Keeping you up to date with ideas discussed on the Focus Farms and at FFBC meetings across Scotland to *improve farm efficiency and profitability*, which could also result in fewer emissions per unit of production and a *lower farm carbon footprint*.

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**What's been happening?**

With some of our Climate Change Focus Farmers now past their half way point in the project, November saw us meet up to discuss what's been happening at the farms. The focus farmers have been trialing ideas from SAC specialists, industry speakers and other farmers coming to the discussion group meetings, tweaking ideas to fit their business.

We had a high profile visitor to one of our meetings recently - Cabinet Secretary for the Environment, Climate Change and Land Reform Roseanna Cunningham MSP attended one of the national Farming for a Better Climate meeting run under the Farm Advisory Service (FAS) programme, kindly hosted by Mark Thompson at Tillyrie in Perthshire (both pictured on the left with SAC Consulting’s James Buchanan). The meeting focused on improving efficiency and reducing the farm carbon footprint, whilst Ms Cunningham was able to highlight the benefit of emissions reductions for both the environment and the farm business. You can see a video clip from the event [here](#).
Compact calving period

The calving period is one of the most important key performance indicators (KPI) for the beef producer. Key performance targets set by the industry are very high. That however, does not mean they are not worth trying to reach, as improving the calving period will have a direct impact on profit. Farmers at a recent focus farm meeting at Rumbletonrig were challenged to see how their herds compare…where are you in relation to the targets?

<table>
<thead>
<tr>
<th>KPI - Key Figures</th>
<th>Targets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mating Period</td>
<td>&lt; 70 days</td>
</tr>
<tr>
<td>Pregnancy Rate</td>
<td>&gt; 95%</td>
</tr>
<tr>
<td>Abortion Rate</td>
<td>&lt; 2%</td>
</tr>
<tr>
<td>Calving Rate</td>
<td>&gt; 93%</td>
</tr>
<tr>
<td>21 Day Calving Rate</td>
<td>&gt; 65%</td>
</tr>
<tr>
<td>Perinatal Mortality</td>
<td>&lt; 5%</td>
</tr>
<tr>
<td>Calf Death 1 month - Weaning</td>
<td>&lt; 2%</td>
</tr>
</tbody>
</table>

Improving energy use on a shoestring budget

Engineer Adrian Jones attended Woodhead recently to talk through key energy saving tips to reduce energy use and associated costs in the dairy.

Along with energy saving tips, Adrian also looked at water use, as this can often be overlooked when reviewing efficiency. Consider how you could reuse water - Adrian suggested secondary use of plate water for livestock drinking or stored in a buffer tank and brought to temperature to be used for plant washing, again saving on energy. Key tips from Adrian included:

- **Know your** system.
- **Know what you are using where - measure, meter & record.**
- **Look at the large energy uses first**, it is easier to find small daily savings on large uses, which will soon add up.
- **Do the obvious & easy options** first - then think about large scale adaptations if required.

Read more in the Climate Change Focus Farmer meeting notes section on the website.

A low cost system with high animal growth

Michael Shannon of Thankerton Camp Farm, Lanarkshire was a recent guest speaker at Rumbletonrig where he talked about grassland utilisation and his paddock grazing system. Michael explained how he manages his paddocks in his forage only beef finishing system.

At peak performance, his native breed purchased stores can achieve a live weight gain of 2.75kg day. Stocking rate is set to match grass production growth curve with at 12,000kgs per acre during May-June dropping to 1,000kg/acre July–August and 800kg/acre in the autumn. Grazing season daily live weight gain at grass 1.5kg/day. Worth considering? You can read more about how Michael manages his system in the meeting notes on our webpages.
Condition scoring in the suckler herd

It is important to condition score cows at key times during the year, at weaning, 60 – 90 days before calving and at calving, stated Kirsten Williams at a recent Nether Aden Focus Farm meeting.

Condition scoring goes from 1 – 5 scale; 1 being thin and 5 very fat. Body condition score 2 would be seen as moderate, condition score of 3 is seen as good while condition score 4 is seen as fat. Kirsten stated that for spring calving cows, body condition scores should be recorded at housing and the cows grouped accordingly.

