"AVAILABILITY OF TIMBER FOR PRESERVATION IN WESTERN AUSTRALIA"

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INTRODUCTION

The area of native State forest being managed under a system of multiple use including timber production, is inadequate to provide all the demands made on it for timber products, unless positive action is taken to improve productivity from the available forest.

The Conservation and Land Management Department is charged with meeting the Government's policy that guarantees the timber industry's resource base, at the levels projected in the General Working Plan No. 87 of 1982.

The available timber resource is changing from logs produced from mature hardwoods almost exclusively to a blend of traditional log material from traditional sources, together with resource from hardwood regrowth forests and softwood forests.

I propose to talk about;

- timber demand and supply predictions for WA
- the concept of net self sufficiency
- options to meet timber needs
- (a) softwoods
  (b) regrowth hardwood forests
- wider use of preserved timber

TIMBER DEMAND AND SUPPLY

The demand for timber - graph 1

HISTORICAL TREND IN WA SAWN TIMBER CONSUMPTION

Per Capita Consumption of Sawn Timber

A range of variables is used including;

- gross domestic product
- housing loan interest rates
- inflation rate
- price of wood products

Our predictions are for a slight drop in future per capita consumption.

Population Trends

The variables here are;

- birth rates
- immigration policies
- economic situation

The prediction used in our calculations are those used by the State Treasury which are close to those of the ABS.

Graph 2

WA POPULATION
(HISTORICAL AND PREDICTED)

Future Round Timber Demand

The sawn timber projections and population estimates are combined and then converted to round timber equivalents. The conversion factors used take into account the state of sawmilling technology, the changing nature of the resource and the changing balance of hardwoods and softwoods.

The results of these calculations are conservative by comparison with those of other authorities' predictions. The Departments per capita estimates are significantly more conservative than those of the BAE 1977 and 1982, Ian Ferguson (ANU), 1972 and the Forwood Conference 1974.

Graph 3

PAST CONSUMPTION AND FUTURE DEMANDS FOR TIMBER IN WA

The calculations for future timber demand and constantly reviewed and updated for general working plans.

We believe that the amount of energy used in processing timber and and alternative materials will eventually favour the use of timber.

The following table shows the relative manufacturing energy requirements for six common building materials.

RELATIVE MANUFACTURING ENERGY REQUIREMENTS FOR SIX COMMON MATERIALS

Product	Manufacturing energy requirements (Megajoules/kgm)
Aluminium	250
Copper	60
Glass	20
Brick and Tiles	4
Concrete	1
Wood	0.5

Source: CSIRO (Ecos 6)

Of course, the energy required to produce preservative treated wood will be greater than untreated wood. Even if this doubles the energy requirement, wood is still favourably placed to compete with other materials.

Timber Supply

Native forests must meet a range of purposes. Timber production is not compatible with all other uses and currently some 32% of native forest sawlog resources are not available.

A second constraint of our native forest is the slow growth rates. Likely rotations for karri exceed 100 years and for jarrah in excess of 250 years. The areas of forest available for production are too small to sustain present cutting rates in the original (mature) hardwood forest and progressive reductions of cutting from this source will be necessary for many years.

To compensate for the limitations of wood supply from the native forests, the Government has developed a programme of developing pine forests.

In recent times, attention has also focussed on the regrowth native forests which have been regenerated following cutting of the virgin stands.

The supply forecasts are therefore in two parts;

- native hardwood forests
- softwood plantations

A range of options have been prepared with the variable being the amount of softwood plantations established.

Graphs 4 and 5

SAWLOG SUPPLY & DEMAND 1985-2050

You will see that to meet the predicted demands, we need to plant 4500ha/year. Unfortunately, sufficient finance has not been available in the past even to meet the lower of these options of 2800ha/year at which level, it is apparent that a significant deficiency will develop, unless alternative strategies are undertaken.

The demand lines for both the whole state and south west only, have been shown as the transport costs to the north west will in all probability, make the locally grown timber less competitive with that from other sources.

The current area of pine plantations in WA is about 73 000 hectares of which about 12 000ha are on private property.

THE CONCEPT OF NET SELF SUFFICIENCY

The 1981 report of the Standing Committee on Trade and Commerce reviewed the arguments for and against Australia pursuing a policy of net self sufficiency in timber and concluded that it should be supported.

Although many other studies around Australia have drawn the same conclusion, it should not be adopted without giving full consideration to the economic factors involved. I propose briefly to discuss the more important of these factors which have led to the decision in Welstern Australia, to adopt the policy of timber net self sufficiency.

