North Coast Woodchipping

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CHAIRMAN'S FOREWARD

This report primarily examines the relative economics the infrastructural needs, the impact upon resources and the industrial development value of the alternative proposals for establishment of a North Coast export woodchip industry based upon waste resources. The object of this study is to form a basis to determine in which form any of the various proposals might be accorded Government approval.

The recommendation and conclusions which have resulted are intended for the guidance of the New South Wales Government in determining its support of the industry and in providing advice sought by the Commonwealth Government in connection with the possible allocation of woodchip export licences.

In parallel with this investigation the State Pollution Control Commission conducted a two day public inquiry into environmental matters in October, 1975 to identify the potential impact of each development proposal.

The State Development Co-ordinating Committee considered each factor displayed at that inquiry and the solutions or modified proposals now offered by the proponent companies and such cost allowances as appropriate and necessary. Such provisions have been considered in making the recommendations now offered to the Government.

The number of proposals, their complexity and related issues have necessitated in-depth up-to-date investigations to determine the most appropriate form of development as requested by letters of October 10 and November 14, 1974, by the Minister for Conservation, the Hon. G. F. Freudenstein, in referring the matter of establishment of the industry to the State Development Co-ordinating Committee for a report in order to provide advice arising from an approach by the Minister for Agriculture of the Commonwealth Government.

M.L. Somers
Acting Chairman
New South Wales
State Development
Co-ordinating Committee.

1. RECOMMENDATIONS

The recommendations of the Committee are that:-

1. The New South Wales Government encourage a north coast woodchip industry as it would be of significant benefit to the Region. The Committee is satisfied that sufficient waste wood does exist to supply such an industry which if properly controlled would not significantly adversely affect the forest environment or timber supplies to existing industries.

2. The New South Wales Government agrees to the use of Coffs Harbour as the port of export for the woodchip industry or Newcastle, on the basis that whilst Coffs Harbour provides the lowest f.o.b. cost, the industry should not be precluded from using the port of Newcastle should market or other conditions make the overall financial considerations more beneficial to the woodchip industry.

3. The New South Wales Government requires the proponent companies to be completely responsible for the export operation and for those items of capital expenditure for which the companies would be the main beneficiary. No significant government expenditure is recommended.

4. The New South Wales Government advise the Commonwealth Government that it would not raise objection should a licence be granted to any company for the export of woodchips out of the port of Brisbane where a portion of the residues used in this export could derive from upper northern areas of this State provided that the same regulations and controls be applied to all operations in N.S.W. irrespective of any chosen export port.

5. The New South Wales Government recognises that the interests of the existing timber industry and the likely interests of the proposed woodchip industry would benefit from an amalgamation from among the existing groups now proposing to enter the woodchip industry and that therefore an amalgamation acceptable to the N.S.W. Government be required as a pre-requisite to the issuance of any export licence.

6. The New South Wales Government favourably considers the export of up to 350,000 tonnes per annum of woodchips from the North Coast by an Amalgamation including Allen Taylor and Company Limited and Sawmillers Woodchips Pty. Ltd., subject to compliance by the Amalgamation with the requirements of the State Pollution Control Commission and all other statutory bodies.

7. The New South Wales Government advise the Commonwealth Government that it favours the granting of one licence for an initial period of 15 years for the export of woodchips, exclusively from the North Coast of N.S.W.

8. The New South Wales Government nominates to the Commonwealth Government the Amalgamation venture, as required above, for the issuance of one licence covering the export of up to a total of 350,000 tonnes per annum of woodchips from the ports of Coffs Harbour and/or Newcastle.

9. The licence should be conditional upon operating procedures, and constraints, as indicated in the conclusions of this study and its continuity be conditional upon adherence to such requirements.

10. It is recommended that the New South Wales Government note that the Planning and Environment Commission and also the Department of Tourism dissented from the joint view expressed by the Committee, in respect of export through Coffs Harbour and expressed concern at the possible adverse effect such might have on a designated Tourist Development Area. The Committee majority after hearing the latest factual information available from these sources, considered that the use of Coffs Harbour should be encouraged particularly in view of the more valuable decentralisation benefits.

* Omission

A. Aboriginal site recommendation (now relegated to conclusion #26)

B. That the successful company must comply with licence conditions as set out in the conclusion. (Note: this includes the 10% standing tonnage filling limit).

CONCLUSIONS

The Committee, having studied the proposals for export of woodchips from the North Coast of N.S.W., having interviewed the applicant companies and having the benefit of Departmental views on these proposals, concludes:-

1. The present wood resources of mill residues and forest residues economically available at this time for woodchip and alternative uses within the area from the Queensland border, south to the Hunter River and west to include the Tablelands, are estimated to be in the order of 500,000 tonnes/yr.

2. This quantity is estimated to be comprised of:-

   a) 330,000 tonnes derived from sawmill residues which could be regarded as accurately identifiable.

   b) 170,000 tonnes derived from a mixture of residues of logging and silvicultural treatment of Crown and private property inclusive of agricultural clearings.

3. With exception of current alternative uses the remainder of these resources could be utilised for woodchip export without detriment to the ~~forest~~ resource, or existing timber based industries and would improve forestry management and future forest yields.

4. Of the estimated 500,000 tonnes per year, sawmill residues equivalent to 33,000 tonnes of woodchips in the area south of Taree are already utilised by Hardboards (Australia) Limited at Raymond Terrace for the manufacture of hardboard, and it has been indicated that this demand is likely to reach 63,000 tonnes when the production of this company returns to past levels using the higher proportion of mill waste as now practiced. Some of the area's forest residues are also utilised by Hardboards and for mining purposes. For this reason, the Committee in its deliberations has accepted that sawmill residues in the Newcastle-Taree area are likely to be utilised for hardboard production.

5. Having regard to the complexity of the various proposals it was decided that each proponent company should be considered primarily in the following manner:-

Standard Sawmilling Co. Pty. Ltd.	-	Brisbane
Toyomenka (Aust.) Pty. Ltd.	-	Iluka
Allen Taylor & Co. Ltd.	-	Coffs Harbour
Sawmillers Woodchips Pty. Ltd.	-	Newcastle

6. Road haulage was used by the Committee for comparative evaluation of the proposals as the Committee's investigations proved rail haulage to be less economic.

7. In relation to the proposed ports the wood resource is most concentrated around Coffs Harbour. which is certainly the most economic port for shipment. Present road transport costs for 350,000 tonnes to Coffs Harbour would be approximately $7/tonne less and would involve lesser road maintenance costs than to Brisbane/Newcastle.

addition D+D

Port development costs at Coffs Harbour would be greater than at Newcastle/Brisbane resulting in higher fixed costs of approximately $2 per tonne, allowing for amortisation of port developments. The Newcastle port under certain circumstances, might in the future offer the remote possibility for cheaper shipping and tug costs of up to $3 per tonne and Brisbane to a lesser figure, however under f.o.b. sales arrangements this would be a benefit to the buyer.

D+D change in sentence + addition

8. The configuration of the port of Coffs Harbour and the practical limitations of extension beyond the current proposal will prevent its future use by vessels significantly larger than approximately 28,000 D.W.T. and may not allow possible future shipping economies under certain circumstances.

changed wording D+D.

The Coffs Harbour facility as envisaged, is, however, considered fully adequate to export the total volume of 350,000 tonnes/yr. using vessels of the size proposed 25,000 D.W.T., at the rate of about one load each month.

addition D+D.

9. While Newcastle and Brisbane could both become export ports for woodchip as an alternative to a central port at Coffs Harbour the economics are not as favourable. However, export from Brisbane and Newcastle need not necessarily be precluded.

10. Relative economic evaluations also indicate that Iluka/Goodwood Island would be less economic than Coffs Harbour for woodchip export due to the following disadvantages:-

- Higher transport costs because of greater distance from the largest volume of resource.

- Higher costs of port development and maintenance. Goodwood Island would be significantly more costly to develop and beyond the economics of the woodchip industry.

11. The proposal of Standard Sawmilling to export Queensland derived woodchip out of Brisbane could draw upon mill and forest residues estimated at 40,000 tonnes per year from N.S.W. and may with suitable conditions be permitted to do so without adverse effect upon State development or the economics of a Coffs Harbour woodchip project.

12. The conversion of mill and forest residues to woodchips could earn export income exceeding $10 million per annum at the recently quoted price of $25/tonne, resulting in significant income to the timber industry and will serve to relieve the sawmilling industry of some costs now involved in the disposal of otherwise useless mill residues.

13. The proposals of Allen Taylor and Standard Sawmilling considered in conjunction with collection by Hardboards near Newcastle, provide for maximum collection of sawmill residues of the North Coast area. Such a pattern of development would minimise overall costs to the broadest possible range of organisations engaged in the utilisation and development of the forest resources of the North Coast.

14. The structures proposed for each joint venture company by the several proponents are considered satisfactory in respect of allowing for participation of existing operating sawmillers.

15. The company structure of Allen Taylor, Sawmillers Woodchips and Standard Sawmilling is considered satisfactory in regard to the current degree of basic Australian control.

16. There is, presently, a downturn in demand throughout the world for woodchip and, whilst noting that Toyomenka alone of the proposers claims the existence of a contract for the sale of woodchip, the Committee concludes that any company when in possession of an export licence, would be able to negotiate a satisfactory pricing arrangement when world demand recovers.

17. Of the proponent companies engaged in timber processing activities and planning to export out of N.S.W. ports, Allen Taylor is seen to have a wide range of expertise while their proposed minority foreign associate, C. Itoh and Co. Ltd. is seen to have the necessary background to support the industry through its expertise in shipping and marketing and financial participation. The Committee notes that Itoh is also a shareholder in the woodchip operation at Eden but considers that this should not disadvantage the development proposed at Coffs Harbour by Allen Taylor.

Addition DoD

18. Sawmillers Woodchips are seen as being representative of a larger number of suppliers of sawmill residues, as distinct from forest residues, spread over the north coast.

19. Woodchip export through Coffs Harbour would require port and related developments at the exporter's expense which has been allowed for by the proponent.

Cost-benefit analysis indicates the nett aggregate of regional economic benefits favours Coffs Harbour export.

20. Development of Coffs Harbour port facilities would involve environmental considerations and while the State Pollution Control Commission is reporting separately on the environmental aspects affecting North Coast woodchipping proposals, this Committee does however, see transport movement through the township of Coffs Harbour as the most significant environmental problem in the area.

21. Any approval to export through Coffs Harbour should be subject to the development of a Howard Street access road to the mutual satisfaction of the company and to Coffs Harbour Shire Council. The cost of construction of these roads could require a contribution by the company which the Committee has allowed for in cost estimates. The Committee is aware of proposals by the Department of Main Roads to re-route the Pacific Highway through Coffs Harbour at some future date. The Department of Main Roads has taken into consideration any extra traffic load should export of woodchip eventuate and concluded that the effect is minimal and will not significantly alter its determination of construction priorities.

add" DoD.

Subst for 'large economic' (DoD.)

Other than the foregoing, no direct costs are foreseen to arise out of environmental considerations which would significantly affect the economics of the proposals for export from Coffs Harbour.

22. Forest operations upon private lands are not as closely controlled by Government agencies as upon Crown lands and, whilst the Committee recognises the historical rights of private landholders, it is true that there is speculation within community interests that indiscriminate clear felling could lead to a degradation of the environment even though the following legislation does exist to control such activities:-

- a stream bank protection under Section 26D of the Water Act
- logging on 'protected lands' under the Soil Conservation Act
- tree preservation orders under the Local Government Act

Thus, the Committee considers that the export of woodchips derived from timber wastes resulting from legitimate agricultural improvement programmes on private landholdings be approved up to a maximum of 10% of the total actual woodchip export volume achieved in that year, with provision for revision when the findings of the current investigation commissioned by the Minister for Lands and Forests, are known.

23. It is desirable that woodchip resources be used for production of pulp within Australia as soon as is practicable and economically viable.

Australian Paper Mills has expressed its current intention to establish a pulp mill on the North Coast in 10-15 years time. The Committee has taken this into consideration and is satisfied that the export proposals under the terms recommended by this Committee will not adversely affect the future availability of resource for manufacture of pulp in Australia. The export of woodchip should be limited to a period of 15 years with re-appraisal after 10 years in the light of the requirements of any proposed Australian pulp industry and the extent of resources available at that time.

24. The development of a woodchip industry on the bases outlined herein would be beneficial to the North Coast regions of the State and could be expected to provide direct employment to the extent of approximately 200 additional jobs. The total population increase is estimated at about 1000 hence such a project at Coffs Harbour would be a most valuable decentralisation achievement. The likely additional income to the region would be $100 million over 10 years on the expected woodchip price.

D&D addition.

25. Commonwealth Government collections would be increased in the order of $1mil/year from company and personal taxation, sales taxes etc. The flow of money collected by State Government and local authorities is estimated to increase also by around $1 million/year as below:-

	($ Estimated)
. Road maintenance tax	60.000
. Port dues	100.000
. Forestry royalties	50.000
. Insurance	80.000 deleted
. Registration of Trucks	50.000
. Payroll tax	100.000
. Fuel tax land & water rates	20.000
. Power	400.000
. Indirect taxes	Not determined

These are expected in most instances to reasonably cover costs expected to arise in provision of such services.

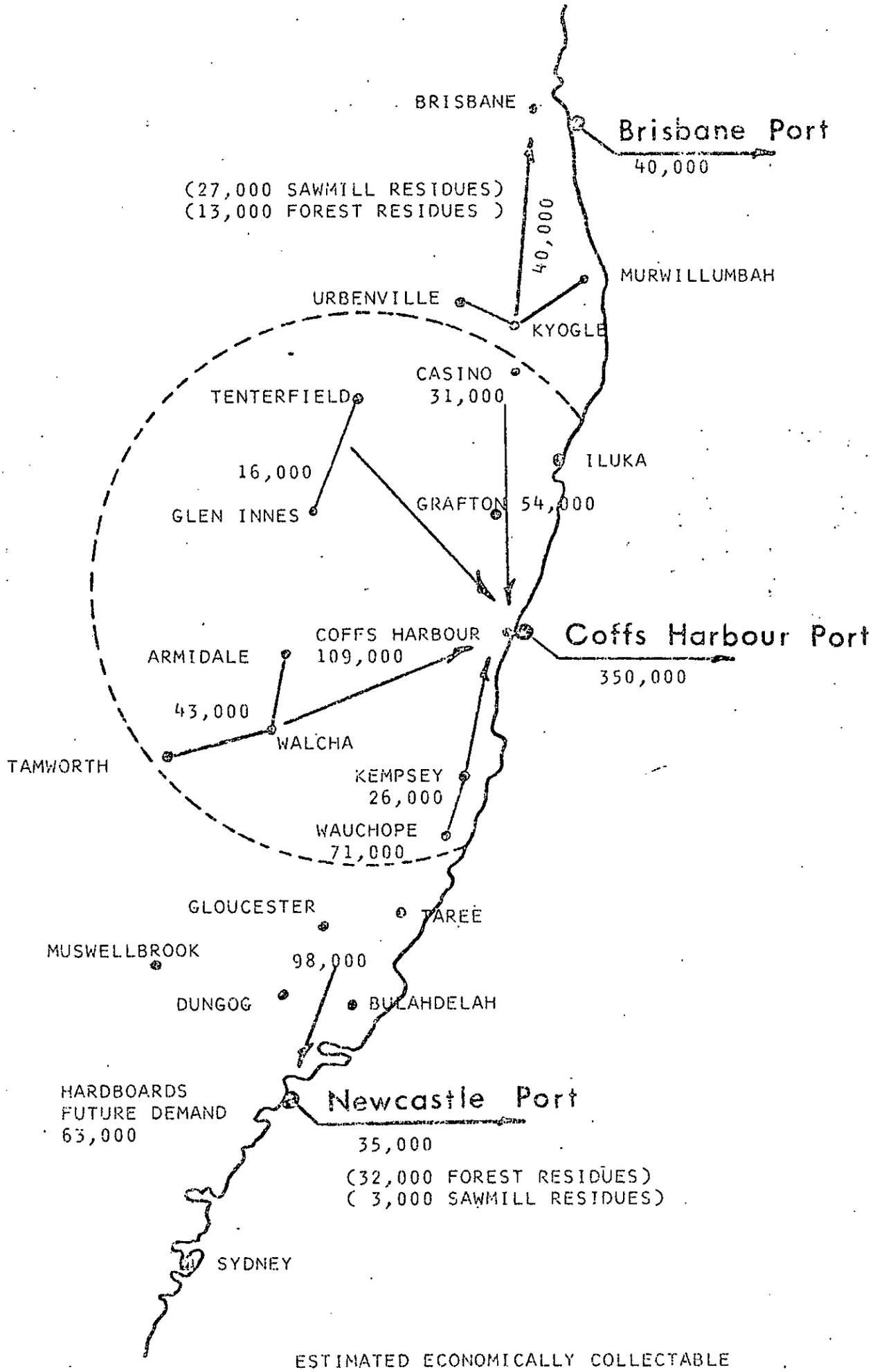
see p72 Addition to 'conclusion' section by D&D

In addition significant benefits will flow to the local area, beyond provision of some port facilities, at no cost to the people of the area. The Government also is not involved in any significant outlay in the proposals as all costs for development work are to be met by the successful export company.

