



FARMING
connect
cyswllt
FFERMIO

Focus Site Project Review

Trying out rotational grazing at Ochor Farm, Tregaron

Prepared by;-

Helen Ovens/Loree Jones

ADAS UK Ltd

Unit 10D

Cefn Llan Science Park

Aberystwyth

SY23 3AH

Date: January 2018

Tel: 01974 847000

Email: helen.ovens@adas.co.uk



Contents

1	Summary	1
1.1	<i>Project Conclusions.....</i>	<i>1</i>
1.1.1	<i>Improved lamb finishing performance.....</i>	<i>1</i>
1.1.2	<i>Improved input efficiency.....</i>	<i>1</i>
1.2	<i>Project Outcomes/Learning Points.....</i>	<i>2</i>
1.3	<i>Take home points for the industry -the benefits of rotational grazing.....</i>	<i>2</i>
2	Business Review	3
2.1	<i>KPIs and business performance indicators.....</i>	<i>3</i>
2.2	<i>Potential impact of the project on business.....</i>	<i>3</i>
3	Project Review.....	3
3.1	<i>Background to project principles –some facts and figures</i>	<i>3</i>
3.1.1	<i>The principles of rotational grazing</i>	<i>4</i>
3.1.2	<i>A comparison of set stocking and rotational grazing –other experiences in Wales</i>	<i>4</i>
3.2	<i>The business benefits of rotational grazing</i>	<i>5</i>
3.2.1	<i>Higher volumes of forage production AND utilisation per ha</i>	<i>5</i>
3.2.2	<i>More ewes per ha</i>	<i>5</i>
3.2.3	<i>Higher lamb weight per ha.....</i>	<i>5</i>
3.2.4	<i>Improvements in soil fertility and structure– manure and urine spread across area</i>	<i>5</i>
3.2.5	<i>Better grassland management resulting in less requirement for silage.</i>	<i>6</i>
3.2.6	<i>Reduced worm burden</i>	<i>6</i>
3.3	<i>Aims of the project</i>	<i>7</i>
3.4	<i>Project methodology.</i>	<i>7</i>
3.5	<i>Project results and discussion</i>	<i>8</i>
3.5.1	<i>SWOT project analysis.....</i>	<i>9</i>
3.5.2	<i>Farmer perspective of the project.....</i>	<i>10</i>
3.5.3	<i>Alignment to sector’s strategic goals.....</i>	<i>10</i>
4	Impact on the industry	10
4.1	<i>Impact on individual business</i>	<i>10</i>
4.2	<i>Impact on wider industry.....</i>	<i>10</i>
4.3	<i>Impact on Welsh Government’s cross cutting and priority themes</i>	<i>11</i>
4.3.1	<i>Climate change.....</i>	<i>11</i>
4.3.2	<i>Animal Health and Welfare (AHW).....</i>	<i>11</i>
4.3.3	<i>Future Generations</i>	<i>11</i>
4.3.4	<i>Tackling Poverty</i>	<i>11</i>

1 Summary

Rhun and Nerys Williams run a mixed livestock system at Ochor farm, near Tregaron.

The Williams' farm in the region of 85 hectares, and the land ranges from 120 to 200 metres above sea level. It is a mixed beef and sheep grassland farm, with circa 550 breeding ewes (250 improved Welsh and 300 mules) and 120 ewe lambs.

Business aspirations:

- Improve kg of lamb sold per ewe
- Improve production from grassland
- Improve net worth of business
- Strive for optimum efficiency on the farm in order to achieve good work life balance

Focus Farm Project key objectives:

The project evaluated the pros and cons of rotational grazing. By measuring and comparing a range of factors the Williamses were able to evaluate the best grazing strategies for lamb finishing.

The farm is located in an area where set stocked grazing is the traditional grassland management system, with rotational grazing systems uncommon. Both the Williamses and the wider farming community have an interest in seeing and understanding whether rotational grazing has a place within their farming systems, in order to increase profitability.

1.1 Project Conclusions

1.1.1 Improved lamb finishing performance

The project showed that a simple rotational grazing system can be put into practice, even within traditional set stocking regimes, and result in improved lamb finishing performance.

It was possible to produce, off 12 hectares, a total of 3,500Kgs of live weight. This equates to 292Kgs of LWG/Ha (if at 48% killing out, it produced 140Kgs of dead weight per ha).

