

# A Transfer to Dairy Farming: The Knowledge and Capital required

A report for:



Farming scholarships

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# Executive Summary

This report aims to examine the skills and competencies required for those contemplating a successful career in dairy farming, be they new entrants to farming or transferring from another enterprise. In doing so, it is hoped to highlight solutions to issues that may arise for farmers in the areas of infrastructure, farm development, business management and sourcing capital to create a simple, viable, sustainable and enjoyable dairy farming business.

The objectives of the study were met through literature reviews and a series of interviews with farmers and industry professionals from countries including Ireland, the UK, The Netherlands, Australia, New Zealand, Chile, Argentina and Uruguay.

The conclusions from this study found:

- Low-cost grass-based dairy farming has huge potential to create sustainable growth in rural Ireland to replace subsistence farming and the social and economic erosion that it promotes.
- Farmers need to have a clear focus on factors within their control and be realistic regarding the scale necessary to provide a sustainable future for their business.
- There are many more valuable lessons from failure than success. No two farms or seasons are the same; land type, weather, stocking rate, milk price, etc., all vary. It's the timely response to circumstance that matters.
- The key to profitable dairy farming is producing and utilizing as much grazed grass as possible.

Recommendations of the study are under 3 main headings:

## Personal

- Make time for family and friends, they are the ones you'll be relying on if faced with a challenge.
- Look out for others who may be in difficulty.
- Maintain a healthy balanced lifestyle; eat well and get plenty exercise.
- Extricate yourself periodically from the day to day running of your farm to focus on the strategic direction of your business. Conduct an annual review involving partners, advisors, mentors and staff. In a spring calving system, an ideal time to do this is in December/January during the dry period.
- Continuously seek to improve your skills. Get into the habit of up-skilling yourself in both theory and practical hands-on experience whenever possible.
- Surround yourself with positive open-minded people from all walks of life. Avoid negativity at all costs; it's a most destructive influence.

## Inside the Farm Gate

- Set realistic goals for yourself and your business, then work backwards to achieve them. Just as we as individuals are much more likely to succeed when we set ourselves goals, so too will a business. It's up to you as a business owner/s to develop realistic strategies and tangible goals for your dairy enterprise.
- Search for innovation that promotes efficiency. Strive for simple replicable systems that can be easily operated in your absence.

- Identify any competitive advantages in your system and stay focused on exploiting them.
- Seek out, evaluate and adopt the latest research relevant to your enterprise. Measure, monitor, and improve to find the sweet spot for your particular circumstances.
- Evaluate every purchase. Be very wary of salespeople; remember no matter how friendly they may come across, they are not acting in your best interests, they are specially trained and their success is rated by their ability to take your money!
- Join a discussion group. The advice and guidance of fellow farmers is invaluable. Many of them will have been in your shoes at some stage and may be able to give accounts of how they dealt with particular challenges. This simple, practical, informal advice, delivered by farmers in their own language, is, without doubt, the most effective method of knowledge transfer.
- Benchmark yourself and your progress against your plan and other comparable businesses to identify areas for improvement. At least aim to be in the top quartile of your peers.

#### At Industry Level

- A review of tax policy needs to be conducted specifically around tax reliefs for expanding businesses and measures to protect expanding farmers from volatility, i.e. a tax deferral scheme in high income years to be reclaimed in low income years.
- Banks and lending institutions need to allow customers to unlock the equity that they have tied up in stock, i.e. chattel mortgages.
- Immediate investment in Teagasc is needed to maintain the quality and value of the independent practical research and the support that it provides for Irish farmers. Its influence is immeasurable, and it is the envy of farmers worldwide.
- New entrants have a duty to act responsibly to maintain and improve Ireland's reputation for safe, sustainable products, ensuring access to premium markets for Irish exports.
- Farmers need to maintain ownership and impose strong governance on the processing industry to ensure operating efficiency to maximise returns for farmer shareholders.

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## Foreword

My Name is Sean Coughlan, a native of County Mayo, on the west coast of Ireland. I grew up on the family farm and studied agriculture after leaving secondary school with the intention of fulfilling a life-long ambition of becoming a farmer. Unfortunately, the home farm was not capable of supporting two incomes and access to land was difficult. Ireland's 'Celtic Tiger' economy was roaring at the time, which offered plenty of opportunities outside the farm gate, so I spent eight years working in the construction industry, along with some time spent travelling.

