

# Farming for a Better Climate



## Improving carbon efficiencies at Corrimony - key focus farm findings

Corrimony is run by David Girvan in partnership with his wife Barbara and parents Lindsay and Maime Girvan.

With predominantly permanent grass and hill ground, the upland beef and sheep farm covers over 3,035 ha in the Scottish Highlands near Glen Urquhart.

At the start of the project, Corrimony had 130 spring calvers, mainly Aberdeen Angus, Limousin and Stabiliser to Stabiliser and Charolais, along with 550 ewes LLeyn pure and crossed with NZ Highlander, lambs all finished. By the end of the project, stock numbers had increased to 165 cattle, moving more towards Stabilisers, and around 1,500 sheep including LLeyn, Highlander, New Zealand Suffolk and Exlana ewes. David and family volunteered to participate in the initiative from 2014 - 2018 and joined with two other farms in the local area, Clynelish and Auchmore, under the working title of HiFEN (Highland Farming Efficiency Network).



### Improving grassland performance

David used GPS soil sampling to help target lime and nutrient application, with around 200 tonnes of lime applied in the last couple of years to lift soil pH. Use of the GPS and precision technology has allowed David to target



and improve areas of fields that would otherwise not be identified as particularly needy, giving a more uniform pH profile within individual fields.

With the potential for paddock grazing to increase overall grass utilisation by as much as 30%, the same area of land can be more heavily stocked. David has

purchased over 4000 metres of electric fencing and has split many of his existing fields into 4 hectare blocks with water supplied to each paddock.

Rotational grazing meant no concentrates were needed for the ewes (apart from a small amount in 2017). This gave an annual saving of approximately £815 with a reduction from £2.07/ewe to £0.05/ewe per head. Prior to the programme David had considered various grazing regimes and was happy with the move to rotational grazing. Better grass has meant Corrimony can support more livestock on the farm.

### Case Study

Find out how other farmers are improving profitability and adapting to a changing climate in our series of case studies, or take a look at our practical guides covering:

- Energy and fuel use
- Renewable energy
- Lock carbon into soils and vegetation
- Optimise the application of fertilisers and manures
- Optimise livestock management and the storage of manure and slurry

For more information, visit our webpages at

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*Farming for a Better Climate is funded by the Scottish Government*

### Websites

[www.farmingforabetterclimate.org](http://www.farmingforabetterclimate.org)

[www.soilassociation.org](http://www.soilassociation.org)

[www.gov.scot](http://www.gov.scot)

[www.ipcc.ch](http://www.ipcc.ch)

[www.agrecalc.com](http://www.agrecalc.com)

[www.planet4farmers.co.uk](http://www.planet4farmers.co.uk)



# Key focus farm findings - Corrimony

## Savings from improved energy and fuel use

Since the beginning of the programme, David and team have looked at a range of smaller energy and fuel efficiency measures including:

- Use of more energy efficient LED lighting. Carbon emissions relating to energy use will be lower.
- Use of biomass boiler for heating instead of gas.
- Uptake of precision technology meaning less fuel is used.
- A switch from selling cattle as store to finishing at home means less haulage.

David attributes vehicle fuel savings of around £3,418 and 9,576 kg CO<sub>2</sub> to an overall increased awareness of fuel consumption and journeys, rather than any one specific measure taken. Electricity use was reduced by 3,500kWh over the three year project, resulting in savings of 2,078 kg CO<sub>2</sub> and £420. David believes this reduction in electricity use is specifically around the move to LED lighting.

## Improving livestock productivity

With better feed conversion and higher growth rates of bulls compared to castrated males, David moved across to a bull beef system. Following this switch, average daily liveweight gain of 1.11kg/day (2014) increased to 1.4kg/day (2015) then to 1.6kg/day (2017). Selling calves at a younger age meant they spent less time on the farm, required less feed and therefore reduced the emissions credited to the farm carbon footprint.

A change in policy from selling cattle store to finishing them has provided a net gain of £100/head. This has removed the need for additional haulage and therefore fuel CO<sub>2</sub> emissions as a result. Minimising the handling stress on the animals also helps to optimise their performance.



David also looked at his grazing regime; better pasture quality means store lambs achieved their target weights sooner and were sold at a younger age, leading to an average increase in income of £8 per head of sheep sold. With more grass available for ewes through summer/autumn, its putting them in better condition for tugging, potentially resulting in higher scanning percentages.

## Key carbon findings

- Overall, total emissions at Corrimony rose by 56% during the project. This was due to a significant increase in livestock numbers, associated feed and bedding plus an increase in lime and fertiliser purchases.
- The measure of on-farm greenhouse gas emissions in relation to saleable product, also referred to as 'emission intensity' fell by 10% from 31.37 CO<sub>2</sub>e/Kg saleable output to 28.32 CO<sub>2</sub>e/Kg saleable output. This compares very well to other upland livestock businesses.
- Although already technically efficient, practical measures and improved efficiencies saved around £17,000.
- GPS soil testing and precision liming/nutrient application has benefitted grass growth and farm resilience.
- Daily liveweight gain has been improved in the beef enterprise. The ability to sell lambs at a younger age and at a higher weight means that more of the farms emissions are offset by saleable output.
- Carbon sequestration by 50 hectares of native broadleaf trees and 200 hectares of native conifers was estimated to be around 2,722.5 t CO<sub>2</sub>e, at this level the sequestration on farm is greater than the total emissions, at a margin of 67.7%.
- For practical ways to reduce your farm carbon footprint, visit [www.farmingforabetterclimate.org](http://www.farmingforabetterclimate.org)