26. If a port facility is constructed at Coffs Harbour adjacent to land significant to local aborigines, it is highly desirable that a compromise concerning this port facility be accepted by local aborigines through the mediation of the National Parks and Wildlife Service and that this be made binding on the company to whom a Coffs Harbour export woodchip licence is granted.

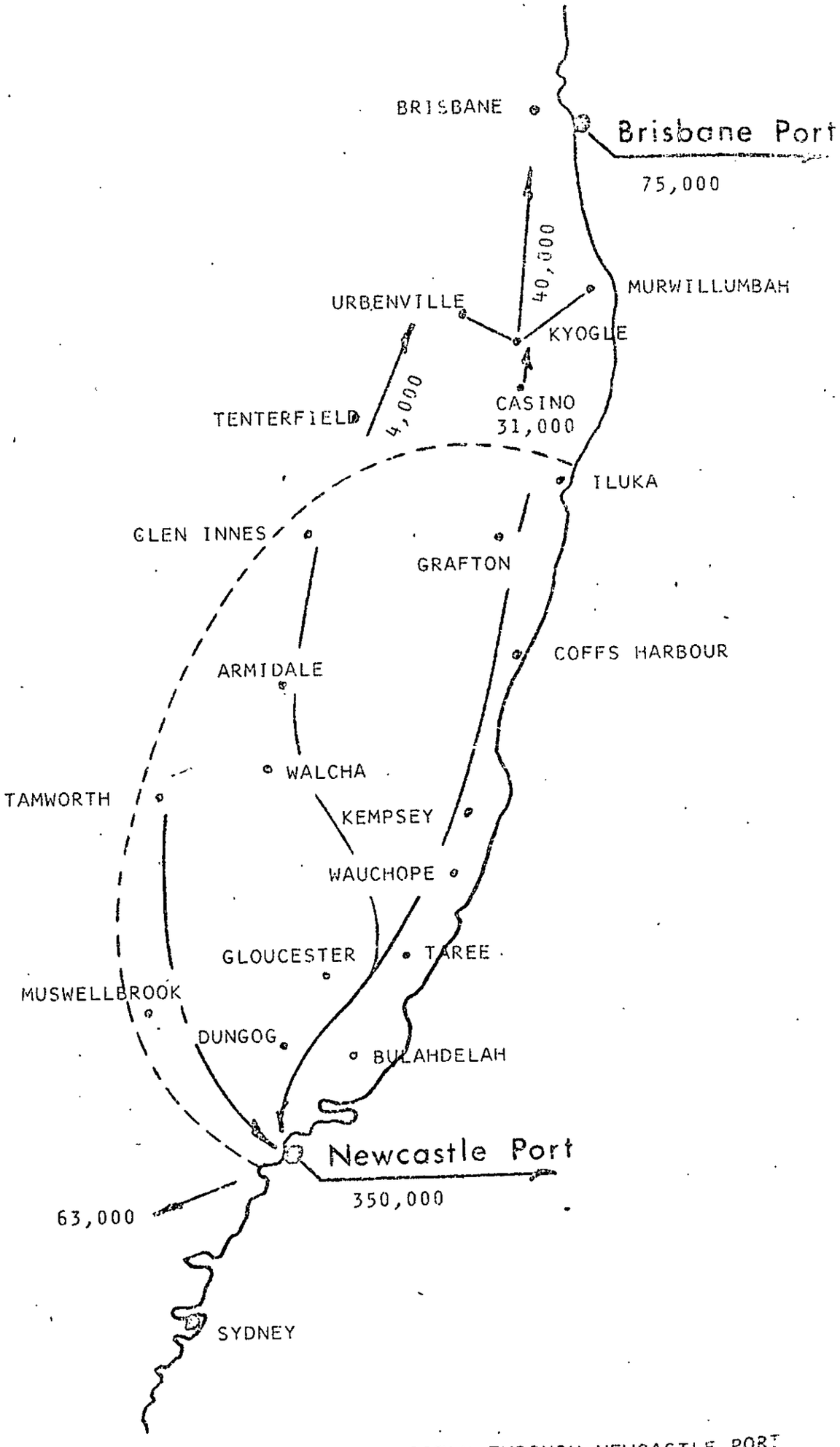
27. If shipping transport as currently envisaged in the Allen Taylor submission is not available and if the f.o.b. price of woodchips is reduced corresponding to any increased shipping costs, woodchip export could become marginally economic. Therefore, it is recommended to the Commonwealth Government that the minimum export price of woodchips ex Coffs Harbour be $25 per green tonne f.o.b. subject to escalation. If the N.S.W. Government decides that the bulk of woodchip export must take place through Newcastle and resort to more expensive vessels becomes necessary, then recalculation of the minimum price of woodchips should be made to a figure sufficient to provide a return to sawmillers and the woodchip exporting company equivalent to that which would be obtained from a Coffs Harbour export venture.

3. Maps

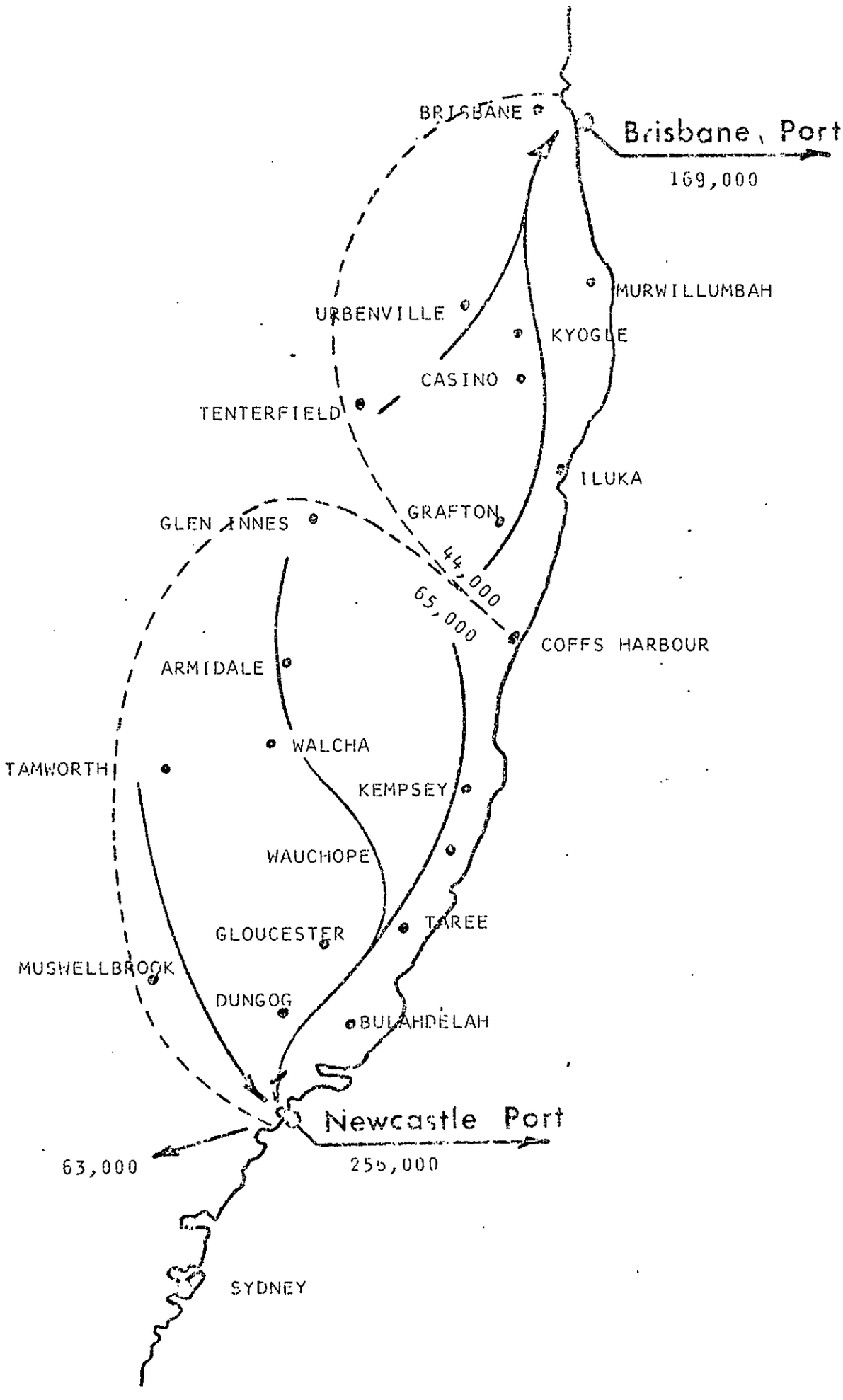


ESTIMATED ECONOMICALLY COLLECTABLE
SAWMILL RESIDUES AND FOREST RESIDUES
TONNES/YEAR

COFFS HARBOUR EXPORT PORT PROPOSAL

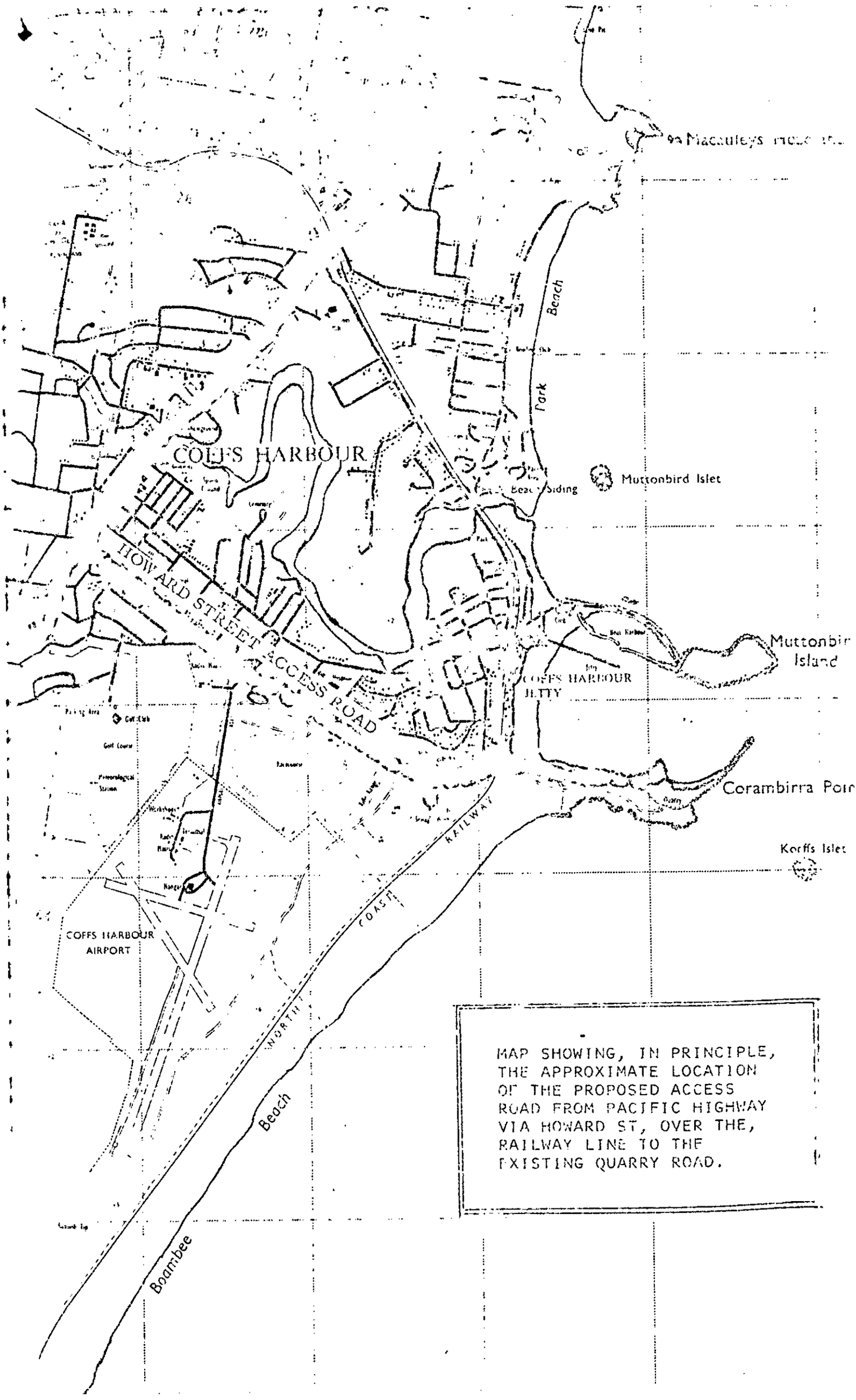


EXPORT MOSTLY THROUGH NEWCASTLE PORT



EXPORT THROUGH NEWCASTLE AND BRISBANE PORTS

RESIDUES NATURALLY FALLING TO EITHER



MAP SHOWING, IN PRINCIPLE, THE APPROXIMATE LOCATION OF THE PROPOSED ACCESS ROAD FROM PACIFIC HIGHWAY VIA HOWARD ST, OVER THE, RAILWAY LINE TO THE EXISTING QUARRY ROAD.

Woodchips for the North Coast a real live issue

If you live on the NSW North Coast you are either pro- or anti-woodchip . . . everyone is aware of the issue and there is no middle of the road.

By PETER LYNCH

Woodchipping is not new to NSW. In 1969 a highly successful woodchip industry was established at Eden on the South Coast.

Woodchips are a product of the forest, as are railway sleepers, posts and poles and the timber produced from sawlogs, and many other materials.

So why the problem in establishing the industry on the North Coast?

The conservationists argue the woodchip industry would destroy forests, lead to polution of waterways and in the case of Coffs Harbour pollute the harbor itself.

SIDE ISSUES

The side issues peculiar to the industry if established at Coffs Harbour are noise, pollution and road damage with an increase in heavy trucks using the thoroughfares to the harbor area and the subsequent damage to the tourist industry.

Advocates of the industry are mostly big sawmillers on the North Coast.

Four companies have so far applied for the export licence necessary before any woodchip operation can be contemplated.

To the fore in feasability studies are Allen Taylor and Co. Pty Ltd and C. Itoh and Co., who have spent a lot of money investigating export prospects for woodchips from Coffs Harbour.

Their joint proposal incorporates several features which differ from woodchip proposals in other parts of Australia.

The major difference is woodchipping near Coffs Harbour would be restricted to sawmill waste, forest residues and agricultural thinnings.

No clear felling would be done except in instances where land was being cleared for agricultural or grazing purposes or where clear cutting was used for the regeneration of forests as has been practised by the Forestry Commission for many years.

The feasability study showed the project would be restricted to a yearly output of 350,000 tonnes because of the limitations in the extent of the storage area and the size of the stockpile and of the port itself.

The proposed storage and loading area is on and from the southern arm of the harbor.

A disused quarry provides a natural and protected storage area.

Opinions differ greatly as to the suitability of the area to stockpile woodchips.

Conservationists have claimed winds would blow the chips into the harbor causing pollution, mainly through discoloration.

This issue and others were taken up by a group of students from Coffs Harbour High School.

"The students wanted to avoid the emotionalism and vested interests of the various protagonists," says science master, Mr R. S. Faggotter.

The students used a wind tunnel and air jet to reproduce on a scale model the wind currents that would be expected at Coffs Harbour.

LITTLE EFFECT

Results of their testing, even allowing for large margins of error, indicated winds of 100 m.p.h. were needed to lift the woodchip pile.

The students also say in their report, "Although we realise these results may not be as accurate as what might be desired, they do correlate and substantiate situations elsewhere. A woodchip pile in the port of Tauranga, New Zealand, has found from experience that despite winds from all quarters, even at times gale-force winds, there is little effect on the stockpile and an insignificant quantity of chips can be seen within a few metres of the pile."

The students also calculated the volume of water in the harbor at low tide and using a scale tested the effect of various amounts of woodchips on the water to determine what effect spillage of woodchips into the harbor would have.

"Conservationalists have been saying spillage of woodchips would have a very large and detrimental effect on the quality of the harbor water."