In 2007, my father decided to retire which gave me the opportunity to take over the home farm. That year I also went back to college to do a degree in business as a mature student. On a previous visit to New Zealand, I had been astonished by the business like approach that farmers had to running their farms, which was something that I lacked at the time.

Over the next five years the output on the farm trebled, driven mainly by improved grassland management. Even though the farm was achieving a self-imposed target of being in the top 10% when benchmarked against other beef farmers completing profit monitors, profits were slim and I failed to see a viable future in beef farming on a fragmented farm. With the removal of EU dairy quotas in 2015 and a keen interest in cows and grassland management, a career in dairy farming appealed.

For my Nuffield topic, I chose 'A Transfer to Dairying; the Knowledge and Capital Required' as it was very relevant for me at the time and I'm in no doubt that this scholarship has had a very positive influence on my progress to date. I am currently milking 150 cows on a 52 ha leased block in Co. Clare. It's purely a milking platform with all replacement heifers being reared on the home farm, 150km away in County Mayo. This is my first season milking and it has had its fair share of challenges, but overall it has been very rewarding and I look forward to gaining more experience and growing the business in the future.

Countries which I visited during my study include Australia, New Zealand, The Netherlands, Chile, Argentina, Uruguay and the UK. The reason for choosing these countries is that they either have developed, or have potential to develop, low-cost, grass-based dairy industries.

## Acknowledgements

First I would like to thank Nuffield Ireland, especially Bill, John and my mentor Grainne, for giving me this wonderful opportunity to broaden my horizons; it truly is a gift that keeps on giving. I'd like to thank my family, friends, advisors and everyone who has given me help and support in pursuit of my goals. Any success I've achieved to date has been down to the kindness and generosity of others.

To my fellow scholars and all the new friends who I met during my travels, especially those who offered their time, experience and hospitality, thank you.

Finally I'd like to thank my sponsor Aurivo Co-op. Not only have they generously sponsored my scholarship through Nuffield Ireland, they've also been very supportive of other initiatives in the agricultural industry like the Land Mobility Service, which is aimed at progressing agriculture and the rural economy as a whole.

Aurivo have also taken a lead in setting up a 'farm profitability program', with a dedicated team offering its farmer members' a range of technical support to help improve profitability at farm level. It's great to be involved with a Co-op with such a positive, proactive outlook.

## Glossary of Terms

DM - Dry Matter

EBI - Economic Breeding Index

EU - European Union

Ha - Hectare

Kg - Kilogram

LOSM - Lower Order Sharemilker

Lu - Livestock Units

MS - Milk Solids

NZ - New Zealand

UK - United Kingdom



## Objectives of This Report

- To outline key skills and competencies required for those contemplating a successful career in dairy farming.
- To highlight solutions to issues that may arise for farmers as they commence dairy farming.
- To identify sources of knowledge and capital required to create a simple, viable, sustainable and enjoyable dairy farming business.
- To reassure potential new entrants that the benefits of a career in dairy farming far outweigh other less-profitable systems of farming for both themselves, their families and the wider rural community

## Methodology

The research for this report was carried out by a combination of personal interviews and a literature review.

## Knowledge

Knowledge is power! For the purposes of this report, knowledge will be defined as: the facts, feelings or experiences known by a person or group of people, the state of knowing, awareness, consciousness, or familiarity gained by experience or learning.

