

FFBC News

The Farming for a Better Climate Newsletter

Dec 2013 (no. 7)



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Farming for a Better Climate highlights practical ways to improve farm efficiencies and lower the carbon footprint. From on farm renewables to making best use of fertilisers, this newsletter keeps you up to date on some of the activities on the four volunteer climate change focus farms and takes a look at some of the practical ideas from these events and other FFBC meetings held around Scotland.

Low carbon means low cost

Findings from three of the four climate change focus farms were highlighted at Stewart Tower Dairy earlier in November. With a contribution from Cabinet Secretary for Rural Affairs Richard Lochhead MSP, farmers Neil Butler, Ross Paton and David Houstoun all gave their thoughts on the initiative and how it had benefitted their farm business.

Through easy and practical efficiency measures, the farms saved almost £60,000 between them. Torr and Glenkilrie reduced their carbon footprint by at least 10% as a direct result of improving farm efficiency, with future carbon reductions expected at Stewart Tower. More details are available in the farmer case study section of the website, but here are a few highlights to illustrate some of the key savings:



(L to R) Neil Butler at Stewart Tower Dairy with Rural Affairs Secretary Richard Lochhead MSP, Ross Paton from Torr and David Houstoun from Glenkilrie.

Torr

As a dairy farm, one of the aspects Ross Paton looked at was how he could cut energy bills. By making small changes to the daily routine and retrofitting a variable speed milk pump, electricity use at Torr was reduced by 21%. Matching the correct tractor to the job, regular maintenance checks and correct tyre pressures, plus a reduction in handling lightly contaminated water around the farm, reduced overall fuel use by 33%. Farm staff played a key part; asking staff to record and monitor fuel use made everyone more aware of the energy needed for different tasks, helping to further improve efficient fuel use on the farm.



Ross said “Being involved with the Farming for a Better Climate initiative has focussed our minds on mitigating climate change and being aware of the wide range of practices which affect the farm carbon footprint.”

Glenkilrie

David Houstoun already ran a technically efficient herd at Glenkilrie, but there were still things to consider for the upland beef and sheep farm. Analyses showed David had higher quality silage than he estimated; knowing silage values enabled a balanced ration for cattle and sheep, making best use of bought in feed. Cows and ewes were grouped based on condition score and rations tailored accordingly. Calving groups at 24 rather than 36 months meant fewer replacements and subsequent savings in feed. Using recycled woodchip as stock bedding also helped David save on straw. Cattle bedded on woodchip required bedding less frequently and tended to be cleaner.



David said “This program has made me think a bit more about where we can make efficiency savings. Quite a number of little changes have been made over the last three years and once added together they make quite a saving in both

financial and environmental terms. I will definitely continue with changes made so far which have proven beneficial to my business whilst also looking for other areas where improvements can be made.”

Stewart Tower

Although following a reduced programme focused on engagement with visitors to the farm shop and café rather than farmer meetings, Neil and Linsey Butler at Stewart Tower Dairy still made significant financial savings through tweaks to current practices.

In addition, installation of a 100kW wind turbine will bring substantial savings in both fuel bills and carbon over the coming years.



Neil said “We were already focusing on some of the areas that have been brought up in the project, for example we have a carbon footprint as part of our milk contract with Sainsbury’s. The initiative helped us to build on this and look at other areas where we could make a change. For example using less fertiliser and increasing clover in grass has had a benefit and is something that everyone can consider and adapt depending on their individual circumstances. One of the things that comes out of these projects is that the cumulative benefits add up, not only for the individual farm but if all farmers were to take up similar measures, actions could show a significant reduction in the carbon footprint for agriculture across Scotland.”

All farms could benefit...

To date, the project has shown that even on already technically efficient farms, there is still scope to improve efficiency, save money and reduce the farm carbon footprint.

Even though the farmer commitment has technically finished, the three outgoing focus farms have kindly agreed to continue to provide data to re-assess their carbon footprint on an annual basis. We will report these findings in future newsletters.

But wasn’t there four farms? Yes; we still have another year to run at Upper Nisbet in the Borders; we will report on Robert and Jac Neill’s findings later in 2014. For more information on the initiative or to see how the farmers profited from low carbon measures, see www.farmingforabetterclimate.org.

