

Table 9: FNSW Cost Structure - Original

	2003/04	2004/05	2005/06
	$000's	*$000's*	*$000's*
Profit on contract harvest & haulage	(3,286)	(1,471)	(180)
Contractors	14,424	12,143	12,104
Depreciation	9,420	10,148	9,784
Employees & related	70,246	72,523	76,199**
Superannuation gains & losses	excluded	excluded	excluded
Materials	15,352	18,176	18,902
Fees	12,512	9,339	10,034
Other	12,018	23,798	18,335**
Sub total	130,686	144,656	145,178
Less: State Gov't grant for Community Service Obligations	(9,455)	(9,557)	(9,557)
: Other Government grants	(4,759)	(6,789)	(6,414)
: Costs of Other Services rendered	(13,763)	(12,671)	(11,866)
Total	102,709	115,639	117,341
Average cost/tonne $	22.10	25.70	25.72
Average royalty/tonne $	28.14	28.49	29.52

Source: FNSW Annual Reports 2003/04, 2004/05 & 2005/06, FOI response 15 March 2007

** These figures were adjusted to put them on the same basis as the 2004/05 figures using a FNSW FOI response of 15 March 2007.

Table 10: FNSW Royalties & Output

	20003/04	2004/05	2005/06
Royalties - from sale of timber & related products - $000's	130,782	128,188	134,668
Total Output - tonnes	4,647,971	4,499,639	4,561,694

Comment

FNSW also has other sources of revenue in addition to timber and related products and State Government grants.

Table 11: FNSW: Other Sources of Revenue

	2003/04	2004/05	2005/06
	$mn	$mn	$mn
Sale of non current assets	4.4	20.1	(1.5)
Profit on other services rendered	5.9	5.4	5.1
State Government capital grants	4.0	-	-
Superannuation gain	0.9	6.2	33.4
Rental of premises	2.7	3.0	2.9
Interest received	0.4	0.4	0.6

(Revenue from State Government grants for community service obligations and other Government grants have not been included since they have been removed from FNSW costs.)

It may be suggested that some of the cost/tonne calculated in Table 9 relates to these other income items, (excluding 'profit on other services rendered'). However, the costs would be mainly administrative or technical ones and are part of the fabric of Forests NSW.

Table 12: FNSW Cost Structure - Adjusted

	2003/04 $000's	2003/04 %	2004/05 $000's	2004/05 %	2005/06 $000's	2005/06 %
Profit on contract harvest & haulage	(3,286)	(3.2)	(1,471)	(1.3)	(180)	(0.1)
Contractors	14,424	14.0	12,143	10.5	12,104	10.3
Depreciation	8,673	8.5	9,422	8.1	9,086	7.7
Employees & related	49,406	48.1	53,153	46.0	56,494	48.1
Superannuation	-	-	-	-	-	-
Materials	14,142	13.8	16,885	14.6	17,545	15.0
Fees	10,891	10.6	8,070	7.0	8,702	7.4
Other	8,459	8.2	17,437	15.1	13,590	11.6
Total	102,709	100.0	115,639	100.0	117,341	100.0
Average cost/tonne $	22.10		25.70		25.72	

Employee Cost as a Percentage of Total Costs

To estimate the head office percentage, I added back to total costs in Table 12, 'Other government grants' and the costs of 'other services rendered'. I then added back to employee & related costs the amounts from 'Other government grants' and costs of 'Other services rendered' that I had estimated were for employee & related costs. I then calculated the percentage that employee & related costs were of total costs.

Table 13: Employee & Related Costs as a Percentage of Total Costs

	Original Table 9 (using Sub total) %	Average Operational %	. Head Office Percentage %	Southern Regional Office %
2003/04	53.8	56.0	60.6	62.0
2004/05	50.1	51.4	54.8	57.0
2005/06	52.5	53.7	57.3	59.6

Head Office:	Table 12 adj. for Contractors, Add back: Other Gov't Grants and costs of other services rendered
Average Operational	Table 12 adj. for Contractors' costs
Southern Regional Office	Estimated from parliamentary question 0167

Table 14: Estimated Costs of Supply of Pulplogs - South Coast Method 1

	2003/04	2004/05	2005/06
		$ Million	
Direct Costs			
Employee costs	3.996	4.322	4.513
Other	2.453	3.260	3.060
Subtotal	6.449	7.582	7.573
Indirect Costs			
Head Office Overheads	1.154	1.347	1.442
Total	7.603	8.929	9.015
Average pulp cost		$/tonne	
South Coast	19.96	24.73	22.56

See p35 for the derivation of these figures

FNSW Staff - Eden, South Coast-Southern, Tumut

Eden	48	Source: ESFM Eden p45
South Coast-Southern	56	ESFM South Coast-Southern p48
Tumut	7	ESFM Tumut p47

Head Office Staff

I was advised by FNSW that there were 272 Head Office staff (Source: FNSW verbal communication). These are mainly administrative, research and technical.

South Coast Offices and Workshops

In the South Coast area FNSW has administrative offices and workshops at Eden and Batemans Bay and a forest centre at Narooma - these were valued at $2.4 million at 30 June 2004.

Tumut Sub Region

In the Tumut sub region there is a forest centre at Tumbarumba. I understand that there are 7 staff there who manage the native forests in the Tumut sub region. 2,534 tonnes of native forest pulplogs were supplied to the Eden chipmill from Tumut sub region in 2005/06. (Source FNSW, FOI response 17 5 07).

Southern Regional Office

I understand that the Southern Regional Office co-ordinates the activities of the Eden & Batemans Bay offices and workshops, the Narooma and Tumbarumba forest centres, the Narooma depot and the Bombala workshop. I understand that the Southern Regional Office is located at Batemans Bay.

Sales from Native Forests from Timber Licenses for Misc. Items

In addition to log sales, there are also sales of fencing timber, firewood and other miscellaneous items under the authority of timber licenses. For the South Coast (excluding Tumut), these items contribution to tonnage and sales dollars were.