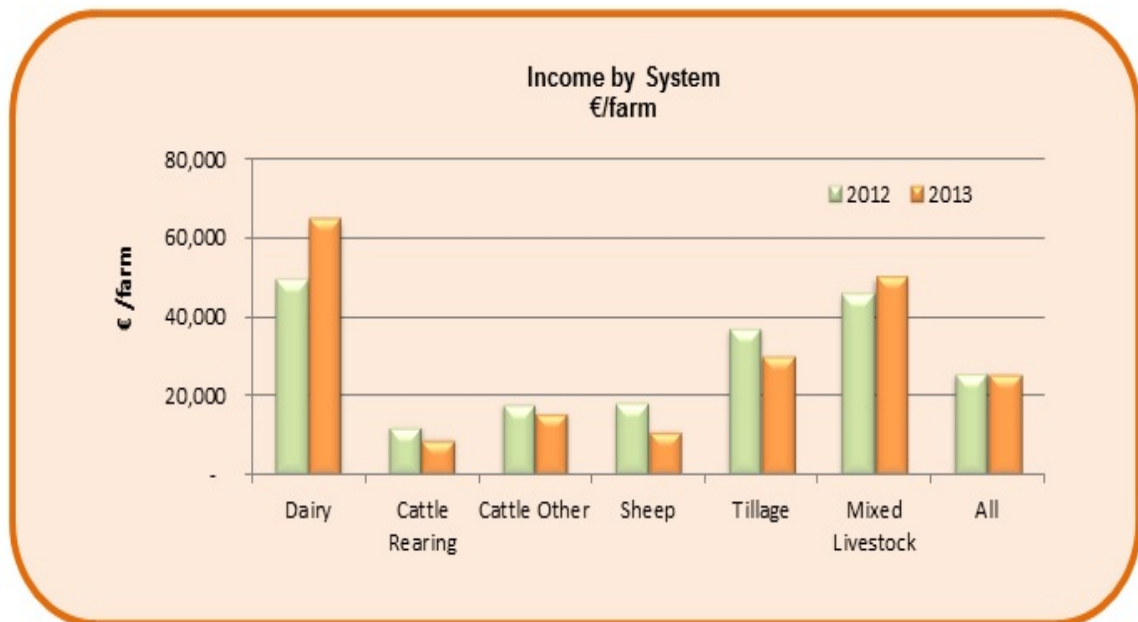
## Capital

Capital will be understood as: material wealth owned by an individual or business enterprise, wealth available for, or capable of, use in the production of further wealth, as by investment of assets or resources including knowledge, especially when used to gain profit or advantage.

## 1. Introduction

Ireland is the 10<sup>th</sup> largest dairy export nation in the world, exporting 85% of dairy outputs in 2013 (Enterprise Ireland 2015). This export figure is set to exceed 90% in the next few years as milk production increases post quota. The Teagasc National Farm Survey has continually shown that over the long-term, dairy farming has been by far and away the most profitable farm enterprise in Ireland; in fact the figures are quite startling.

Table 1



(Hennessy T. Aug 2015)

Analysis of e-Profit monitor figures back this up. According to 2014 eProfit monitor data, the average spring milk dairy farm in 2014 generated a net profit of €1,806 per ha, which is way ahead of any other sector. Kinsella et al (1999) found that “65% of annual income on dairy farms returns to the local economy each year. The profits generated from dairy farming combined with a high level of local spending makes dairy farming very valuable to the rural economy”.

For anyone thinking of changing farm enterprise, the first consideration has to be why they feel the need for change. What has caused them to reach a point with their present enterprise that is prompting them to look for alternatives?

- Has it been a long term ambition?
- Is it because of poor returns from a present enterprise?
- Or is it simply because everyone is talking about switching at the moment, now that EU quotas on milk production have been removed?

## 2. Research Findings

Dairy farming, by its nature, is a specialised business. Not only does it require significant capital to set up, it also requires a broad range of diverse skills, including animal, grassland, regulatory and financial management.

### 2.1 The Decision Making Process

Einstein said, “No problem can be solved with the same level of thinking that created it.” Consider that carefully, and then approach this decision with an open mind. By clearly defining the factors influencing this need for change, it’s going to be much easier to evaluate if a transfer to dairy farming is the correct choice that will hopefully deliver the desired outcomes.

What are the objectives to be achieved? Is dairy farming just a job to make a living or is dairy farming being considered, not only as a way of making a living, but also with an eye to the future, seeing it as a good way of creating wealth in the longer term? To achieve this, future expansion may be needed.

Dairy farming can be a very demanding occupation when compared to other enterprises, especially in a spring calving, grass-based system that is the most prevalent in Ireland. What current experience do you have in farming and what new skills will you need to acquire for success? “For everyone that has ambitions of one day becoming a farm owner, how many actually realise their goals? What qualities do that minority possess that makes them successful? Could it simply be that they’re good at realising their weaknesses and seeking help to address them?” Adrian Van Bystervelt, (Dec 2014)

Anyone considering switching to dairying has to be sure that they are fit both mentally and physically for the challenges that they are likely to face. While dairy farming can be a hugely rewarding and satisfying career, it can also be quite stressful when things aren’t going according to plan. This tends to happen in all types of

farming, however, because of the intensive nature of dairy farming, little issues can quickly compound into bigger problems.