NEW climate change focus farm...could it be you?

Low carbon farming methods may sound like a bit of a chore, but it’s really all about business efficiency. Cutting your farm carbon footprint can be much more practical, straightforward and financially rewarding than you think. We are looking for new volunteers for the climate change focus farm project and would be especially keen to hear from farmers in the North and North East of Scotland. For an informal discussion, contact Rebecca Audsley on 01292 525089 or rebecca.audsley@sac.co.uk or speak to your local SAC Consulting Office.

Upper Nisbet; targeting diet for top performance

You need to get your silage analysed to make up accurate rations and make best use of bought in feed this winter. That was one of the messages at a recent climate change focus farm meeting looking at Practical Rationing hosted by Robert and Jac Neill at Upper Nisbet near Jedburgh.

Colin Morgan, SAC Consulting Livestock Nutritionist highlighted ways to improve herd performance, including the value of condition scoring within the herd and knowing the quality of silage. Colin stressed the need for optimum efficiency when feeding cows this winter.



Silage analysis at Upper Nisbet revealed an ME of over 11MJ and a protein content of 13%, but this had to be balanced with less silage in the pit. Feeding poor silage will have an impact on performance; feeding better silage without knowing values could also be costing you money. For example a dry, spring calving cow could need

anything from 20-40 kg silage plus straw to fill up on; this depends on both cow condition and silage quality.

The meeting also heard from Technical Director for ScotMin Nutrition Ian Henderson, who highlighted how sub-optimal levels of minerals and trace elements can reduce livestock productivity.

Matt Palmer of Harbro stated that you can work with just three rations, weaned, grower and finisher, keeping rations simple. Improved efficiency can be measured in reduced feed costs but also in better feed utilisation. Matt suggested a focus on £/kg of LWG not £/day; young animals have a better feed conversion rate and can be pushed hard to reach target weight, getting them off the farm sooner. This may see an increase in short term ration costs, but overall feed costs will reduce in the longer term, improving farm efficiency.

SAC Consultant and Farm Facilitator Moira Gallagher said “It’s worth assessing the condition of stock and targeting diets to the performance you want. Is it possible that some of your normal store cattle could be more profitably finished this winter? Now is a good time, if you haven’t already, to analyse your silage and work out how much you have of it”.

The next meeting at Upper Nisbet is planned for February 2014; contact Moria Gallagher, SAC Consulting at the St Boswells Office on 01835 823322 or moira.gallagher@sac.co.uk for details.

Forage ‘ready reckoner’

This [quick and easy calculator](#) gives an indication of current performance in terms of livestock units per hectare of forage and annual silage production based on yields. The information can help you plan ahead, benchmark your current system and identify scope for improvement. From www.farmingforabetterclimate.org, click on the ‘Improving farm efficiency’ box, towards the bottom of the page click ‘downloads’. The ready reckoner is under the *Management of livestock* heading.

Profiting from FYM and slurry

Farmyard manures are often seen as a ‘bonus’, with little consideration given to the corresponding reduction of nitrogen (N), phosphate (P) and potash (K) applications from bagged fertilisers, writes David Michie, SRUC Agricultural Consultant. Knowing the value of farmyard manure could help you better target nutrient use on the farm, improve soil condition and make best use of resources.

Applications of typical manures supply the P and K amounts shown in Table 1 (at moderate soil P and K levels). The column on the right gives a financial value based on current P and K fertiliser prices. In reality, farmyard manures have a much higher (but less tangible) value by improving soil structure, water holding capacity, drainage, and cation exchange capacity (CEC); as well as from their micronutrient and N content. An increasing amount of slurry-producing farms have invested in slurry stores. It’s good to see a return on this investment; reducing fertiliser costs through maximising crop utilisation of nutrients is a positive way of demonstrating this.

