

Should I try silvopastoral agroforestry on my farm? Click on the links below for information on various aspects of grants, costs, markets and impacts.

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Grants & Subsidies

Please note that the Woodland Grant Scheme and the Farm Woodlands Premium Scheme (not currently applicable to agroforestry) are under review in Scotland and England. The types of woodland supported and the levels of payments may therefore change in the not-too-distant future.

The Forestry Commission, through its Woodland Grants Scheme currently pays grants for agroforestry in Great Britain (England, Scotland, Wales).

"We will pay grants for agroforestry, which is a mixture of trees and agriculture on the same piece of land. If you are going to plant the trees at wide spacing, the grant and supplements will be reduced *pro rata* based on 1100 trees per hectare. Agroforestry is not eligible for the Farm Woodland Premium Scheme."

When trees are planted in silvopastoral systems at the recommended density of 400 trees per hectare, the *pro-rata* grant and supplements will be 0.36 (just more than one third) of the full WGS amounts.

In Northern Ireland, the Forest Service also pays grants for agroforestry but at the higher rate of one half of the WGS payments.

The full WGS payments per hectare planted are:

Area planted	Type of tree	
	Conifer	Broadleaved
under 10 hectares	£700	£1350
over 10 hectares	£700	£1050

The grants are paid in two instalments. 70% when planting is finished and 30% after five years. The payment of grants requires that the area planted must be maintained to the reasonable satisfaction of the Forestry Commission for at least 10 years after planting.

Supplements to the Woodland Grant Scheme are available. These are:

The Better Land Contribution (BLC) is paid for agricultural land which includes "improved grassland". Your [local Forestry Commission staff](#) can provide details of how it is assessed. BLC is paid as a lump sum with the first instalment of the establishment grant for new planting.

The Community Forest Premium (CFP) provides an additional incentive for the planting of new woodlands in specially targeted areas. Your [local Forestry Commission staff](#) can tell you if the CFP is available in their area.

More information on [Forestry Commission grants](#) is available.

Information on the [Northern Ireland Forest Service grants](#) is also available.

Throughout the UK, pastures which are planted up with agroforestry remain as eligible forage areas for the current livestock grants. The pastures can continue under grazing from day one because the trees are individually protected

The biodiversity and landscape benefits which are associated with agroforestry may contribute extra points in the scoring systems for the agri-environment schemes run by the various UK rural affairs departments. For example:

- the [Rural Stewardship Scheme](#) run by the Scottish Executive Environment & Rural Affairs Department (SEERAD);
- the [Countryside Stewardship Scheme](#) run by the Department for Environment, Food & Rural Affairs (DEFRA) in England;
- the [Countryside Management Scheme](#) run by the Department of Agriculture & Rural Development (DARD) in Northern Ireland;
- [Tir Gofal](#) managed by the Countryside Council for Wales on behalf of the National Assembly for Wales Agriculture & Rural Affairs Department.

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Establishment costs

The costs of establishing silvopastoral agroforestry on existing permanent pastures, where no reseedling is to be undertaken, are based on the purchase of tree seedlings, provision of tree protection and on pre-treatment and maintenance with herbicides.

Herbicides:

The recommended tree planting density is 400 trees per hectare. The location for each tree is pre-treated with herbicide in a 1 metre wide spot. This area is maintained weed-free for up to three years. The cost for each application is roughly £0.04 per tree or £16 for 400 trees per hectare.

Tree seedlings:

Costs will vary according to the tree species chosen, the quality of the plants, the number of plants bought and the locality of the tree nursery. An average price would be £0.40 to £0.60 per tree.

Tree protection:

Each tree must be protected from grazing by a tree shelter or tree guard. The tree protection will also encourage more rapid stem growth in the tree. Tree shelters and guards vary in cost according to the type of shelter. Rigid plastic tubes are very common but may have to be replaced after a number of years as the trees outgrow them. Wider, or expanding tree guards, will last longer but will cost more to buy in the first place. Each shelter must also be supported by a pressure-treated wooden fence post and an anchor peg on the opposite side to stop the shelter/guard from rotating when livestock use them to rub.



Tree shelters, including ties, can be purchased for between £0.55 and £0.75 each. Longer lasting tree guards will cost up to £2.00 each. Supporting pressure-treated fence posts can be bought from your local fencing contractor or saw mill. A 3" (8 cm) post will do for sheep and will cost about £1.20, the anchor peg plus tie will cost about £0.30.

Tree shelter with supporting pressure-treated stake and anchor peg in herbicide-treated spot; trees at 400 per hectare, regular spacing.

Trees may also be planted in clumps. Clump planting involves planting several trees, up to nine, at close spacing within a fenced enclosure. The enclosure for nine trees planted in a 3 x 3 square pattern at 1 metre spacing will be a square of 3 metres x 3 metres. The enclosure will have a standard fence post at each corner and a paling bar around the top supporting sheep net around the enclosure. Using 3 x 3 metre enclosures evenly spaced with 15 metres between their centres, would be equivalent to planting 400 trees per hectare. The cost of this type of protection will vary with the availability of material around the farm.