Availability of Imports

Reliable authorities have forecast regional and world wide timber shortages. Dr Ted Hillis recently emphasised this message during his visit to WA. Frequent warnings have been made that the tropical rain forests, where WA draws the bulk of its imports, are being cut at alarming rates and without adequate reforestation.

The eastern states of Australia, the other major source of imports, are not planning for significant exportable surpluses.

Price

The perceived regional and world shortages of timber are expected to cause steeply increased prices. One economist predicts that international timber prices will increase by 70%, in real terms, by the turn of the century.

High freight costs into Australia mean that timber imported is generally more highly priced than timber of equivalent quality imported into other countries.

For timber imported from our nearest state, South Australia, some 15 - 20% of costs are incurred in freight.

Efficiency

As local pine forests begin to yield high volumes of large sized sawlogs, modern sawmilling plants will process them as efficiently as other states. Consumer prices are then expected to reflect the significant benefits in the reduced freight costs which the local product will enjoy.

The two species of pine planted in WA, pinaster and radiata are well adapted to local conditions and have growth rates comparable to those found elsewhere for these species.

Social Benefits

Growing and processing timber provides jobs for Western Australians. South Australia has demonstrated that 200 hectares of plantation will support 10 jobs in the timber industry.

Employment is created for farmers and seasonal workers, and the timber industry is a major stabilising influence in the South West economy.

Revenue generation, and a build up of infrastructure and public services is of particular significance because the industry is decentralised.

Attaining net self sufficiency by establishign softwood plantations, has a positive effect on conservation by reducing the demand pressures on native forests.

OPTIONS TO MEET TIMBER NEEDS

Maybe we have been too successful in selling the idea that the resource will not be sufficient to meet our needs. It is true that the level of cut from the mature forests will be progressively reduced over the next few years in a very significant way.

The challenge is to replace this with the timber (as opposed to alternative materials) being grown to renew the original resource.

The timber will be different but it will be there.

Softwoods

The present available resource has already been discussed. The Government is currently evaluating how best to encourage further softwood forest establishment by the private sector.

The impact of softwoods on meeting our needs for timber will be large and increasing.

It must be understood that almost all these trees have been planted since the war and the majority are 20 years old or less.

Improved methods of using the P.pinaster resource, perhaps emphasizing its superior strength properties should be investigated.

Hardwoods

The hardwood resource is changing from a mature timber essentially to a regrowth timber with the following consequences.

(1) There is mounting evidence that it may be less durable naturally. Regrowth timber, for example Karri, may also be more susceptible to Lyctus attack on the sapwood.

(2) The proportion of less durable sapwood to durable heartwood is increasing. As forest growers impose more intensive management methods the proportion will increase even further.

(3) The overall size of trees available for conversion will be smaller. It will be essential to use the sapwood to get the required timber dimension.

The timber growers, timber converters, and timber users can and must get together to determine techniques that can be successfully developed to utilise the new resource.

Problems to be overcome -

(a) Growing problems.

To maximise production, trees will be grown faster, and more of each tree will be used. It is inevitable that the processing of these trees will need to be different.

(b) Harvesting Problems.

The need to obtain timber from forests has been complicated by the need to maintain strict hygiene measures to combat the spread of Dieback disease.

Both the timing and organisation of logging will change. No longer can we just go into the bush and cut down a few trees.

Integrated logging operations, where a single operation will produce several log products for different customers at the same time, when forest conditions are favourable for logging will become more widespread.

(c) Conversion Problems

The use of alternative species will be further investigated and tested, eg, marri.

Engineering criteria for the use of these species need to be established.

The need to use the timber produced as a result of thinning operations when the smaller competing trees are removed to allow the balance of the trees to grow faster.

Research into sawing and seasoning patterns best suited to the new material is in progress. The need for private industry and Government efforts to be integrated to produce the best solution must be recognised.

The Harvey Wood Utilisation Research Centre is available for joint projects.

WIDER USE OF PRESERVED TIMBER

We are not trying to put people out of the business of using timber.

The reverse is the case. In fact it may be that we can make available a greater volume of the new resource.

What is necessary is to find out how to use it properly. This will involve a greater involvement in timber treatment.

Preservation has a positive influence on improved utilisation. It is good economic sense to produce an SEC pole with double its service life, by using preservative treated sapwood. It is also the responsible course of action in the interest of conservation.

Western Australia was endowed with a naturally durable species, jarrah. The timber consumers have developed a timber use complex built around this species and its natural durability. They are reluctant to accept the inevitable changes that are occurring, towards less durable material from alternative hardwood species such as marri, and softwoods.