## 2.2 Planning

Personal circumstances change; children, education needs, etc., all place different requirements for drawings from the business. It's not only a career change; setting up in dairying requires a lot of investment. The will to make things happen is the difference between success and failure. Some of the most feasible plans never work out because the necessary actions aren't taken to see them through properly; remember a plan without action is just a plan.

### **Plan, Believe, Achieve!**

Because the level of investment required to set up a dairy enterprise can be much higher for dairy farming compared to other livestock enterprises, a proper detailed financial plan is essential, not just for the purposes of dealing with banks or investors when securing finance, but also for evaluating investment decisions, measuring success and the all-important task of risk management.

Always build a contingency of 10–20% into your plans. If you lack experience, engage a properly trained consultant to help prepare a plan, but don't rely on them to do all the work, after all this has to be your plan, the role of the consultant is to support you in developing your plan.

This plan will also be useful for benchmarking where the business is at compared to where it had planned to be. What worked? What didn't? Regular benchmarking of the business against its objectives will give a better understanding of performance; this should lead to better planning in future.

## 2.3 Profit

The simplest way to define profit is:

Sales – cost of sales = profit

This may look like a simple equation, however how often do farmers think of this when making purchasing decisions? Farmers are often referred to as price takers; for the majority they are at the mercy of the world market for their produce. Farmers

have little or no say in the price they receive for their produce, which is regulated by supply and demand; this is especially true here in Ireland as we are heavily reliant on exports of commodity type products. “To produce profit at scale you need to set up a very simple grass-based system,” Andrew Brewer, July 2014. The average spring milk dairy farm in 2014 generated a net profit of €1,806 per ha compared to €3,255 per ha on the top 10% of farms. Why is there such variance? The higher output on the top farms reflected:

- higher grass grown per ha (11.2 v 8.5T/dm/ha)
- higher stocking rate
- higher output per livestock unit
- higher output per ha

(e-Profit Monitor Analysis Dairy Farms 2014)

Sure there are farm specific reasons for profit levels, but are they responsible for all of the difference? While there may be physical constraints that influence the profitability of a farm, analysis by profit monitors suggests farm management as the factor that has the biggest single effect on profitability. So what are the top farmers doing that is allowing them to be so efficient?

Farmers have plenty of control over their costs of production, so naturally one would assume that all farmers are constantly focusing on the cost of production and looking at ways of lowering their input costs (factors within their control), but concentrate little on the price they receive (little or no control). If that were the case then why does profit monitor analysis show huge variance in production costs on Irish farms?

A common trait among people who successfully manage to get established in business is the ability to prioritise when resources are limited. A simple rule that helps the process is to categorise spending decisions into needs and wants. This is especially important when making expensive infrastructural investment decisions during initial set up. A need is something that is essential to the running of the farm. A want, on the other hand, is something that would be nice to have but is not essential to make the farm work.

A good practical example of a ‘needs’ versus ‘wants’ question is the decision on what level of specification to order on a milking machine. What’s needed is a machine that extracts milk from a cow in an efficient way that protects both the milk

and the cow. Other specifications (milk meters, swing over arms, cluster removers, etc.) are wants and should only be purchased if and when the budget allows.

Although many extras are nice to have, the question has to be asked, would this capital give a better return if it was spent on other areas like stock or soil fertility? Extra spec can always be retro-fitted in the future when the business is over the initial cash hungry set up phase.

## 2.4 Capital

Availability of capital will dictate the initial development of a new dairy farming enterprise but it doesn't have to be a limiting factor in the long run. Very few farmers start out with a suitable block of land and ample capital to develop it. What matters is the application of the resources that are available be they land, cash, intellect or simply an open mind combined with a desire to succeed.

Limited capital during start-up often forces excellent innovation and discipline that often leads to the setting up of a much more efficient and effective enterprise in the long run. An excellent exercise is to look at the return on your capital employed for each of your asset classes, e.g. land, cows or machinery. This will often show that you may be better off paying rent to use someone else's land while you concentrate on building equity through assets which have a much higher internal rate of return versus land, say cows and young stock for example. Concentrate on building your net worth in the early years. It'll give you much more options for increased gearing in your business later on. "Four legs appreciate, four wheels depreciate," Neil Campbell, (Dec 2014).