	03/04	04/05	05/06
		%	
Misc. items - tonnage, %	3.5	4.7	3.5
- sales $, %	0.09	1.4	1.3

Sales Not from Timber Licenses

These sales involve the issue of licenses and permits. E.g., bee permits, forest products licenses, grazing permits, occupation permits and special purpose permits. These sales were about 22% (weighted average) of total sales - Eden 9%, 2001/02, South Coast-Southern 37% in 2002/03

Method 1

1) To estimate staff resources used on pulplog harvesting & sales for the South Coast area:
   * I estimated that 15% of staff resources were used on activities other than those related to log harvesting and sales. These activities were:
     - sales from native forests from timber licenses for miscellaneous items
     - sales from native forests not from timber licenses
     - co-ordinating activities of the Southern Regional Office with the Native Forests Tumut sub region office located at Tumbarumba
     - other activities not related to log harvesting & sales,
   * I then used the percentage of log output that was for pulplogs to derive an estimate of staff resources used on pulplog activities. Hence, whilst pulplogs were 71%-73% of South Coast log output staff resources used were 60%-62%.
2) I then used the percentages I had derived in Table 13 to estimate total direct costs for pulplogs for the South Coast - where South Coast means Eden region plus South Coast-Southern sub region.
3) I then made an estimate of head office costs attributable to the South Coast output of pulplogs.

Method 1 - Using FNSW Annual Reports

	03/04	04/05	05/06
Total Output NSW - tonnes	4,647,971	4,499,639	4,561,694
Pulplogs South Coast- tonnes	380.892	361,130	399,523
% of staff resources on logs	85%	85%	85%
Pulplogs Sth Coast as a % of South Coast log output	71.0%	71.2%	72.6%
South Coast staff - 48+56	104	104	104
Pulplogs, staff resources	62.8	62.9	64.2
Average employee cost	$65,104	$69,801	$71,281
- adjusted For SES staff	$63,664	$68,671	$70,332
Employee cost for native forest pulplogs - excl. SES	$3.996 mn	$4.322 mn	$4.513 mn
Employee cost as % of costs			
- Head office percentage	60.6%	54.8%	57.3%
- South Coast percentage	62.0%	57.0%	59.6%
Total Direct Pulp Costs	$6.449 mn	$7.582 mn	$7.573 mn
FNSW Head office staff	272	272	272
Employee costs - incl. SES	$17.71 mn	$18.99 mn	$19.39 mn
Total HO Costs	$29.22 mn	$34.65 mn	$33.84 mn
Average HO overheads/tonne	$6.29/tonne	$7.70/tonne	$7.42/tonne
Allocation rate - native forests	$3.07/tonne	$3.73/tonne	$3.61/tonne
- plantations	$7.67/tonne	$9.33/tonne	$9.04/tonne
Assumption: For every $1 of HO costs for native forests I allocated $2.50 to plantations			
Indirect Pulp Costs.			
Pulplogs: Head Office costs applicable to South Coast	$1.154 mn	$1.347 mn	$1.442 mn
Total Cost	$7.603 mn	$8.929 mn	$9.015 mn
Cost/tonne	$19.96	$24.73	$22.56

Unit costs are discussed on pages 15 to 23. See also page 39.

Method 2: Costs and Revenues of the Southern Regional Office

Answer to Parliamentary Question 0167, part 1, a, b, c

Question 0167 of 19 September 2006

1. What is the annual cost of operating the:
    a. offices, research activities and workshops of Forests NSW in Eden?
    b. offices and workshops of Forests NSW in Batemans Bay?
    c. Narooma Forest Centre?

FNSW Answer of 24 October 2006

1.(a) to (c) The Southern Regional Office recurrent expenditure in 2005-06 was $11.689 million. This represents the cost of all Forests NSW Native Forests Operations Branch activities based collectively on the Batemans Bay (including Narooma depot), Eden and Tumbarumba work centres. The expenditure cannot be split further on a geographic basis because it is only available at the Regional level.

The gross cost of operating Eden, Batemans Bay and Bombala Workshops last financial year was $1,383,000. The accounts of each workshop are not separated.

Estimated Cost of research activities in Eden 2005-06:
Total: $396,029 (mainly comprising the Eden Burning Study $237,136)

Source: Parliamentary Questions & Answers, Paper No. 23

To derive costs for the Eden region plus South Coast-Southern subregion I proceeded as follows.

i) I multiplied the $11.689 mn by 93.7% - since Tumbarumba has 7 staff used on native forest management and Eden plus South Coast-Southern has 104. 7/111 = 6.3% and I assumed that recurrent expenditure varied according to the number of staff employed.

ii) I multiplied the $1.383 mn by 0.666 - to remove Bombala (in the Monaro region) assuming each workshop cost about the same to run.

iii) I added an allowance for head office overheads of $3.61/tonne, which I obtained on page 35.

Table 15: FNSW, Operating Costs, Native Forests, South Coast, 05/06

	2005/06 $ mn
Native Forests Operations Branch	10.95
Eden, Batemans Bay, workshops	0.92
Research	0.40
Sub total	12.27
Head office overheads	1.99
Total	14.26

South Coast means South Coast-Southern plus Eden

Table 16: Cost Structure of the Southern Regional Office 05/06

Table 16A: Costs of the Southern Regional Office 05/06*

	Total	Eden	SC-Sth'n
	$mn	$mn	$mn
Operational costs	10,11	5.06	5.05
Regional management costs	0.84	0.42	0.42
Subtotal NF Operations Branch	10.95	5.48	5.47
Eden, Batemans Bay workshops	0.92	0.46	0.46
Research	0.40	0.24	0.16
Subtotal	12.27	6.18	6.09
Add Head Office overheads	1.99	1.28	0.71
Total	14.26	7.46	6.80