The result after soaking woodchips proportional to water volume for three weeks showed that if eight entire woodchip piles were allowed to be dumped in the harbor extensive discoloration would occur; two woodchip piles would cause little color but would be objectionable; one woodchip pile color difference would be small and if .1 of a woodchip found its way into the harbor there would be no detectable difference to the naked eye or photo-electric apparatus.

The students also noted that oceanic currents swill through the harbor making it unlikely that a large coloration would build up.

HEAVY TRAFFIC

A third area the students looked at was that of increased heavy traffic through the commercial centre of the town.

After extensive counting of all forms of transport at three key points on two separate occasions the students concluded that woodchip trucks would have an insignificant bearing on traffic congestion.

The fact that the students investigated the problems of a woodchip industry in Coffs Harbour so extensively over a 12-month period and largely in their own time highlights the community interest in the issue.

The State Pollution Control Commission and the Senate are both conducting inquiries which will affect the future of woodchip proposals on the North Coast.

A GUIDE

Sawmillers say that the low value of woodchips in relation to timber from millable logs could do nothing but encourage sawmillers to cut timber from all millable logs.

As a guide the Forestry Commission suggests one tonne of woodchip would be worth $6 while sawn timber from a millable log capable of producing one tonne of woodchip would be worth a minimum of $50.

At a joint meeting of the North Coast and Northern Tablelands Conservation Societies recently, Mr Neville Wran, the State Opposition Leader, said he viewed with particular concern the fact that 44 pc of the North Coast forests were owned privately and these would be a prime source of raw materials for the woodchip proposals.

"They could be eliminated, slooshed down, uprooted and consumed by the woodchip mills because the Forestry Commission has, under the present laws in NSW, no legal control over these private forests," he said.

"Even if the Forestry Commission had control over these private forests there would still be cause for concern."

In answer to these propositions the interested parties on the pro side argue that the cost of roads and transport would not allow this situation to develop.

The Forestry Commission say that while they have no control over logging on private lands, controls can be exercised through the application of the Soil Conservation Act, the Water Act, and provisions of local government and preservation orders.

And so the great debate goes on . . . it will be some time before a decision either way is made.

This page is an addition not mentioned at meeting! Irrelevant & questionable info.

4. OBJECTS OF THE INDUSTRY

The following reasons have been advanced in support of the advent of the North Coast woodchip industry:

- Improvement of profitability and productivity of the sawmilling and forest industries.
- To provide the maximum benefit to the maximum number of sawmillers.
- The improved utilisation of existing resources.
- Improved forest management and yield.
- Underwriting of job security of the existing 4,800 employees in timber industries covering the whole of the North Coast.
- Reduction of residue disposal costs.
- Utilisation of a resource which is currently wasted.

The industry, as proposed, might be regarded as one of wood waste recovery (residues) primarily from sawmills and in this regard the following expectations could be envisaged:

- Whilst all proposers have indicated that the return to sawmillers would be of the order of $6 per tonne for debarked slab residue, Allen Taylor & Co. Pty. Ltd. (Allen Taylor) have circularised sawmillers to the effect that the expected starting point price will be $10 per tonne for chipped residues in the bin at the sawmill - a similar price to all the sawmillers.
- Apart from the return from the proposed industry, most sawmillers will obtain some saving through the elimination of burning. This saving could be expected to average $1 per tonne and could be as high as $2 - 3 per tonne in some instances.
- Lembke (Australian Forest Industries Journal) projects to the effect that smaller sawmills on the basis of economics will become fewer being absorbed by larger millers. Should such a trend accelerate, it is conceivable that sawmill residues could become more economic to collect.
- Returns from both chipping of sawmill waste and from the more valuable sawn portion are likely to bring about the economic utilisation of some otherwise unrecoverable timber presently left in forests.
- On present values, gross income to the industry from 350,000 tonnes per year export, at a rate of $9 million per year could amount to the order of $135 million over 15 years from material which is now burnt or left to rot on the forest floors. Woodchips should become more valuable having regard to the predicted world shortage of pulpwood.

It has been established that sufficient residues would be available to support the industry (Appendix I). The Committee considers that it is in the best interests of State and private industry to encourage the industry, subject to qualifications expressed elsewhere in the report.

has been substituted for "appropriate environmental safeguards". - which is not properly mentioned elsewhere.

In considering the attributes of the proponent companies, it would be difficult to recommend that preference be given to the issue of a licence directly to a foreign controlled company which has no activity in the local sawmilling industry in the face of Australian companies applying for licences which are part of the sawmilling and forest industries and would service the woodchip industry. On this basis alone, it would be difficult to support a recommendation approving of the issue of a licence to Toyomenka. It is recognised that Toyomenka would have the necessary financial strength and marketing ability to back up such a venture.

Since no commensurate benefits would accrue to the industry through development at Iluka-Goodwood Island compared with Coffs Harbour and since no other proposers are interested due to higher port development and operating (transport) costs Iluka-Goodwood Island could not be viewed favourably when compared to Coffs Harbour for woodchip export.

The viability of a Brisbane export operation is seen as being dependent upon Queensland residue availability and other local factors not the prerogative of this Committee to assess.

Having established a principle in respect of Standard Sawmilling (Brisbane) and Toyomenka (Iluka-Goodwood Island) further analyses are related in the main, to proposals for shipment from Coffs Harbour by Allen Taylor and from Newcastle by Sawmillers Woodchips, but with due consideration of the influence of a possible Brisbane facility upon both N.S.W. operations.

Considerations which could have influence upon the choice of licencee are seen as the financial capability of the proposer, expertise of the proposer, degree of Australian ownership, degree of local activity in the timber industry, equity interest to be held by the buyer, price and specification arrangements, shipping capability of proposed buyers, environmental effects and cost of constraints, capital expenditure for development and market prospects.

The merits of Itoh as Allen Taylor's partner are seen as being that the company:-

- has a large fleet of chip carriers and had indicated in writing the availability of a chip carrier at a low freight rate.

- is presently buying Australian hardwood chips at an acceptable price and has indicated the highest offer at this point of time, viz. $45/B.D.U., equivalent to $25/green tonne.

- has close connections with a number of pulpmills so that their joint venture would not be relying on the demands of only one buyer.

The merits of Allen Taylor are seen as being that the company:-

- is the only proposer to have undertaken reasonable economic and feasibility studies in support of proposals.

- has strong local financial strength through links with B.M.I.

- has strong technical competence through these associations and their timber industry operations.

While Sawmillers Woodchips is a shell formation, their claims for consideration include:-

- the right for a stake and voice in the industry which their shareholders will primarily service.

- their proposed operation would initially require little capital and could immediately commence through Brisbane and Newcastle through temporary facilities if economic and should a market be immediately negotiable.

The implications of the latter in conjunction with higher operating costs are analysed in Appendices II and V. Allen Taylor makes similar provision in their proposals. It is seen as being desirable that the structure of the export company makes suitable provision for all sawmillers to have the opportunity to participate with protection and forms of profit sharing. Each of the applicant companies has indicated that they will arrange company structures accordingly.

The Committee, being mindfull of the equivalent interests and local identity of Allen Taylor and Sawmillers Woodchips, supports the view that, in consideration of their relative merits, due regard be given to forms of approval so constructed as to encourage an amalgamation or united approach by these two proposers. The opinion of the Committee is that the establishment of the industry and its integral components should be aimed in a manner which is in the best interests of sawmilling and forest industries and of State development.

The most desirable arrangement is seen as an amalgamation of Allen Taylor and Sawmillers Woodchips with allocation of shares to participating sawmillers on a pro rata tonnage basis, together with a minority interest to be held by the ultimate buyer. It has been brought to the attention of the Committee that such an arrangement is under negotiation by these parties.

5. RESOLUTION OF PROPOSALS

See Appendix II for synopsis of proposals:

1. (a) The first proposal to emerge was that by Allen Taylor in association with C.H. Itoh (Itoh) based upon shipment of 350,000 tonnes per year through Coffs Harbour. Allen Taylor has indicated that they also recognise that resources south of Taree could possibly be more economically transported to Newcastle and would be prepared to study the economics of shipment through Newcastle of more southerly resources having due regard to established collection practices servicing the hardboard industry at Raymond Terrace.

   (b) Then followed a proposal by Standard Sawmilling Co. Pty. Ltd. (Standard Sawmilling) based upon shipment of primarily Queensland residues through Brisbane, along with some 100,000 tonnes per year of residues from northern N.S.W. The majority of these N.S.W. residues could be competed for with Allen Taylor.

   The two companies were prepared to co-operate to the extent that until Coffs Harbour was developed the residues collected by Allen Taylor would be shipped through Brisbane. When Coffs Harbour became developed, Standard Sawmilling then planned to ship through Coffs Harbour those N.S.W. residues which could be more economically transported to Coffs Harbour.

   There is, thus, no significant conflict between these two proposals, 1. (a), 1. (b).

   (c) The proposal by Toyomenka (Australia) Pty. Ltd. (Toyomenka) is not greatly different, fundamentally, from the above combined two proposals. A central port of shipment (Coffs Harbour or Iluka - Goodwood Island) is proposed for the major volume of exports. Iluka-Goodwood Island was the company's first choice.

2. The proposal to emerge by Sawmillers Woodchips Pty. Ltd. (Sawmillers Woodchips) is significantly different in that all north coast sawmill residues, with the exception of those north of Grafton, are proposed to be transported to Newcastle for shipment. Sawmillers Woodchips and Standard Sawmilling propose to join in a Brisbane-based export project.

Basically, resolution would appear to lie between the relative economics of proposals 1. (a), (b), (c) and 2., i.e. the relative cost/benefits of shipment of the major available volume of residues through one central north coast port v.s. shipment through Newcastle.

RELATIVE PROJECT COSTS

The Committee decided that comparison of production costs between the proposals should be on an f.o.b. basis as it was established that the purchaser, in addition to sea freight, will pay tug costs, etc.

Some 350,000 tonnes of the economically available North Coast resource is closer to Coffs Harbour. The 27,000 tonnes of sawmill residues north of Casino, together with any south of Taree not required for hardboard and other incidental uses could well be collected for export through Coffs Harbour without significantly affecting project economics.

The cost studies indicate that export through Coffs Harbour could be, at this point of time, some $5 per tonne f.o.b. less than export through Kooragang (Newcastle) and Brisbane. This order of saving is significant having regard to an expected woodchip export value of $25 per tonne f.o.b.

It is logical to assume that in practice a higher percentage of residues would be collected from nearby resources than more distant. It is in this respect that the theoretical basis for the calculations in this report produces a higher cost than might occur in practice for export through Coffs Harbour relative to other alternatives. This is due to the existence of a very large and very close low cost resource base which, along with further savings in transport costs expected to result from inflation, amplify Coffs Harbour advantages and could give rise to a further cost saving of several dollars per tonne within several years should inflation proceed at rates similar to recent years.

While export through Iluka could be marginally viable, it would be less economic than through Coffs Harbour but comparable to the alternative of Kooragang/Brisbane.

Newcastle could provide for an immediate commencement of collection and export if demand exists. However, a temporary higher price would need to be negotiated.

It is apparent that a large enough resource is not economically available near Newcastle to give a sufficient transport advantage to ensure full utilisation of more distant and major resources near Coffs Harbour - a similar situation exists relative to Brisbane.

A significant volume of sawmill residue near Newcastle is already utilised by the local hardboard industry while, in the short-term, most of sawmill residue could be required being the lowest cost source of woodchip. An export operation at Newcastle would either take from or increase costs of the local hardboard industry. It would not seem desirable to disrupt the existing and projected operations. Encouragement of local use of resource would seem preferable to encouragement of export.

The priorities to be resolved are thus seen as being twofold:-

1. Policies of support for regional development as against increase of capability of centralised facilities.

2. Policies of support of promotion of local as against foreign interests.

Sundry items, not accounted for in assessing the f.o.b. price which could show a small differential favouring Coffs Harbour, include cost of land and rates and tonnage charges, shorter conveyor (interest and depreciation on $250,000), higher capacity loader (interest and depreciation on $250,000). Productivity of regional labour is generally considered to be higher than in metropolitan industry.

Normal demurrage, because of weather, strike action and possible other unforeseen factors, has not been included and does not appear to favour either port.

The total N.S.W. North Coast tonnage as estimated to be economically available could be more economically shipped through Coffs Harbour alone. The tonnage in the Coffs Harbour area alone could be most economically shipped out of Coffs Harbour.

The only project catering for the industry as a whole showing total costs less than the $25 per green tonne woodchip price expected, at this point of time, is ex Coffs Harbour based upon a return of $6 per tonne for debarked slab to sawmillers, $10 per tonne to sawmillers for woodchips and a higher cost for forest residues. Shipment ex Iluka could be marginally economic while Brisbane/Kooragang schemes appear doubtful economically.

Sufficient residues are not available outside the zone of influence of Coffs Harbour to the north or south to justify either a Brisbane operation and/or a Newcastle project in addition to a Coffs Harbour project.

A Brisbane project could possibly be justified based upon Queensland residues and costing of scheme H assumes such.

It is pointed out that all costs and assessments have been made having regard to information available at this point of time as are likewise any assumptions. Any changes in these could, of course, change the balance.

TABLE NO 1
RELATIVE PROJECT COSTS TO THE POINT OF LOADING (F.O.B.) - $ PER TONNE
DETAILS APPENDIX II

	COFFS HARBOUR			Iluka	NEWCASTLE			Brisbane and Kooragang
					Kooragang		Lee Whf.	
TONNES/YEAR '000	189	350	425	329	350	256	180	625
COST ITEM	A	B	C	D	E	F	G	H
1 Transport	3.5	5.7	6.7	7.7	13.1	12.1	11.5	11.5
2 Interest charges								
a) port development	1.0	0.5	0.4	1.2)	-	-	-	-
b) stacker/loaders	0.6	0.3	0.3	)	0.3	0.4	-	0.4
3 Depreciation								
a) port development	)	)	)	)	-	-	-	-
b) stacker loaders	1.2)	0.6)	0.5)	1.0)	0.2	0.3	-	0.3
4 Wharfage charge	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
5 Loading demurrage	-	-	-	-	-	-	0.2	-
6 Maintenance dredging	-	-	-	0.3	-	-	-	-
7 Port handling	1.6	0.8	0.7	0.8	0.8	1.0	7.0	0.9
8 Roads	0.4	0.2	0.2	0.2	-	-	-	-
9	8.6	8.4	8.7	11.5	14.7	14.1	19.0	13.4
10 Chip cost	10.7	10.7	10.7	10.7	10.7	10.7	10.0	10.7
11	19.3	19.1	19.4	22.2	25.4	24.9	29.0	24.1
12 Contingency	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
13	22.3	22.1	22.4	25.2	28.4	27.8	32.0	27.1

It is assumed that all projects, except G, will operate on the basis of mobile and fixed chipping costs which along with transport and project costs, are detailed in Appendix II.

Sawmill residues required by Hardboards have not been included in costings, except G.

D - Development costs are such to accommodate vessels of 45,000 DWT.

E2b - A higher loading rate is required by the Maritime Services Board at Kooragang than at Coffs Harbour or Iluka.

G - Lee Wharf (proposal by Sawmillers Woodchips-temporary facility) 7G charges quoted by Toll Chadwick plus $0.5 per tonne for quality control and management.

H - 200,000 tonnes ex Queensland, 256,000 tonnes ex Kooragang south from Coffs Harbour, 169,000 tonnes ex Brisbane north from Coffs Harbour.

column to show latest Sawmillers proposal has not been included

TABLE NO 2.
RELATIVE COST OF HAULAGE OF TONNAGE FALLING NATURALLY TO COFFS HARBOUR

Area	Tonnes per year '000	Trips per year '000	Av. Haul dist km	Trip km per year '000	Haul rate $ per tonne	Haul cost $ per year '000	Av. haul dist. km	Trip km per year '000	Haul rate $ per tonne	Haul cost $ per year '000
		• Road haulage cost to Coffs Harbour					• Road haulage cost to Newcastle and Brisbane			
Nyngle north	40	-	-	-	-	-	-	-	-	-
Casino	31	3.1	176	546	7.6	236	240	744	9.8	304
Grafton	54	5.4	85	459	4.3	232	360	1944	14.0	756
Coffs H.	109	10.9	35	382	2.6	283	400	4360	15.3	1668
Kempsey	26	2.6	112	291	5.3	138	280	728	11.2	291
Wauchope	71	7.1	189	1342	8.1	575	232	1647	9.5	675
Glen I./ Tenterfld	16	1.5	240	360	9.8	157	336	504	13.2	211
A.T. Walcha	43	4.3	224	963	9.2	396	384	1651	14.7	632
Taree sth	35	-	-	-	-	-	-	-	-	-
Total	350			4343		2067		11578		4537

Number of trucks
500 km/day
250 days/year

$\frac{4,343,000}{500 \times 250} = 35 + 3 \text{ spares} = 38$

$\frac{11,578,000}{500 \times 250} = 92 + 8 \text{ spares} = 100$

Extra trucks would be required in each scheme for Casino North and Taree South residues.

