

Expanding your Dairy Enterprise

A Guide for
Milk Producers



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Foreword



For generations, co-operative dairy farming has made an immensely positive contribution to rural development and economic life for the benefit of farming families and communities throughout the Lakeland Dairies operating region and further afield.

We at Lakeland Dairies are optimistic and confident for your future in dairy farming and for the growth and success of your business as we all look forward together to new opportunities for expansion in the post quota era.

As a farmer owned and controlled co-operative, Lakeland Dairies is deeply committed to the future wellbeing of milk producers. We have the required business strategies in place to support your ambitions. We have made, and are continuing to make, the necessary major investments in technologically advanced processing centres for your high quality milk.

Our major customers worldwide are looking forward to the availability of further milk supplies and more of our value-added dairy products in the future. While there may be some peaks and troughs in the world markets, there is continuing growth in the world demand for food. Dairying will outperform other agricultural sectors for the foreseeable future and it will continue to contribute strongly to rural economic developments.

This advisory booklet provides advice and information arising from the ongoing Joint Research Programme between Teagasc and Lakeland Dairies around the best approach for dairy farmers to take as they expand their milk production. All future progress must be achieved on the basis of sustainability. Maximising herd performance from the resources that you have is key to success along with reasonable capital investments where required.

I want to thank Teagasc for their expert contribution and participation in our Joint Research Programme. This process will continue and we will collectively be seeking to encourage and support dairy farmers on a long term basis as we look forward to the future success of co-operative dairy farming for all of our milk producers.

Best wishes.

A handwritten signature in dark ink, reading "Mr G Hanley". The signature is fluid and cursive, with a long horizontal stroke at the end.

Michael G. Hanley

Chief Executive
Lakeland Dairies

Feeding the expanding herd

Feed costs are by far the biggest bill on any farm.

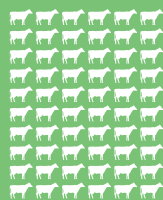
The purpose of expansion is to make the farm more profitable and in turn more sustainable. However if farm efficiency does not increase in terms of growing more grass to feed the extra cows, inevitably the feed bill (silage and concentrates) will increase dramatically and you will be milking more cows for very little reward.



If I grow 8t or 12t grass DM per ha what difference will it make to my profit?

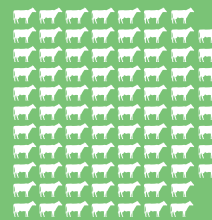
8 T DM/Ha
Total feed purchased
€19,573
(all concentrates)

60 cows



8 T DM/Ha Total feed purchased **€39,010**
(€28,750 as meal and €10,260 as silage)

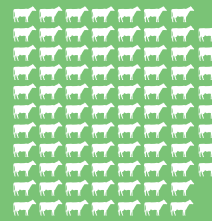
85 cows



Expand herd with no pasture improvement

12 T DM/Ha Total feed purchased **€24,064**
(all concentrates)

85 cows



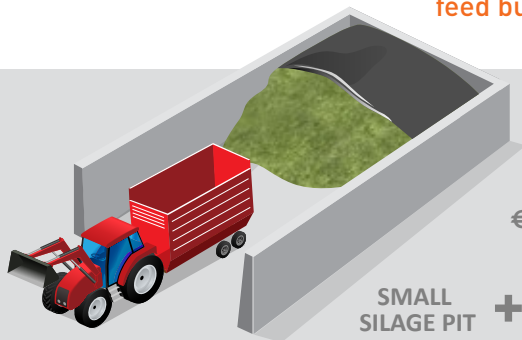
Expand herd and improve grass production



I can increase milk output while controlling my cost by growing more grass.