* Excludes Tumbarumba Forest Centre and Bombala workshop

Table 16B: Unit Costs of Log Output - Southern Regional Office 05/06

	Total	Eden	SC-Sth'n
Total Cost	14.26 mn	7.46 mn	6.80 mn
Less costs of other activities	1.84 mn	0.40 mn	1.44 mn
Equals Log Costs	12.42 mn	7.06 mn	5.36 mn
Log Output -tonnes	550,141	353,042	197.099
Average log cost/tonne - $/tonne	22.58	20.00	27.19

See also p39

Table 16C: Unit Costs per Hectare 05/06

Log Cost - $mn	12.42	7.06	5.36
Less Head Office overhead - $mn	1.99	1.28	0.71
Equals Direct operational cost - $mn	10.43	5.78	4.65
Area assessed for soil & water - ha	23,793	12,804	10,989
Average operational cost/ha - $/ha	438	451	423
Average cost/ha, including HO costs - $/ha	522	551	488

Method - to estimate the Costs of Eden and South Coast-Southern

1) For South Coast-Southern I wanted to split the 56 staff into 2 components - a) management staff for SC-Southern & Eden and b) operations staff for SC-Southern. Eden has 48 staff and South Coast-Southern 56 according to FNSW ESFM plans. Using the net loggable area of each region and assuming that State Forest reserves use 50% of the resources per hectare as the net loggable area for forest management, I estimated that 8 staff were used on regional management activities. This amounted to $840,000 of recurrent expenditure which I split equally between Eden and South Coast-Southern.

2) I divided the remaining workshop cost (after excluding Bombala) by 2, assuming that the cost of the workshops at Batemans Bay and Eden were about the same.

3) An allowance for head office overheads of $3.61/tonne was made using data at p35.

Table 16D: Costs & Revenues of the Southern Regional Office by Type of Output, 05/06

Total - Southern Regional Office

	Revenue	Costs ** $mn	Net
Pulp	5.13	8.65	-3.52
Sawlogs	5.20	3.77	+1.43
Misc.	0.03	0.02	+0.01
Other	2.50	1.82	+0.68
Total	12.86	14.26	-1.40

** includes $1.99 mn for head office overheads, excludes Tumbarumba forest centre & Bombala workshop

	Eden			South Coast-Southern		
	Revenue	Costs ** $mn	Net	Revenue	Costs ** $mn	Net
Pulp	4.49	6.15	-1.66	0.64	2.50	-1.86
Sawlogs	1.68	0.91	+0.77	3.52	2,86	+0.66
Misc.	nil	nil	nil	0.03	0.02	+0.01
Other	0.55	0.40	+0.15	1.95	1.42	+0.53
Total	6.72	7.46	-0.74	6.14	6.80	-0.66

Eden: ** includes $1.28 mn for HO overheads

South Coast-Southern: ** includes $0.71 mn for HO overheads

To estimate the costs of other activities I assumed costs were 73% of revenue.

Table 16E: Pulplog Royalty Rates and Costs 05/06

	Eden	SC-Southern	Total
Average royalty rate/t*	14.60	7.00	12.85
Average pulp cost/t	20.00	27.19	21.65**
Loss/tonne	5.40	20.20	8.80
Loss - $ million	1.66	1.86	3.52

* average royalty rates have been estimated from FNSW FOI responses and ESFM plans.

** The average pulp cost is not the average log cost of $22.58/tonne shown on page 15 Table 5C because of the effect of the weighted average where the proportion of pulp is significantly different in Eden and SC-Southern.

Integrated Operations and Pulpwood Costs

When estimating pulpwood costs I have borne in mind that logging operations are integrated. Around Eden the ratio of sawlogs to pulplogs is about 1: 9.
For the South Coast-Southern sub region the ratio was about 1.15 : 1 by tonnage for 05/06. In earlier years the ratio was about 1.5 : 1 by tonnage

I received verbal advice from FNSW that marginal cost was appropriate when computing the cost of supplying pulplogs. However, with 87% of logging operations around Eden directed to supplying pulplogs it did not appear appropriate that pulplogs could be considered a marginal activity. Similarly in the South Coast-Southern sub region about 47% of log output was pulplogs in 05/06. The figures suggested that pulplogs were not a marginal activity.

I note that the word marginal also has a meaning with respect to costs as well as a meaning with respect to output. In terms of costs it is meant that pulp logging can occur with only minor increases in costs. I have addressed this issue at pages 17-23.

The methods I have used to estimate pulplog costs imply that the unit costs of sawlogs and pulplogs within each sub region are the same. Whilst operational yields are different it is not Forests NSW that does the harvesting - that is done by contractors. FNSW does pre logging planning, logging supervision and post logging work. Field work and office work are required. I have outlined the activities on page 18. Under ESD principles the work needs to be holistically integrated in order to meet operational goals and maintain ecological values. There is also a significant co-ordinating role for the Southern Regional Office. It needs to co-ordinate goals and objectives across Eden and South-Coast Southern where the operational and ecological characteristics are different. Under these circumstances it appeared to me that unit costs would be similar for pulplogs and sawlogs.

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Appendix 2: Forests NSW Output

South Coast means: Eden + South Coast-Southern

Table 17: NSW Total Output & Native Forest Log Output

	2003/04	2004/05	2005/06
Total output - tonnes	4,647,971	4,499,639	4,561,694
Hardwood NF log output - tonnes	1,355,494	1,253,876	1,324,288
Native Forest pulplogs - tonnes	491,292	467,810	504,259
% Pulpwood	36.2%	37.3%	38.1%
South Coast			
Hardwood NF log output - tonnes	536,287	506,964	550,141
Native Forest pulplogs - tonnes	380,892	361,130	399,523
% Pulplogs South Coast	71.0%	71.2%	72.6%

Source: FNSW Annual Reports 03/04, 04/05, 05/06, FOI response 17 5 07

Table 18: South Coast Native Forest Output 2005/06 - 2003/04

Table 18A: FNSW FOI: Native Forest Output by Sub Region, 05/06, tonnes

	Graded Sawlogs	Salvage Logs	Pulplogs	Other Logs	Sub total Logs	Misc.	Total
Eden	31,088	14,285	307,669	nil	353,042	nil	353,042
SC-Sth'n	58,919	45,485	91,854	841	197,099	3,794	200,893
South Coast	90,007	59,770	399,523	841	550,141	3,794	553,935
Tumut	23,098	16,743	2,534	nil	42,375	15,363	57,738
Total pulp			402,057				