The resource falling naturally to Coffs Harbour if hauled to Brisbane and Newcastle would incur additional haulage cost of $7 per tonne.

- This saving would enable the support of even more distant residues and provide a higher return to sawmillers.
- The haulage cost saving by export through Coffs Harbour while amounting to $2,470,000 per year initially could increase with inflation (at about 10% per year) to $5 million in the 10th year.
- After allowing for higher capital charges arising from the higher costs of development of Coffs Harbour over and above Brisbane and Newcastle the nett loss the timber industry would experience could be of the order of $15 m. over a period of 5 years, allowing for 10% inflation.
- Inconvenience to tourist travellers would be significantly greater along the Highway (92 trucks travelling 11.5 million km per year as against 35 trucks travelling 4.3 million km).
- Road maintenance costs would be higher as a result of greater road damage.
- Fuel usage would be 1 million gallons per year greater - undesirable pollution effects and fuel wastage in times of fuel shortage.
- Some $3 million extra capital would be required for trucks.

7. COST INFLUENCES

7.1 EARLY STUDIES OF VIABILITY

In that transport costs were recognised as the key for viability of this industry, early investigations were related to transport economics.

The Committee endeavoured to devise an optimum scheme based upon rail transportation to an existing port, viz. Newcastle.

Being mindful of higher prevailing rail freight rates but the desirability of encouraging rail transport to reduce road traffic impacts, the Public Transport Commission endeavoured to devise a unit train scheme to minimise transport costs.

The scheme did not prove favourable in that the overall transport costs utilising unit trains from three accumulation points were found to be higher than the relative all road transport costs.

In respect of transportation by rail of residues in the Coffs Harbour zone of influence, it can be realised that virtually the full rail freight cost from Coffs Harbour to Newcastle would be a cost additional to the road transport cost to a port at Coffs Harbour since the residues would have to be collected by road from dispersed mills and forest areas for delivery to a Coffs Harbour railhead (i.e. instead of to the port). Also, there would be incurred at the railhead, the capital cost of these facilities, the capital cost of unit train wagons and maintenance and the cost of rail unloading equipment at Newcastle.

Transport by standard rolling stock at the rates quoted by the Public Transport Commission would not be more economic than by road from any point of collection. Appendix II compares the relative costs of road and rail transport. On the basis of present rates, rail is not competitive with road transport.

It became apparent then than the lowest mean transport cost in catering for wide ranging residue resources would accrue by export through Coffs Harbour, the approximate centre of the most concentrated volume of resource which, in turn, would provide the safest base for establishment ensuring maximum benefits to the sawmill and forest industries apart from any additional regional development benefits.

A large and low cost resource close to the point of accumulation is the recognised basis for the participation of more distant or less economic resources in similar industries in other parts of the world. Neither Newcastle nor Brisbane have such an advantageous primary cost base.

Subsequent studies indicated that the whole or part of the North Coast resources could be viably shipped out of Coffs Harbour which cannot be said for either Brisbane or Newcastle on the basis of known costs and present woodchip export price. It has been mentioned that pulpmaking expansion is proposed near Brisbane which could compete for a significant tonnage of the more economically collectable residues.

Three types of facilities have been contemplated for Newcastle:-

. Kooragang utilising the existing bulk berth with provision of loading equipment by proponent companies.

. At Lee Wharf utilising Toll Chadwick's loading system (very low capacity) with stockpiling at Sandgate and truck haulage to wharf (a costly system).

. Kooragang utilising a new multiple-use Government wharf (2-3 years hence) with provision of loading equipment by proponent companies.

The former are envisaged as temporary measures pending availability of the latter.

The relative economics largely depend upon the relative transport costs and the possible cost of any environmental constraints yet to be determined although the various possibilities and cost impacts are considered in this study - refer Section 7.3.

Any deliberate imposition of large additional transport costs on the major volume of resource could only be justified if such costs could be offset by other savings through shipment out of Newcastle. The current indications are that presently no savings other than capital charges of the order of $2 per tonne would be likely.

Of the two most appropriately suited and situated central port prospects, Iluka and Coffs Harbour, it would seem reasonable for one to be offered a decentralised opportunity in the face of ever-seeking efforts which could bring recognised regional benefits to a decentralised area rather than intensify already well endowed centralised locations.

7.2 LOGIC FOR SHIPMENT THROUGH COFFS HARBOUR

While estimates of the volume of economically collectable residue (Appendix I) are not identical in each proposal the lowest estimate indicates significant resource to support an export woodchip industry and moreover, that by far the most large concentrated volume lies within some 120 km. of Coffs Harbour. In fact, some 350,000 tonnes of the estimated 500,000 tonnes which might be economically collected on the north coast of N.S.W. are closer to the single centre of Coffs Harbour than to Iluka or to Newcastle and Brisbane combined.

The large volume of residues near Coffs Harbour provides a most effective low cost base upon which the industry could expand into collection from further distant areas. Brisbane and more particularly Newcastle do not provide such an extremely advantageous benefit. Other significant advantages of shipment through a Coffs Harbour port facility are seen or calculated as providing:-

1. The most economic form of development of the industry.

2. The maximum benefit to the sawmilling/ forest industries.

3. Increased benefit to the Forestry Commission as its forests in the area could improve with further silviculture.

4. Relief to parts of the depressed North Coast area.

5. A tourist interest for visitors to the region if tours are arranged.

6. Increased regional benefits of the kind demonstrated at Eden (see Appendix III).

7. Reduced haulage distance which provides:

   - less road hazard through fewer vehicles over shorter distances and less fuel usage resulting in more favourable environmental situations.
   - lower road damage and cost of maintenance.
   - lower transportation operating costs resulting in higher income to the sawmilling and forest industries.

8. Greater potential benefit, through developed local practices, in support of a pulp operation planned by A.P.M. in the area.

9. Port development for a private industry operation at no cost to the Government.

Having established that a central port of shipment, Coffs Harbour, provides the most economic form of development, on the basis of known costs and wood price, the nature of opposition needs to be considered in order to assess the validity and any costs arising therefrom including environmental protection.

7.3 ENVIRONMENTAL CONSIDERATIONS - ECONOMIC IMPACT

Considerations are taken into account in this study in respect of any environmental constraints so far identified which would affect the economics of the industry.

It will be recognised that additional costs give rise to reduction of benefits to the sawmilling and forest industries primarily.

Analysis of the overall effects of the alternative schemes indicate a significant inter-relationship between possible environmental effects and the benefits and viability of the industry. A judgement of the order of priorities may well be necessary,

For instance, should it be found necessary for the protection of the environment that woodchip export could not take place through Coffs Harbour, costs of the next best alternative, Iluka, could disadvantage the industry by $3 per tonne f.o.b., by $5 per tonne ex Kooragang and by $10 per tonne ex Lee Wharf.

The major and contentious activities resulting from the advent of the industry are seen as highway transport movement and port facility location and the accommodation of any adverse effects is taken into account in cost analyses where significant and quantitive.

Significant additional costs could be imposed upon the industry should any constraints bring about the situation whereby longer haulage distances are involved and in which case the number of trucks required would be greater, involving higher freight cost, higher capital investment, higher road maintenance taxes and higher road repair costs through a large mileage multiplier (see Table 2).

Coffs Harbour export could add further traffic inconvenience to residents which, in the opinion of the Committee, should be accommodated by diversionary routes adding a cost to the operation of some 20 cents per tonne in fixed charges, in satisfaction of public convenience.

It is not expected that there will be any significant direct constraints imposed upon chip trucks per se as suitable vehicles designed to limit noise and spillage will be used.

It is not expected that any constraint would be imposed which would force transport by rail and which could represent added cost and capital investment impositions, but rather encouragement to utilise rail is desirable.

It is not anticipated that there would be any significant constraints imposed upon chipping of sawmill residues. In fact, should sawmillers elect to burn residues environmental constraints could impose some costs which could be saved by the alternative of chipping.

The cost of constraints which are likely to be applied to ensure that forest logging residues are removed in a manner which is not environmentally detrimental is indeterminate. Any cost imposition will incur similar relativity in each alternative. Implications of constraints in respect of agricultural and private woodlot residues are covered in Appendix I.

Opposition to the utilisation of some ports, as distinct from the industry as a whole, has been brought to the attention of the Committee by various interests. The opposition, sometimes emotional and speculative, is not always braced by factual evidence nor seemingly have many attempts been made to accommodate any reasonable alternatives.

Opposition of a similar nature has been levelled at the whole industry, where, however, reason is expected to prevail with any valid problems being accommodated in order that overall opportunities are enhanced.

It has been brought to the attention of the Committee that the Shire Council of Coffs Harbour ~~(by one vote majority)~~ does not favour the use of Coffs Harbour as a port for woodchip export. A petition, organised by an Anti-Woodchip Group at Coffs Harbour, was signed by 5,370 residents and tourists. By comparison, a petition organised by a Pro-Woodchip Group for a Clarence River port was signed by 3,000 residents and tourists. Weighting each petition on size of population, etc. would suggest a similar value be assigned to the petitions. As the situations are similar one would have expected similar benefits or disadvantages for each location.

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Representatives of the National Parks and Wildlife Service have indicated that representations have been made for the proclamation of a Marine Park and an Aboriginal Reserve at Coffs Harbour in an area affected by the woodchip export proposal. The Committee has been advised that requirements for the establishment of the Marine Park and costs involved in accommodating the required provisions of the Aboriginal Reserve can be met without adversely affecting the economics of the woodchip proposal.

The Committee holds the belief that the authorities and preservation interests concerned will readily co-operate with the company in its desire and intent to rather enhance tourism, restoration, preservation, etc. Ships and harbours and related activities are attractive to tourists. Eden provides a local example of how such a similar type of industry has increased population and tourist interest and provided other community benefits otherwise unobtainable. It should be recognised that the timber industries also generate a wide range of benefits in the area.

The Regional Advisory Council supports the development of Coffs Harbour. The Chamber of Commerce, at a meeting on 4th February, 1976, overwhelmingly supported woodchip export from Coffs Harbour in accordance with the current proposal. The interests of the sawmilling and forest industries in the area, the business community and the real interests of the tourist industry do not appear to have been fully considered by the opposition.

In summary, there appears to be one significant environmental intrusion which could be introduced by the advent of the industry and this being the impact of additional heavy haulage traffic on State highways and through towns. This intrusion would be minimised by shipment from Coffs Harbour and maximised by shipment from Brisbane and Newcastle. The volume of trucking on the highway north and south could have some economic/ environmental effect upon the whole North Coast tourist industry. It appears reasonable that highways be used for these vehicles.

The impact on minor roads is not seen as a drain on Shire funds as proponents in all cases have undertaken to contribute to road maintenance.

In respect of export through a Coffs Harbour port, in satisfaction of public convenience and the opposition by Council, the Committee has given consideration to minimisation of chip truck movements through the town and regards establishment of an appropriate diversionary route to avoid residential streets of Coffs Harbour a cost which the industry should bear.

Economic studies reveal the industry to be marginally viable through any alternative, based upon known costs and expected woodchip export price. The total cost of environmental constraints could effect the whole industry at the expense of the timber industries and regional development. This particularly applies if export through a central port, viz. Coffs Harbour, is denied.

The objects of the industry could be significantly impaired by adoption of less than the most economic scheme. Even in the short-term any lesser capital costs incurred in development of Coffs Harbour for woodchip export are exceeded by higher operating costs incurred in transportation, etc. to Newcastle-Brisbane. The exclusion of Coffs Harbour on environmental grounds for export of woodchips could thus affect the economics of the industry.

8. BENEFIT ANALYSIS

The gross aggregate of regional benefits favours Coffs Harbour for export of residue derived woodchip. These benefits are generated primarily from:-

(a) Out of 500,000 tonnes over the whole North Coast area, 150,000 tonnes are in the Coffs Harbour Area.

(b) Port operations. Similar capital expenditure would be incurred for Coffs Harbour port development as for extra trucks required for haulage to Newcastle.

(c) The gain to the industry of the favourable differential between transport (variable) costs to Newcastle and capital (fixed) costs at Coffs Harbour which could increase with time due to inflation.

(d) Regional multiplier effects.

(e) Environmental benefits, less fuel, less traffic impact.

Whereas a Coffs Harbour operation does divert some income from the sawmilling and forest industries to the finance sector, a Newcastle operation diverts far greater income to the transportation industry - the latter, in turn, resulting in more Government and public costs and fewer local benefits in various sectors as identified in Appendix III.

The effects of establishing the industry at Coffs Harbour could be a significant advance in that area whilst in relation to Newcastle the relative effect would be minimal.

The cost of the Coffs Harbour operation not only supports the industry more than a Newcastle-based scheme would, but additionally provides a valuable decentralised industry, as well as improving a central port, at no cost to the Government.

9 ASPECTS RELATIVE TO LICENCING

9.1 MARKET BACKGROUND

While other Australian chip industries depend upon over 90% of resource from deliberate tree felling, the North Coast industry will depend upon over 90% of resource from trees felled for other useful purposes where residues are at present wasted.

The volume proposed for export would represent just over 10% of that already proposed for export from Australia as follows:-

Tas.	-	A.P.P.M.	900,000 tonnes/yr.
		Northern Woodchips	750,000
		Tasmanian Pulp	650,000
W.A.	-	W.A. Chip & Pulp	750,000
N.S.W.	-	Harris-Daishowa	750,000
			3,800,000

It is generally known that the Japanese woodchip market has been in severe downturn for some time and that the situation is expected to improve within some two years. Under the uncertain circumstances, a firm buyer commitment, bonefides and capability are highly important.

The imports of all types of woodchip into Japan was 10.6m^3 million in 1973 of which 2m^3 million were derived from the U.S. Purchases have been cut back by around 30% this year while paper and board factories are operating at 40-60% of capacity and inventories have increased to three times the normal volume.

However, in the long-term, the world demand for pulp and other wood products, it is reported, will greatly exceed existing world capacity and the present downturn is expected to be of relatively short duration. Two United Nation Agencies forecast a world paper and board deficit of over 16 million tonnes by 1978. Since 1973, newsprint has leapt from $187 per tonne to $275 per tonne having risen sharply in 1971.

addition DOD ?

Australian contracts are generally f.o.b. sales. However, the effect of possible lower ocean freight and tug costs which might arise by shipment out of Newcastle along with the problems of C.I.F. arrangements are discussed in Appendix II. The hypothetical possibility of vessels of 50,000 tonnes operating out of Newcastle appears remote in view of annual tonnage to be shipped. Further to this, potential benefit to the north coast region would not be obtained.

9.2 PRICE AND SPECIFICATION

A market may not be negotiable if the minimum export price is set too high under the terms of the granting of a licence. While world parity price is indeterminate, the relative prices of softwood and hardwood chips of various specifications (particularly bark percentage, moisture and density) can be compared. Current spot sale prices might be ignored due to the depressed Japanese market, the only market expected to be available.

New Zealand softwood chips fetch $US58 per B.D.U. ($A46 per B.D.U.)

Hardwood chips, until recently ex Eden, fetched $A36 per B.D.U. However, since the project is controlled by the parent Japanese buyer, the price obtained in Japan is more significant to the overall profitability of this company. Recent information indicates the price has been raised to $A45 per B.D.U.

The export price for other Australian hardwood chips is of the order of $A40 - $A45 per B.D.U. with bark content of around 1%. One B.D.U. = 2,400 lbs dry wood. One B.D.U. x 1.8 = green tonne.

It would appear that a realistic minimum export price could be of the order of $A45 per B.D.U. with 3% bark, or more preferably 5% bark with appropriate clauses to cover escalation of costs and currency changes. A higher bark specification would significantly reduce the costs of chipping operations while increasing yield.

Similar market assurance clauses to those recently effected for coal exports would be desirable and necessary particularly as a large number of relatively small sawmillers and perhaps transport owners could be effected by downturns in the industry.

9.3 ALTERNATIVE USES AND DEMAND FOR RESIDUES

	Estimated Tonnes Per Year
Hardboard manufacture	- 33,000 (future up to 63,000)
Oyster, garden, etc. stakes	- 1,000
Fuel - forewood	- 10,000
Mining Timber	- N/A

A significant volume of sawmill residue near Newcastle, collected from some 15 mills, is already utilised by the local hardboard industry while in the short-term most of this residue could be required being the lowest cost source of woodchip. An export operation at Newcastle would either take from or increase costs of the local hardboard industry. It would not seem desirable to disrupt the existing and projected operations. Encouragement of local use of resource would seem preferable.