For example, feed requirements for cows in different condition at Nether Aden are shown in the table below:

<table>
<thead>
<tr>
<th>Condition Score</th>
<th>At Calving</th>
<th>Going to grass</th>
<th>At Breeding</th>
<th>At Housing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fat - 650kg cow</td>
<td>2.5</td>
<td>2.0+</td>
<td>2.0 – 2.5</td>
<td>3.0+</td>
</tr>
<tr>
<td>Normal - 650kg</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thin - 650kg</td>
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</table>

Ultimately having cows in the correct condition score going into the calving period will leave you with reduced calving difficulties, less stress and more time to manage other things on the farm. If the cows are either too fat or too thin this can lead to calving problems, low birth rates for calves, lower milk yield and potentially result in you having a more stressful calving period.

Protecting Farm Soils

As part of the focus farm programme at Castlemains in East Lothian, Bob Simpson and the discussion group took a trip to neighbour Colin Hunter, who farms at Stonelaws, to have a look at some of the things he was doing to protect and improve farm soils.

Colin shares machinery and labour with his brother and nephew, who farm in Midlothian. After the wet 2012, Colin noted some damage to his soils, with compaction, water logging and soil capping starting to become more common on the farm.

Colin carried out a bit of research and found that the use of traditional cultivation techniques is contributing to long lasting damage to our soils, resulting in a loss of topsoil and organic matter. If we continue farming in the same way, we could continue on this downward trend, making it harder to achieve target yields in a poorer quality soil.

Colin started to look for different ways to farm that would protect his soils, maintain a profitable yield and improve the value of his land. To test these theories and see how it could work for his farm, he started by changing to min-till. Pleased with the results, Colin has now converted completely to no-till, whilst also using cover crops to protect soils. Using this ‘conservation agriculture’ approach where a variety of crops, cover crops and no-till minimizes soil disturbance, it also maximizes soil organic matter and protects soil biodiversity.
**pH is pivotal to maximising crop and grass yields**

Liming may sometimes seem like a luxury, but it’s an essential if you want to get the best out of the nutrients you apply in slurry, manure and bagged fertilisers. A recent meeting at Hillend looked at the importance of soil pH and how this can impact on both crop yield and livestock productivity, plus the range of liming materials and their relative liming values with guest speaker Hugh Ironside from the SAC Consulting Cupar Office.

Correct soil pH is seen as one of the most important factors to get right when trying to farm as efficiently as possible. Both grass and crops will have difficulty accessing the nutrients held in the soil if the pH is out of range. This could mean below target yields and a waste of both time and money when it comes to spreading slurry, manures or bought in fertilisers.

Hugh highlighted a number of different liming materials currently on the market and stressed that it was important that the neutralising value (NV) of the product was known. This way you could make price comparisons between the various other liming materials on offer.

Applying the right amounts of lime on a regular basis, based on up to date soil sampling either by traditional sampling methods or by GPS sampling and precision application was recommended.

The table below, taken from the recent *Valuing Your Soils* brochure, shows how soil pH influences nutrient uptake, the width of the bars indicating the range at which plants can access the nutrients in the soils.

There is more information on pH and liming, along with practical information on various other soil issues in the *Valuing Your Soils* Brochure on our website in the *Practical Guides* section.

### pH range

<table>
<thead>
<tr>
<th>pH range</th>
<th>Strongly alkaline</th>
<th>Medium alkaline</th>
<th>Slightly alkaline</th>
<th>Very slightly alkaline</th>
<th>Slightly acidic</th>
<th>Very slightly acidic</th>
<th>Slightly acid</th>
<th>Medium acid</th>
<th>Strong acid</th>
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**Nutrients**

- nitrogen
- phosphorus
- potassium
- sulphur
- calcium
- magnesium
- iron
- manganese
- boron
- copper & zinc
- molybdenum
Efficiency measures - No one size fits all

It's not just MSPs that have been visiting farms to hear about efficiency measures and how these can benefit the farm and the environment, a group of Scottish Government policy makers visited Rumbletonrig recently too.

The visitors wanted to understand some of the daily challenges faced by livestock producers and to see what practical actions the agricultural sector can take to contribute towards reducing Scotland's greenhouse gas emission targets, whilst also maintaining profitability.