Table 18B: FNSW FOI: Native Forest Output by Sub Region, 04/05, tonnes

	Graded Sawlogs	Salvage Logs	Pulplogs	Other Logs	Sub total Logs	Misc.	Total
Eden	30,880	18,138	297,080	nil	346,098	280	346,378
SC-Sth'n	48,914	47,400	64,050	502	160,866	1,534	162,400
South Coast	79,794	65,538	361,130	502	506,964	1,814	508,778
Tumut	19,612	19,243	nil	nil	38,855	18,255	57,110
Total pulp			361,130	531			

Table 18C: FNSW FOI: Native Forest Output by Sub Region, 03/04, tonnes

	Graded Sawlogs	Salvage Logs	Pulplogs	Other Logs	Sub total Logs	Misc.	Total
Eden	32,301	20,379	320,681	nil	373,361	43	373,404
SC-Sth'n	57,590	44,745	60,211	380	162,926	619	163,545
South Coast	89,891	65,124	380,892	380	536,287	662	536,949
Tumut	35,312	18,020	nil	nil	53,332	17,910	71,242
Total pulp			380,892				

Source: FNSW FOI response 17 5 07
Other logs are: Girder, pole, pile & veneer   Misc. is mainly firewood, fencing & wood blocks

Table 19A: FNSW Output - Product Type by Source, 2005/06

	Hardwood Native Forest	Hardwood Plantations	Cypress Pine Forest	Softwood Plantations	Total
			Tonnes		
Pulpwood	504,259	39,433	nil	983,298	1,526,990
Sawlogs	777,790	75,306	54,650	1,964,487	2,872,233
Veneer logs	11,838	3,733	nil	44,464	60,035
Poles	30,401	13,496	nil	nil	43,897
Round timber	nil	nil	nil	27,706	27,706
Sub total	1,324,288	131,968	54,650	3,019,955	4,530,861
Other	30,833	-	-	-	30,833
Total	1,355,121	131,968	54,650	3,019,955	4,561,694

Table 19B: FNSW Output - Product Type by Source, 2004/05

	Hardwood Native Forest	Hardwood Plantations	Cypress Pine Forest	Softwood Plantations	Total
			Tonnes		
Pulpwood	467,810	35,991	nil	1,042,458	1,546,259
Sawlogs	747,575	86,502	72,285	1,828,938	2,735,300
Veneer logs	11,294	3,581	nil	76,806	91,681
Poles	27,197	10,104	nil	nil	37,301
Round timber	nil	nil	nil	34,895	34,895
Sub total	1,253,876	136,178	72,285	2,983,097	4,445,436
Other	54,203	-	-	-	54,203
Total	1,308,079	136,178	72,285	2,983,097	4,499,639

Table 19C: FNSW Output - Product Type by Source, 2003/04

	Hardwood Native Forest	Hardwood Plantations	Cypress Pine Forest	Softwood Plantations	Total
			Tonnes		
Pulpwood	491,292	35,040	nil	1,045,217	1,571,549
Sawlogs	827,662	94,159	78,001	1,859,732	2,859,554
Veneer logs	9,316	6,414	nil	78,499	94,229
Poles	27,224	9,511	nil	nil	36,735
Round timber	nil	nil	nil	45,595	45,595
Sub total	1,355,494	145,124	78,001	3,029,043	4,607,662
Other	40,309	-	-	-	40,309
Total	1,395,803	145,124	78,001	3,029,043	4,647,971

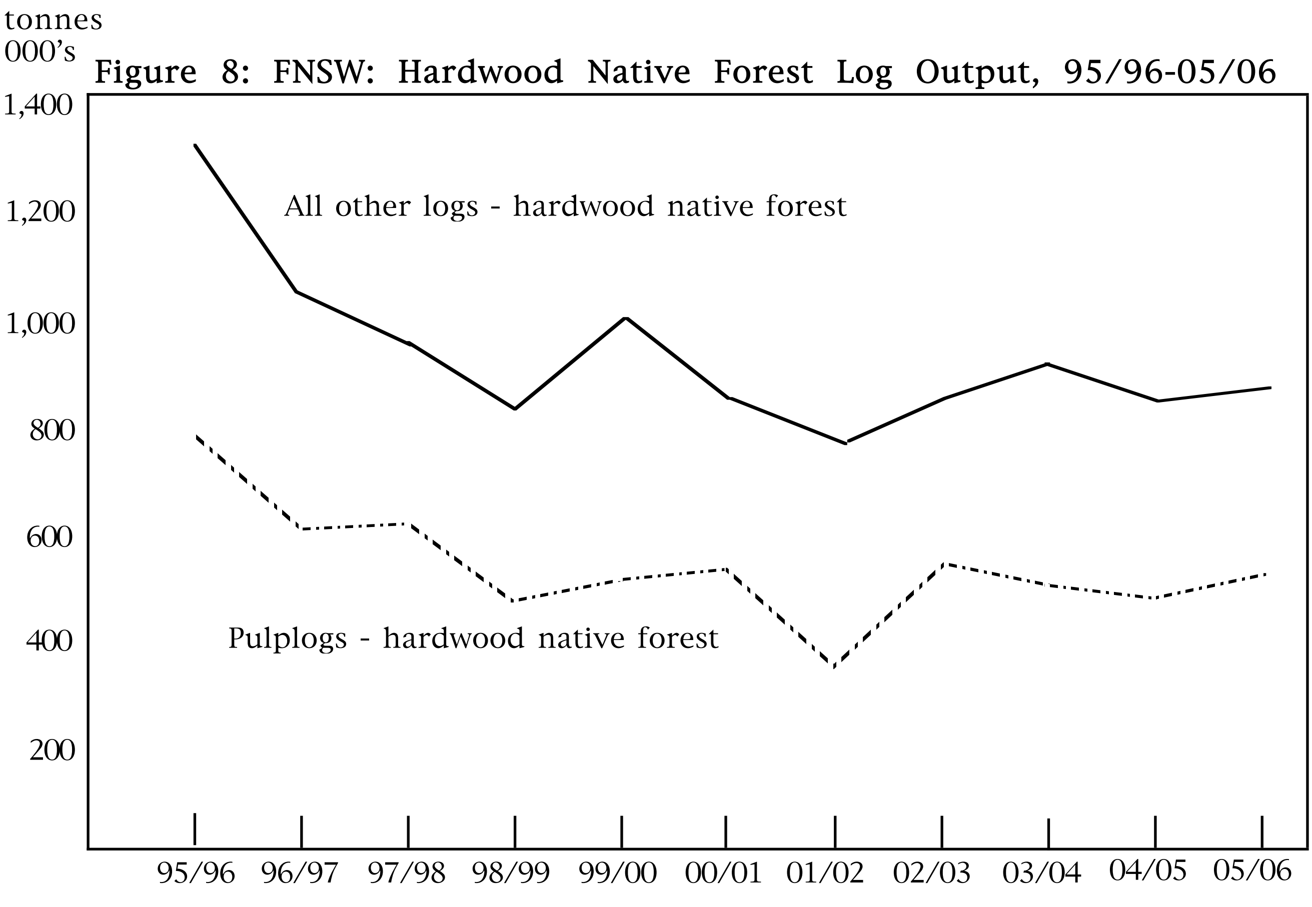
Source: Forests NSW Annual Reports 2003/04, 2004/05, 2005/06
Conversion factors, cubic metres to tonnes: Hardwood 1.17 Softwood 1.00 Cypress Pine 0.77
Other is mainly firewood, fencing & wood blocks