The thorough scientific investigation of wood and wood waste as a possible source of new products has continued for many years. Despite the many developments such as the production of organic chemicals, reconstituted wood products and wood as an energy source in several forms, no economic use has emerged, sufficient to utilise any more than a small portion of the total resource available. The technical possibilities are widely known and documented, but in the Australian context the only likely large volume users of mill offcuts and logging residues during the next decade or more are pulp mills and manufacturers of the various particleboards and hardboards.

Over the last 20 years, A.P.M. has exhibited a continuing interest in the establishment of a pulpmill near Coffs Harbour. For economic reasons, the company's main interest in the past has been in the development of a resource of young fast-grown timber of high pulping quality and has established some hardwood plantations of its own. No real interest has been shown in the use of mill waste because of its lesser value for pulping purposes.

During this time, A.P.M. has found it necessary to defer its plans for pulpmill construction on several occasions. The most recent estimate of commencement of pulping is the mid-eightys with an estimated annual wood residue requirement of 160,000 tonnes. The company has also indicated that it would not object to the granting of an export licence for up to ten years.

Bearing in mind the long delays in the development of a North Coast pulping industry that have already occurred and recognising the significantly higher pulping value of regrowth timber, the committee believes that the granting of an export licence for wood chips for a period of fifteen years would not interfere with the development of an A.P.M.-type operation as presently visaged.

The question of availability of various residue types is covered in depth in Appendix I.

Summary of Existing Residue Demand by Hardboards of Australia - Plant at Raymond Terrace.

Newcastle District	Chips	Slab	Total Tonnes
Herons Creek - Taree	4,000		
Carson - Gloucester	9,000		
Foster - Maitland	16,000		
Taylor - Dungong		4,000	
	29,000	4,000	33,000
Private Forest Pulpwood (likely to remain as such for competitive and physical reasons)			27,000
			60,000
Quantity of sawmill chips to be increased as market for panel products recovers as expected			30,000
			90,000

10. Appendices

RESIDUE AVAILABILITY

The proposed woodchip export industry has as its main support base wood waste arising from sawmilling. These residues are the simplest and most economic to collect although dispersed in larger and small volumes, but more significantly are reasonably identifiable in respect of available and economically collectable volume.

The nature of residues can be broadly classified into two categories, i.e. sawmill and forest. Established measurement practices enable a reasonable assessment of availability of the former. The latter would be much greater in respect of volume available, but the quantity which might be economically collected is indeterminate, at least until collection practices are established.

It is fairly well established in Australian sawlog practice that each three tonnes of mill intake results in one tonne of waste. Based upon Forestry Commission records, the amount of mill waste produced in the year 1973/74 would have been of the order of 330,000 tonnes for the north coast area from Newcastle to the Queensland border from 112 sawmills having a log intake greater than 2,500 tonnes/year (or 360,000 tonnes on the basis of sawlog yield). The waste resulting from some 200 small mills having a log intake less than 2,500 tonnes/year would be additional in respect of the 330,000 tonnes. The average intake of these 200 mills could be some 500 tonnes/year in round figures. On this basis, an additional residue volume of some 30,000 tonnes/year might be available. It is beyond the scope of this investigation to determine the location of each mill and whether or not collection could be economic. However, it is reasonable to assume that eventually the majority would be collected being the cheapest to collect as proven at Eden and by Hardboards at Raymond Terrace. Competing and alternative uses primarily north of Newcastle effectively reduce sawmill residues to between 270,000 and 300,000 tonnes per year and contracts the area of availability virtually within a 150 mile radius of Coffs Harbour.

There is no such determinate way of assessing the available volume of various forest residues. The amount of residue remaining on the forest floor and/or left standing after logging operations is said to vary from 10% to 150% respectively. If a round figure of 50% is used, the availability becomes equal to total sawlog yield, i.e. 1,212,000 tonnes for 1973/74 which represents a total volume six times greater than sawmill residues. It is beyond the scope of this investigation to examine the location and structure of such residues let alone that which could be economic to collect.

It might be noted that collection of forest resi... as yet unproven practice in Australia and the e... could be expected to favour residues which are cl... port, easy to debark and split, recoverable size... abundant and in easy terrain - which should tend ... more advantageous to Coffs Harbour than the over... of mill log input assumed in this report for calcu... purposes. Mainly due to physical factors only a s... percentage is expected to be economic to collect ... export price for woodchip. However, it is possi... when operations commence efficient collection met... be devised. Initially, forest residue collection is envisaged to supplement sawmill residue collecti... some could hold for collection of residues arisin... silvicultural and agricultural improvement progra..., further aspects of which are covered in depth in ... paragraphs.

Other forest type resources which could produce ... would be thinnings from crown and private property to improve growth and residues from crown and pri... property lands being cleared for new plantings a... agricultural schemes. Some locations could thus ... credited with an available volume far greater tha... Estimates of availability have been given in the ... 200,000 and 40,000 tonnes/year respectively.

It would appear reasonable to assume that some f... forest type residues might be economically colle... order to justify the basis for calculations, but ... in mind that the eventual collection could be s... different having regard to the various combinati... foregoing variants. Perhaps the more direct appr... that of Allen Taylor who appear to be the only p... have made some practical attempt of assessment in... with these variants in the major forest areas. ... readily realised that there would be a high deg... flexibility in the volume mix of such residues w... be collected.

The frontispiece map illustrates the location o... Available residues which are not closer to Coff... than to Brisbane and Newcastle would appear to ... that no doubt they could be collected where nec... proposed by Allen Taylor in their Environmental ... Statement. Economically collectable sawmill and ... residues closer to Coffs Harbour than to Newca... Brisbane are estimated at 350,000 tonnes/year ... 237,000 tonnes/year constitute sawmill residu... additionally 27,000 tonnes in the north are s... to Brisbane and after allowing for the stated ... year potential requirement by Hardboards, leav... 3,000 tonnes/year closer to Newcastle where it ... be noted some of the forest residues are used f... timber and pulpwood. Residues available close... would thus consist primarily of forest type, t... perhaps being already collected for other uses.

Agricultural residues would be additional as would be any residues available from the 200 small sawmills with mill intake less than 2,500m^3 per year. However, non-exportable undersize produced by chipping, possibly about 35,000 tonnes/year, could offset this availability.

It would thus appear that 350,000 tonnes per year is a reasonably safe approximation while in excess of 400,000 tonnes/year could well be collected depending upon future costs, price and demand.

According to the scheme and when operating the actual volume and mix of residues collected may well change the emphasis would no doubt fall upon collection of residues of all types closer to the point of export in the early stages of operations. Transport costs will largely influence the economics of collection and hence economic availability.

The method of estimation, in view of all that foregoes, appears reasonable for the purpose of examination of the relative costs of alternative schemes. Volumes are in line with the estimates of proponent companies (Table 3) which although differ are reasonably comparable having regard to the wide variety, distribution, etc. of residues.

The basis for calculations adopted for consistency in this report relates economic availability to mill log input for 112 larger mills. Sawmill residues are estimated on the basis of 1 tonne per $3m^3$ of log intake (112 mills). In order to arrive at a figure to include some overall 10% of all types of forest residues a basis of 1 tonne per $2m^3$ of log input is adopted.

The three main denominators of transportation costing, viz. residue volume, distance to port and freight rate while each being subject to a degree of uncertainty are of an adequate order of accuracy for the purpose of comparative evaluation of the relative economics of alternative projects.

Advice from the Long Distance Road Haulers' Association of Australia has been that road haulage rates are generally negotiable and vary according to the type of goods, loading time, tonnage capacity, hours of utilisation, owner-driver or company operated and whether country or city located. The rate formula used for this study has been computerised from a wide range of road haulage rates and for consistency has been adopted in all calculations. The rate estimates so derived are consistent with going rates elsewhere in Australia for the special type of road transport carriers required for woodchip as distinct from other commodities.

Since costs are dependent upon the points from which residues will be derived, and which of course is not precisely defined, the dispersed resource estimates have been aggregated upon an area basis with an approximate centre of gravity to determine the road distance for each area volume to the alternative ports. The same basic parameters areassumed for consistency in all calculations.

Table No. 3

Comparison of Estimates Economically Collectable
(Includes alternative uses)

Given by:-	Residues '000 tonne/yr.
1. Forestry Commission	500
2. Country Sawmillers Association	700
3. Sawmillers Woodchips	525
4. Allen Taylor	525
5. Toyomenka	592

1. Range for sawmill residues - 1 tonne per $3m^3$ of mill intake and for sawmill plus forest residues - 1 tonne per $2m^3$ of mill intake for 112 larger mills plus the balance for agricultural residues.
2. 10% forest residues allowed. Mill residue zones additionally include Bathurst, Baradine, Wyong.
3. Casino and north not included.
4. Basis of feasibility study - see Table No. 4.

Table No. 4

'000 Tonnes/Yr. Residues

	Forestry Commission		Allen Taylor			
	Sawmill	Sawmill Plus Forest	Sawmill	Logging & Silvicultural		
	Basis of Calculations			Crown	P.P.	
North of Casino	27	40	-	-	-	-
Grafton	36	54	-	-	-	-
Coffs Harbour	74	109	92	51	20	
Kempsey	18	26	52	30	29	
Casino	21	31	56	-	-	
Armidale) Tamworth)	29	43	-	-	-	-
Glenn Innes	11	16	58	-	-	
Wauchope) H. Creek)	48	71	36	-	-	
Taree	38	57	70	-	-	
Newcastle	28	41	40	-	-	-
	330	488	404	81	40	

Allen Taylor's sawmill estimates are based upon 1973/74 sawlog yields ex forests and thus include availability from mills of all sizes on the basis of 1 tonne/3 tonne of sawlog yield which produces a higher estimate. Estimates of forest residues are based upon plot studies, etc. as indicated in their Environmental Impact Statement.

SAWMILL INPUTS 1973/74 M^3 Table No. 5

Forestry Commission of N.S.W.

Zone	SubZone	Mill Input	Zone Input	Mill Size 10,000	Mill Size 10,000 20,000	Mill Size 20,000+
				Number of mills		
Casino	Casino	62,400				
	Kyogle	22,900				
	Murwillumbah	37,100				
	Urbenville	23,900	146,300 (166)	16	5	1
Grafton	Grafton	108,500	108,500 (123)	5	0	3
Coffs Harbour	Coffs Hbr.	84,800				
	Dorrigo	93,860				
	Macksville	40,000	218,660 (248)	20	8	1
Kempsey	Kempsey	51,000	51,000 (58)	5	2	0
Wauchope	Wauchope	88,600				
	Herons Creek	53,000	141,600 (161)	3	5	1
Taree	Taree	78,800				
	Gloucester	35,800	114,600 (130)	13	2	1
Newcastle	Bulahdelah	36,000				
	Dungog	25,000				
	Muswellbrook	20,400	81,400 (92)	8	2	0
Glen Innes	Tenterfield	17,400				
	Glen Innes	14,000				
	Armidale	38,500				
	Nowendoc	40,300				
	Tamworth	8,100	118,300 (134)	7	2	2
		Total	980,360 (1112)	Total 112		

Excludes some 200 small mills with less than 2,500m^3/year input. Exclusion of such very dispersed small residue volumes allows for a margin of error in the basis of estimation used in this study. Some sources base estimates upon total sawlog yield (1,212,000 tonnes for 1973/74) and a sawmill residue ratio of 1 tonne per 3 tonnes of sawlog yield thus producing higher estimates.

Figures in brackets represent '000 tonnes of mill intake for forestry zones as indicated.

Future Potential of Native and Private Woodlots

It would appear that there could be some confusion between clear felling and selective felling. Where can the distinction be quantified? Perhaps an answer might be found in the article by Mr. M. R. Jacobs, a significant quotation from which is:

was to have been deleted in entirety

"The more of the old defective growth that is removed the better will be the future forest ..... would add 1 million M^3 per year ..... likely future availability of small wood in the Coffs Harbour Region is very large and should support substantial industries."

Numerous objections have been raised by conservation groups, perhaps of a speculative nature, that indiscriminate clear felling upon private lands will emerge to provide wood for chipping other than that from legitimate clearing for agricultural development and logging on private forests. In the absence of contrary support by private landholders of their right to sell their own by-product wastes in a free enterprise society, otherwise left to rot or to burn, it is possible that such wastes could become denied to the industry. While the volume of such economically collectable residues may not be great, nevertheless such residues could contribute to economic stability while the reverse holds that absolute denial, virtually rejecting the proposers' undertaking, could detract from stability. This could allow marginal farming operations to be economic. The impact is difficult to measure, but could be related to reduction in export tonnage against fixed capital costs.

check original or ok ✓

Export approval of woodchip derived from residues from private landholdings, exclusive of those from sawlog productions, if restricted to 10% of the total export volume and subject to revision after two years would enable a reasonable period of time to examine the situation without penalising any party. Certainly the operating party would be unlikely to break its intent since review of tonnage could equally be downward or upward. Such wood residues will be produced and any deliberate wastage could hardly be condoned.

Fear of indiscriminate clear felling could be somewhat discounted. The cost of clear felling in many instances could not be recouped by chipping.

addn

If silvicultural input from private forests is to be achieved ~~funds~~, expertise and controls are required which could probably arise from woodchip activities.

The Committee is aware of the likely environmental consequences of wide scale and intensive tree felling operations in native forests. The oversight of any forest operations should be such to ensure that environmental deterioration does not occur.

Expansion of activities on this land could be unlikely due to the following:-

1. Licence limitation and revision as forms of control.

2. Some penalty for chipping of timber which could be used by Sawmills.

3. Mobile chipping does not lend itself to whole log chipping.

4. Cost of clearing in many instances could not be recouped by chipping. This would be self-regulatory because the return per acre would be insufficient to warrant deliberate clear felling for chipping.

5. Transport economics limit spread.

6. The resource is more valuable as sawlogs.

Operations on State owned timbered lands are under the control of a Government instrumentality and these operations will be regulated in volume and technique. Under Forestry Commission requirements, all timber felled and hauled and utilised for woodchips would be recorded.

Timber operations on privately owned lands are not as closely regulated and it is in these areas that environmental damage is more likely to take place, but not necessarily arising from woodchip operations. Statutory controls covering timber operations on these lands are now restricted to:-

- a stream bank protection under Section 26D of the Water Act.

- logging on "protected lands" under the Soil Conservation Act.

- tree preservation orders under the Local Government Act - tree preservation orders are enforced in cities but seldom in Shire areas.

The Government too, has recognised the importance of this problem and the Minister for Lands and Forests has appointed Dr. S.W. Gentle, previously head of the Department of Environment, to investigate the ramifications of controls over private lands, and to recommend action in this respect. Whether this investigation results in the introduction of legislative action, remains to be seen. The Committee believes that in the meantime, it is desirable to allow woodchipping operations to proceed on a limited scale on private lands so that waste can be utilised and the need for controls can be better identified.

RELATIVE COST ESTIMATES

1. RELATIVE CAPITAL COSTS

350,000 Tonnes/Yr.	To Kooragang		To Coffs Harbour
	By Road $'000	By Road-Rail $'000	By Road $'000
Road Trucks	5,000	3,000	2,000
Rail Wagons	-	1,500	-
Rail Ancillaries	-	240	-
Dredging	-	-	2,300
Berth	-	-	1,800
Stacker/Loader/Conveyors	1,750	1,750	1,250
Chippers-mobile and at sawmill	2,340	2,340	2,340
Harvesting Equipment	1,000	1,000	1,000
	10,090	9,830	10,690

2. RELATIVE PROJECT COSTS

(a) Coffs Harbour - 350,000 tonnes per year.

It is required that no central chipping be involved. Costs are calculated to the point of loading (f.o.b.) and exclude tug hire/ownership which the buyer has been requested to absorb.