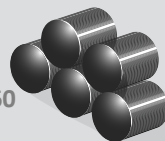
25 extra cows = **€19,439** more per year in total feed budget costs **unless grass growth changes**

LESS GRASS =



SMALL
SILAGE PIT

+



€10,260

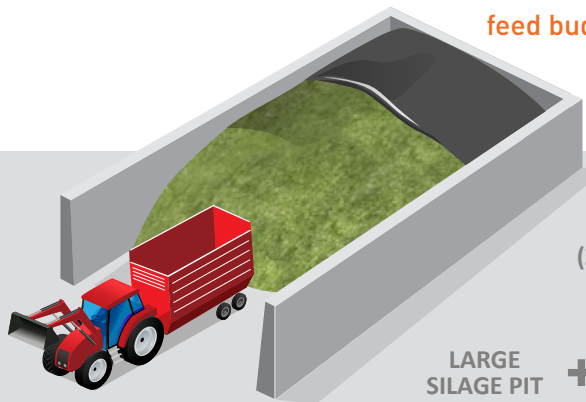
BOUGHT IN SILAGE AND MORE
CONCENTRATES FOR EXTRA COWS

€9,179



25 extra cows = **€4,490** more per year in total feed budget costs **with good grass growth**

MORE GRASS =



LARGE
SILAGE PIT

+

SMALL INCREASE IN
TOTAL CONCENTRATES FED

(Zero extra silage costs)

€4,490





Control what you can!

There is a positive future outlook for dairy farming and milk production. While milk price is a key variable in farmer profitability, it is substantially a function of global market factors - including supply and demand. These are factors that are beyond the direct control of the individual farmer.

There are many other areas that farmers can control in favour of their profit margins such as grassland management, breeding policy, animal disease, quality management and the sources and use of capital.

Don't hesitate to get advice and assistance whenever you need it. It is also important to keep up to date with new research and knowledge from qualified sources e.g. Teagasc open day events and discussion groups.

Case study – Lakeland Farm

Current Farm Situation

- 341,000 litres (28,000kg milk solids)
- 62 cows plus heifers/beef on 44 ha
- Milking platform 44ha
- Low farm debt (€300 per cow)
- Efficient system – total cost 21.9cpl
- Young family - viable scale needed

The Farm Business Proposal

- 105 spring calving cows
- Contract rear heifers
- Improve grass and paddocks
- Construct 16 unit milking parlour
- Convert beef housing to cubicles
- Hired labour, for relief milking and calving season

HOW MUCH EXTRA MARGIN PER YEAR WILL THE EXPANSION GENERATE?

Extra Milk and Stock Sales	€82,561+
Extra Borrowings	€7,920
Extra Feed Costs	€9,978
Extra Variable Costs	€20,506
Labour (Hired)	€9,000
Extra Heifer and Fixed Costs	€17,752
Estimated Net Cash Position	€17,405+

What are the pros and cons for this farm?

- ✓ ➤ Higher farm profit
- More time off
- Better infrastructure
- ✗ ➤ More debt
- Increased risk
- Peak labour demand

What are the Risks?

- Low Milk Price
- Poor weather
- Herd health/ fertility
- Investment overspend



Is it worthwhile?

If yes – the next step is to prepare a full financial plan. See p14.

Growing more high quality feed on your farm

- Soil fertility- target index 3 for Phosphorus and Potassium and Ph 6.3 Lime
- Reseed all poor quality paddocks in next 4-5 years
- Better access to paddocks through farm roadways
- Graze and close 60% of the farm by 1st November to set up for spring (close 10 days earlier on heavier farms)
- Practice on/off grazing in wet ground conditions and buffer feed to meet cow requirements
- Create a cow track to paddocks with poor access
- Be flexible and use reels to allocate square blocks to cows



Quality Grass



Poor Quality Grass



Making the most of grass for milk

Grazed grass costs less than half the price of silage and less than one third the price of concentrates. Getting more milk from your grass resource is a proven way to boost dairy margins

Many highly profitable farms are now growing 12-13 tonnes of grass DM per year. This is an achievable target for the average farmer currently at 7-8 tonnes per year. 14-15 tonnes of DM per year is the future target and everyone should strive to achieve this through excellent management.