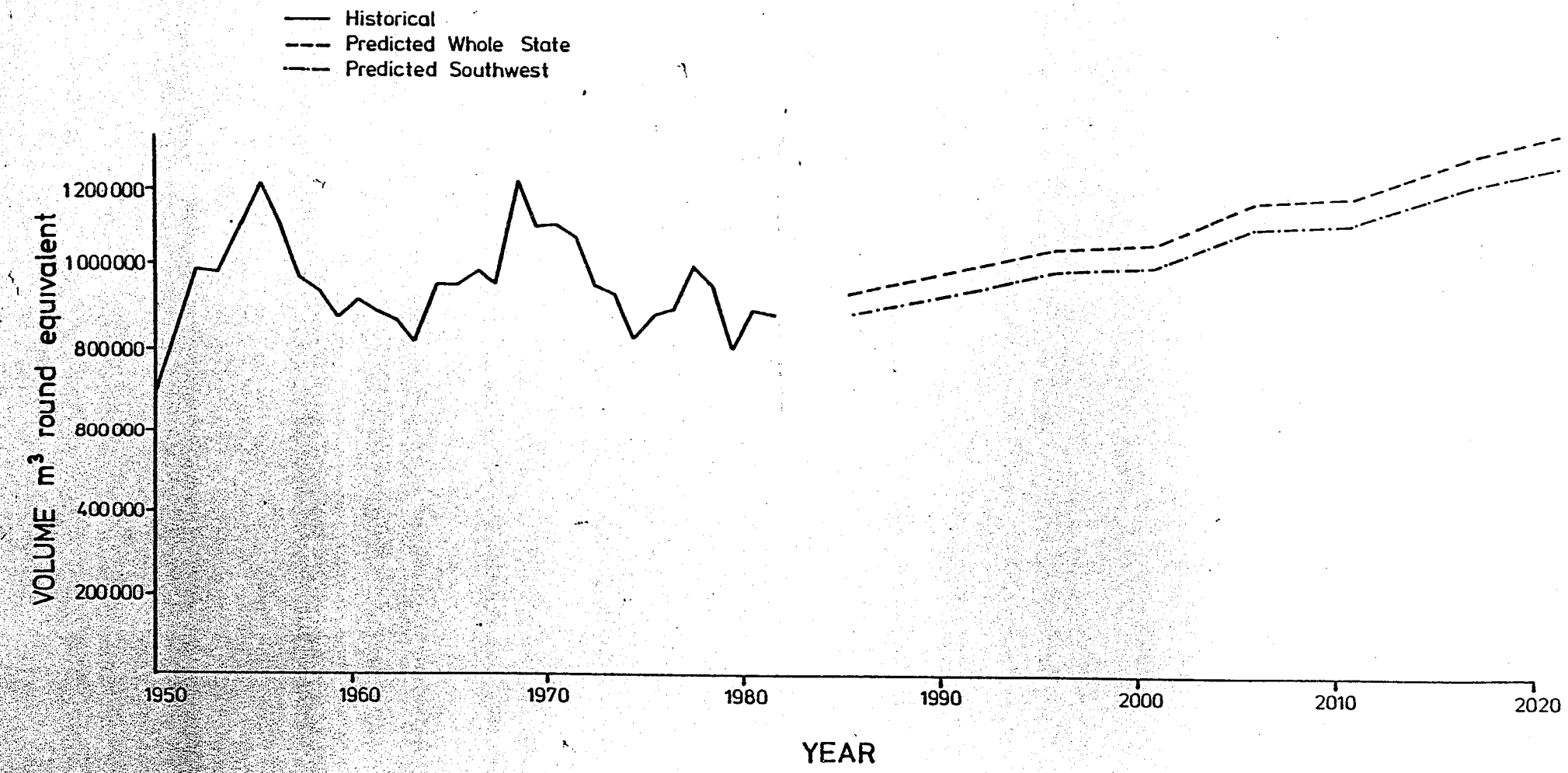
You have seen what is happening to our source of supply. Hardwoods are being replaced by softwoods. Further more, the hardwood resource of the future will be smaller trees with greater proportions of sapwood and possibly lower natural durability in the heartwood.

We need to get our act together technically in order that we may be successful in the market place. Government will play its part. It can supply an unbiased inspection service to guarantee the quality of timber to a predetermined standard. We also believe we can in very large measures supply the timber in quantity and quality required for use after preservation given that the problems discussed above can be solved.