Table 20: FNSW, Hardwood Native Forest Log Output, 1995/96 to 2005/06

	95/96	96/97	97/98	98/99	99/00	00/01
Pulplogs	768,191	605,254	614,623	472,970	503,546	533,113
All other logs	1,321,035	1,051,918	937,271	824,492	990,269	845,903
Total	2,089,226	1,657,172	1,551,894	1,297,462	1,493,815	1,379,016
% Pulp	36.8	36.5	39.6	36.5	33.7	38.7
	01/02	02/03	03/04	04/05	05/06	
Pulplogs	391,340	540,760	491,292	467,810	504,259	
All other logs	753,183	838,583	904,511	840,269	858,062	
Total	1,144,523	1,379,343	1,355,494	1,253,876	1,324,288	
% Pulp	34.2	39.2	36.2	37.3	38.1	

Source: FNSW Annual Reports
All other logs are : Sawlogs + veneer logs + poles, piles & girders + round timber + Other (where appropriate as the definition of 'other' appears to have changed between 00/01 and 01/02)
Cubic metres was converted to tonnes, using 1.17.

Figure 8: FNSW: Hardwood Native Forest Log Output, 95/96-05/06



The graph shows a decline in output from earlier years which has stabilised since 02/03. Pulplogs as a proportion of log output have remained relatively constant at around 36%-38%, see Table 20 above.

Table 21: NSW Native Forest Pulplogs: North Coast & South Coast FOI Data & Annual Report Data, 1996-2006, tonnes

	06	05	04	03	02	01
Total North Coast	160,738	159,037	170,207	263,521	108,251	213,716
Less Plantations	39,433	35,991	35,040	40,571	42,631	66,498
North Coast Native Forest	121,305	123,046	135,167	222,950	65,620	147,218
South Coast Native Forest	399,523	361,130	380,892	316,864	337,641	394,771
Tumut Native Forest	2,534	nil	nil	11,982	4,385	2,004
Total Native Forest - FOI	523,362	484,176	516,059	551,796	407,646	543,993
Annual Report - NF	504,259	467,810	491,292	540,760	391,340	533,113
Woodchip Exports						
- calendar yr	1,060,407	854,550	838,604	794,433	711,378	760,993
- financial yr	957,478	846,577	816,519	752,904	736,186	736,876

	00	99	98	97	96
Total North Coast	209,186	172,515	227,871	158,995	221,767
Less Plantations	82,660	81,751	0?	0?	0?
North Coast Native Forest	126,526	90,764	227,871	158,995	221,767
South Coast Native Forest	398,004	391,858	399,294	458,611	562,103
Tumut Native Forest	nil	nil	nil	nil	nil
Total Native Forest	524,530	482,622	627,165	617,606	783,870
Annual Report - NF	503,546	472,970	614,623	605,254	768,191
Woodchip Exports					
- calendar yr	712,758	704,264	666,830	700,123	700,00
- financial yr	708,511	685,547	683,477		

Figures in blue are estimates. Estimates were made using data in Table 22, information in ESFM plans, Annual Report data, data supplied for the RFA process, changes in exports and internal consistency checks.

North Coast Native Forest 06,05,04 - sourced from FOI   Plantations - sourced from Annual Reports
South Coast Native Forest 06,05,04 & Tumut - sourced from FOI
FOI figures are compiled from sales records, Annual Report figures from delivery dockets
Annual Report figures are about 96%-98% of the FOI figures

South Coast Pulplogs

The Eden Management area supplies about 85% of FNSW pulplogs to the chipmill. This figure can vary. In periods of high demand from the chipmill or tight supply from Eden there is a tendency for more pulp to come from the South Coast-Southern sub region and some from Tumut sub region. As a result the average royalty rate falls.

This has occurred since 03/04 when the average royalty rate was $14.26/tonne and in 05/06 it was $12.85/tonne. This indicates that a higher proportion of the pulp is coming from the South Coast-Southern sub region. The minimum supply from Eden under the RFA agreement is 345,000 tonnes/annum. It would appear that this may also be around the maximum supply. For South Coast-Southern the maximum pulp output is 97,000 tonnes/annum under the RFA.