GROW IT:

- Soil test every 4 years
- Soil Index 3 for P and K, correct pH
- Perennial Ryegrass swards
- Early Nitrogen and good use of slurry

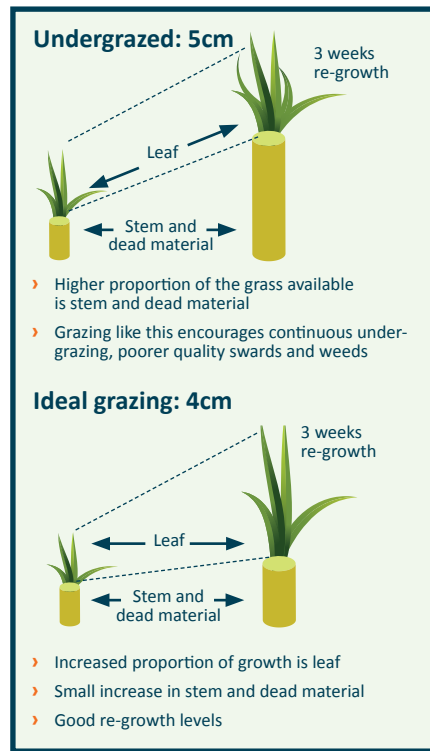
USE IT

- Invest in roadways and paddocks. Multiple water and access points for flexible grazing
- **Spring:** Graze the milking block in rotation from mid-February until mid-April. Graze tight for a clean sward
- **Summer:** Graze swards at 8-10cm (1400kg cover) for best quality. Hold rotation length at 18-21 days

- **Autumn:** Extend grazing by building grass on the farm in September. Use high energy low protein supplements

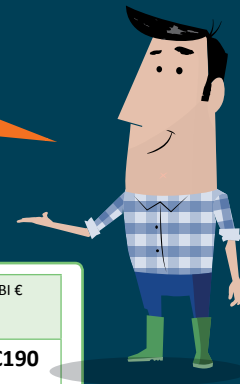
SAVE IT

- Develop a silage plan outlining quantity and quality of winter feed required
- Dry cows need 70 DMD (early June) silage, milking cows 74+ DMD (mid-May) silage
- Remove heavy grazing covers as baled silage during summer
- Hold 2-3 high quality bales per cow (or pit silage equivalent) for spring feeding to milking cows
- Don't damage swards- on-off grazing and back fence in poor conditions



Economic Breeding Index

Even with genetics for lower peak yield, Cow A delivers a higher lifetime yield due to her superior fertility sub-index, and greater revenue per lactation due to increased fat and protein percentages.



COW A



FB Name Breed	Heifer ID	SIRE ID Dam PB MG Sire ID	Sire EBI Dam EBI MGS EBI	C. Date Age Lact.	Milk Kg Fat Kg Prot Kg	Milk %	Fertility	Calving Health	Beef Maintain mgnt	EBI €	
1005 HO 71.9	IE code NR 25%	UPH 1429 S308	187 194 206	1yr 11m	159 13.8 11	0.15 0.11	€68	€99	€27 €2	€-13 €-12 €-6	€190 32%

Milk	Fat %	Pro %	Milk solids (kg)	Calving interval (days)	Exp lactation	Avg lifetime yield litres
6288	4.24	3.62	494	360	7.1	44,424

Milk Revenue = €2,669

COW B



FB Name Breed	Heifer ID	SIRE ID Dam PB MG Sire ID	Sire EBI Dam EBI MGS EBI	C. Date Age Lact.	Milk Kg Fat Kg Prot Kg	%	Milk	Fertility	Calving Health	Beef Maintain mgnt	EBI €
614 HO 96.9	IE code FR 3.1%	SVO 203 RUU	-13 135 194	11/03/2013 2yr 7m 1	452 14.0 10.5	-0.05 -0.07	€39	€14	€19 €1	€3 €-6 €5	€75 37%

Milk	Fat %	Pro %	Milk solids (kg)	Calving interval (days)	Exp lactation	Avg lifetime yield litres
6208	3.64	3.10	418	383	2.43	15,085

Milk Revenue = €2,320

The higher EBI cow delivers €340 more profit per year



The importance of breeding high EBI stock cannot be overlooked. Consider the comparison (left) of two cows, similar in appearance, but one cow has something the other does not:

High EBI

Compare the two cows in relation to

- Higher overall life time yield
- Greater milk solids
- Shorter calving interval
- More expected lactations

Which cow would you choose?

Can you identify high quality stock based on EBI?

The highest profit farmers in the Lakeland region have high EBI herds - it certainly pays to be in the know.