In comparison to previous years, lambs were achieving on average an additional 1.5kg when reared within the rotational grazing system.

Under the rotational grazing system improvements were made in terms of managing livestock sales. Being aware of future grass availability provided security when retaining lambs currently not meeting market requirements. The increase in lambs achieving the desired specification rose by 8% (from 74% to 82%), something Rhun felt was the greatest benefit from a management perspective. Lambs were finished to greater weights later in the season without the worry of selling all lambs ahead of winter. Adopting this system increased income from lamb sales and prolonged the income period improving annual cash flows.

1.1.2 Improved input efficiency

Regular monitoring of grass yield and quality enabled a variable rate of fertiliser to be applied at optimal times. Results found that applying fertiliser when grass cover was at 1,400 to 1,500 kg DM/ha resulted in reduced application rates, indicating optimum Nitrogen (N) uptake.

Adopting a system of weekly measuring improved efficiency through increasing yield and improving overall quality of grassland, thus optimising applications and reducing associated costs.

1.2 Project Outcomes/Learning Points

- Additional 1.5kg liveweight gain per lamb as a result of grass quality and availability improvements.
- Less barren ewes than in previous years. Improvements made to grassland quality is the likely contributor to this, as higher levels of both energy and protein in the weeks leading to tupping helped ensure adequate body condition score (BCS).
- 12 ha produced a total of 3,500kgs of live weight, i.e. 292kgs of LWG/ha and producing 140kgs/ha of deadweight.
- Lambing percentage increase of 2 – 3% in 2017.
- Improved management of lamb sales. An increased number of lambs met desirable specification and weights for market sales. This was a direct result of better forward planning of grass supply.
- Measuring grass cover and quality can improve efficiency when making fertiliser and manure applications.
- Reduction in weed populations through use of a weed wiper.

1.3 Take home points for the industry -the benefits of rotational grazing

- Rotational grazing results in higher forage production and usage per hectare when compared to continuous stocking.
- Quality of grazed forage increases, by up to 12ME.
- Higher stocking rates can be sustained on the same number of hectares.
- Urine and manure distribution is more even – can reduce need for additional fertiliser and manure applications.
- Weeds can be controlled under all-grass wintering systems as the grass will out-compete pernicious weed species over winter months, reducing weed vigour the following summer¹.

¹ FG 5th March 2015 – Susan Buckingham and Dr John Vipond.

2 Business Review

2.1 KPIs and business performance indicators

The business performance indicators Rhun wanted to work on in this project were:

- To establish a grass management system, producing high quality grass
- Use the opportunity to continue to assess and tackle flock worm burden, using FEC sampling
- Lamb finishing weights
- Increased production per ha
- Extended grazing season

Progress against these business performance indicators is detailed under section 3.5 of this report.

2.2 Potential impact of the project on business

A 10% improvement in numbers of lambs reaching desired market specification by the end of November 2017 (82% of lambs in spec), thus **improving output efficiency and increasing income from lamb sales**.

Forage supply exceeded demand throughout the entire period lambs were grazed, **reducing costs associated with alternative bought in feed**.

The business is now able to **plan for future grazing seasons** having closed the paddocks in October. This has been possible due to the business meeting market specification sooner.

When returning to grass in the Spring a planned rotation and grazing wedge will be in place.

Financial gains have been made throughout the project, however improvements made have also improved overall farm efficiency and viability.

3 Project Review

3.1 Background to project principles –some facts and figures

Research has shown that rotational grazing systems can result in a 56% increase of DM/ha yield, as outlined in the table below.

Effect of moving from set stocking to a paddock grazing system

Strategy	Annual yield (t DM/ha)	Utilisation (%)	Useable yield (t DM/ha)	Percentage increase
Set stocking	6.0	50	4.3	
Continuous (variable)	8.5	60	5.1	20%
Rotational	10.2	65	6.6	56%
Paddock	10.2	80	8.2	92%

<https://beefandlamb.ahdb.org.uk/wp-content/uploads/2016/07/BRP-Planning-grazing-strategies-manual-8-150716.pdf>

3.1.1 The principles of rotational grazing.

Success relies on:

- Measuring and managing sward height, on a weekly basis.
- Setting up a series of paddocks, and rotate stock in a group around the paddocks, in each paddock for between 1 and 4 days, depending on grass growth rates.
- Use the following target sward heights as a guide for moving sheep onto the next paddock²:

Class of stock	Grazing period	Rotational Grazing	
		Pre-graze (cm)	Post-graze (cm)
Ewes and lambs	Turn-out - May	8 - 10	4 - 5
	May - weaning	8 - 10	4 - 6
Pre-tupping	Sept – November	8 - 10	4 - 5
Weaned finishing lambs	July - September	10 - 12	5 - 7

3.1.2 A comparison of set stocking and rotational grazing –other experiences in Wales

David Jones at Ddol, working with Innovis, undertook a set stocking [v](#) rotational grazing trial, with the following results³:

	Set Stocked	Rotational grazing
Current stocking density	5.5 ewes / acre (with twins)	9 ewes / acre (with twins)
Average lamb weight at turn-in	30.3 kg	29.3 kg
Average current growth rate	391 g / day	363 g / day
Total lamb liveweight per acre	364 kg	475 kg

Rotational grazing can benefit both established pasture and new reseeds. Set stocking punishes the more productive grasses within a sward, as their re-growth is grazed off as soon as it appears, undermining any investments made by the farmer in reseeded. By rotating stock round, the more productive grasses get the chance to rest and recover⁴.

² Source: AHDB Beef and Lamb

³ <http://innovis.typepad.com/innovis/2014/06/the-show-season-has-officially-started.html>

⁴ Rhidian Jones (ex) SAC Consulting

3.2 The business benefits of rotational grazing

3.2.1 Higher volumes of forage production AND utilisation per ha.

With moderate grazing pressure it would be expected that sufficient control over sward height would be maintained. Ensuring control over such factors will provide a pasture that is well managed and therefore well utilised. It is expected that under such conditions, a rotationally grazed paddock will reach an utilisation rate of 65%, compared to 50% within a set stocking system and 50% under continuously grazed systems. It is also expected that adopting such a grazing strategy will significantly increase the cover of productive species over a period of 2-3 years⁵ and therefore improve long term productivity.

For continued high level utilisation rates, an individual farm should have a target cover of 2,000 – 2,500 kg DM/ha before the feeding system commences. Once achieved, a feed budget will need to be calculated to gain an understanding of grass supply and whether or not this meets flock demands⁶.

Mr Williams decided to take the advice of grassland specialist Gareth Davies to establish this system and found his advice and guidance incredibly beneficial. This type of grassland advice may be of help to farmers developing or practicing a new system for improved utilisation and reassurance.

3.2.2 More ewes per ha.

Producing a grass budget to suit desirable stocking rates will produce higher output/ha.

If grass leys are sown with a variety of high sugar grasses such as white clover or chicory then higher stocking rates can be used to optimise livestock and grassland performance without compromising the nutritive value present to livestock. When feed budgets have been modelled for estimated grass growth figures some Welsh farmers have increased stocking rate by as much as 25%. It is recommended that the farmer does this with the support of an advisor, as well as being mindful that some ewes will need to be withdrawn before silage production and again throughout the winter rotation, in order to protect that grass wedge.

3.2.3 Higher lamb weight per ha.

An increase in lamb weight per ha is achieved via two factors. Firstly, higher levels of DM, particularly that available at weaning will increase lamb weights to a greater extent than continual grazing⁷. Secondly, as previously mentioned, the prolonged grazing period will extend the ‘finishing period’, providing a cheap feed ensuring lambs are finished to desirable and possibly heavier weights.

3.2.4 Improvements in soil fertility and structure– manure and urine spread across area

Although rotational grazing can provide benefits associated with resting periods, high stocking rates can cause soil compaction from high levels of trampling whilst forage is rapidly grazed. However, rotational grazing has less of an impact on soil erosion that that caused by long term continual grazing systems⁸.

⁵ Vipond, J. 2015. *Flock grazing strategies: Many sheep farmers waste a third of grass*. Farmers Guardian.

⁶ AHDB. 2015. *All grass wintering of sheep*. Kenilworth. AHDB.

⁷ Hayman, J. Saville, D. 1981. Comparison of rotational grazing with set stocking of ewes and lambs in spring on irrigated pastures in Canterbury. *Journal of Experimental Agriculture*, 9 (11-19).

⁸ Clayton. 2014. *Permaculture Strategies: Intensive Rotational Grazing*. Trans Terraform. Available from: <http://transterraform.com/permaculture-strategies-intensive-rotational-grazing/>. (Accessed 17th January 2018).