Adding the 345,000 & the 97,000 implies 442,000 tonnes. However, this amount is not being supplied even though the chipmill is operating at or near maximum capacity of 1 million tonnes/annum. South Coast + Tumut was 402,057 tonnes in 05/06.

Table 22: Native Forest Pulplogs: South Coast, 1965-2006, tonnes/annum

	65-69	70-75	76-82	83-91	92	93
Eden	nil	219,515	509,120	538,421	497,008	490,118
SC-Sth'n	nil	38,744	89,860	95,031	87,707	86,491
Total	nil	258,259	598,980	633,452	584,715	576,609
	94	**95**	**96**	**97**	**98**	**99**
Eden	504,571	511,582	469,354	389,822	336,425	332,555
SC-Sth'n	69,300	87,039	92,749	68,789	62,869	59,303
Total	573,871	598,621	562,103	458,611	399,294	391,858
	00	**01**	**02**	**03**	**04**	**05**
Eden	336,648	325,741	294,906	261,640	320,681	297,080
SC-Sth'n	61,356	69,030	42,735	55,224	60,211	64,050
Total	398,004	394,771	337,641	316,864	380,892	361,130
	06					
Eden	307,669					
SC-Sth'n	91,854					
Total	399,523					

Source: SFNSW records submitted to RFA process, FNSW FOI responses, FNSW ESFM Eden & SC-Sth'n
Figures in blue are estimates. SC-Southern: Assumed to be about 15% of the total for 70/71 to 92/93. Records for SC-Southern prior to 93/94 no longer exist.

Figure 9: Pulplogs & Sawlogs, South Coast, tonnes/annum 1965-06

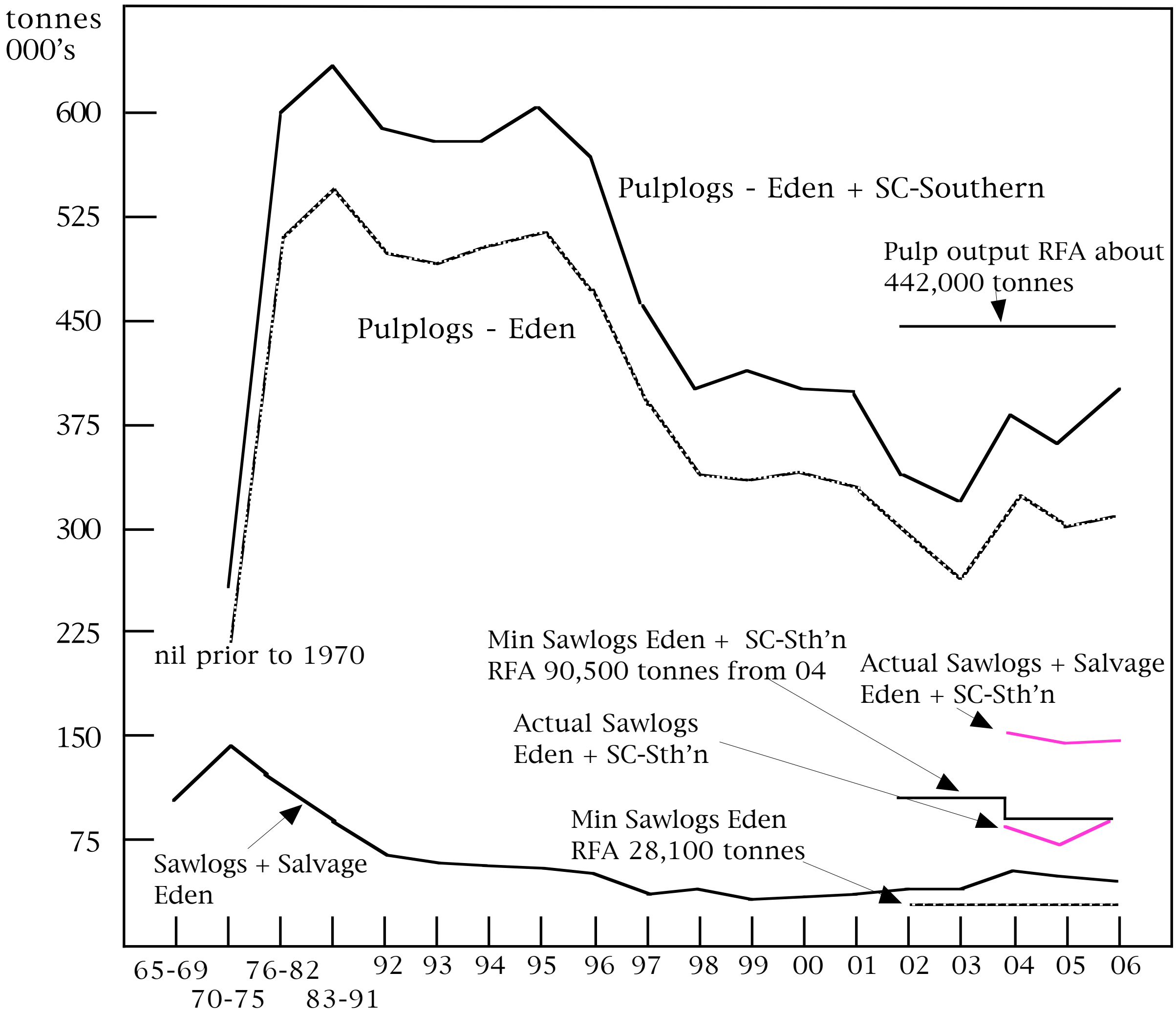


Table 23: Eden Management Area, Average Sawlog Output 1965-2006, tonnes/annum

	65-69	70-75	76-82	83-91	92	93
Sawlogs	103,390	143,299	121,192	88,081	67,985	60,306
	94	95	96	97	98	99
Sawlogs	57,166	56,498	50,149	35,915	38,600	35,100
	00	01	02	03	04	05
Sawlogs	37,340	39,585	41,828	40,700	52,681	49,018
	06					
Sawlogs	45,373					

Source: SFNSW records submitted to RFA process, FNSW ESFM Eden, FNSW FOI 17 5 07
Figures in blue are estimates.