The following is an estimate of the likely order of costs:-

Cost	$/Tonne
Haulage	5.7 (5.35 by Allen Taylor)
Port Handling (operating)	0.8
Chips (loaded from mills and forests)	10.7
Wharfage	0.3
Port Development; Interest	0.5
Diversionary Road	0.2
Equipment; Interest	0.3
Amortization	0.6
	19.1
Contingency	3.0
	22.1 (20.7 by Allen Taylor)

Capital Equipment Expenditure	Cost $'000	Amortization 15 years $/Tonne			Interest 8% $/Tonne		
		Book	45% Tax	Nett	Book	45% Tax	Nett
Harvesting	350	0.07	0.03	0.04	0.08	0.03	0.05
Stacker/Loader	1,250	0.24	0.17	0.13	0.57	0.26	0.31
Dredging/Berth	4,100	0.78	0.35	0.43	0.54	0.42	0.52

(b) Kooragang -256,000 tonnes per year (collected south of Coffs Harbour)
350,000 tonnes per year (collected north to Grafton)

Equipment/Capital Expenditure

Stacker/Loader/Conveyor - $1,750,000

	Cost	Nett After Tax Saving of 45%
Interest = $\frac{1,750,000}{350,000}$ x 8% =	$0.5/tonne	$0.3/tonne
Depreciation = $\frac{1,750,000 \text{ @ } 15 \text{ yrs.}}{350,000}$ =	$0.3/tonne	$0/2/tonne

(c) Kooragang/Brisbane

Road Transport Costs to Kooragang (with no Central Port) - Tonnages Naturally Falling to Newcastle.

	Lead Distance Km	Tonnes per year '000	$ per tonne	Total Cost $'000
Glen Innes	480	16	18.0	288
Armidale	384	43	14.7	632
Coffs Harbour - South	400	65	15.3	995
Kempsey	304	26	11.8	307
Wauchope	224	71	9.2	653
Taree (mainly forest type)	176	25	7.5	188
Newcastle (mainly forest type)	80	10	4.3	43
		256	12.1 (Av.)	3,105
	to Brisbane	169		
	ex N.S.W. Total	425		

Road Transport Costs To Brisbane (with no Central Port) Tonnages Naturally Falling to Brisbane.

	Lead Distance Km	Tonnes per Year '000	$ per tonne	Total Cost $'000
Queensland	264*	200*	10.6*	2,120
M'bah-Kyogle	141	40	7.0	280
Casino	261	31	10.9	338
Grafton	320	54	12.5	675
Coffs Harbour-North	400	44	15.3	673
		369	11.1 (Av.)	4,086

Note: Residue estimates are conservative enough to compensate for the 10% loss as undersize chips produced during chipping operations.

* Estimates provided by Sawmillers Woodchips. No major residue volume exists within 112 Km. of Brisbane. It is assumed that Glen Innes resource would be directed to Newcastle. It is assumed that 60% of the resources in the Coffs Harbour area (South) would be destined to Newcastle.

Combined Road Transport Costs

	Tonnes Per Year '000	$ Per Tonne	Total Cost $ '000
To Kooragang	256	12.1 (Av.)	3,105
To Brisbane	369	11.1 (Av.)	4,086
	625	11.5 (Av.)	7,191

(d) Newcastle-Lee Wharf (Sawmillers Woodchips Proposal) 550,000 tonnes per year.

The following is an estimate of the likely order of costs:-

Cost	$/Tonne
Haulage	11.5 (13.9)
Slab and Chipping	10.0
Wharfage	0.3
Stockpile and Handling Charges	2.0
Haulage from Sandgate to Port	2.5
Port Loading and Handling Charges	2.0
Quality Control/Management	0.5
Demurrage	0.2
	29.0
Contingency	3.0
	32.0

Road Transport Costs to Newcastle (Lee Wharf) Stage 1 Sawmill Residues Only, As Proposed by Sawmillers Woodchips

	Lead Km.	Tonnes/Year 1000	$/Tonne	Total Cost $'000
Casino	-	-	-	-
Baradine	480	0.5	18.0	9
Bathurst	400	2.5	15.2	38
Coffs Harbour	400	31.0	15.2	471
Glen Innes	480	25.0	18.0	450
Kempsey	304	33.0	12.0	396
Newcastle	80	42.0 (10)	4.3	181 (43)
Taree	176	50.0 (19)	7.6	380 (144)
Wauchope	240	16.0	9.8	157
		200.0 (137)		2,082 (1,708)
		180* (123)	11.5 (13.9) (Average)	

* Slab is to be transported which may incur 10% loss on chipping at central chipper.

Only a small proportion of the large Coffs Harbour residues is proposed to be collected.

The tonnage, as proposed, from the Taree and Newcastle areas includes that already used by the local hardboard industry. The average haulage cost shown in brackets excludes 63,000 tonnes per year, the future demand requirement indicated by Hardboards.

It must also be noted that while accepting these proposed tonnages they do, in fact, differ somewhat from the estimates of sawmill residues as arrived at by the Committee and are higher in respect of the Newcastle and Taree areas. The tonnage figures shown in brackets are hypothetical in allowing for collection for Hardboards, etc. Any error would not have a significant effect upon costs.

Sawmillers would be expected to accept less than $6 per tonne for slab residues. The project appears to be uneconomical. Total costs would be $10.6 per tonne at least, higher than for Coffs Harbour export (180,000 tonnes per year vs 350,000 tonnes per year). Any higher tonnage ex Lee Wharf would incur higher costs of more distant residues but could hardly be a workable situation.

(e) Iluka - 329,000 tonnes per year.

Capital Expenditures	$	15 yrs. Amortisation $/tonne	Interest Cost 8% $/Tonne
Dredging and Berth*	7,000,000	1.42	1.70
Access Roads	500,000	0.10	0.12
Stacker/Loader	1,250,000	0.25	0.30
	8,750,000	1.77	2.12
Nett cost after 45% tax saving		0.97	1.17

* 1974 estimate was $5.7 million, to accommodate large vessels of 45,000 d.w.t.

Project Costs

Equipment) interest	1.1
Port Development) amortisation	1.0
Wharfage	0.3
Road Haulage	7.7
Chips (5/m + mobile)	10.7
Port Operational	0.8
Maintenance Dredging $1 million/year	0.3
Roads	0.2
	22.1
Contingency	3.0
	25.1

Road Transport Costs to Iluka

Zone	Lead Km.	Lead Miles	$/ Tonne	'000 Tonnes/ Year	Total Cost $'000
Casino	160	100	7.0	73	511
Coffs Harbour	140	88	6.3	150	945
Glen Innes	240	150	9.8	58	568
Kempsey	270	170	10.9	48	523
	Average -		7.7	329	2,547

Inclusion of Wauchope residues would increase the average transport cost.

(f) Impact of Inflation upon Escalation of Variable Costs

Relativity of Alternative Schemes: Newcastle/Brisbane vs Coffs Harbour

Assumed Inflation Rate Of	Year	Fixed Cost Difference $'000	Operating Cost Difference $'000	Advantage of Coffs Harbour Project
10%	1	315	-	-315
10%	2	315	2,450	+2,135
10%	3	315	2,695	+2,380
10%	4	315	2,965	+2,650
10%	5	315	3,261	+2,946
10%	6	315	3,587	+3,272

By the sixth year, the Coffs Harbour advantage could be $9-35 per tonne when exporting 350,000 tonnes per year.

It has been assumed that in Year 1 no operating cost. difference will be incurred although fixed costs will accrue.

The benefits of a capital cost orientated industry are thus illustrated in minimising risks due to inflation which increases variable costs. While an extra $3 million capital for trucks for transport to Newcastle almost balances the $4 million for Coffs Harbour port development, the latter does not incur variable costs (i.e. higher transport costs) nor replacement capital in the short-term. While transport costs have been recognised as the key to economic viability of the industry as a whole, Newcastle as the port of shipment could increase transport costs to the extent of being non-viable.

add to Dr D
See P.33

FORESTRY DISTRICT	TRANSPORT CENTRES	(1) SAWLOG INPUTS cu. m. 1973-1974	SAWMILL RESIDUES @ 1 tonne per 3 cu. m. log input	(2) FOREST RESIDUES		TARGETED INTAKE / ANNUM	LEAD DISTANCE Km.	CARTAGE $/TONNE	CARTAGE COST $ 000
				CROWN	P.P.				
CASINO	KYOGLE CASINO	169600	56500	N/A	N/A	16000	203	8.50	136
COFFS HBR.	GRAFTON COFFS HBR. DORRIGO BOWRAVILLE	276800	92300	51000	20000	158000	64	3.70	585
KEMPSEY	MACKSVILLE KEMPSEY	154900	51600	30000	20000	93000	88	4.50	418
WAUCHOPE	TELEGRAPH R WAUCHOPE HERONS CK.	109100	36400	N/A	N/A	23000	170	7.35	169
TAREE	JOHNS RIVER TAREE MT. GEORGE	211000	70300	N/A	N/A	27000	232	9.45	255
GLEN INNES	GLEN I. ARMIDALE	175300	58400	N/A	N/A	33000	224	9.20	304
NEWCASTLE	B'DELAH DUNGOG M'BROOK WYONG	119400	39800	N/A	N/A	--	--	--	--
							AV./TOTAL	5.35	1867

Total targeted annual intake during years 3 to 10 of an initial 15 year operation: 350,000 tonnes

(1) Forestry Commission Annual Report 1973-1974.

(2) Results of Studies as published in our E.I.S. February 1975.

COFFS HARBOUR WOODCHIP PROPOSAL
DISSECTION OF ESTIMATED INCOME BY DISTRICT PRODUCTION UNITS AND SERVICES
ALLEN TAYLOR'S ESTIMATES

DISTRICT	PRODUCTION UNITS/SERVICES						TOTAL
	TONNAGE '000	CHIPPING S'MILLS & BUSH	BUSH HARVESTING	ROYALTY	CARTAGE	ADMINISTRAT'N & LOADING	
		$	$	$	$	$	$
COFFS HARBOUR	158	1,172,000	544,000	136,000	585,000	1,418,000	3,855,000
KEMPSEY	93	652,000	344,000	86,000	418,000		1,500,000
CASINO	16	160,000	-	-	136,000		296,000
OTHERS	83	830,000	-	-	728,000		1,558,000
TOTALS	350	2,814,000	888,000	222,000	1,867,000	1,418,000	7,239,000

Estimated, additional direct Income - Wages, Oil, Fuel, Tyres, Electricity Repairs & Profit - Kempsey/Coffs Harbour, Grafton District

CHIPPING - SAWMILL & BUSH	64% of $1,824,000	$1,167,000
BUSH HARVESTING	68% of $ 888,000	$ 604,000
ROYALTY	80% of $ 222,000	$ 178,000
CARTAGE	73% of $1,003,000	$ 732,000
ADMINISTRATION & LOADING	20% of $1,418,000	$ 284,000
		2,965,000

3. COSTS OF CHIPPING

(1) AT SAWMILLS (Fixed and Mobile)

Cost Item	Mobile 40,000	4,000+	$/Tonne 6,000 +
Capital Service	0.3	1.8	1.2
Amortization	0.8	1.2	0.2
Maintenance	0.8	0.3	0.3
Wages			
. blade sharpening)			
. debarking)	1.3	2.5	2.5
. chipping)			
Value of slab residue	6.8*	4.2	5.2
	10.0	10.0	10.0

*Allowing $0.8 for profit and contingency, return to sawmiller would be $6.

Mobile chipping appears to be more economic and the return to the Sawmiller greater. However, small wood pieces cannot be recovered in the larger mobile chipper and sawmill chippers are said to be more convenient.

Fixed Chipping

- 30 at 30 mills - total output, say, 120,000 tonne/year
- Cost $70,000 total $2,100,000
- Tonnage 4,000 tonne/year average/mill
- Amortization 15 years
- Interest @ 10% on $7,000 = $0.7/tonne
- Wages @ half the time of two men (4,000) 1½ man (6,000)
- Maintenance $1,000 year

Mobile Chipping

- Two servicing 80,000 tonne/year
- Cost $120,000 each total $240,000
- Amortisation 15 years = $16,000/year for both
- Interest @ 10% on $240,000 = $24,000
- Wages three men = $30,000/year on chipper
- One or two men $20,000 in mill yard bundling, etc.

Estimated Average Cost of Chipped Residues from Sawmills and Forests

It is assumed that the average cost/price of chips at sawmills would be $10 per tonne whether chipped by mobile or fixed chippers.

	$/Tonne		Tonne/Year	
Sawmills	10.0	x	205,000	= 2,050,000
Forests	11.6	x	145,000	= 1,682,000
	10.7		350,000	3,732,000

In assumption of the hypotheses a similar ratio could be applied in respect of any total tonnage resulting in a similar average cost of chips.

2) IN FORESTS (Mobile)

Equipment	$	
. Chipper	120,000)	
. Tractor	50,000)	4 of the above
. 2 skidders	75,000)	units = $1,000,000
. Four wheel drive	5,000)	
	250,000	

Amortisation of above:-

. life 5 years approximate
. utilisation 800,000 tonnes approximately
. cost per tonne = $1.3

Interest on above:-

. at 10% (subject to source) = $100,000/year
. cost per tonne = $0.7 (145,000 tonnes/year)

Maintenance of above:-

. replacement parts, etc. allow 25% of capital costs

Wages 6 men per unit x 4 = 24, i.e., $240,000 = ($1.7/tonne)

Cost of Residues:-	$/tonne*	Tonnes/yr.
1. Royalty on log waste	3	70,000
2. Royalty on thinnings	5	40,000
3. Agricultural waste	7	35,000
		145,000

* these are assumed average approximations. The Forestry Commission has indicated that royalties will depend upon the economics of the industry.

Estimated Order of Costs	$ per tonne	1	2	3
Cost Item				
Capital Service	0.7			
Amortisation	1.3			
Maintenance of Equipment	1.6			
		5.3	5.3	5.3
Wages				
. debarking)				
. harvesting/removal)				
. chipping)	1.7			
Residues cost, and profit		4.7	7.3	8.3
		10.1	12.6	13.6

Estimated average cost of Mobile Chipping of Forest Residues

1.	10.1 x 70,000	=	707,000
2.	12.6 x 40,000	=	504,000
3.	13.6 x 35,000	=	476,000
	11.6 145,000		1,687,000

3) A brief outline of chipping could be of interest to some extent even if to throw enlightenment upon the specific area of intensive and indiscriminate clear felling operations emerging on the north coast. If central chippers are not installed there is less likelihood of such operations being practical or viable.

	Fixed	Mobile	Central
Capacity tonne/yr.	10,000--20,000	40,000	500,000
disc diam (incl.)	36.49.54	72	96" 144"
Type of residue	Small slab	split billets 15" diam.	large billets whole log
cost	$80,000	120,000	$200,000 to $800,000
Horse power required	100	200	800 1600

It is understood only disc type are used in Australia but drum types have been introduced overseas. Disc types have around 6 knives whereas drum types have in the order of 60 knives.

The Harris-Daishowa operation at Eden was initially based upon log splitting in the forests and central chipping of split billets at the mill. Such methods were found costly and the problem is evidenced by the recent installation of a central whole log chipper and debarker at Eden which has overcome capacity and other problems although the billet chipper is still used on a supplementary basis.

Mobile chippers envisaged by Allen Taylor are much smaller and not suitable for intensive clear felling operations. Higher costs of collection and chipping are envisaged for forest residues than sawmill residues.

(4) An exercise showing the possible extent of fixed and mobile chipping:-

AT SAWMILLS	MOBILE CHIPPING	FIXED CHIPPING	
Tonnes/year chip output	Less than 3,000	4,000 to 6,000	6,000
AREA	No. of mills	No. of mills	
Casino	16	5	1
Grafton	5	0	3
Coffs Harbour	20	8	1
Glen Innes	7	2	2
Kempsey	5	2	0
Wauchope	3	5	1
Taree	13	2	1
Newcastle	9	2	0
Totals	78	26	9

Costs indicate a sawmiller would receive less return on fixed chipping than mobile chipping where his chip output was less than 5,000 tonnes per year.

4. ELECTRIC POWER

The North Coast area, including Coffs Harbour area, is served with power by the Northern Rivers County Council. Existing mills are already served by the system and no difficulty would be experienced in making capacity available subject to the usual advice of the time scale envisaged in the development of the proposed industry.

5. COMPARISON OF CURRENT TRANSPORT RATES

$ per tonne

Equivalent distance	Km.	1	2	3	4	Rail Standard Wagons	Unit Train Wagons (Company)
Short haul	48	3.2	-	-	2.8		
	80	4.3	4.5	3.8	3.7		
Kempsey/CH	112	5.4		4.7	4.5		
Casino/CH	160	7.5		6.7	8.5		
Taree/N	176	7.6	8.0			13.5+5/18.5	
Wauchope/CH	192	8.1	8.4		7.4		
Wauchope/N	240	9.8	9.8	10.0		16 + 5/21	8 + 5/13
Glen In./CH	240	9.8	9.8		9.2		
Taree/CH	224				9.5		
Kempsey/N	304	12	11.6			14 + 5/22	
Coffs H./N)	400	15.2	16			19 + 5/24	9.2+5/14.2
Glen In./N) Grafton/N)	480	18				20 + 5/25	12 + 5/17

1. Formulae computerised from broad range of rates

   $\frac{150}{\text{km.}} + 3.44$ = cents per tonne per km.