Bull selection guidelines

Key objective! “to breed replacement heifers with the genetics to drive profit”

How do I select the right AI sires for my herd?

- Determine the EBI of your herd, this can be got from the Irish Cattle Breeding Federation (ICBF)
- Decide on your herds breeding objectives and work to achieve these, e.g. fertility and higher milk solids
- Select genetic targets in line with your breeding objectives e.g. bulls with a fertility sub index of €120 or greater
- Select a team of bulls that will deliver the type of replacements you require
- Consider the targets below when selecting AI sires.

EBI target for bull selection	
EBI	€250 or higher
Fertility	€120
Milk solids	+30kg
F %	+0.11
P %	+0.13



If you are trying to build the genetic profile of your herd through the use of stock bulls this simply won't be achieved. Try to ensure all replacement heifers are bred from high genetic merit AI sires.

Sourcing and breeding high quality replacements

Sourcing the correct type of heifer be it for a new entrant or an expanding herd is one of the most important areas on which to focus. Data is now available (e.g., from ICBF) to help you in sourcing the correct type of stock.

It is essential to examine the EBI and performance records of the seller's herd before making any decision to purchase. Avoid herds that have poor fertility and/or low milk solids content. Use the EBI targets in the table to identify suitable stock.

Target Heifer EBI if purchasing stock

EBI	> €180
Fertility	> €90
Milk solids	>20kg
F%	0.11
P%	0.08

Replacement heifers should be home-bred if possible. If purchase is necessary, make sure to select high EBI stock from disease-free herds. It is advised to purchase stock in batches from as few herds as possible to reduce the risk of disease.

Source heifers that will be calving between 22-24 months. Worldwide research work has shown these heifers have stronger survival figures within herds compared to heifers calving at 32-36 months.



Achieving a two year old calving heifer

- Calving at 2 years old improves lifetime performance and reduces rearing costs
- Target weight at breeding (330 kg Fr) is crucial
- Heifers must gain an average of 0.7kg of live weight / day from birth to achieve required weight
- Critical Stages: Calf rearing, 1st summer, 1st winter, turnout, 2nd summer, 2nd winter

Targets weights for replacement heifers (kgs)

Breed	Age	Age	Age	Age
	6 months	9 months (at housing)	15 months (breeding)	24 months (precalving)
Holstein Fr	165	220	330	530 - 550
Nz Fr	155	210	315	525
Jersey/ Hol Fr Cross	145	195	295	490

Synchronizing your breeding heifers

- Your replacement heifers are the best genetics in your herd
- Breed heifers for at least 1 round of AI for more high quality dairy heifer calves
- Use a simple synchronization programme to reduce labour and improve calving spread

	Prostaglandin Protocol
April 25th - May 1st	Observe for heat 5 times a day AI heifers with observed heat (AM/PM rule)
May 2nd	Any heifer not bred by 2nd May should receive Estrumate (2ml) or Lutylase (5ml)
May 3rd - May 8th	AI heifers with observed heat (AM/PM rule)
May 12th	Estrumate (2ml) or Lutylase (5ml) to all heifers not bred.
May 15th	Fixed Time AI 72 hours after injection
May 16th	Fixed Time AI 96 hours after injection



Cost of expansion and development

In the Field:



Roadways

- Furthest point in field should be no more than 150m from a roadway
- Good walking surface required finished with a fine dust
- Width 4-6m depending on cow numbers
- Slope to avoid water pooling on surface

Water

- Loop system to improve flow rate
- Flow rate required: 12 litres per cow per hour
- Main pipelines should be at least 25 or 32mm and 38 or 50mm for larger herds
- Cow should not have to walk more than 200m to get to a water trough

Drainage

- Investigate what is causing the drainage problems
- Objective is to lower the water table
- Clean out all open drains and ensure existing drainage systems are working
- Drainage is costly, therefore it is important to assess the potential returns

Pasture improvements

- Soil fertility: Soil test to assess lime, P and K requirements
- Results show 60% of soils in the Lakeland region are index 1 or 2 for phosphorus. There is also a high lime requirement on many farms
- Improved soil fertility will result in greater growth rates and ensure better response from fertiliser
- Plan to reseed all old pastures in 4-5 years. Reseed 10% of the farm on an annual basis thereafter
- Borrow funds to improve soil fertility and complete reseedling if needed. Do not rely on cash flow as this is likely to delay progress if margins are tight