Data Note: Tables 22 & 23
From 1998 onwards the data are not strictly compatible.
Pre 1998 the data refer to timber from State Forests, timber reserves, and other crown lands in the Eden Management Area. From 1998 onwards the data refer to State Forests. For sawlogs the data from 1998 onwards is about 96-97% of the pre 1998 data due to this change in the scope of the reporting base.

Eden Management Area

There has been a fall in the output of sawlogs and pulplogs from the Eden Management Area since 1975, reflecting a lower availability of land for logging and tighter environmental regulations. However, the fall in sawlog output has been much more dramatic, suggesting that the high volume of pulp output may be affecting non quota sawlogs.

In the ESFM plan for Eden, FNSW have said that sawlog supply will be made up of 2 components.

i) 24,000 cubic metres/annum from 2004 onwards
ii) 23,000 cubic metres/annum of suitable material from the pulpwood material.

An additional 20,000 cubic metres of high quality sawlogs can also be supplied from Tumut to meet Eden's needs.

The minimum pulp supply was 345,000 tonnes/annum under the RFA.

These provisions demonstrate the dominance of pulp in the Eden Management area. Pulp is not a marginal activity.

Estimation Methodology for Tables 22 & 23

70-93 Pulp - assumed SC-Southern was 15% of total. FNSW has indicated that pulp was supplied from SC-Southern prior to 93/94 but records haven't survived.
99 Sawlogs - Estimate is State Forests estimate in cu metres converted to tonnes
00 Sawlogs - used linear interpolation between 99 and 02.
01 Sawlogs - used linear interpolation between 99 and 02.
03 Sawlog - 03 was a year when output of sawlogs over the whole State fell about 2.7%. I therefore multiplied 41,828 by 0.973

Conversion Factors - cubic metres to tonnes

I used the following information to derive the conversion factors I used to convert cubic metres to tonnes.

	Green weight
Cypress Pine	770 kg/cubic metre
Radiata Pine	1,000 kg/cubic metre
Hardwood - average	1,170 kg/cubic metre

Mature/Mixed Forest Changed to Regrowth on Account of Pulplogs for the Eden Chipmill Since 1970

Method

1) 1970 - 1975	exports 300,000 tonnes/annum & 95% mature/mixed forest
2) 1976 -1982	exports 650,000 tonnes/annum & 95% mature/mixed forest
3) 1983 - 1991	exports 675,000 tonnes/annum & 95% mature/mixed forest
4) 1992 - 1996	exports 680,000 tonnes/annum & 90% mature/mixed forest
5) 1997 - 2003	used actual exports & 70% mature/mixed
6) 2004 - 2005	used actual exports & 65% mature/mixed
7) 2006	used actual exports and 65% mature/mixed
8) Stockpile	used value of finished goods stock, $7.948 mn p23 SEFE 2006 Financial Report divided by average cost of chips/tonne from 1970-2006 allowing for inflation and using $64.60/tonne as at 2006.
7) Yield	used 110 tonnes/hectare 1970-91
	used 100 tonnes/hectare 1992-96
	used 90 tonnes/hectare 1997-2006

Average Cost of Woodchips Sold, 1970-2006

I used the price index of materials used in manufacturing for log sawmilling and other wood products ANZSIC subdiv 231-232, (ABS 6427.04) together with the CPI (ABS 6401.01)to derive an inflation factor, which I then weighted by output from 1970 to 2006. to derive an average weighted price for the cost of manufacturing woodchips from Dec 1970 to Dec 2006, using $64.60/tonne as at 31 Dec 2006. (See Appendix 3.) This gave an average weighted price of approximately $32.87/tonne.

Mature Trees Vs Younger Trees

The amount of mature/mixed forest entering the chipmill from log truck counts show about 65% mature/mixed, 25% regrowth and 10% sawmill chips.

Data from SEFE's Financial reports show that exports were about 59.8% regrowth chips by tonnage in 2005 and 47.8% in 2004.

This suggests that of the mature/mixed forest truckloads currently entering the chipmill about 40% contain older trees and 60% younger trees. A significant number of older trees from public forests are still going into the chipmill.

In 2004, the figures suggest that of the mature/mixed forest truckloads entering the chipmill about 52% contained mature trees and 48% younger trees.

Table 24: Mature/Mixed Forest Changed to Regrowth on Account of Pulplogs for the Eden Chipmill, Since 1970

Years	Total Exports	Mature/ Mixed forest	Forest area	% NSW	NSW Forest
	Mn Tonnes	Mn Tonnes	hectares	%	hectares
1970-75	1.80	1.71	15,545	86	13,370
1976-82	4.55	4.32	39,270	92	36,130
1983-91	6.08	5.77	52,450	94	49,300
1992-96	3.40	3.06	30,600	85	26,010
1997-2003	5.05	3.53	39,220	53	20,785
2004-2005	1.69	1.10	12,220	44	5,375
2006	1.06	0.69	7,667	38**	2,913
Subtotal	23.63	20.18	196,972	78	153,883
	Size	Mature/Mixed	Forest	%NSW	NSW Forest
Stockpile	0.24	0.20	1,952	78	1,523
Total	23.87	20.38	198,924	78	155,406

** this percentage is not the same as the 45% given on page 9. It relates only to public forest logs from NSW and is a percent of exports for calendar '06, not production for financial yr. 05/06.

The data suggest that 199,00 hectares of mature/mixed forest has been changed to regrowth on account of woodchipping since 1970, of which 155,000 hectares in NSW. Some of this regrowth forest would have gone into National Parks since 1970. It is possible the figures are slightly high as I have made an estimate of 15% supplied from Southern for 1970-93. FNSW advised that pulp was supplied prior to 94 but records no longer survive.

After 15 years the regrowth is thinned - the thinnings go to the chipmill to make regrowth chips. After 20/25 years it is cut down again - to the chipmill for regrowth chips which are more valuable to the chipmill than mature chips which come from mature/mixed forest. The process then starts again.