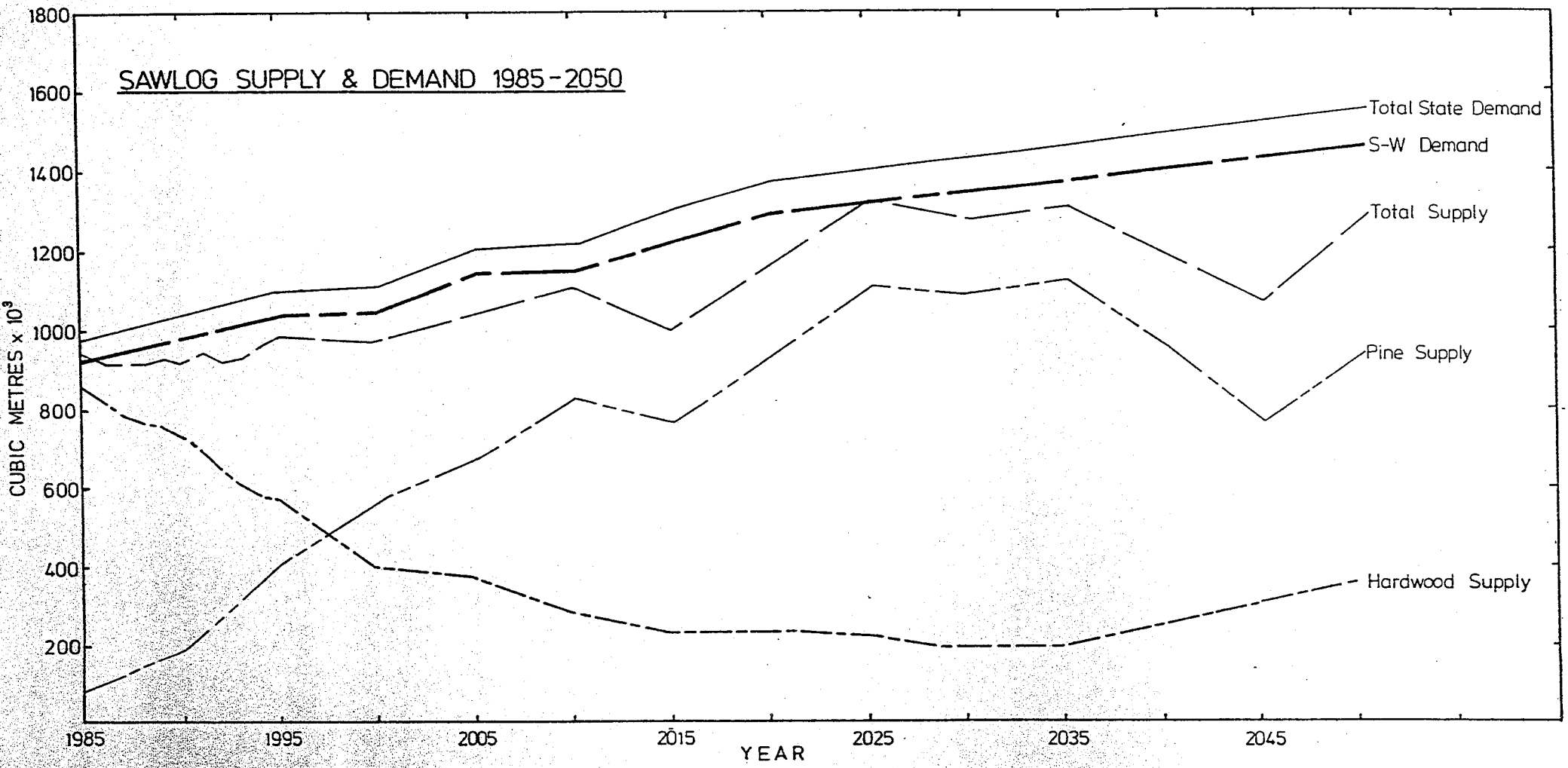
I conclude with the good news. Softwoods and the sapwood of hardwoods are receptive to preservative treatment. The future of our industry depends on grasping the opportunity to capitalise on these benefits.

GRAPH 1

PAST CONSUMPTION & FUTURE DEMANDS FOR TIMBER IN W.A.