Table 1: Financial value of manure based on P and K content only

Manure	Application rate*	P ₂ O ₅ (kg/ha)	K ₂ O (kg/ha)	P & K fertiliser value (£/ha)
Fresh cattle FYM	20 t/ha	64	160	£133
Cattle slurry	40 m ³ /ha	48	128	£104
Pig slurry	40 m ³ /ha	72	96	£105
Broiler litter	10 t/ha	250	180	£284

*Application rates: 20 t/ha = 8 t/acre; 40 m³/ha = 3,562 gallons/acre; 10 t/ha = 4 t/acre.
Taken from SRUC Technical Note TN622

If soil analysis shows P and K levels as moderate, you can budget for an availability of 100%, giving the figures above. If soil P and/or K levels are low, then you should only budget for an availability of 50% and 80% respectively in your nutrient management plan. Despite the values in Table 1, farmyard manures are variable so it is worth getting an analysis done to determine actual nutrient values and improve the accuracy of your budgeting.

Both [PLANET Scotland](#) and [MANNER](#) nutrient budgeting tools take organic manures into account; making allowances for their date, rate, and method of application. You can customise manure nutrient values with your own analysis results to get even more accurate recommendations. A good deal of research underpins these calculations, giving useful, realistic recommendations.



Manure is not just a bonus: it is a high value fertiliser and soil amendment. Not only can targeted applications result in big savings, but better use of nutrients can also help to reduce the carbon footprint on the farm.

Soil and Nutrient Network

Managing soils and nutrients can save the business money and improve efficiency; that was the message at a recent event at Ednie Farm as part of the Soils and Nutrient network. Seven farms are participating in the network to see if they can make better use of nutrients and improve farm soils. To date, the participating farms have had soils analysed on 12 fields across the farm, along with investigations into soil structure and nutrient status. One farmer said “It’s useful to take a back to basics approach; the meeting provided a good refresher”. For more information on the Soil and Nutrient network, contact climatechange@sac.co.uk

Cut pollution risks and benefit the farm business.

Farmers at Oban Mart were able to take advantage of specialist advice at an event combining a number of topics around improved handling and use of slurry and manures, alongside other measures to help to reduce pollution risks and improve farm habitats for wildlife. Knowing soil nutrient status and values in slurry and manure helps to accurately target nutrients on the farm, potentially reducing both emissions and pollution risks. One farmer commented “It’s essential to act on useful information to get on in farming. I’m going to test my soils more regularly from now on” The meeting also showcased the new ‘Mind the Gap’ tractor sticker, a handy reminder of legal working distances next to watercourses. Copies of the sticker and ‘Know the Rules’ information booklet are available free from local RPID, SEPA, NFUS and SAC Consulting offices or via www.farmingandwaterscotland.org



Crofters get good grass guidance

Inverienate Estate, by Kyle and Waternish were two venues for a meeting on Skye earlier in the year to look at a range of efficiency measures around grassland production. Grass is the cheapest form of feed you have access to. Crofters attending the event said they would definitely take more soil samples and take another look at their liming policy.

A growing contribution to minimising emissions

Although not suitable for all farms, growing trees is one method of sequestering or 'locking up' carbon dioxide, a major contributor to climate change, writes Jim Reilly, Forestry



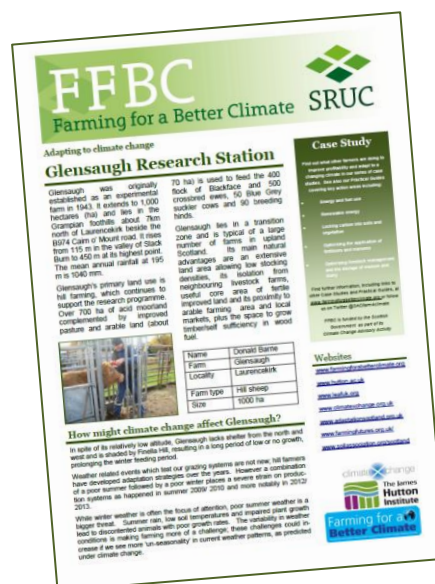
Consultant. Planting trees can conjure up images of large conifer plantations, but these are just one of many options. It's possible to plant just a few acres in trees which, if well managed, will deliver a financial return.

While the benefits of woodland for amenity, shelter and conservation are clear, it can be hard to see an attributed sum of money on the farms bottom line. Often mature farm woodland contains little valuable timber, leading to the erroneous conclusion that trees are worth little or

nothing. This is incorrect; selected and managed woodlands can contain trees of considerable value. Like livestock, choosing the wrong breed (species) and then neglecting them is unlikely to produce show winning animals (or quality timber).

