

Under this programme an increasing acreage was planted, ranging from 2,800 in 1922 to 57,800 acres in 1928. As the objective was then clearly in view, a curtailment of 11,000 is planned for this year (1929), and further curtailments of 10,000 acres each year following until the completion of the programme. During the seven years 148,700 acres have been established, at a direct cost of £529,100, of which about three-fourths was paid as wages. The economy of large-scale operations and a continuous programme is shown by the fact that in 1922 an area of 2,800 acres was established at a cost of £5 12s. 2d. per acre, while in 1928 57,400 acres established cost only £2 11s. 11d. per acre.

If afforestation is to be undertaken by the State beyond the present programme and on a large scale, it is essential that immediate consideration be given to the question, as a considerable amount of preparatory work is necessary before actual planting is practicable, and therefore a definite programme covering a period of years must be laid down. Land must be surveyed and laid out with fire-breaks, roads, &c.; seed must be procured (to some extent overseas), and nurseries for the growth of young trees must be established.

To secure economical continuity in these operations finance must be assured beforehand, not subject to casual grants or political expediency. If a definite programme is decided upon and due preparation made, such a programme can at a moderate extra cost be expanded in a period of exceptional unemployment to meet the needs of the situation, and in such case grants might be made to recoup the undertaking for the additional outlay involved. On the other hand, should an all-round improvement in trade at any time absorb into general industry so large a proportion of the seasonal and general unemployed that labour is not freely available for tree-planting, the greater part of the preparatory work would not be lost, but would be available for another season. The principal exception would be the season's planting of young trees, but even here a one-season stand over is practicable with some species of trees with little loss. A practicable alternative to standing-over a considerable quantity of trees would be to carry on planting with some dilution of juvenile or female labour.

Before any decision on the question of a wide extension of the policy of afforestation can be safely arrived at the economic aspect of the matter must receive careful consideration. As this is mainly a matter for experts, we do not presume to advance a general opinion, except that, if shown to be economically sound, afforestation may be made a peculiarly valuable adjunct to the Dominion's industries, and also a considerable factor in dealing with crises of unemployment. In the latter connection it must be borne in mind that hitherto measures undertaken for relief of unemployment have seldom if ever been reproductive, therefore the extent to which afforestation may be reasonably expected to be reproductive must be given its proper weight in considering this industry as unemployment relief work.

In arriving at a judgment on the question of the economic soundness of afforestation it is not possible to make any certain and definite pronouncement on account of the long period between the initial outlay and the partial or complete harvesting of the product, and the corresponding uncertainty as to market and price at those periods.

Timber is a commodity which takes a long time to produce. The more rapidly growing exotic softwoods take not less than from forty to fifty years to mature. Each £1 of initial expenditure by compound interest accretion at  $4\frac{1}{2}$  per cent. becomes a charge against the undertaking in fifty years' time of more than £9. If considered purely from the viewpoint of timber-production, the prime factor is the question of market and price in fifty years' time. Here considerable difference of opinion exists among experts.

On the one hand, it may be generally stated that world authorities have for some years past sounded a persistent note of warning as to a world shortage of softwoods within a measurable period. This is mainly due to the enormous demands made on the existing forests for wood-pulp for various purposes, a demand that so far increases year by year as additional uses for this material are discovered. A notable recent addition in this field is for artificial silk and wool.

The period at which a shortage may be expected according to this view is indicated by the statement made at the annual meeting of the New Zealand Forestry League on the 28th June of this year (*vide Dominion*, 29th June, 1929) by the Director of Forestry that "experts considered that the natural timber-supplies of this Dominion would be exhausted by 1965. It was further considered that exportable surpluses in both America and Canada would disappear in twenty years' time."

If this view is only partially true, the probability is that by the time the present plantations, and any further ones which may be undertaken, will be mature for harvesting the present importation of softwoods into New Zealand will have ceased, and there will be an export market at a remunerative price.

On the other hand, it must be borne in mind that this view is by no means universal, and in particular is not supported by the competent authorities in the Dominion's sawmilling industry. Neither is it borne out by the present state of that industry, which has been for some years in a depressed condition.

The latter condition may, however, be partly due to faulty organization, which it is at present sought to remedy by legislative action. It is natural and proper, under such existing conditions, that a conservative viewpoint should be dominant, but it must be borne in mind that the operations of the industry are almost entirely confined to the native forests, and that one of the prime factors in producing the present depressed condition in the industry is the increasing inaccessibility of the standing bush, with the corresponding high cost of haulage to the available markets or ports for exportation. This latter is a point which must receive the most serious consideration in connection with any scheme of planting which may be entered upon in the future.

The question of the economic justification of a policy of extensive afforestation for the future is a matter to be decided only after the careful weighing of expert opinion, and this Committee have not had either sufficient evidence or sufficient time to enable them to reach a final conclusion. However, there are some points to which we wish to draw attention.

The question of forest utilization cannot at the present time be considered solely, if indeed mainly, from the point of view of the production of sawn timber. If this point alone is considered, it would appear that the extensive use of substitutes for wood, in the shape of concrete for building and bridge construction, and of wall-board composed largely of mineral products for interior work, would be