## 2.5 Sources of capital

When we speak of capital tangible assets like cows land or cash come to mind. What are the options for someone with little or no capital who is planning a future in dairy farming? Australian dairy farmer Damien Murphy (Nov 2014) asks do you possess any intangible assets that you can leverage against to turn into tangible assets? Investing time developing knowledge and skills to become an excellent lower order sharemilker is an example of turning an intangible asset (personal ability) into hard cash. "Lack of capital should never be an excuse, it's just going to take a little longer. Make sure your experience is gained using someone else's money," John Cotter, (Dec

2014). The first port of call for finance is usually banks. There are plenty other sources of finance that farmers have used to get started. These include:

- family
- friends
- business partners
- private investors
- merchant credit
- cow leasing

A new alternative worth consideration could be crowd funding to raise the capital for a herd of cows. Crowd funding involves raising small amounts of money from a large number of people, usually through the internet. The novelty factor and the solid return of investing in cows could prove attractive.

There is also a lot of money sitting in bank accounts at very low interest rates at the moment, which may actually be losing value when inflation is factored in. Are there ways of gaining access to this money? Good sharefarmers in New Zealand consistently make compound annual returns of over 20% when the growth of stock numbers is taken into account.

The first thing any investor will look for is a track record. Is there a clean credit history? Is there a track record of regular savings? How have any previous ventures turned out? Success tends to replicate itself. No matter where you're starting from, always be conscious that you are building your reputation in business and that it will be used to evaluate you. Evaluate risk/reward carefully and aim for steady growth.

A career in dairy farming isn't only reserved for people from an agricultural background. Some very successful dairy farmers had no farming experience growing up. Neither is dairying reserved for those who own land.

## 2.6 Alternative Options for New Entrants

In Ireland a new Service has been set up by Macra na Feirme to help facilitate collaborative farming arrangements. "Nowadays there are more land owners looking to collaborate with suitably qualified farmers to realise the potential of their land," according to Austin Finn of the Land Mobility Service, which is dedicated to offering

independent advice to land owners and those looking to access land. Options for those without their own land include:

- Leasing

Leasing a farm for a specific period is the most straight forward option with a contract in place for the protection of both parties. Recent budget changes to Irish taxation rules have given generous tax breaks to land owners who sign up to long-term leases. These changes are aimed at increasing land access to active farmers and are already having an impact.

- Sharemilking

While it has been hugely popular and successful in other parts of the world, sharemilking is a relatively new concept in Ireland. A template sharemilking agreement has been developed by Teagasc in conjunction with the Irish Farm Managers Association which could provide interesting opportunities for new entrants, particularly those with little or no equity who are looking to get started.

- Equity partnerships

“In the past an acre of land cost the same as three cows in New Zealand but recently this correlation has changed as access to finance increased and land for conversion became scarcer,” Mark Townshend, (Nov 2014). This led to a dramatic increase in land prices and while huge wealth has been generated for land owners, it has made the traditional progression from sharemilker to farm owner more difficult.

Equity partnerships have become popular in New Zealand as land prices have increased. Investors attracted by the capital gains have been keen to team up with top performing sharemilkers. These arrangements can come in many different forms and often include silent investors that aren't involved in the day-to-day running of the enterprise.

### 2.7 Case Study No.1: New Entrants, Charlie and Jodie McCaig

The thought of becoming dairy farmers, let alone award winning ones, never occurred to 2014 New Zealand sharemilkers of the year Charlie and Jodie McCaig. Charlie, from Bristol in the UK, and Jodie, a mechanic's daughter from New Zealand, met while Jodie was on an overseas trip to Europe. After completing a stint travelling



the world, they found themselves in New Zealand in November 2008. For the '09/'10 season, Charlie worked as a dairy assistant, relief milking, etc. In May 2010, they started contract milking 270 cows which lasted for two seasons. From there, they progressed the following year to a Lower Order Sharemilking (LOSM) position on a charity farm run by the Taranaki Community Rugby Trust. This charity element in itself caused unique issues for the McCaigs as all cows on the farm were donated by local farmers. The herd consisted of 500 cows from 350 different herds! "This led to some health and fertility issues," admitted Charlie. Their success in turning that farm around led them to be considered for their current 265 cow, 50:50 sharemilking position.

