



FCCT – Carbon Calculator Case Studies

Woodland Valley Farm, Cornwall

Habitat creation

Location: Ladock, Cornwall

Farm size: 70 hectares

Farming: Beef and sheep

Carbon balance: Livestock impact balanced by sequestration activities

Sustainable practices: Wildlife habitat creation, renewables, education activities

Business benefits: Maximised nutritional benefits

Woodland Valley Farm

Situated in a quiet valley near Ladock in Cornwall, this 70ha organic farm has a beef herd with a small sheep flock that graze outdoors nearly all year. The farm has consciously investigated and established species-rich swards that enable animals to achieve maximum nutrition from the pasture and minimise poaching in wet conditions.

Owners Chris and Janet Jones are also passionate about education and have built a small conference centre, kitchen and accommodation, hosting anything from school groups to corporate events, ensuring that farm education is key to the experience. They have also invested in solar PV and a wind turbine, and are active in local sustainability (Low Carbon and Transition) groups.

Carbon emissions

Due to the lack of soil cultivations and low-maintenance pastures, tractor operations are quite limited and hence red diesel use accounts for less than 4% of total emissions. However use of road vehicles accounts for around 11% of emissions. Exported electricity, mostly from a 50kW wind turbine, is quite significant and nearly offsets electricity bought in. However export is set to rise substantially by the next Calculation because in the turbine had only been operational for 50 days at the time of the 2011-12 Calculation. This should far outweigh any electricity bought in and give significant carbon savings.

Materials use was generally very low, the main emissions coming from the embodied energy in the solar panels, and the steel and concrete for the wind turbine.

The main source of emissions, as with most livestock farms, was from the animals themselves at around 70% – nitrous oxide and methane in the manures, and methane from enteric fermentation.

The beef herd, being the main commercial enterprise, contributed the vast majority of these emissions, followed by horses, sheep and pigs. A small amount of feed is bought in, accounting for just 2% of emissions. Therefore one way livestock farmers can reduce their emissions is to maximise feed grown on the farm wherever possible.

Sequestration

Chris Jones has long been excited by the possibility of using soils to sequester carbon. Soil analysis has been completed across the farm in order to monitor the changes to Soil Organic Matter.

Woodland Valley, as the name suggests, has significant areas of woodland, of varying age structures, contributing 76% of total sequestration. Hedgerows are extensive and mature, accounting for 14% of sequestration, whilst a young nut orchard contributes around 10% of sequestration.

The overall balance

What Woodland Valley shows is that, whilst livestock are a significant source of greenhouse gas emissions, if farm habitats are well managed and soils managed to build organic matter, carbon sequestered can far outweigh greenhouse gas emissions from all other farm activities.

Future developments

Chris is keen on an electric vehicle, so that personal transport can be carried out by electricity produced on the farm. He is also keen to investigate a small scale Anaerobic Digestion plant so that wastes from the farm and local community are turned in to energy, creating jobs at the same time.

Summary

Well managed habitats and soil balancing emissions from high impact livestock. The farm has an exciting mix of farming, education and energy production, living proof that farms can be about much more than just food.

Use the **Farm Carbon Calculator** to measure your farm's emissions and identify where to focus efforts: <http://www.cffcarboncalculator.org.uk/>

Read the **FCCT Toolkit** for more information on how to implement these techniques: <http://www.farmcarbontoolkit.org.uk/toolkit>