I note that of the 345,000 tonnes of pulplogs/annum to be supplied from Eden, 46,000 tonnes is to come from thinnings.

Comparison of Estimate of 155,00 ha for NSW with FNSW Seeing Report 05/06,
The 155,000 hectares for NSW is broadly compatible with information in FNSW Seeing report for 05/06, It shows 25.6% or almost 494,000 hectares in NSW are regrowth forests.

Seeing Report 05/06		
Proportion of total native forest that is regrowth	25.6%	p27
Total native forest - ha	1,929,678	p10
Implied regrowth forest - ha	493,998	

It is considered that regrowth forests would broadly be areas that were previously intensively logged. In the early years of logging for pulplogs the logging was more intensive than it is now. Some 49,000 hectares of this forest has had time to regrow for a second harvest. Some of it may have gone into National Parks as the total forest estate administered by FNSW has fallen by about 1.2 million hectares since 1996.

It is therefore difficult to reconcile the 155,000 hectares with the current State wide figure of 493,998 hectares however, the figures are broadly compatible.

Information provided to the RFA process was that for the Eden CRA region SFNSW could supply the chipmill with all regrowth pulplogs from 2016 onwards, suggesting that changing mature/mixed forest to regrowth forest was the intention.

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Appendix 3: South East Fibre Exports

South East Fibre Exports (SEFE) is a foreign owned, woodchipping company located to the South of Eden NSW on Twofold bay. SEFE sells **woodchips overseas** and **fuel domestically** to log truck operators at its chipmill. A small quantity of woodchips, about 1%, is sold domestically for landscaping.

Sales of woodchips. Sales of woodchips for 2006 were estimated from SEFE's 2006 Financial Report. However an inconsistency was noticed between the figure provided at para 2 page 2 for the average weighted fall in the woodchip price and the information provided in notes 27 and 28 at page 36. I took the information at para 2 page 2 to be the more correct.

Table 25: South East Fibre Exports: Price of Woodchips and Earnings per tonne: 2002-2006

	2006	2005	2004	2003	2002
Woodchip Sales $000's	91,545	75,125	71,646	66,280	56,742
Total Sales $000's	101,635	83,515	76,758	70,114	59,673
EBIT $000's	9,492	11,547	9,127	10,469	8,737
Net Profit $000's	6,840	7,968	5,963	7,266	6,264
Exports, tonnes	1,060,407	854,550	838,604	794,433	711,378
			$A		
Price woodchips/tonne	86.33	87.91	85.43	83.43	79.76
Price of fuel/tonne	9.52	9.82	6.10	4.83	4.12
Total sales price/tonne	95.85	97.73	91.54	88.26	83.88

Fuel sales = total sales – sales of woodchips.
EBIT: Earnings before interest and tax,
Source: South East Fibre Exports Pty. Ltd. Financial Reports for the years ended 31st December 2006 to 2002.

Profit Before Tax Attributable to Woodchips 2006

The $7.395/tonne = (Earnings before tax - other income - interest received)/1,060,407
= 9.291 mn - $0.156 mn - $1.293 mn)/1,060,407
= $7.395/tonne

Table 26A: SEFE, Total Cost of Woodchips Sold, 2002-2006

	2006	2005	2004	2003	2002
			$ Million		
Raw materials used	76.009	67.064	52.825	49.801	43.683
Less cost of fuel	10.090	8.389	5.112	3.834	2.931
Cost of woodchips	65.919	58.675	47.713	45.967	40.752
Less					
Changes in inventories	(2.583)	6.690	(2.432)	0.298	1.309
Cost of woodchips sold	68.502	51.986	50.146	45.669	39.443

This table assumes that fuel was sold to the log truck operators at cost.

Table 26B: SEFE, Cost of Goods Sold/tonne, 2002-2006

	2006	2005	2004	2003	2002
Cost of chips sold - $Mn	68.502	51.986	50.146	45.669	39.443
Tonnes shipped	1,060,407	854,550	838,604	794,433	711,378
Cost of chips/tonne, $	64.60	60.83	59.79	57.49	55.44
Cost of fuel/tonne, $	9.515	9.82	6.10	4.83	4.12
Cost of goods sold per tonne, $	74.115	70.65	65.89	62.31	59.57

components may not add to totals due to rounding
This table assumes SEFE sold the fuel at cost.

These figures agree with SEFE's accounts.
Example: 2006

Cost of goods sold	= $74.115 * 1,060,407
	= $78.592 mn
+ changes in inventories	$ (2.583) mn
= raw materials used	= $76.009 mn agrees with figure on p7 of SEFE's 2006 report.

Table 27: Effect of Changing Assumption that Fuel is Sold at Cost on SEFE's Cost Structure, year ended 31 December 2006

	Fuel sold at Cost	Fuel sold at 10% Profit	Fuel sold at 20% Profit
		$/tonne	
Average log royalty - Vic & NSW	11.56	11.56	11.56
Payment to logging contractors	46.89	46.89	46.89
Processing overheads	6.15	7.10	8.05
Subtotal: Cost of chips sold	**64.60**	**65.55**	**66.50**
Remuneration of chipmill employees	5.86	5.86	5.86
Employee benefits expense	0.72	0.72	0.72
Depreciation	1.67	1.67	1.67
Repairs & Mtce + Other expenses	5.22	5.22	5.22
Borrowing costs	0.19	0.19	0,19
Transfer of plantation expense	0.68	0.68	0.68
Subtotal - Expenses	**78.94**	**79.89**	**80.84**
Earnings before tax attributable to woodchips	7.39	6.44	5.49
Equals: Total woodchip price	**86.33**	**86.33**	**86.33**
Less BOP effect, after tax	(6.45)	(6.45)	(6.45)
Less losses - FNSW, Vic Forests	(8.80)	(8.80)	(8.80)
Equals Net export price	**71.08**	**71.08**	**71.08**

Source: SEFE, Financial Report year ended 31 December 2006

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