Key points to the McCaigs' success:

- an open mind
- clear written goals contained in short, medium and long term plans
- excellent communicators, very active through discussion groups and social media
- a good consultant
- good financial planning and regular updating of budgets
- regular update with the bank
- following and adopting latest research
- continual up-skilling

Charlie offered a word of advice to all young farmers, "Enter competitions, not only does it make you concentrate on your facts and figures, it exposes you to other great farmers and any success raises your profile in the industry."

### 3. Farm Development

This section will give a brief overview of the infrastructure that is going to be required for a grass-based dairy farm to operate. The focus is on limiting expenditure to the bare essentials required to get the system operational.

#### 3.1 Infrastructure

Dairy farming requires considerably more infrastructure than most other types of livestock farming. The cost of putting the necessary infrastructure in place when converting a farm to grass-based dairying can be substantial, often running into

several multiples of the actual cost of the cow. The main items of infrastructure required include: milking parlour, roads, paddock fencing, water system, winter accommodation and slurry storage, which is required to comply with EU legislation.

The necessary levels of investment will vary depending on the previous land use on the site. The first task is to assess what current infrastructure may already be in place on the site in the line of roads, sheds, slurry storage, water systems, paddocks, etc. to see if any of it can be integrated into the new development to reduce up front capital spending. Evaluate all infrastructural investments on a 'needs' versus 'wants' basis, especially if the budget is tight. "We've created a monster in our yard that has to be fed! I cannot stress how important it is to keep investment to the bare essentials in the beginning," Ed Payne, (Sept 2014).

Although a reasonable level of investment will be required, avoid putting the business under too much financial pressure during the start up phase of the enterprise. "For capital investments you are better borrowing to fund it rather than trying to do it out of cash flow. Structuring capital loans over longer terms and using interest-only facilities in the first 12-24 months can make a huge difference to cash flow at the start," Brian Rushe, (Sept 2014).

The exact location of facilities is critical whether developing a Greenfield site or adding to existing structures. Speaking about the development of a Greenfield parlour in Scotland, Brendan Muldowney commented that, "To access 80% of the grazing platform the cows have to make a 180 degree turn when exiting the parlour which greatly disrupts cow flow. My advice is to always face the parlour exit towards the majority of the grazing platform and to avoid any bottlenecks," Brendan Muldowney, (Aug 2014).

When making decisions around facilities it is well worth engaging professional advice; there are a number of firms now providing this service many with a lot of previous experience. It may look like an unnecessary cost in the short term but it could well be a wise investment compared to getting it wrong. Once concrete and steel are in place there's no cheap way of going back!

Always plan with expansion in mind; simple things like positioning buildings in parallel and away from boundaries gives much more scope to facilitate expansion the future; this is especially true for milking parlour and/or collecting yard extensions. For collecting yards, rectangular ones are much easier to extend versus circular. Most

modern herringbone parlours now have dairy and plant rooms located to the side for this reason.

Constant access to fresh clean drinking water is essential for dairy cows who can require up to 120 litres of water per day during hot summer weather. Make sure to factor in adequate capacity when installing water infrastructure. Troughs should be sited centrally in paddocks, ideally away from access points and low/wet areas to avoid poaching and grass soiling. Cows should not have to travel any more than 250 metres to a trough if they are to be encouraged to drink enough water

Good roads are essential for moving stock around the farm; ensure that they are clean and cambered so that water won't lie on them. The finished surface must be smooth enough to prevent any injuries or lameness. A good rule of thumb is that the surface must be smooth enough for you to walk on comfortably in your bare feet.

### 3.2 Case Study No. 2: Low-Cost Farm Development, Tom Foot and Neill Crigg

Necessity is the mother of invention. Business partners, Tom Foot and Neil Grigg, took a rather unconventional approach to developing their dairy business. They're milking 900 cows, once a day, through two mobile milking parlours, on a 900 acre block of land, on a three year Farm Business Tenancy agreement in Dorset on the south coast of England. Initially the pair were looking for a 300 acre dairy farm which Tom would run while Neil would provide support rearing young stock, etc. on his home farm in Devon. Located in a primarily arable farming area the chances of acquiring this type of farm were not looking good.