Glensaugh; adapting to climate change

Donald Barrie at Glensaugh kindly produced a case study for us, highlighting some of the climate considerations Donald is faced with farming at Glensaugh Research Station. Read about how Donald makes best use of inputs, the new wind turbine, and how they are farming to their strengths in our uncertain and changing climate. You can read the case study [here](#) or go to www.farmingforabetterclimate, click on 'downloads' towards the bottom of the page.



Remember its not just wind....

Often, wind turbines can be the first consideration when thinking of renewables, writes Jim Campbell, SAC Consulting Renewables Specialist. However there are other small scale renewable technologies to consider for the farm, for example:

- **Solar water heating** – Energy from sunlight is used to provide heating and hot water. If suitably positioned, this system could meet around 1/3 of your requirements over the year.
- **Solar PV (photo voltaic) panels** – Generate electricity from sunlight. Where demand does not match production excess energy can be fed in to the grid.

- **Micro hydro** – Where a suitable combination of head and flow exist, a hydro installation may be viable. Ideal sites will have either a steeply falling burn or an existing weir or dam. Deemed to have a low environmental impact and long operational life when installed on the correct site.
- **Biomass** – More farmers are considering wood fuelled systems, such as woodchip or pellet burners. Opportunities for sale or home supply of wood are bringing more farm woodlands into active management.
- **Anaerobic digestion** – Bacteria breakdown a 'feedstock' in a controlled environment to generate biogas. Suitable feedstocks could include food waste, slurry, manures, maize or grass silage.



Using less fossil fuel will lower energy bills on the farm and reduce your carbon footprint. The technologies mentioned above are included in either the Feed in Tariff or Renewable Heat Incentive schemes, so if eligible, will qualify for additional payments.

Thinking of renewables?

For more information on renewables, visit the [improving farm efficiency](#) section (click on downloads at the bottom of the page) at www.farmingforabetterclimate.org. Also take a look at the Renewable Development Initiative at www.renewableenergyonfarms.co.uk/

Renewable Development Initiative

The Renewable Development Initiative (RDI) has been developed by the National Farmers Union Scotland with funding from the Scottish Government. The RDI has been established with the aim of providing sound independent advice to farmers and land managers across Scotland on renewable energy. Smiths Gore's role is that of project facilitator; to run the project and to facilitate open farm meetings and discussions.

This initiative will run over three years and aims to follow the development of renewable energy installations at a total of 15 farms across Scotland. These installations will be located across three separate regions (north, central and south) and various renewable energy technologies will be studied, including biomass, wind, solar photovoltaics, hydro power and anaerobic digestion.



The selected projects will demonstrate the challenges faced and solutions adopted at various stages of a scheme's life - from planning, to construction, to operation. The projects will also provide an insight into how

renewable energy can provide valuable additional income to an agricultural business. As part of regular farm open days there will be informative presentations and workshops with farmers that have first-hand experience of renewables, as well as with industry experts.

The first farm open day was held in the north region on the 4th of November 2013 and featured two farms: one which has two operational biomass boiler installations for grain and wood chip drying, with a third under construction; and a second farm where an 800kW wind turbine development has recently gained planning approval and grid connection and is awaiting construction.

The next two open farm events on the calendar are planned for early 2014; one in the central region on the 19th of February which will look at wind and biomass, and one in the southern region on the 26th of February examining wind, solar photovoltaics and anaerobic digestion.

More details are available on the initiative website at www.renewableenergyonfarms.co.uk/

What is FFBC?

Messages in the media can often leave you confused about climate change and the impact it could have on your business. With Scottish Government funding and support from NFUS, SRUC are running the Farming for a Better Climate (FFBC) initiative.



FFBC focuses on improving the profitability of the farm business to reduce farm emissions linked to climate change.

The key to reducing greenhouse gas emissions is **improved efficiency**, which is also vital for a sustainable and profitable business. **Demonstrating that we are taking action now could offset future regulations for the agricultural sector.**



Farming for a Better Climate aims to identify some of these practical steps and demonstrate what others have found when putting these

steps into practice on their farm. It promotes 5 key action areas:

- Optimising fuel and energy use
- Renewables
- Locking carbon into soils and vegetation on the farm
- Improved nutrient use
- Optimise livestock management

As demonstrated by the climate change focus farms, even on already technically efficient farms, there is still scope to improve efficiency, save money and reduce the farm carbon footprint.

