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Farming Connect Management Exchange

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Tom Cowcher

Scotland

Agroforestry

October 2017

1. Background

Inspired when visiting 1st Agroforestry Conference at Cranfield College in June 2017.

Two speakers from Scotland related their experience:

- i) Mike Strachan with Forestry Commission Scotland
- ii) Andrew Barbour 'Upland Beef and Sheep Farmer'

The Woodland Trust were sponsors of the event and were promoting Agroforestry.

We were in discussion with Woodland Trust regarding setting up Agroforestry as they had bought agricultural land next door to our farm. The intention of the exchange visit was to gain knowledge from good practice seen in Scotland.

Since setting out on the project, the Woodland Trust decided not to engage in Agroforestry on their land neighbouring our farm.

2. Agroforestry in Scotland

24th October 2017

Met up with Mike Strachan who works as a Policy and Development Officer for Forestry Commission Scotland. He is also Chairman of the UK Farming Woodland Forum and a member of the European Agroforestry Federation. Mike has helped support changes at a European level to allow for agroforestry to be an accepted measure in rural development programmes.

Mike took us to the Bolfracks Estate near Aberfeldy, Perthshire. The estate is over 2,000 hectares with half in forestry and half in agriculture.

The first site we visited was of 20-year-old trees which had been planted on to the plough. There was an abundance of grass beneath the trees. Over the years, poor trees have been removed and the remaining trees have been high pruned at 5 to 6 metres. This produces tall straight trees of good quality timber. The varieties of trees grown were Cherry, Birch, Sycamore and Ash. For the first ten years only sheep were grazing amongst the trees, but since then cattle and sheep graze between the larger trees.



Eva Cowcher & Mike Strachan

The second site we visited was of 10-year-old trees. They were planted at spacing 3m x 3m in blocks with tracks between. Mike felt that planting at 5m x 2m was better. The varieties were Oak, Ash, Sycamore and Sweet Chestnut. As with the first site, these trees will be trimmed and high pruned to 5 to 6 metres to produce high quality timber. The trees are open for sheep to graze and provide good shelter.



Mike & Eva assessing tree guards

The support payments in Scotland seem more generous for establishment of 400 trees per hectare £3,600/h. Ongoing maintenance payments for five years on £100/h for grazed woodland and £40/h for stock-excluded woodland.

25th October 2017

Visit the farm of Andrew and Seonag Barbour.



Seonag & Andrew Barbour with Tom Cowcher

Andrew works on a family farming and forestry business in highland Perthshire. The farm has cattle and sheep on land that is over 1,000ft altitude. There are shelter woods on the farm and Andrew is interested in the management of pastoral woodlands and how they integrate with grassland management.

On the visit Andrew said that they have 10% woodland pasture over the 1,200 acre upland farm. He mentioned that just 3% of the tree cover for crop or livestock windbreaks has a significant benefit on CO₂ retention.

Site 1: We walked up to a shelter belt at 1,400ft. This was a 40-year-old plantation of Scots Pine, Sycamore and Norway Spruce. The wood was approximately 800 metres long and 60 metres wide. He had removed the fence along one side of the plantation, this now open wood, encouraged animals to seek shelter and browse. He noted that when inclement weather was coming, both sheep and cattle would seek shelter. Animals that are more content do better. Over the years trees have been selectively thinned, mainly for firewood.



40-year-old plantation

Site 2: Near to the yard, an area was planted in 1994 to provide a shelter belt. The taller growing trees of Oak, Birch and Sycamore face the prevailing wind. In the middle there is Hazel and the lower end, Black Thorn. This provides excellent shelter for sheep, particularly at lambing time. The larger trees will provide good, straight timber for the home sawmill.



Birch & Hazel

Site 3: Adjacent to a ruined cottage, 3 years ago, a small plantation of Whitebeam, Birch and Hazel was planted. The trees have high guards and stakes to protect them from sheep. The whole site is protected by double electric fence to keep deer out. All new planting in this part of Scotland must have deer fencing. The sheep can pass under electric fences and graze around the trees. Although trees are planted, land is still able to be grazed, hence remains in agricultural production.



Double electric fence

Site 4: Down in the valley, some 8 years ago, Oak, Sycamore, Birch and Rowan were planted. The plan for the site is known as 'Strip Alley Planting'. The alley is like a track 4m wide. The rows of trees being planted at 12m centres, each tree 2m apart. Sheep are now grazing between the trees and after 16 years, cattle will be able to graze. A government grant covered the cost of establishment. Trees were planted at 1,600 per hectare.



Strip Alley Planting

Andrew is convinced of the benefit of Woodland Pasture on his poorer land. Not only do trees provide shelter, which saves lamb losses, but also encourages earlier grass growth by raising the soil temperature and moisture.

Key Learning Outcomes and Knowledge Gained

Both Mike and Andrew saw benefits in planting trees on an upland farm. There were useful gains in shelter, moisture retention and rise in soil temperature.

Important Factors:

- More lambs surviving when inclement weather strikes at lambing time
- Grass grows earlier around trees, due to warmer soil
- Animals gain nutrients when browsing on trees/bushes
- Sheep and cattle enjoy sheltering among trees, hence more content
- Woodland Pasture is best suited to poorer land, better land needed for forage and cereal production
- A small area of Agroforestry (as little as 3% tree cover) has a significant benefit in CO₂ retention.

Having carried out the exchange visit to Scotland, I feel better able to integrate woodland into our farming system.

Rather than planting trees on our good farmland, we will more likely be opening up some woodland to animal grazing and shelter. We have ample tree cover with 30% of the farm in woodland, plus thick hedges and numerous trees scattered around the farm.

3. Next Steps/Valuable Knowledge Gained

We have already opened up access for sheep into woodland. It provided shelter and hard ground for feeding animals, hence benefitting both livestock and saving pasture from severe poaching. At present most of our woodland is on the Stock Excluded Scheme, but within 12 months we will be looking at grazing more woodland and establishing Woodland Pasture.

We have planted Aronia berries, Apple trees and have Bee hives at the top of the forestry. So, we will be harvesting non-wood forest products from our woodland.

We intend planting Sycamore and Whitebeam trees, which we have not used before. They are good for browsing animals.

4. Key Messages to the Industry

1. Incorporating Agroforestry into a farming system has many benefits
2. Marginal and steeper land is better suited to tree planting
3. On farms with plenty of tree/hedges, additional tree planting on good land is not recommended
4. In intensive farming alongside rivers especially in Nitrate Vulnerable Zones, riparian planting has benefits in mopping up nutrients before they pollute the river downstream
5. On upland farms woodland pasture and shelter belts save lives; particularly new born lambs
6. Green House Gas Emissions – as little as 3% tree cover has a significant benefit in CO₂ retention
7. Other factors in farm management have major significance regarding CO₂ retention. Composting manure and storing undercover are very important factors
8. Organic farming utilising clover leys to build fertility and enable fattening of cattle within 18 months reduces Green House Gas Emissions.
9. Agroforestry. A system with Woodland Pasture, Trees and Hedgerows within an Organic farming system is a good post Brexit model for UK farming