The visitors were treated to a farm tour taking in the spring calving suckler herd with hosts John Mitchell and son Steven. SAC Consulting's Donald Dunbar explained the crop rotation and some of the on-farm measures to protect soils and improve nutrient use efficiency and the financial benefits to the farm business. The visit illustrated practical ideas John and his team were considering to cut emissions and benefit the farm, but importantly also showed how there is no 'one size fits all' solution when it comes to tackling climate change at the farm level, and that farmers need to do what is right for their individual business.

As part of the visit, the group heard how John has undertaken GPS soil sampling & mapping of fields; from this he has been able to target the applications of fertiliser, reduce the amount of P & K applied and make more use of manure. By looking at the farm carbon footprint and how the entire bull beef finishes, John has also been inspired to look at how perhaps pushing his steers harder might affect his efficiency, provided there is no drop in quality.

What's new in renewables?

We took a practical look at solar, wind and biomass installations at both Haughead and Blackiemuir Farms as part of the programme of focus farm meetings with Willie Officer at Ardoch of Gallery.

Guest speakers Jim Campbell and John Farquhar from SAC Consulting discussed various renewable systems, the Renewable Heat Incentive (RHI) and what's changing in the renewables industry.

Key points included:

- Careful planning of renewable installations will pay dividends in the long run.
- For financial viability of new schemes more emphasis will be placed on the value obtained from the energy and less on incentive payments.
- Viable schemes will be those at high yielding sites, with low capital costs where on-site usage is high.
- RHI changes favour larger energy users.
- Heat pumps show better potential for small scale heat demands if properly designed.
- AD can still be viable; a consistent eligible heat demand is necessary.
- Digestate drying is no longer eligible.
Seeing both the wood and the trees

With farm woodlands providing shelter for livestock, a source of wood fuel for sale or home supply plus added wildlife and landscape benefits, it might be worth reconsidering the options for farm woodland planting. Two farmers spoke to Farming for a Better Climate recently and put forward their experience of additional woodland planting on the farm.

John French runs Kinstair Farm, an 83ha mostly arable unit as part of a wider farming and cereals business. The farm provided hill grazing for a suckler herd. In 2013 John decided to move the herd back to the home farm and plant 12ha of hill with woodland. John said “The grazing on the hill was hard to access and we were spending a lot of time just checking stock. Moving the cattle to the home farm and planting the hill with trees has saved us a lot of travel time and fuel while locking up a large amounts of carbon”.

Craigengillan Estate near Dalmellington, Ayrshire is run by Mark Gibson as a mixed estate with hill farming, forestry, conservation management & diversification including holiday cottages, The Scottish Dark Sky Observatory & livery stables.

The Estate has 1,140ha of hill grazing, peatland, improved pasture, and young and established woodlands. Through participation in agri-environment schemes, Mark has been able to deliver many conservation benefits. Mark said “Our long term plan is to turn bleak hillsides back into a productive patchwork of native woodland and pasture. Willie Welsh the estate’s shepherd and I have worked closely together to plan the new woodlands to minimise conflict with the farming operations. Yes we have fewer sheep but they are performing better, lambing percentages are rising and the new woodlands will be sequestering over 65,000t of carbon dioxide in the years ahead.”

The Forestry Grant Scheme may be able to provide help with costs associated with creation and management of woodlands. You can read more about both John and Mark’s experience on the Farming for a Better Climate webpages in the Case Studies section.

New role for Clynelish

Congratulations to Climate Change Focus Farmers Jason and Victoria Ballantyne at Clynelish as they embark on the new QMS Monitor Farm programme. Clynelish near Brora in Sutherland is run by Jason and Victoria Ballantyne in partnership with Jason’s father Murdoch.

Jason and Victoria will still be participating in the work of the HiFEN group until its conclusion in 2017. Victoria and Jason are an excellent addition to the QMS monitor farm network, building on their findings as climate change focus farmers.

Have you been to one of our meetings?

Then chances are, you might be on our Twitter or Facebook page. Along with key findings from meetings and notices about forthcoming events, we post some of our photos on to our Farming for a Better Climate Twitter and Facebook accounts. Find us at Farming for a Better Climate on Facebook or follow us on Twitter @SACFarm4Climate
Tips and ideas shared at events across Scotland

Its always good to hear what other people are doing and share ideas. There have been a number of Farming for a Better Climate meetings looking at a range of small, practical changes that could make your business more resilient. Here is a round up of some of the topics covered at these additional events held across the country:

July saw a big turnout of farmers to two beef events in the North looking at driving production efficiencies into livestock production.