   Rate$/tonne = Cents per tonne per km. x km. ÷ 100

2. Log haul N.S.W. (Forestry Commission)
3. Eden Woodchip haulage. An overall 10-15% escallation could be expected in the near future.

4. Allen Taylor

Woodchip Orbost/Eden

3.5c/tonne/km., 112-240 km. range.

4.9c/tonne/km. 80-272 km., i.e. $3-85/tonne for 78 km.

Billets

Austin Anderson Timber Transportation Study - Tasmania May, [illegible]

3.58c/tonne/km., 30-200 km. - owner drivers - one long and one short haul per day totalling 480 km.

Coal - Newcastle Area

6 km. @ 9.61 c/tonne/km. = $0.6 48 km. @ 6c/tonne/km. $2.9/tonne

63km. @ 4.85c/tonne/km. = $3-10/tonne. Rate levels after [illegible]

98km. @ 4.84c/tonne/km. = $4.84/tonne

6 p.m. - 12 mid. 5.15c/tonne/km. 12 mid., Sat 5.21 c/[illegible]

In general owner-drivers expect a return of $170 per day ($190 with overtime). For 48 km. haulage of 3 trips/day 20 tonne the rate would be $2.7 per tonne (4 trips, i.e. [illegible] tonne/day, rate $2.4).

Unit Train Freight Rates (in company-owned wagons)

To unit train rates have to be added the cost ($5 per tonne) of handling from mills to the three sidings.

Whilst the prepared exercise is purely hypothetical, based upon hypothetical movement, the Public Transport Commission is prepared to offer the successful company the following rates:-

Grafton to Kooragang	$10-53 per tonne
Coffs Harbour to Kooragang	$9-20 per tonne
Wauchope to Kooragang	$8-05 per tonne

The rates are subject to any general escalation in rates that occur prior to the traffic moving and are offered on the following conditions:-

(a) Gross weight of wagons is indefinite but with a density of 0.44 tonnes per m^3, it is assumed a wagon can be built to provide a nett load of 50 tonnes with a gross no greater than 76 tonnes. On this basis, each train could comprise 1 x 44 class diesel electric locomotive, 13 wagons for a gross load of 1,020 tonnes and a nett load of 650 tonnes.

Suitable loading and unloading facilities would need to be constructed to permit loading to be performed within two hours and unloading in the same period.

(b) Time for loading ten minutes per wagon.

(c) Operations are carried out round the clock, loading and unloading to commence on arrival of trains.

(d) Based on five-day week operation.

(e) Operations based on a 48-week year, five train movements per week.

(f) Wagons will be privately owned.

(g) Repair costs for wagons have not been allowed for, assumed that this will be borne by the company.

(h) Repair costs for brakevans have been allowed for in the pricing.

(i) Examination and lubricating costs for wagons and brakevans have been included in the costing.

(j) No allowance has been made for any special sidings or loading or unloading facilities which may be required.

(k) The potential wagon cycle time will allow one rake of 13 wagons to move the tonnages given, but there is no spare time for any delays or breakdowns in the traffic movements or loading and unloading scheduled times.

(l) The movement of the following annual tonnages:

Grafton	31,200 tonnes)	
Coffs Harbour	62,400 tonnes)	156,000 tonnes
Wauchope	52,400 tonnes)	

Rates applicable to wagon loads of woodchips using standard rolling stock owned by the Commission to Kooragang Island are as follows:-

	Per Tonne
Wauchope	$16-02
Heron's Creek, Kendall	15-32
Taree	13-46
Wingham	12-93
Tamworth	16-00
Muswellbrook	9-72
Singleton	7-02
Maitland	4-55
Grafton	20-21
Coffs Harbour	19-04

Unit Train Haulage Costs from Coffs Harbour Area

	150,000 tonnes
15 wagons @ $50,000	$750,000
1 railhead facility	60,000
Rail unloader at Port	90,000
Expenditure	$900,000

	Cost $/Tonne
Amortization - 10 years	0.4
Interest - 10%	0.6
Maintenance	0.3
Demurrage	0.1
Railhead operation - unload, stockpile, load	0.5
Short lead road haul to railhead (48 km average)	3.0
Unloading at port	0.1
	5.0
Unit train to Newcastle	9.2*
Total (road/rail)	$14.2

* subject to P.T.C. hypothetical exercise.

Rail transport is more costly than road except over distances equivalent to Coffs Harbour, Newcastle and beyond and where specifically unit train rates could apply presumably in respect of tonnage multiples of 150,000 tonnes per year (train rake capability).

Road haulage would be necessary for "short-haul" from nearly all collection points to specifically built railhead facilities thus significantly contributing to overall costs.

6. SHIPPING COSTS

Availability of Woodchip Carriers

At present, there are approximately 85 chip carriers, either existing or building, under the control of Japanese shipping interests. As relatively specialised vessels, built or converted to carry woodchips, these are usually the subject of ten to fifteen year charter contracts. Hence, uncommitted vessels are not usually available for charter.

In the present depressed state of the paper market in Japan, some vessels have been released from charter contracts and, in addition, other vessels are coming clear of original long-term charter. However, in the long-term, confidence cannot be placed in any Australian woodchip export industry having ships readily available to it for charter purposes. Indications are that where vessels do become available it is probably that these would be of a smaller size of carrier.

Vessel Size

Vessels range in size from about 7,000 D.W.T. to 60,000 D.W.T. with few vessels at the extremes of this range. The most common size of vessels is in the 30,000-40,000 D.W.T. range and Japanese shipping interests have indicated that this size of vessel will most probably continue to be the greatest in number in the foreseeable future. There are 14 Japanese-owned vessels presently contracted for the haulage of chips from Australasia to Japan; these range in size from 22,000 D.W.T. to 48,000 D.W.T.

It will be seen, therefore, that the limitations on size of vessels capable of safely using Coffs Harbour, viz. 28,000 D.W.T., will result in woodchips from the North Coast being limited, in export from that port, to the smallest group of vessels presently engaged in this trade to Japan.

Examples of Contracts

(a) British Columbia to Japan

Vessel size - 28,300 D.W.T.
Entered service in 1975.
Unit freight cost (approximate Australian equivalent) - $5.5 per tonne subject to escalation.
Period of charter - 10 years.

(b) Bunbury (Western Australia) to Japan

Vessel size - 41,000 D.W.T.
To enter service mid-1977.
Unit freight cost - $6.9 per tonne, subject to escalation.
Period of charter - 10 years.

Likely Trend of Future Freight Rates

Advice to the Committee has indicated, firstly, a wide range of freight rates of vessels now in service and, secondly, a likely increase in freight rates in the future as newer, more costly vessels enter service.

The extent of variation in existing freight rates is indicated in the following table (information supplied by C.H. Itoh):-

Older Ships

Tonnes D.W.T.	$ Per Tonne U.S.A. to Japan
24,000	10.20
24,000	5.75
26,000	5.35
31,000	9.10
39,000	4.55
47,000	6.45
58,000	3.75

Vessels Recently Built and Hence on New Contracts

29,800 D.W.T. - $11-40 per tonne U.S.A. to Japan
32,500 D.W.T. - $13-00 per tonne U.S.A. to Japan

Vessels Now Building - Anticipated Freight Rates

25,000 D.W.T. - $16-70 per tonne U.S.A. to Japan
50,000 D.W.T. - $14-70 per tonne U.S.A. to Japan

Information supplied in regard to three vessels due to enter service in 1977 shows a similar trend of increase in likely freight rates, viz:-

23,750 D.W.T. vessel - anticipated freight rate $13.5 per tonne Australia to Japan

36,700 D.W.T. vessel - anticipated freight rate $12.37 per tonne Australia to Japan

50,000 D.W.T. vessel - anticipated freight rate to [illegible]9 per tonne Australia to Japan

Comparative Size of Vessel to Serve Export from Coffs Harbour or Newcastle

The vessel size limitation necessary for Coffs Harbour is 28,000 D.W.T. Such a size of vessel could be among those most likely to become available from existing long-term charterers. C.H. Itoh indicates that a particular vessel

of approximately 25,000 D.W.T. would be likely to be available for operation out of Coffs Harbour and the freight rate (being an older vessel) would be approximately $8.8 to $15.4 per tonne. This is a very satisfactory freight rate. Should resort have to be made to a newer vessel, the indications are that a freight rate of about $19.8/tonne might apply.

The vessel size limitation for Newcastle is presently 50,000 D.W.T. which is approaching the largest woodchip carrier in the Australia/Japan service. If a vessel of 40,000-50,000 D.W.T. range could be available of the same age grouping as that said to be available at Coffs Harbour then a freight rate of say $5 per tonne could be expected. If such a satisfactory freight rate could not be obtained due to unavailability of older vessels then resort may have to be made to a newer vessel and a freight rate of about $10 per tonne might then be expected. The Committee is mindful of the fact that the Port of Newcastle is flexible and could accommodate and utilise small as well as large chip carriers if variations in world markets and trade demands make it opportune to do so.

In summary, the use of Coffs Harbour provides no problem in regard to shipping freight rates whilst the fortuitous availability to an older, smaller vessel continues. The future possibility of having to export woodchips in newer vessels, limited in selection to those up to 28,000 D.W.T., indicates the vulnerability in such an instance because the landed cost of the product in Japan would increase more than if larger vessels could be employed. Use of Newcastle as the export port would permit firmer control over the shipping freight segment of the landed cost of product in Japan, due to the flexibility in size of vessels which could be brought into service should market trends, availability of vessels, etc. necessitate future departure from the initial planned transportation pattern.

Charter Arrangements

The Committee reviewed the situation, common to many exports of bulk cargoes from Australia, where sale is on the basis of f.o.b. and not C.I.F. As Japanese interests would provide the vessels used in the woodchip export, it seems unlikely that agreement could be obtained to depart from the generally existing trade pattern based on f.o.b. prices. The advantage of f.o.b. trading to the Japanese purchaser is that any shipping economies flow to the purchaser rather than to the Australian exporter.

However, advantage to the exporter is that in times of commodity downturn, he will avoid financial difficulty and loss in the shipping business which could be one important reason why Australian exports are predominantly f.o.b. based.

Coffs Harbour with no future capacity for increase in vessel size offers no potential for a reduction in the future sea transportation cost.

Newcastle could, on the other hand, offer future sea transportation economies as larger vessels may use that port and provided sales were on a C.I.F. basis.

However, pricing patterns indicate that economies in sea transportation could convenience the buyer at the inconvenience of the exporter by export through Newcastle versus Coffs Harbour with no financial gain to the exporter.

The Committee's view is that any economies in sea transportation should be able to be passed on to local producers. In view of unlikely alteration of the existing f.o.b. pattern, the Committee has accepted the inability to price the product through to port of discharge and consequently all prices in this report are therefore limited to a f.o.b. basis.

In considering the proposal for export from Coffs Harbour, the Committee is mindful of the fact that the proposed export price by C.H. Itoh ex Coffs Harbour is as high as the export price prevailing for other Australian woodchip projects where large carriers operate and chip costs are higher. Thus, in this instance, the potentially higher sea freight cost - brought about by the limitation in size of vessel - has not led to a disadvantageous price to the Australian exporter. The Committee also noted that the f.o.b. prices quoted for New Zealand softwood chips are not materially different from those quoted for Australian hardwood chips although generally smaller vessels are engaged on the New Zealand-Japan trade. The Committee therefore is satisfied that, at this juncture, the proposed export of woodchips from the north coast of N.S.W. does not appear to be disadvantageously based in terms of export price.

Summary

It must be recognised that specially built ships are required for woodchips and their availability is limited. Newly built ships, because of today's high cost of building, would command much higher rates than the average of older woodchip carriers. Information indicates that only smaller older carriers are available and, therefore, the use of smaller ships may not be a disadvantage, but rather an advantage.

This was to have been omitted - I understood.

Itoh has indicated a rate of $8.8 to $15.4/tonne using a smaller older ship which would be made available, whereas a new larger vessel would have to be built by any other buyer incurring a rate of the order of $19.8/tonne, so it is claimed.

It could well be queried why Itoh does not choose to ship ex Kooragang if, in fact, it would be cheaper since it is expected they will be obligated to pay the price indicated by the Australian Government in accordance with Australian parity (rather than world parity for similar ocean distances).

The size of a vessel which would most likely be used for the trade from Kooragang to Japan would appear to be of the order of from 25,000-35,000 tonnes D.W.T. (only 25,000 tonne vessels could be used from Lee Wharf). Any larger vessel would not be fully utilised. It is the policy of the buyer to operate a vessel continuously on a run, if possible. However, a large fleet owner most likely spreads his costs over all runs and a high cost in one operation may not be debited to that particular operation.

It does not seem possible to pre-determine the actual freight rate as it will largely depend upon ship availability at the time. F.o.b. rates could be much higher using a recent large carrier than an older small carrier. Information suggests smaller carriers are not available. A large carrier would not be fully utilised by the proposed North Coast industry. The problem is a marketing one. The buyer would appear to be in the best negotiating position. It has been indicated by proponents that there are quite a number of vessels in the 20,000-25,000 tonnes class suitable for world trips and the Japanese importers would probably use these vessels.

The question of tug hire costs is a matter under negotiation between the parties - Allen Taylor has proposed that Itoh bear the tug hire or ownership costs which have not, at this time, been accepted nor rejected. Such costs could amount to $0.7 or $0.5 per tonne on the basis of the hiring of both tugs or the hire of one and the ownership of the second, respectively.

The Committee has not been able to reach unanimous agreement as to the effect of shipping costs which primarily depend upon availability of vessels in the future. The cost could possibly be higher ex Coffs Harbour than Kooragang but information provided by Itoh indicates any extra cost may be absorbed by the buyer. Further, since it is the Federal Government's policy to consider the adequacy or otherwise of trade on an f.o.b. basis, it appeared reasonable to eliminate further consideration of this matter. Thus relative economics of the alternative schemes are calculated to the point of being loaded onto the vessel, i.e. the costs to the local industry.

APPENDIX III

POTENTIAL BENEFITS OF THE INDUSTRY
IF ENJOLT PORT AT COFFS HARBOUR

1. REGIONAL

1) Employment: The employment results of wood-based industries can be spectacular according to world-wide experience.

A classic example is illustrated at Eden where Harris-Daishowa Australia Pty. Ltd. began a woodchip project in the late 1960's and since then has increased its direct employment from 114 in '67 to 530 during June, 1975. The more recent figure represents over 30% of the town's total workforce and undoubtedly a higher percentage if indirect employment is taken into account.

In common with Coffs Harbour and the North Coast case, fishing is an important industry at Eden and in the latter town there are seasonal employment drifts between the woodchip and fishing industries which has allowed a wider employment base to operate for the majority of the year. Both industries interact with one another for the overall benefit of the town. This benefit is reflected by the observation that seven years ago Eden had very high levels of seasonal unemployment while today workers can readily find a job in either the fishing or the woodchip industry.

This favourable employment situation has provided a prerequisite for the population of Eden to increase and since 1971 the population has increased by 1,600 to 3,800. The woodchip industry's role in increasing the area's population is difficult to qualify exactly, but using a 3.5 average family size has brought 530 - 114 or 416 x 3.5, i.e. 1,456 people into Eden since 1971 which is 92% of the actual population increase of 1,600 reported over the period.

Although the establishment of a woodchip industry on the North Coast will undoubtedly create additional employment and regional benefits, the ultimate advantages could differ from the Eden experience as a result of the following:-

- A substantial decline in the native forestry yield and consequently employment is anticipated in the forest industries. In 1973/74, 1,840 people were employed in sawmilling in the Coffs Harbour FORWOOD Region while in the 1980's only 1,300 are expected to be employed. This declining employment trend is also evident in other areas, i.e. Casino, Dungog and Wauchope, although Coffs Harbour will probably be the most affected area.

This trend is likely to step-up over the period 15 to 30 years hence.

* FORWOOD Regions - those regions considered by the Forest and Wood Based Industries Conference (shortened to FORWOOD) which met in April, 1974, to review all aspects of forestry policy.

. The expected employment by a North Coast woodchip operation is also low compared to the number involved at Eden due to the source of the basic material which, at Eden, is directly required to be felled in the forest. Unlike the Eden area, where there is an extensive forest area largely uncommitted to existing industries, on the North Coast the forest areas are largely committed to the supply of sawlogs for a larger established industry and employment therein.

. At the time the woodchip industry was set up at Eden, the economic base of the town was narrow, small and seasonal as a result of the fishing industry and minor industries.

A North Coast woodchip export industry would have the effect of retaining some labour in the area and partially preventing the population drift to the big cities which may well occur as the North Coast sawmill industry declines in the future.