Total cost:

The total initial cost per hectare for 400 trees, excluding labour, will be between £970 and £1550 according to the quality of material purchased.

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Farming impacts and benefits

Livestock species:

Sheep are recommended as the livestock species in silvopastoral agroforestry in the UK. The trees must be [individually protected](#) to prevent the livestock from damaging them. Physical support of the tree shelter/guard against cattle is very expensive. Goats are natural browsers of trees and better avoided.

Livestock production:

Experience in a number of trials with sheep across the UK has shown that with sycamore trees planted at 400 per hectare there is no reduction in annual livestock production after 12 years of tree growth. With very fast growing larch trees on an upland site and ash on a lowland site, both planted at the same stocking rate, reduction of around 10% in annual livestock production was found after 10 to 11 years of tree growth. Pruning of the larch trees then maintained annual livestock production at around 90% of the original level on the upland site. Despite pruning, the ash trees on the lowland site developed crowns large enough to shade the pasture and reduce annual livestock production further; in this case, if livestock production is to be maintained, the trees will have to be thinned.

Pruning and thinning of the trees can be used to maintain the level of pasture production. Pruning is also necessary to maintain the quality of the timber to be produced.

Livestock welfare:

Experience with 14 years of silvopastoral agroforestry has not shown any animal welfare problems. For example, there have been no reported problems with flies in the sheltered agroforestry environment. It has been shown that the sheep actively use the trees for shelter. This could lead to welfare benefits at lambing time when lambs can shelter and at other times of the year when ewes can also benefit. There is some evidence of energy saving through provision of shelter, the animals lose less body heat in cold and windy weather in agroforestry areas and can find shade on hot sunny days.

Farm machinery:

Farm machinery is likely to be used in silvopastoral agroforestry systems only for spreading fertilizers on the pastures. Planting trees at the recommended density of 400 per hectare will give 5 metres between the trees if they are planted in a regular square grid pattern. The same overall planting density can be achieved by re-arranging the trees closer together together in rows with a greater distance between the rows giving better access for a tractor and spreader. The rows need not be in straight lines. For example, contour planting can create a pleasant landscape effect while still allowing tractor access. Pruning of the trees, which is required for good quality timber, will make tractor access easier as the trees grow.



Conventional tractor and fertiliser spreader in 10-year -old ash, 400 per hectare, regular spacing.

Farm skills:

Tree planting can be undertaken by farm staff. [Herbicide spraying](#) can be carried out with a knapsack sprayer. Handling of tree seedlings and tree planting should be carried out with great care and some [training](#) would be an advantage. [The erection of tree shelters](#) can be carried out with a tractor-mounted fence-post hammer. Later in the life of the agroforest, the trees will need to be pruned and some thinning may also be necessary, farm staff can carry out all of these jobs with existing tools and equipment. It is not necessary to employ outside contractors. [Training](#) in these skills would, however, be an advantage.

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Environmental benefits

Experience in a number of trials across the UK has shown that biodiversity increases as a result of silvopastoral agroforestry. Silvopastoral agroforestry can be considered as wood pasture, one of the Priority Habitats in the [UK Biodiversity Action Plan](#) (BAP); included under the term "wood pastures" in the BAP are "pastures with trees in them". In Northern Ireland, The Department of

Agriculture and Rural Development recognises this and awards extra qualification points for its [Agri-environment Schemes](#). Wood pasture may also contribute to qualification points in the [Rural Stewardship Scheme](#), as run for example, by the Scottish Executive Environment and Rural Affairs Department (SEERAD) because it is one of the Priority Habitats in the BAP.

Invertebrates:

Invertebrates are encouraged to grassland sites when trees are planted on them at silvopastoral agroforestry densities. Spiders and rove beetles appear to respond more quickly to the introduction of trees than other groups such as carabid beetles. Greater number of invertebrates will provide more food for birds.

Birds:

There is an increase in the number of bird species - both woodland and open-field bird species have been observed in agroforestry fields. There is also an increase in the total number of birds over conventionally grazed pasture.

Plants:

The only measured changes in pasture plant species species in silvopastoral agroforestry systems over a 14-year period have been immediately around trees in the areas which were treated with herbicide during the first few tree-establishment years. The changes were greatest in older pastures which have a more varied seed bank than more recently sown pastures. The species composition of the main areas of pasture have remained unaffected when compared to similar conventionally managed pastures.

Pastures on one site under the canopy of 35-year-old poplar trees, thinned to 156 trees per hectare have shown changes in pasture composition. While perennial ryegrass, white clover, rough-stalked meadow grass and creeping thistle were prevalent in nearby conventional pastures, the pastures under the 35-year-old trees had more shade tolerant species such as creeping bent, Yorkshire fog and annual meadow grass. Feeding values to grazing animals may be reduced with these changes and management, including rates of fertiliser application, may have to be adjusted.

Rates of change:

The rates at which increases in invertebrate and bird activity and the establishment of new plant species on new silvopastoral agroforestry sites will depend on the surrounding countryside from which the movement of species and individuals will be initiated.

Landscape:

Landscape impacts can be very positive when trees are introduced onto farmland as silvopastoral agroforestry. [The image of grazed woodland](#) is one which many people find very attractive.

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