Father and son team Louis and David MacVie farm beef cows and breeding ewes on their 550 ha mixed farm near Duns in the Scottish Borders.

As well as the livestock enterprises they grow winter barley, spring barley and fodder rape.

The business has recently replaced two straw bedded courts with a slatted shed with underground slurry storage.

How might climate change affect Langtonlees?

Climate change is predicted to bring more extreme weather and wetter winters. This already seems to be occurring in the Borders with higher rainfall seasons requiring animals to be housed for longer; this extends the winter feeding period and increases straw requirements for bedding livestock. In a changing climate, warmer summers can reduce straw yield whilst wetter summers can delay harvest activities.

Despite being on the edge of an arable area, sourcing straw has become increasingly difficult and expensive. One factor is demand for straw from farmers in the west of the country which pushes up the price of straw to local farmers. The second factor is an increasing trend by arable farmers to chop straw behind the combine and incorporate back into the soil. This is partly to improve soil structure and return valuable phosphate and potash nutrients to their soils, but also because the changing weather patterns reduce the autumn sowing window. Baling and removal of straw can add further delays.

Following the collapse of two straw bedded cattle sheds in 2010 due to extreme snowfall, the above factors persuaded the partners to replace the bedded courts with a slatted shed.
Muck from straw bedded courts is applied to cropping fields in the autumn and spring. Construction of the slatted shed now allows slurry from 400 head of cattle to be applied to silage fields in the spring and after 1st cut is removed. Crop utilisation of nutrients is greatly improved as the grass is actively growing which reduces this risk of leaching and diffuse pollution, but also makes significant savings on purchased bagged fertiliser.

The annual slurry production is equivalent to £4,250 of crop available nutrients as nitrogen, phosphate and potash each year.

A slatted shed allows more animals to be house on a given floor area. The 944 m² floor area can house 400 head. The design of the shed provides a light and airy environment and prevents poor ventilation and subsequent respiratory issues often associated with slatted sheds.

Animal comfort has also been greatly improved by the fitting of slat mats over the concrete slatted pens. The slat mat is made from 100% recyclable products and its curved design gives greater comfort and grip but also promotes the movement of waste/urine through the slat. Manufacturers claim there is also a reduction in ammonia and methane measurement with the shed.

The move to the slatted shed has also enabled growing stock previously sold as store to be retained and finished on the farm increasing overall output. Part funding for the work came from the Scottish Rural Development Programme.

The slatted shed has considerably reduced the amount of tractor fuel required to bale, gather and haul straw back to the farm as well as building into the straw shed and removal for bedding. This has made fuel savings and will help to reduce the farm carbon footprint.

To see what other farmers are doing to adapt to a changing climate and improve business efficiency whilst reducing the farm carbon footprint, visit www.farmingforabetterclimate.org, register for the free e-newsletter at climatechange@sac.co.uk, and follow us on Twitter @sacfarm4climate.