A woodchip project could also help mobilise timber resources with an aim to establishing a pulpmill in the area. A pulpmill would be a major employer and would provide jobs for about 1,000 people. Australian Paper Manufacturers have been buying up suitable land in the Bellingen-Coffs Harbour area for many years with a view to ultimately setting up a pulpmill to supply a major share of this State's currently imported pulp and paper needs and if this eventuates it will benefit the region to a substantial extent.

The multiplier effects of woodchipping are known to be greater than those of pure sawmilling. Thus, the overall employment results of woodchipping could be expected to be significantly greater than the 200 men likely to be directly employed.

Empirical evidence of the multiplier effect is limited and difficult to generalise, but a study by Hirshman (1970) discovered that forestry had strong backward and forward linkages and these linkages became stronger as more processing occurred. (A forward linkage describes the process in which output of the

forest industries are used by other industries and backward linkages occur when the forest industries use inputs from supplying industries.) These linkages can be important to the region as strong linkages, especially backward ones, ultimately induce a network of income and employment flows to become operational.

The assessment of employment covers the zone of influence of Coffs Harbour at target production of 350,000 tonnes per year. Probably less than thirty sawmills appear large enough (i.e. which could produce over 4,000 tonnes per year of chips) to justify a fixed chipper installation. Such mills could account for 120,000 tonnes per year each. Possibly up to 15 mills could install fixed chippers to service groups of mills in close enough proximity to each other.

Two mobile chippers may be required to service the majority of sawmills which are small (numbering 100 to 200) and which account for 35% of mill log intake, i.e. 80,000 tonnes. Mobile chippers may be found even more economic as cost inflation erodes the profitability of low capacity fixed chippers.

What the balance between mobile chippers and fixed chippers will finally be is indeterminate at present. Planning in relation to logistics will be highly important.

A mobile chipper could chip at the rate of 60 - 70 tonnes per hour and within three hours chip the residues held at a small mill; the rest of the day could be spent travelling. Even at this rate, the capacity of mobile chippers could be 80,000 tonnes per year as against a fixed chipper which at the largest mill would not exceed 10,000 tonnes per year on the basis of its own residues.

30 fixed chippers employing two men in larger mills, including increased debarking in the forests	say	60
50 medium-size sawmills - group basis	say	50
2 mobile chippers - for small mills		6
<u>Forest Mobile Chipping</u>		
4 chippers, three men each		12
4 tractor/harvestors		8
<u>Transport</u>		
35 trucks, one man each		35
Fleet service, five men		5
<u>Port</u>		
Stacker/loader crew 5, Clerical 3, Quality control 2, Forest management 1, Transport management 2, Management 1		14
		190

Kaiser and Dutrow (1971) carried out a detailed study of forest industries in the southern U.S.A. and from their work an employment multiplier for woodchip production can be inferred to be about 2.1 as against 1.6 for sawmilling. These multiplier figures would be higher than those to be expected in the N.S.W. North Coast due to the larger size of the U.S.A. projects and larger leakages from the N.S.W. system. Panel 5 of the FORWOOD Conference investigated the South Australian project at Mount Gambier and estimated an employment multiplier of 1.55. This figure is consistent with the American study and seems quite realistic in the case of the future North Coast (Coffs Harbour) woodchip industry while a figure of 1.2 for the currently established sawmilling activities would seem a fair approximation of the employment multiplier. If these figures are applied to the previously mentioned future employment estimate of 200, it can be concluded that 217 could be directly and indirectly employed in the North Coast area. The number of 800 or 900, allowing for the multiplier effect, who are expected to lose their jobs in sawmilling on the North Coast is probably an over-estimation as a number of indirect jobs will probably remain to service other industries or operate at a lower level. Thus, to be optimistic, only those currently employed directly will actually lose their job as a result of the decreased hardwood production.

It can be concluded that although the establishment of a woodchip industry on the North Coast will not have a dramatic effect on the regional labour system, it could provide employment benefits to the Region and possibly some relief from the decreasing job opportunities expected in the sawmilling and logging industry.

2) Tourism ,

The tourist value of the North Coast region is self-evident. Annual visits represent some two million person trips - staying in 1973-74 a total of 7,127,000 person nights and spending some $35 million in the region.

The natural recreational environment is immensely important to the region and the cause of much tourist activity as it is the beaches and climatic conditions that attract most people to the North Coast resorts. With this in mind, it is understandable that residents and environmentalists express concern against any industry which could damage the natural forests, etc., cause congestion and pollution and consequently deplete tourism.

Large road transport units and movement should naturally be minimised. With an average annual daily traffic flow of about 10,000 on the Pacific Highway through Coffs Harbour, it can be argued that about 50 extra trucks per day will only have a slight effect provided that Howard Street by-pass is used.

It has been argued that a port facility and woodchip plant would be aesthetically harmful to the environment thus lessening the tourist attractions of an area. However, the experience at Eden seems to contradict such a theory. In fact, some fifty tours a year are conducted over the woodchip plant and about 1,000 people inspected the Eden project in 1975. Response has been such that further tours may have to be scheduled in the near future. The tour takes between three and four hours and it appears that some tourists would spend more on the usual items and accommodation.

Evidence from around the world and specifically Queensland where the "Big Pineapple" is situated and the North Coast of N.S.W. where the "Big Banana" is found, suggests that tourists are definitely attracted to resorts where agricultural based complexes with supervised tours can be found. A woodchip export complex could be viewed as a similar unique development.

Although not clearly outlined to date Allen Taylor proposes a number of tourist facilities associated with the industry and port development.

Representations to the National Parks and Wildlife Service have now defined the proposed boundary for limiting dredging in relation to provision of a Marine Park around Muttonbird Island. A figure of about 30 metres from low water mark is now proposed and spoil must not be allowed to be deposited inside such boundary. This can be accommodated by using a suction cutter dredge and such was intended by Allen Taylor. Accordingly, it appears that this environmental requirement can be satisfied.

PPH - please note this addition by Fisheries Branch

Representations were also made from the Officer of the National Parks & Wildlife Service who was representing the Aboriginal community in the Coffs Harbour area. He explained the mythological significance of Corambirra Point and the attitude now being taken by the Aboriginal people.

It appears that the quarry area and the two access roads existing onto Corambirra Point could be excluded from the area designated as a reserve of significance to the Aboriginal people and the bulk of the peninsula proclaimed. The Aborigines desire the proclaimed area to be developed with a cairn and suitable plaque and some re-afforestation, generally, to restore the condition existing many years ago and appreciate that the funds to do this work can most simply become available by trading-off the small part which, in terms of mythological significance, might be regarded as devastated.

The company proposing to use this site has offered the necessary funding and this has been taken up in the financial submissions. The Aborigines are understood to be happy with this arrangement and negotiations are proceeding. Any recommendation arising from the Committee would be on the basis that these conditions were acceptable and were maintained by any successful company.

The aesthetics of the stockpile cannot be objectively debated although as an integral part of the overall project, it could be argued that it would attract as many tourists as it would deter. There is no possibility of significant quantities of woodchips being scattered over surrounding areas. At Eden, there is negligible pollution of the surrounding areas.

The Forestry Commission, in its publication "Woodchips from Eden", points to the minimal disturbance caused by the project and concludes that "no adverse results" can be outlined.

3) Community

Many of the community benefits that can be expected to result from the woodchip industry can be inferred from the foregoing two sections.

A larger more economically stable area, which woodchipping industries can help to induce, can provide a wider range of facilities and more freedom of choice is available to the inhabitants thus benefitting their life-style in a number of ways.

Again, the Eden experience provides a useful precedent and the community benefits that woodchip operations appear to have stimulated can be summarised as follows:-

. Greater direct employment opportunities.

- Greater income generated from worker salaries.

- The previous two aspects providing incentives for more people to enter the area which, in turn, stimulates other industries and services to be established.

- Increased numbers of tourists (many to actually tour the woodchip plant per se) creating further demand for tourist facilities in turn stimulating further employment and income.

- Building approval for tourist-type accommodation has increased from $31,000 in 1972 to $742,000 in 1975.

- Building approval for commercial premises has increased from $52,000 in 1972 to $394,000 in 1975.

- Twenty new shops have been built in the last five years.

- One new bank and a new library.

- A new modern caravan park catering for 130 people.

- A new 16 unit motel is planned.

- Owners of Bayview Motel are pursuing an application for a new 50 unit licensed motel.

- Building approvals for dwellings has increasedfrom 31 in 1972 to 61 in 1974.

- A new high school was opened at Eden in 1973 also catering for secondary education requirements and bringing more school teachers to the town to service the higher educational needs.

- Increased establishment and membership of service and sporting clubs has brought about improved recreational facilities available to residents and tourists.

- Significant improvement and increase in the capacity and quality of electricity supply in this area has been to the advantage of consumers.

- Council staff increased by 30 (50%) since 1968.

It is evident that many of these benefits were initiated by Government or institutions. The actual flows that will accrue to the various levels of Government will be discussed in the following section of this report, but it is relevant at this stage to point out that some proportion of the revenue collected by the Government is returned to the area of origin. Some taxes, e.g. road taxes, are raised for the main purpose of repairing roads damaged by large motor vehicles. But even these simple repair activities will be of economic benefit to the whole area as employment is generated on repair of roads, trucks, etc. while parts and materials are also required for equipment and works.

A percentage of forestry royalties are also returned to the area of origin and better forest management will result from the increased royalties which the woodchip operation will create.

As previously mentioned, a decline in native sawlologging around Coffs Harbour is also expected and woodchipping and more significantly pulpmaking would be useful in helping to arrest the employment and income recession expected in forest activities of the area. More tourist expenditure may also result and economically enhance the area as previously discussed in 2).

2. GOVERNMENT

Woodchip operations will result in a number of revenue flows occurring from the woodchipping firm(s) to various tiers of Government.

Local Council will receive additional land and water rates arising from increased population.

N.S.W. Government

- Road tax of approximately $60,000 per year.
- Port dues $100,000 per year.
- Forestry royalties, indeterminate say minimum the order of $50,000 per year.
- Motor vehicle registration $70,000 per year.

See P.11

See P11

- Fuel tax in the order of $100,000 per year.
- Power charges, indeterminate, say $400,000 per year. (a charge for services rendered)
- Payroll tax of about $50,000 per year.

Therefore, gross monies expected to flow to N.S.W. State Government from the woodchip industry could be in the order of $1 million per year and this figure excludes increased indirect taxes on various consumer item sales, etc.

Additionally, truck insurance may be taken out with the Government Insurance Office and if this occurs up to $30,000 per year could accrue to the Government.

Should have been deleted

Federal Government

- Company taxes on profits from the woodchip exports could be $180,000 per year if just over $1 per tonne is the firm's gross profit. Additional revenues could also arise from the increased profits of sawmillers and income taxes arising from increased employment, both direct and indirect.
- Sales taxes.
- Duty on equipment, if imported.
- Fuel tax will also be paid to the Commonwealth Government.

At a guess estimate, these Commonwealth revenues could be likely to exceed $1 million per year.

Total aggregate monies flowing to the three tiers of Government could be in the order of $2 million per year.

3. PRIVATE ENTERPRISE

The money the woodchip export company will pay to the numerous transport and timber operators will be a very important source of income to the North Coast. This is because not only will it be a significant amount of money but this extra income may help offset the decreasing sawlog output expected to occur.

It has been indicated that $6 per tonne will be paid to sawmillers for their timber which is used to make woodchips. When the peak output of 350,000 tonnes is reached, about 237,000 tonnes will come from sawmill residues which should mean that a direct flow of about $1.5 million each year will be introduced into the region's economic system as a result of payments to sawmillers

Such income could significantly improve the economic standing of the many small sawmills, many of which seem set for the hard times ahead and in some cases closure.

About 65,000 tonnes out of the 350,000 tonnes total could come from private property owners. If $6 per tonne is paid for the wood, this will mean an income flow of $400,000 per year will occur as a result of this previously useless timber.

A further 50,000 tonnes which could generate $300,000/ year is expected to be derived from the Forestry Commission's operations and this will also need to be harvested and chipped.

The direct income to chipping operators associated with gathering 350,000 tonnes/year of various residue types at an average round figure cost of $4 per tonne amounts to $1,400,000.

Income accruing to the transport industries will be in the order of $5.7 per tonne or $2 million per year when 350,000 tonnes per annum is exported. Labour and maintenance income derived from port operations at $0.8 per tonne will yield $300,000 per year in extra income when the target export output is reached.

These direct incomes amount to the order of $6 million per year. In an income multiplier of 1.5 is applied this will lead to total direct and indirect income of about $9 million per year introduced to the region's economy. The proportion accruing to the benefit of the Coffs Harbour area could be approximately in accordance with the ratio of $\frac{150{,}000 \text{ tonnes}}{350{,}000 \text{ tonnes}} \times \$9 \text{ million} = \$4\frac{1}{2}$ million per year allowing for the full benefit of port operations, management and the likelihood of the area being the centre of trucking facilities and service industries.

Properly managed and controlled, the woodchip industry could bring about improved sawlog yield, reduce the impact of the expected downturn and provide much needed finance to farmers, sawmillers and forest operators for their waste which is presently providing no economic return.

The direct and indirect employment from woodchip operations will aid private enterprise by increasing the overall income and therefore the markets in the region. All benefits could be significantly lower if Newcastle is the port of shipment particularly as fewer residues are likely to be collected in the Coffs Harbour area.

The facilities and activities that have grown at Eden have involved builders, mechanics, service and commodity suppliers, etc., most of whom were from private enterprise. The increased income that these extra jobs create is reflected in other ubiquitous rounds of spending and thus the overall multiplier effects of increased job opportunities would reach out beyond the region which originated the income flow.

REGIONAL COST/BENEFIT OF WOODCHIP EXPORT FROM COFFS HARBOUR

Costs

(a) Quantifiable: No major cost of this type can be foreseen at this stage.

Monies collected will wholly or partly cover the more identifiable extra costs expected to arise, such as increased forestry supervision, road repair and power distribution, etc. Costs of road maintenance could be higher if Newcastle is the port of shipment.

add D&D

While the major capital cost to industry at Coffs Harbour is required for port development, a similar capital cost at Newcastle is required for the additional trucks and replacements, presupposing, of course, that all residues would be collected. Thus, lower road transport costs ex Coffs Harbour might be regarded as contributing to the provision of a port at no cost to Government or the people. On the other hand, Newcastle could provide a convenience to foreign interests while inconveniencing local interests and increasing costs.

* Time and time again committee members raised the fact that the new port facility is of no value to any other industry or consector of community. (at least during the 15 years of the project)

Benefits

(a) Quantifiable: Federal, State and Local Governments and their associated bodies will receive monies in the form of port dues, various rates, progressive income taxes from employees of the woodchip operation and company taxes from the trucking and timber firms themselves. Total revenues from the above source will be about $2 million per year. A portion of this figure will be re-channelled back into Region 1 either directly or indirectly, e.g. road and fuel taxes, forestry royalties, truck registration.

Coffs Harbour residues appear uneconomic to transport to Brisbane or Newcastle and therefore Coffs Harbour, as the port for shipment, could enable collection of more residues thus generating maximum benefits to the area.

D&D addition

Total direct income to wood owners, sawmilling and transport industries will be about $6 million per annum when export reaches 350,000 tonnes. This will help widen the economic base of the region and thus create subsequent waves of income flow. Using an income multiplier of 1.5, total income generated from this source will be $9 million. Employment and population increases will be greater, exporting from a central port, representing more valuable decentralisation and regional benefits.

D&D addition *

* not substantiated by D&D. Export thru Newcastle employs more transport personnel if same volume is collected.

(b) Non-quantifiable: Trucking activities, increased tourism may cause congestion and related costs. Effects of trucking could be lowerif exportis from a central port.

None of the above costs should be of significant detriment to the region and the committee feels most can be readily controlled or minimised by existing institutions.

While the benefits to the community appear to be reasonably identifiable, the costs to the community appear to be minimal and primarily qualitative as related to aesthetic changes, i.e. traffic volume and the conflict of a port facility with the tourist environment.

(b) Non-quantifiable: Utilisation of forest wastes will allow improved forest management to take place-pollution from burning, and costs, will be reduced according to utilisation.

By the experience of similar projects elsewhere, the setting up of a woodchip export operation might increase tourism to the main centres of the project, i.e. the exporting port site and the larger sawmills. These tourists could generate further income, employment and a network of ancillary industries.

The woodchip project will mobilise a large timber resource which, to date, has been wasted. This mobilisation will tap a resource which may assist a pulpmill to operate in the area in a shorter length of time than was originally envisaged.

Although no definite commitments have been identified, the Committee considers that the setting up of a Central port on the North Coast could provide a desirable potential trade outlet for other industries in the area.