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**THE DESIRABLE BALANCE  
BETWEEN  
HARDWOOD AND SOFTWOOD  
PRODUCTION  
IN WESTERN AUSTRALIA**

by

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Conservator of Forests

and

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Management and Working Plans Officer  
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## THE DESIRABLE BALANCE BETWEEN HARDWOOD AND SOFTWOOD PRODUCTION IN WESTERN AUSTRALIA.

A. C. Harris and G. W. Nunn.

### 1.—Summary.

Until its population exceeds one million, Western Australia is able to carry on a reasonably industrialised civilisation with a very small consumption of softwood and the desirable balance between hardwood and softwood is chiefly a matter of the price structure and of the total wood production possible. It is better, for the future, to consider using greater quantities of fast grown softwood and to endeavour to maintain a favourable export trade in the indigenous hardwoods.

### 2.—Present Day Consumption.

Western Australia, with a population of only 650,000 has a per capita consumption of sawn timber of between 50 and 60 cubic feet in the log, or 200 to 250 super feet in the square.

Imports, apart from pulp and paper products, are of the insignificant order of about 1.1 million cubic feet, mostly specialty woods, or less than 2 cubic feet per capita, while consumption of locally grown pine mostly for case making from early thinnings is of the order of one million cubic feet, or a further  $1\frac{1}{2}$  cubic feet only per capita, this low figure being due to the wide use of hardwood for cases.

It is evident from these figures that the population is not at present seriously in need of softwood as timber.

Imports of pulp and paper products are, however, estimated at over 2 million cubic feet, to a value of over £1.5 million sterling.

In round figures this represents say, 4 cubic feet per capita in the log for paper. This figure based on statistics is, however, likely to be a serious under-estimate due to the State importing books, periodicals, etc., which would not show in the Statistician's returns and a figure therefore of 5 cubic feet will be assumed.

### 3.—Future Requirements.

If the population of Western Australia was envisaged as remaining static or growing to only one million, it could be said that apart from pulp and paper, the net annual increment of 68 million cubic feet would suffice to maintain the population with resource to only minor imports of specialty woods.

Softwood requirements then might be envisaged as, say, 4 cubic feet per capita for sawn timber and plywood and 2 cubic feet for pulp and paper, allowing for 3 cubic feet of hardwood thinnings being used for pulp. Thus 6 cubic feet per capita or 6 million cubic feet increment might be supposed as a requirement.

In Western Australia an average M.A.I. of 200 cubic feet per acre may be taken as an average of *P. radiata* and *P. pinaster* plantations, thus giving a desirable plantation area of (6 million cubic feet ÷ 200) 30,000 acres.

If, however, Western Australia is to look forward to a population of several millions, the situation takes on a different aspect. It is also contended that the high quality woods such as Jarrah and Karri should not, in the future, be used for the many inferior purposes for which they are used today. They can in the future, be looked upon as high value woods for export, when a growing population has been encouraged to use a greater proportion of softwood, or such substitutes as Marri.

Population forecast by competent authorities is approximately 1.4 million by 1985 and 2 million by 2000 A.D.

#### 4.—Potential Consumption of Softwood.

Using the arguments put forward in paragraph 3 and assuming a population of 2 million, the estimated balance of softwood and hardwood may be approached in the following light:—

Total consumption per capita of all wood except firewood at 60 cu. ft. in the round, including pulp and paper—120 million cu. ft.

Deduct M.A.I. of indigenous State Forest—80 million cu. ft.

**Note.**—This figure represents an increase on the current net annual increment anticipated from better forest management.

Leaving 40 million cu. ft. as softwood requirements, which at an estimated 200 cu. ft. per acre per year would suppose a softwood plantation area of 200,000 acres.

This approach to the subject is, of course, highly speculative, being based on the current forecast population of not over 2 million by the end of this century. It does, however, show that the whole question of the desirable balance is one depending upon the forecast of future population, particularly in Western Australia, which is isolated by thousands of miles from all other World sources of timber. As a matter of interest, the current pine plantation working plan for the State aims at an ultimate area of pines of 200,000 acres being planted at the rate of 2,000-5,000 acres per annum, depending upon finance.

#### 5.—M.A.I. of Indigenous Forests.

There is, of course, every prospect that ultimately the M.A.I. of 4 million acres of indigenous forest may be raised far beyond the 80 million cubic feet supposed in paragraph 4, and more particularly as increasing population makes possible the use of thinnings, but it is not considered wise to assume too high a figure for the present century.

#### 6.—The Per Capita Balance of Consumption.

If the figures used in paragraph 4 are considered, it will be seen that the consumption at the 2 million population mark would be:—

Hardwood—40 cu. ft. per capita.

Softwood—20 cu. ft. per capita.

It is, however, thought likely that Jarrah and Karri will command increasing prices and that the natural economic trend will be towards the use of a greater percentage of softwood at a lower price, although it must not be overlooked that the people of Western Australia have a decided preference for Jarrah in building construction and flooring and are not likely to favour softwood or other substitutes such as Karri unless the price is attractive.

In the present state of our knowledge it is not easy to visualise more than 200,000 acres of pine plantation, owing to lack of suitable soils for growing pines. So far the results on the soils of the Jarrah forests have been too poor to encourage the hope that their conversion to pine would lead to greater timber production on an economic basis. On the Karri soils, Karri will give an M.A.I. of 200 cubic feet, so there is no reason to consider replacing it with pine.