Rotational grazing also benefits pasture soil fertility and organic matter, reducing overall dependence on fertiliser applications⁹. Key soil fertility and organic matter benefits come via the spread of manure across the whole pasture. When set stock grazing sheep and/or cattle, livestock will typically return to water tanks or a given area of a field. This results in nutrient accumulation near these areas, rather than a more even spread across the field. Rotational grazing reduces this tendency, with animals being moved around the ground, from paddock to paddock⁹.

When working under a rotational grazing system the best form of on-going management is to take regular soil samples, which can then be used to apply correct doses of fertiliser. This will not only reduce environmental impacts caused by high levels of inputs and unnecessary applications but will also reduce costs associated with such practices. Providing applications are made based on soil sample results and 'crop requirement', N uptake will be increased resulting in optimal growth rates.

For efficiency of N use, applications should ideally be made immediately after each grazing cycle with a livestock withdrawal period of 21 days (although, this is often not practical, with most graziers only applying N 2 to 3 times annually). It should also be remembered that livestock will return 60 – 80% of available pasture nutrients through their urine and dung which will reduce overall need for artificial applications¹⁰.

3.2.5 Better grassland management resulting in less requirement for silage.

Improvements made to utilisation rates through rotational grazing will result in a reduced requirement for silage as the grazing season will not only be prolonged but the grazing quality will be sustained for a longer period. This volume of high quality grazing material can be achieved as yields are maintained as a result of reduced recovery times associated with rotational grazing systems.

3.2.6 Reduced worm burden

Opting for a less intensive form of rotational grazing will prolong each fields resting period, with research showing longer rest periods significantly reduce in-field worm burdens and therefore reliance on anthelmintics. Choosing to monitor worm burdens using tools such as Faecal Egg Counting (FEC) helps gain an understanding of previous and current worm burdens and is something that was practiced throughout the project.

⁹ IFAS. 2014. *Grazing Management can improve pasture fertility*. IFAS. Available at: <http://nwdistrict.ifas.ufl.edu/phag/2014/04/11/grazing-management-can-improve-pasture-fertility/>. (Accessed 17th January 2018).

¹⁰ Undersander, D. Albert, B. Cosgrove, D. Johnson, D. Peterson, P. *Pastures for Profit: A guide to rotational grazing*. University of Wisconsin. Available from: https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1097378.pdf. (Accessed 17th January 2018).

3.3 Aims of the project

- To evaluate the pros and cons of rotational grazing, in an area where set stocking is the accepted grazing system used to rear and finish lambs.
- To use sward height measurements as part of the project, inputting data into AgriNet, and using the support services of a grassland specialist.
- To assess whether rotational grazing on Ochor Farm results in an improved finished lamb product, with little or no additional costs.

The benefits of measuring grass weekly, using this to develop a paddock grazing system, with the ultimate goal of having sufficient grass to finish lambs off quicker, to the desired specification.

Rhun trialled the Agrinet tool (which is one of several subscription based grazing management tools available), as part of his sward height data management system. As indicated on the AgriNet website:

The regular measurement of grass, combined with frequent movement of animals between paddocks, results in a farm growing more tonnes of a higher quality grass. Since grass is the cheapest form of feed this will result in higher farm profits and will help the farm cope during periods of low milk and beef prices.

The use of the key Agrinet tools, such as the spring rotation planner, the grass wedge, and the grass budget, make this possible. By constantly tracking supply and demand of grass, you can make prompt decisions during times of grass surplus or deficit.

There is a learning curve on how to make the right week to week decisions on grass. A key process for learning is to join online discussion groups within the AgriNet grass site and learn from your peers. This online discussion group is also available to your grass adviser and puts this adviser in a great position to add value to your grass data and help you make the right decisions.

At the end of the growing season the software can identify tonnes grown per hectare on each paddock, which allows you to make good decisions on paddock reseeded.

3.4 Project methodology.

During May 2017, with the support of a grassland specialist, a plate meter, and the data services of Agrinet, Rhun set up a rotational grazing system at Ochor farm.

He originally started by grazing two mobs of ewes (90 in each mob) and lambs around different areas of the farm. He worked within the existing fencing infrastructure for this, rather than use electric fencing.

Each mob had 8 paddocks to graze, spending between 2 and 4 days in each paddock depending on the size of the paddock. This continued until weaning.