In the Yard:

Milking parlour:

- Number of units should ensure 8 rows maximum. Allow for expansion.
- Good collecting yard design and a cow drafting facility are key features
- Don't over invest in milking facilities as it has a poor return on investment
- To calculate bulk tank size $30L \times 2.5 \text{ days} \times \text{number of cows}$



Cow accommodation:

- Slurry storage: need $6m^3$ per cow
- Feed space: 24-30 inches per cow
- Cubicle space: 1 per cow
- Good calving facilities: these greatly reduce the work burden. An open straw-bedded area large enough for $\frac{1}{8}$ of the herd is ideal



Get help with yard design - plan ahead for further expansion

Key Messages

- ✓ Prioritise spending on grazing infrastructure and pasture improvements as they have greatest return on investment.
- ✓ Keep spending on buildings and machinery to the minimum until farm is generating enough profit to meet the repayment capacity
- ✓ Borrow for reseedling and land improvement if needed. Relying on cash flow could delay this work

Financing expansion

Financial planning is the basis of any good expansion project. Proper planning for expansion will require full costings of any works required to facilitate sustainable expansion. It will also require knowledge of the current levels of profitability in the business coupled with projected profit and cashflow levels.

THERE'S A
DIFFERENCE
BETWEEN
PROFIT AND
CASHFLOW

REMEMBER
THESE
IMPORTANT
POINTS



Comparing Profit and Cashflow

	Profit	Cashflow
Receipts	€80,000	€80,000
Trading Expenses	€40,000	€40,000
Bank Interest	€5,000	€5,000
Depreciation	€7,000	
Drawings		€35,000
Tax		€5,000
Loan Capital Repayments		€20,000
Stock Valuation Increase	€6,000	
Total	€34,000	- €25,000

You can go broke making a profit!

Two objectives when expanding

1. Increase farm profit
2. Maintain positive cashflow

Complete a Profit Monitor

- Before expanding, current herd performance should be maximised, the profit monitor gives you this information
- It will give you a better insight into how your farm business is performing
- It will highlight where improvements in current performance can be made

Risk Analysis

Analyse the risks to expansion from:

- Milk price falls ↓
- Interest Rate Increases ↑



Should you borrow or use your own funds to expand?

- **Warning!!** – cashflow is critical to the farm business, large scale expansion **should not** be funded from cashflow
- Cashflow should be used to service loan repayments



The low down on Borrowings

- **Interest rates** – whats available? Shop around for keenest rates
- **Interest only repayments** – are they available as the business is developing?
- **Length of loan term** – remember the longer the term the less pressure on cashflow
- **Repayment schedule** – can it be structured to the months where cashflow is highest?
- **Fixed or Variable rates** – what is right for you?
- **The effect of borrowings on cashflow** – how will the money borrowed be paid back? Will it leave scope for other essential work?
- **Secure enough funding the first time the loan is set-up**, this will avoid incurring extra solicitors fees if more money is required.
- **Give the bank a schedule of drawdown** – you don't need the full amount of the loan as work is beginning, this will keep repayments at a minimum until all works are complete.

Expansion Timetable

- Set realistic but challenging goals for your expansion
- Set a timetable for required works that will facilitate expansion
- The timetable will dictate the pace at which the money being borrowed is drawn down

Labour saving tips for the expanding herd

- **Three groups of stock on the farm**
 - Milking herd
 - 0 – 1 yr old replacements
 - 1 – 2 yr old replacements
- **Sell bull calves/all late calves**
- **Sell your cull cows early, avoid the temptation of finishing them on farm**
- **Ideally no more than 8 rows of cows per milking in your parlour (where finances allow)**
- **A fertile herd- compact calving with 75% calved in the first 6 weeks of the season**
- **Full use of contractors for slurry mixing/spreading, silage making etc (cheaper than doing it yourself)**

A manageable level of borrowing is good for any business as it allows that business the opportunity to grow.







For further information & advice contact
any of the joint programme advisors

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