Out of frustration, the pair took on a 900 acre tillage farm. "We'd kind of got ourselves into it before we really thought about it," admitted Tom. Starting out, the farm was in stubbles with no dairy infrastructure in place. An added constraint was a stipulation in the agreement that stated, "For any money that Tom and Neil invested in farm infrastructure they were to receive £1 remuneration at the end of the three year term." This meant that for any investment they made in fixed assets on the farm, they would be paid £1. "It quite simply meant that any assets we were going to invest in the farm were either on feet or rubber," Tom Foot, July 2014. No money was invested in housing, instead, all stock were out-wintered on forage crops and baled silage.

Because of the three year time frame and the fact that they had no fixed assets to borrow against, it was very difficult getting credit, which hampered progress. To

get started Tom, who has a degree in agricultural engineering, built a 12 unit mobile milking parlour out of second hand materials which they used for the first season in which they milked 300 cows. With a few design tweaks, they built a larger 20 unit parlour for the following season and completed a second in time for the third season.

As the milking parlours are brought by tractor to the paddock, this did away with the need for farm roadways for bringing the cows to and from the yard. There is also only one water trough on the farm to service the 21 paddocks, mounted on a trailer which simply connects into the water main in whichever paddock the cows are.

Although there was huge financial pressure for the initial years due to short term loans at high interest rates, the future looks very profitable, once this debt has been cleared. Also, due to the initial success, the farm tenancy has been extended, giving the business added security. The soil type and dry climate (900mm rainfall) in Dorset is also a huge help in allowing this system to work. These two farmers are living proof of what is possible when we challenge conventional thinking.

A final few points of advice from Tom:

- Budgeting, budgeting, budgeting
- Communicate regularly with creditors
- Put a buffer of feed in place for emergencies
- Get the correct genetics for the system (hardy, fertile, crossbred cows)
- Be very aware of animal health (lost 100 cows to an outbreak of red water)

## 4. Management

As has been already mentioned, management has the greatest effect on profitability. A good understanding of all aspects of effective dairy farm management is a key skill for those contemplating a successful career in dairy farming.

### 4.1 Financial Management

Modern-day farming requires a greater deal of financial management than ever before. In a Teagasc, new entrant to dairy program, run by Dr. Roberta Mc Donald, “the biggest challenge faced by new entrants was cash flow management” (Aug 2015). When the value of a farmer’s assets, which usually includes land, are taken into account the values can look impressive. The challenge is to use these assets to

add to the value of the overall asset while all the time protecting the original assets. This can prove difficult. Although some level of leveraging is necessary, it is important not to over-borrow as this may put the original asset at risk. “Only borrow to the value of your liquid assets,” Johnny Alvis (Jul 2014). This is a great rule of thumb that affords protection to core assets like land should the business get into difficulty but should not be a limit to investment in a venture that will deliver a good return on capital.

“Tax planning is essential to take full advantage of incentives like stock relief and helps to limit exposure to any unnecessary tax bills,” Brendan Muldowney, (Aug 2014). Tax policies in Australia and New Zealand allow farmers to defer a portion of profits in high price years to support them in poor price years. Such policies might be more beneficial to Irish farmers than the current income averaging scheme operated in Ireland. Ideally a suitably qualified accountant or tax consultant should be consulted for advice in this regard as taxation is a specialised area which can be subject to change annually.

For any business, cash flow is critical, especially so for start-ups. In spring milk production a lot of costs arise early in the season before the peak income starts to arrive. There needs to be a plan in place to allow the business to survive through this time. “We always put aside a fund of €250/cow to see us through the spring until the peak cheques start to arrive,” Paul Hyland, (June 2014). Proper budgets, that are revised regularly, allow any shortfalls in cash-flow to be flagged well in advance so that action can be taken early to protect the business.

#### 4.2 Coping with Volatility

It has often been stated that the only constant in this world is ‘change’. In recent years, EU milk prices have come into line with world market prices in preparation for the ending of quotas. The vast majority of dairy products are consumed in the country they’ve been produced in. Only 12% of the world’s milk crosses international borders. Ireland is quite unique in that it exports 85% of what it produces, making us fully exposed to the world market which is very prone to price fluctuation.