What can you do?

We all want to hand on a thriving and profitable business. With changing weather conditions and increasing prices, this is becoming more of a challenge. Taking a second look at routine practices could help you to identify further efficiency savings. For ideas and information, see www.farmingforabetterclimate.org.

NEW Practical guides and farmer case studies

Resource efficiency on arable farms is one of the new titles in the [practical guides](http://www.farmingforabetterclimate.org) section. From www.farmingforabetterclimate.org, click on 'Improving farm efficiency' box, towards the bottom of the page click 'downloads' to view the full list to date. You can also see [what other farmers have done](#); from adapting to climate change at Glensaugh to installing a wind turbine at Stewart Tower. Click on the Farmer Case Studies box on the Farming for a Better Climate homepage.

We're still 'Twittering'

We are still using Twitter to put out bits and pieces of news and re-tweet important snippets from others or highlight events. If you haven't tried Twitter, it's a worth a look. You can keep up to date with the project by following us on Twitter at SACFarm4Climate.

Dates for the Diary

There are a range of meetings that could highlight practical ideas that save money and lower the farm carbon footprint. Events are advertised on the [website](#) and via [Twitter](#). Here is a selection:

Soil pH and Liming

Knowing your soil nutrient and pH status can help you make best use of nutrients on the farm. Two meetings will investigate this topic; could whole farm sampling make better use of nutrients and save you money? Meetings are on 22nd Jan at Auchincruive and 23rd Jan at Burnhouse Manor Hotel Nr Beith. Contact Chloe.McCulloch@sac.co.uk or the SAC Consulting Ayr Office on 01292 525252.

Alternatives to Straw Bedded Courts

A changing climate could be one reason why straw has become more expensive and harder to source. What are the realistic alternatives for bedding cattle? The meeting will visit Langtonlees and Kelloe Mains on 30th Jan. The meeting is free but please book your place to allow for catering. Contact Donald.Dunbar@sac.co.uk or the SAC Consulting St Boswells Office on 01835 823322.

Trees; a valuable resource. Woodland Management and Biomass

The Soil Association invite you to a practical day looking at trees on Thurs 20th Feb near Inverurie. Topics include planting, pruning and processing; how to manage existing woodland; selling wood and wood fuel; what you need to know to commission a boiler; the RHI and an introduction to the Woodland Trust. Speakers include Ian Cowe, Forestry Commission Scotland; Neil Harrison, re:heat and Russell Jobson, Woodland Trust with a visit to Dalfling Farm, Inverurie.

The event is free of charge to farmers and other land managers & £60.00 plus VAT to others. Places are limited and booking is essential so lunch and resource packs can be provided. For further information please call Lyn on 0131 666 0847 or email lmatheson@soilassociation.org

With support from SRDP's Skills Development Scheme & QMS

Getting in touch

What would you like to see covered in future newsletters? You may already be taking steps to mitigate or adapt to climate change; we would love to hear about them.

You can send a general enquiry to climatechange@sac.co.uk or contact one of the team:

- **Project Coordinator** — Rebecca Audsley, SAC Auchincruive Office. Email rebecca.audsley@sac.co.uk Tel 01292 525089
- **Upper Nisbet Focus Farm Facilitator** – Moira Gallagher, SAC St Boswells Office. Email moira.gallagher@sac.co.uk Tel 01835 823 322
- **Glenkilrie and Stewart Tower Focus Farm Facilitator** — Peter Lindsay, SAC Perth Office. Email peter.lindsay@sac.co.uk Tel 01738 636611
- **Torr Focus Farm Facilitator** — Gillian Reid, SAC Perth Office Email Gillian.reid@sac.co.uk Tel 01738 636611

If you would like to be notified when the next newsletter is out, email climatechange@sac.co.uk and ask to be added to the mailing list. Your email details won't be shared with anyone else.

Best wishes for a productive and profitable 2014 and thank you for reading the newsletter!