After weaning 12Ha of ground was allocated, for lamb finishing. Rhun started off with 260 lambs and started grazing them on 7 fields, then after the first rotation (14 days long) split the five bigger paddocks into quarters, one of them into thirds and the final 2 acre one was left unsplit. This gave a total of 24 paddocks (1.5 to 2 acres in size), utilising electric fencing materials already on the farm which minimised any additional expenditure.

On 26/7 the lambs were split into three groups and given 8 paddocks each. The lambs were split according to weight, with the heaviest lambs on the newest leys, and the lightest on the older leys. As the season progressed and lambs were sold from the newer leys, the heavy mob were then replenished from the

medium mob, the medium mob was replenished from the lighter mob, and then there were more lambs added to the lighter mob. This kept the stocking rate at 21 lambs/Ha.

The lambs were kept on the rotational grazing until the end of November, up to this point 620 lambs had been grazed on these paddocks, of which 500 had been finished. Lambs were added to the fields at 32Kgs and the average killing weight was 39Kgs.

The remaining 120 lambs were either taken indoors or fed alternative feeds.

3.5 Project results and discussion

	KPI/performance attribute	What was the project result?
1	To establish a grass management system, producing high quality grass	<p>An incorporation of a rotational grazing element into a set stocked grazing management system, to improve the quality and volume of grass from the farm as a whole.</p> <p>Existing fields grazed on a rotational basis, starting once lambs are at foot, on a paddock to paddock system to minimise costs associated with electric fencing and labour.</p> <p>The rotational grazing system was dependent on results of weekly measuring and recording by Rhun and responding to/managing the DM volumes and cover. Additional advice and support came via monthly visits from grassland expert Gareth Davies.</p> <p>During the period that the lambs were being grazed, the paddocks in question grew 3T/DM/ha at an average of 24Kgs/Day with a demand of around 22Kgs/DM/ha/day.</p>
2	Explore the value of technology and data collection	<p>As a result of the project Rhun now records grass growth weekly with all results uploaded to Agrinet. To assess livestock performance EID technology is used to record all weights at regular intervals. For a number of years FEC sampling has been conducted on the farm, this being something that will continue for routine monitoring of worm burden.</p> <p>Since beginning the project investments have been informed by external advice, both on grassland management and also on software use. Rhun will use advice on an on-going basis, in order to maximise the benefits of the farm-works software.</p> <p>Following on from the project, there will be continued routine use of technology and data collection to improve long term efficiency and utilisation of the farm.</p>
3	Lamb finishing weights	<p>Previously selling only 74% of lambs at markets desirable specification, opting for a rotational grazing system has increased this to 82%. The project has allowed Rhun to be more selective when drawing lambs as he now has the knowledge of future grass growth available for grazing, resulting in increased numbers of lambs hitting specification level.</p>

	KPI/performance attribute	What was the project result?
4	Increased production per ha	By the end of November 500 of 620 lambs had been finished at a killing weight of 39kgs, having entered the rotation at 32kg. Throughout the project 12 ha had produced a total of 3,500kgs of live weight, this being 292kgs of LWG/ha and producing 140kgs/ha of deadweight.
5	Extended grazing season	<p>Grazing at Ochor Farm ran from May to November throughout the project. However, some fields were closed off in October. Routine grass monitoring and recording continued to inform Rhun of the nutritive value provided to livestock, whilst regular soil sampling gave assurance for continued grazing without causing damage to soil structure, nutrients or SOM.</p> <p>As previously mentioned the ability to extend the grazing period led to more lambs reaching desired market specification whilst also allowing the farm to retain lambs for a longer period without incurring additional costs associated with feed.</p>

3.5.1 SWOT project analysis

STRENGTHS	<ul style="list-style-type: none"> • Improve overall performance of flock. • Heavier lambs enter the market place as a result = increased returns. • Little wastage in comparison to conventional feeding systems. • More production from grazed grass • More accurate predictions of future grass growth
WEAKNESSES	<ul style="list-style-type: none"> • Currently operating on a field to field basis – if smaller grazing mobs were required due to varying weights then a paddock based system may be required, this incurring additional costs associated with electric fence and labour requirements • Soil compaction could be an issue due to increased stocking rates, unless managed effectively
OPPORTUNITIES	<ul style="list-style-type: none"> • Encourages more proactive feeding adjustments by the farmer, to optimise production and keep costs down • Increased use of perennial legume varieties such as clover or alfalfa could further increase a farms stocking and fields carrying capacity
THREATS	<ul style="list-style-type: none"> • Farmer knowledge levels are critical for optimising the use of a rotational grazing system. • Soil erosion a possibility, due to increased stocking rates, unless managed effectively • Increased poaching associated with higher rainfall influenced by climate change

3.5.2 Farmer perspective of the project

From a management perspective the biggest benefit of the project has been the increase in lambs achieving the desired specification, rising by 10% to 82%. (2016-2017 comparisons).