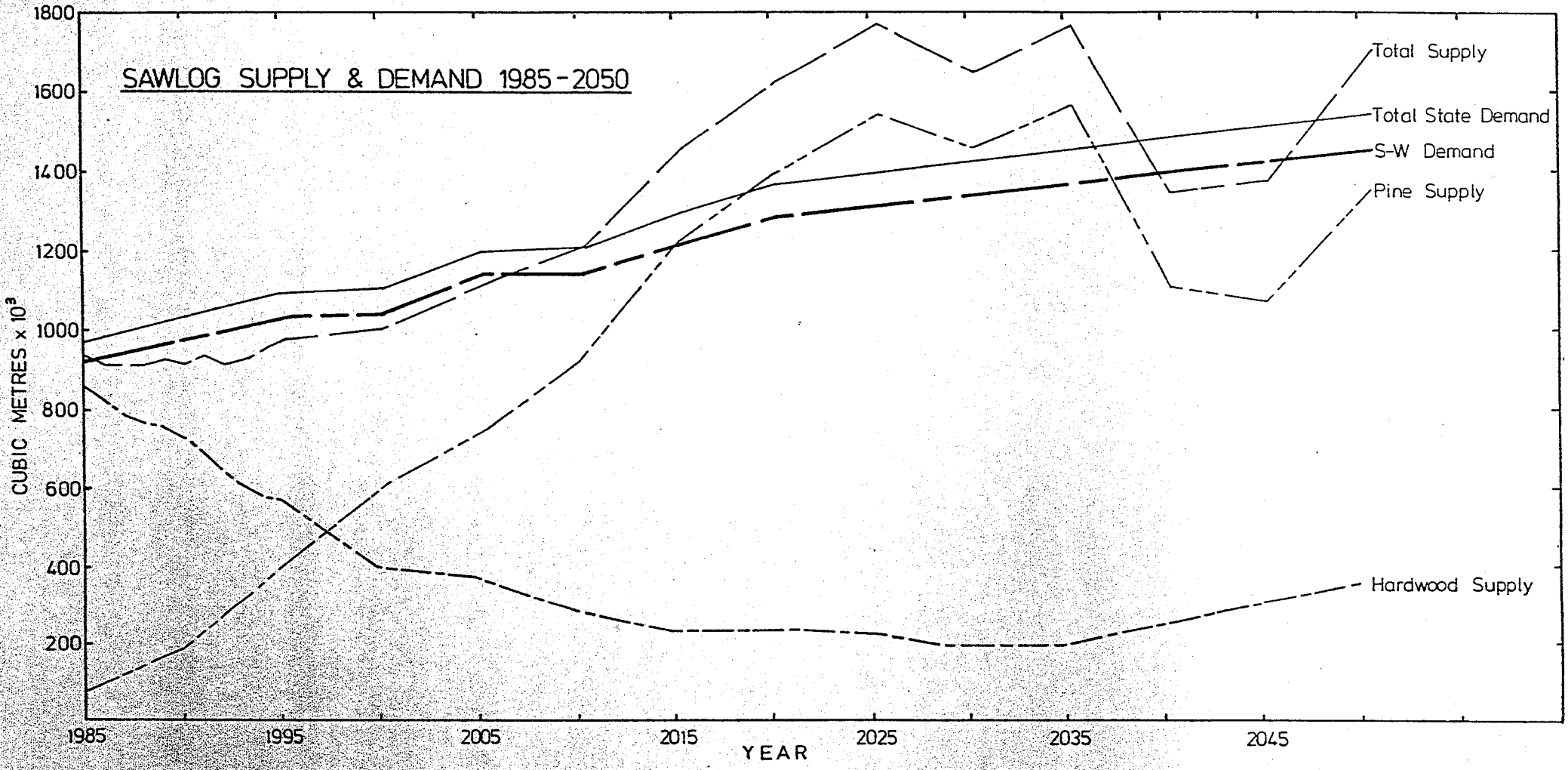
GRAPH 2



NOTES: 1. Pine Supply
1.1 Is based on an annual rate of 2800 ha/year until the year 2008, made up of 2300 ha/year radiata; 500 ha/year pinaster.
1.2 A 10% reduction in yield has been made to allow for losses due to fire, wind, insect, disease.

2. Hardwood Supply
2.1 Assumes no change in hardwood markets, log standards, or processing technology.
2.2 Is based on levels of cut prescribed in GWP 87, but
2.3 Excludes the resource on the Shannon basin, and the proposed northern jarrah reserve.
2.4 Allows for sawlogs from jarrah regeneration after the year 2018.
2.5 Assumes 100 000m^3 sawlogs from private property until 1990, reducing to zero at 1995.

GRAPH 3



NOTES:

1. Pine Supply
   - 1.1 Is based on an annual rate of 4500 ha/year until the year 2008, made up of 4000ha/year radiata; 500ha/year pinaster.
   - 1.2 A 10% reduction in yield has been made to allow for losses due to fire, wind, insect, disease.
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