The first of these was with Gerald, Morag and Douglas Smith of Drumsleed Farm near Fordoun and highlighted the benefit of weighing cows and calves and how they were aiming to calve down their commercial heifers at two years old. There was some debate on the case for keeping smaller cows to improve efficiency.

The Macdonald family at Castle Grant Home Farm near Grantown on Spey hosted the second event in the series, and looked at efficient ways to manage the suckler herd and breeding ewes and raise each crop of beef and lamb. SAC Consulting's Jimmy Hyslop and Kirsten Stewart were two of the specialists at the meeting (pictured).

Farmers in Lochgilphead, Castle Douglas, Lockerbie and Dumfries were able to benefit from the expertise of SAC Vets Heather Stevenson and Frank Malone, who delivered a number of informative and interactive sessions looking at control strategies for liver fluke in cattle and sheep and also stomach worms in sheep, both of which can lead to a significant cause of loss of production in livestock. Visitors heard about a range of control strategies they could consider and adapt for their farm.

Claunch Farm at Sorbie looked at efficiencies in dairying, including working out the cost of production and using benchmarking, how to manage grass effectively in order to make good quality silage and take more milk from grass. Speaker David Keiley also looked at focusing more on concentrate quality and the savings, which could be made by tailoring blends to your silage quality.

Soil Management and efficient grassland production was the focus of a visit to Ardacheranmore, Glendaruel with the MacKellar family. The workshop looked at soil structure, its importance and how to improve it, soil pH and nutrient values and how this can give you more grass plus efficient grassland management strategies.

Key findings at all events were that making the best use of inputs and improving livestock health and performance could save money, improve farm profitability and help to reduce your farm carbon footprint.
Farming for a Better Climate - more profitable than you might think!

The wider Farming for a Better Climate (FFBC) initiative is delivered under Scotland’s Farm Advisory Service (FAS), with the Climate Change Focus Farm programme supported as part of Scottish Governments Veterinary and Advisory Services (VAS) legacy activities.

FAS is part of the Scottish Rural Development Programme (SRDP) which is co-funded by the EU and Scottish Government. This programme provides information and resources aimed at increasing the profitability and sustainability of farms and crofts. You can read more about FAS at www.fas.scot

With input from working farmers, FFBC aims to help farmers and land managers consider ways that can make their business more profitable and efficient, whilst at the same time reducing greenhouse gas emissions and demonstrate that farmers are also taking action to tackle climate change.

There’s no one measure, but instead a whole range of ideas suitable for most farms that could benefit the farm business and help to reduce emissions through improved efficiency. Tips and ideas are grouped under five key action areas.

Notes from focus farm meetings and details of upcoming on-farm events are available via our Facebook and Twitter accounts or at www.farmingforabetterclimate.org

Five key action areas:
- Using electricity and fuels efficiently
- Developing renewable energy
- Locking carbon into the farm
- Making the best use of nutrients
- Optimising livestock management

Where are our focus farmers...and how can you benefit?

It’s always good to see what others are doing, identify tips and share your ideas about common issues. Each Focus Farm hosts a series of practical, on-farm meetings with farmer speakers, SRUC Consultants and industry specialists to look at practical ways to strengthen and develop the farm business.

The Focus Farms have around 5 meetings or visits each year at times to suit the farming calendar. Meetings are free of charge and all farmers are welcome to attend.

If you farm and would like to come along to the meetings you would be very welcome.

You can read notes from previous meetings on the project website at www.farmingforabetterclimate.org via the focus farmer pages. Meetings and events are advertised through our Facebook page or on our Twitter account @SACFarm4Climate.

You can also discuss the programme in more detail with your local farm facilitator.
Further information and contact details

There is more information about what we are doing, along with dates of our forthcoming meetings on our Facebook and Twitter feeds. You can read more about the farms, download practical guides and case studies at www.farmingforabetterclimate.org

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Visit the website at
www.farmingforabetterclimate.org

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