Rhun is convinced that this is as a direct result of being able to visibly see the quantity of grass that he had in the paddocks, and as a result of measuring this grass he was able to be more selective with his drawing of lambs.

He reflected that 'in years gone by there would always be occasions when you feel grass was a bit tight, and I would send off some marginal lambs just to reduce numbers and take the pressure off the ground'.

This year he has not had to make those decisions as he knew he had the grass available, and this has resulted in the rise in lambs hitting specification.

Rhun is sufficiently convinced of the value of rotational grazing to get ready to do the same again next year. He closed up some paddocks in October 2017 in readiness for grazing with ewes and lambs in Spring 2018, this will then allow him to start a rotation and create a grazing wedge for the rest of the season.

3.5.3 Alignment to sector's strategic goals

This work contributes to the Welsh Red Meat Sector's strategic objectives, specifically in relation to:

- Improving on-farm output from the red meat sector by at least 7% by 2020, by increasing helping to contribute to increasing the national average flock performance.
- Increasing the average weight of lambs produced per ewe in Wales, by at least 10 (to 56kg).
- Develop new business focussed programmes to improve the management, efficiency and profitability of Welsh red meat businesses.
- Establish mechanisms that will maximise outputs from grass based systems and reduce reliance on bought in (imported) feed.
- Inform/educate the industry about cost saving/conservation, energy and water efficiency, ways to reduce waste and ways to improve knowledge, openness and transparency.

4 Impact on the industry

4.1 Impact on individual business

For the full summary list of the impact of the project on the business, refer to the Project Conclusions in section 1.1 of this report.

4.2 Impact on wider industry

Take home points for the industry are provided in the Summary section of this report.

4.3 Impact on Welsh Government's cross cutting and priority themes

4.3.1 Climate change

Rotational grazing helps ensure adequate vegetation cover is present (as managing an adequate grass wedge is a key principle), which protects against erosion. This grass cover has the ability to withstand frequent grazing and will further sequester atmospheric CO² as roots will act as a carbon store.

Additionally, it is estimated that the system reduced carbon emissions associated with feed delivery vehicles by up to 75%.

If the principles of this project are adopted more widely, they will contribute to a reduction in emissions from feed production and transportation. Ensuring standards of animal welfare are high will improve feed efficiency and reduce inputs. This will help reduce nitrogen use per unit of meat produced across the sector as a whole. Grazing high quality grassland or silage is also associated with reduced methane emissions, this being particularly valuable when mixed grazing or grazing cattle alone¹¹.

4.3.2 Animal Health and Welfare (AHW)

The project has resulted in a reduction in the amount of barren ewes and increased lambing percentages, indicating improvements have been made to the health status of the flock. All health issues were recorded throughout the project, this being a valuable tool for identification and eradication of any potentially harmful or contagious disease. Health recording should be practiced across all farms as a tool for disease prevention and eradication, to which will improved flock health status and reduced costs associated treatment.

FEC sampling also helped in evaluating flock worm burden and will continue to be used as a preventative measure in future. With increased resistance to anthelmintics throughout the UK and particularly Wales, there is an increasing demand for alternative methods such as management and prevention, rather than reliance on chemical treatment alone.

4.3.3 Future Generations

The project encourages young farmers who are working or looking to work in the sheep industry to be forward thinking and to grasp opportunities to run a business more efficiently. This includes reducing cost, labour and time; whilst making full use of what lower cost alternatives such as a grass based diet can provide. All of which are increasingly important post Brexit in such a volatile industry.

4.3.4 Tackling Poverty

Running flocks more efficiently will allow businesses to use time more wisely and to be able to focus on elements such as improved grazing management resulting in increased productivity and reduced costs. More cost efficient business practices result in the potential for increased returns, whether that be from on or off farm income.

¹¹ <http://www.nutrientmanagement.org/what-we-do/tools/feed-planning-for-sheep-and-cattle/>