

4. AS TO WHAT EXTENT THE OPERATIONS OF THE STATE PLANTATIONS SHOULD BE SUPPLEMENTED AND EXPANDED, AND IN WHAT LOCATIONS NEW NURSERIES AND PLANTATIONS, IF ANY, SHOULD BE SITUATED.

This question at once leads to the crucial point of the whole afforestation question—namely, the cost of production of the timber crop and the profit or loss thereon. In considering the financial aspect of afforestation it is essential that a strictly commercial basis should be adopted, in order to see whether any proposed plantation will result in a profit or loss to the State. In the first place, as the average cost of recent loans raised by the Government has come to about  $4\frac{1}{2}$  per cent., and as we have no means of knowing whether the rate will come down in the future, we have decided to adopt a  $4\frac{1}{2}$ -per-cent. basis for our calculations.

Notwithstanding that all the leading authorities on forestry, such as Professors Schlich, Sommerville, and Maw, insist on the fact that compound interest on the initial cost of a plantation, and the annual rental value of ground used, should be charged till the timber is in a marketable condition, there still appears to be a good deal of misapprehension in the popular mind on the subject, some persons questioning the necessity of charging compound interest, or, in fact, any interest at all. Then, again, they argue that if the land upon which the plantations are situated belongs to the Government, no rental value should be allowed for. Perhaps, to make the position clear, it may be well to work out a supposititious case, thus: Suppose the Government had £100,000 either to lay out in establishing a plantation or to advance on loans at  $4\frac{1}{2}$  per cent.—if they adopted the latter course, and compounded the interest for forty years, they would at the end of that time have the sum of £581,636, and if the loan was for eighty years the sum would amount to £3,383,010, without any danger from fires or other risks incidental to forests. So it is clear that if money was put into a plantation it should produce timber at least equal in value to the above amounts at the end of the respective periods or the operations would entail a loss to the State.

Again, in regard to the rental value of the land: suppose the Government owned 10,000 acres of land worth £10 per acre, and had to decide whether to lay it out in plantations or to lease it for settlement purposes. If the latter course should be adopted, and the rental compounded as above for periods of forty and eighty years, the amounts would be £481,636 and £3,283,010 respectively; so that here again, unless the timber produced at the end of these periods equalled in value the amount shown in the first computation, plus the amount in this, the State would be a loser, irrespective of the indirect revenue from the tenants.

There is, moreover, another fact to be taken into account in estimating the final cost of the timber produced—namely, the annual upkeep or maintenance charges. On the data available this factor is very difficult to estimate. In the report of the Royal Commission on Coast Erosion and Afforestation in the United Kingdom, 1909, the sum of 4s. per acre per annum is set down for the purpose. We are of opinion, however, that owing to the extra cost of labour, and the difficulties in connection with the fire risks, and the eradication of bracken fern, the above figures would be much too low for this Dominion, and that at least 6s. should be allotted for the purpose stated.

Coming to the cost of the forestry operations already carried out by the Government, the departmental report on State afforestation for the year 1911–12, the latest available, gives the actual cost to date of State nurseries and plantations as £218,433 14s. 2d., to which must be added £30,698 16s. 4d., the value of labour performed by prisoners but not charged for by the Justice Department. No interest on the capital expended nor rental value of the land occupied has been allowed for, but probably if the present value of stock in hand, buildings, implements, and permanent improvements are taken into account they would balance the two latter items. The return shows 18,870 acres as having been planted, and dividing that into the sum arrived at as above gives the cost of each acre now under trees and its upkeep to date as £13 4s.