

Worksheet for estimating costs and returns for a farm woodlot

Sustainable Land Management Programme



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How to work out establishment costs

Source cost estimates for fencing, planting etc. from information sheet (42). For each item, it contains the minimum and maximum costs likely to be incurred.

1. Enter area of the proposed woodlot into D5, D8, D9, D11, D12, and D13
2. Enter perimeter to be fenced into D6. Multiply by fence cost estimate, and write answer in I6.
3. Enter length of access track into D7. Multiply by track cost estimate, and write answer in I7.
4. Multiply D8 by a weed clearance estimate, and write answer in I8.
5. Multiply D9 by a pest control estimate, and write answer in I9.
6. Enter proposed planting density in D10. Multiply it by D5, divide by 1000, multiply by seedling cost estimate, and write answer in I10.
7. Multiply D11 by a planting labour cost estimate, and write answer in I11.
8. Multiply D12 by a supervision cost estimate, and write answer in I12.
9. Multiply D13 by a post-planting release spray estimate, and write answer in I13.
10. Add all the items from I6 to I13, and write the answer in J14. This is the total woodlot establishment cost.

How to work out tree management costs

Source cost estimates for pruning, pest control etc. from information sheet (43).

1. Write woodlot area in D19, D22, D23, D24, and D25.
2. Write number of prunes proposed in D20. Multiply D20 by D19 by pruning cost estimate. Write answer in I20.
3. Write number of thins proposed in D21. Multiply D21 by D19 by thinning cost estimate. Write answer in I21.
4. Multiply D22 by weed control estimate times 30. Write answer in I22.
5. Multiply D24 by pest control estimate times 30. Write answer in I24.
6. Multiply D24 by fence and track maintenance estimate times 30. Write answer in I24.

7. Multiply D25 by insurance etc. estimate times 30. Write answer in I25.
8. Add all the items from I20 to I25, and write answer in J26. This is the total woodlot management cost while it is growing i.e. years 1 to 30.

How to work out harvest costs

Source cost estimates for individual items e.g. roading, logging, from information sheet (44).

1. Enter area of each proposed woodlot into D32.
2. Select a yield estimate that matches the site characteristics. Enter it in D33.
3. Multiply D32 by D33, and enter the answer in D34.
4. Adjust D34 by a timber recovery factor ($r = 0.9$ for easy site, 0.8 for an average site, 0.7 for a difficult site), and write answer in D35.
5. Multiply D32 by a roading cost estimate that matches the site, and write the answer in I32.
6. Multiply D32 by a logging cost estimate that matches the site, and write the answer in I33.
7. Multiply D35 by a transport cost that matches distance to port or sawmill, and write the answer in I34.
8. Multiply D35 by agents fee and write answer in I35
9. Add all items from I32 to I35, and write the answer in J36. This is the cost of harvest.
10. Add J14, J26 and J36 and write answer in J37. This is the total forestry cost.

How to work out harvest returns

1. Adjust D35 by a percentage product mix (from information sheet 44) which matches the proposed tending regime, and write answers into D42 - D45.
2. Multiply D42 - D45 by stumpages (from information sheet 44) and enter answers into I42 - I45.
3. Add all the items from I42 to I45, and write the total in J46. This is the gross return.
4. Subtract I37 from I46 and write the answer in I47. This is the net return for forestry.

Grazing returns

Grazing returns from the same land can be estimated from the following table, if the proposed woodlot's land use capability (LUC) is known from a farm conservation plan.

Land use capability (unit number)	Stock carrying capacity (stock units per hectare)
Ash-mantled footslopes	
4e2 or 4e7	14
5c1	14
6e1 or 6e6 or 6e10	10
Siltstone or mudstone hill country	
6e7 or 6e8	10
7e9 or 7e4	8
Sandstone hill country	
6e23 or 6e13	10
7e11	5
Hard siltstone hill country	
6e21	8
7e20	7
Hard sandstone hill country	
6e17	8
7e17	4
Hill country with deep-seated mass movements	
4e8	17
6e20	11
7e14	9
Unconsolidated sediments	
4e*	17
6e12	10
7e3	5

To estimate grazing returns

1. Enter area of proposed woodlot into D52.
2. Identify LUC, and enter corresponding SCC into D53.
3. Multiply D52 by D53 and write answer in D54.
4. Multiply D54 by current gross margin for type of stock grazed in paddock. Write answer in I54. This is annual gross return, if the paddock is still grazed.
5. Multiply I54 by 30, and write the answer in J55. This is the accumulated return from grazing. It can be compared with the one-off return from forestry, in J47.

N.B.

Costs and returns in this worksheet are not discounted over 30 years to present-day values, so it does not constitute an economic analysis.

Its intended purposes are:

- Estimating costs likely to be incurred if a woodlot is planted, and
- Comparing the woodlot's likely return, with the return from grazing the same land,

assuming that forestry costs, timber prices and inflation keep pace with one another over the next 30 years.

It is a good idea to photocopy this sheet and repeat the calculations, using minimum, maximum and average (halfway between) costs and product prices. This will help landowners decide whether a farm woodlot will be affordable and beneficial.

Repeating the calculations is also a good way to compare :

- Change in net return, from varying stand management at one site, and
- Difference in net return between two sites on the farm.

For further advice or information contact:

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	A	B	C	D	E	F	G	H	I	J
1	WORKSHEET FOR ESTIMATING COSTS AND RETURNS FOR A FARM WOODLOT									
2										
3	Establishment costs									
4					Unit measure		Unit cost			Total cost
5	Woodlot area (ha)									
6	New perimeter fence if required (m)									
7	New access track if required (m)									
8	Pre-plant weed clearance (ha)									
9	Pre-plant pest control (ha)									
10	Planting density (sph)									
11	Planting labour (ha)									
12	Supervision (ha)									
13	Post-plant release spray (ha)									
14	Total establishment cost =									\$
15										
16										
17	Management costs									
18					Unit measure		Unit cost			Total cost
19	Woodlot area (ha)									
20	Number of prunes									
21	Number of thins									
22	Weed control (ha)									
23	Pest control (ha)									
24	Fence & track maintenance (ha)									
25	Insurance etc. (ha)									
26	Total management cost =									\$
27										
28										
29	Harvest costs									
30					Unit measure		Unit cost			Total cost
31										
32	Woodlot area (ha)									
33	Yield estimate (m3/ha)									
34	Total yield (D32 x D33 m3)									
35	Recovered (m3)									
36	Total harvest cost =									\$
37	Total forestry costs =									\$
38										
39										
40	Harvest returns									
41					Unit measure		Unit return			Total return
42	Clearwood (D35 x %)									
43	Framing logs (D35 x %)									
44	Unprun'dlogs (D35 x %)									
45	Pulpwood (D35 x %)									
46	Total 30-year gross return =									\$
47	Total net forestry return =									\$
48										
49										
50	Alternative return from grazing woodlot area									
51										
52	Woodlot area (ha)									
53	Av. Stock carrying capacity (su/ha)									
54	Total stock units carried (D53 x D54)									
55	Total 30-year gross return (I54 x 30) =									\$