While it is very important for farmers to set up their system so they can maximise returns during high price years, it is more important to ensure that the business can survive during a dip in the market. Lecturer in Economics, Colm Mc

Carthy, when speaking about volatility and Ireland's competitive advantage as a low-cost milk producer, had this advice for farmers, "If you really believe that you are a low-cost producer you should grit your teeth and sit through the inevitable periods of poor prices secure in the knowledge that you have chosen the correct path." He goes on to say, "Let the market work its inexorable logic and force the high cost competitors out," Irish Farmers Journal, (29/8/15).

As the majority of the world's milk is produced from grain, it is inevitable that low grain prices will drive production, eventually leading to an oversupply. Therefore there is a positive correlation between cereal price and milk price albeit with a time lag. Thus the price of grain is the best milk price indicator for farmers to use to predict future milk prices. "Here in Australia, feeding 1.5-2 tons of grain per cow at grass is considered a low input system" Graeme Nicoll, (Nov 2014).

#### 4.3 Managing Labour

In the past Irish dairy farms relied on support from family, neighbours, etc. to help during busy periods. Very few farms get by without hiring labour, if only for a few busy weeks or some relief milking. If you plan to employ some labour, have you got any experience of managing staff, contractors, delegating tasks, etc.? "Effective communication is crucial: if people do what they say they will do- things work," Richard Dayment, (July 2014).

Always remember, no one is as likely to work as hard for you as you will for yourself. Failure by farmers to recognise that fact is a huge barrier on many farms and it often prevents businesses from growing. In a dairy business it is; "People first, cows second," Joe Delves, (July 2014).

When dealing with staff, "Honesty is number 1," Mark Townshend, Dec 2014. This works both ways; good staff respect honest employers also. "Always match the task to a person's ability to complete it," Charlie McCaig, (Dec 2014). Expecting someone with little or no experience to carry out complex tasks will inevitably end in disaster if not properly instructed. Always make sure that instructions are clear and understood; effective communication is the key.

Dairying is a seven day a week job with out of hours work especially in the spring. A good roster with adequate time off is very important for staff morale. Most employees understand this and are willing to take time in lieu at other times during the year. The Dairy NZ website has some practical tips on staff management and

developing a roster ([www.dairynz.co.nz](http://www.dairynz.co.nz)). Involve staff in the process, discuss with staff what suits them, sometimes they may have other commitments and may prefer to work weekends and have weekdays off.

#### 4.4 Time Management

Farmers are often accused of being very poor at time management; indeed it is an area where most farmers admit they need to be more disciplined. Farming can be very time consuming during certain periods. While this is acceptable for short periods, a balance needs to be struck; all humans need adequate rest and play. “Don’t let your health be the true cost of expansion,” Andrew Brewer, (July 2014).

Endurance athlete and business mentor Gerry Duffy suggests, “A great question to ask yourself is do you see yourself as self employed or as a business owner?” A self employed person is constantly working within the business. Most farmers see themselves as self employed and will readily admit that they are guilty of becoming slaves to the farm, spending too long concentrating precious time and effort on menial everyday tasks that could often times be more cost effective to pay someone else to do. This denies them time to concentrate more on planning and making strategic decisions for the business. This will become even more important as farms expand.

A business owner, on the other hand, doesn’t see themselves as just an employee. They have the ability to extract themselves from the business occasionally to invest in their own personal development. By doing this they gain the ability to stand back and look at the business from an outside perspective; “Work on your business, not in it,” Olin Grennan, (Dec 2014).

This time is critical for ensuring the business achieves its full potential. It is needed to evaluate where the business is at, to develop goals, to set targets and to think about, and put in place, strategies to ensure the business gets there. “You need to have clear written goals then work back ways to realise them,” Jack Ayles, (July 2014).

A good level of business acumen, an ability to construct and reorganise budgets and an understanding of where the business is financially at any moment, is necessary and really helps to reduce mental stress, especially when other factors, like weather, disease, milk price, etc., arise to compound problems.

New entrants often comment that milking cow's morning and evening imposes a structure on the day compared to their previous enterprises. While individuals may work on different algorithms, by and large we're most productive earlier in the day, especially with mundane jobs like office work. By setting and adhering to strict times for milking everything else gets planned around it. 15/9 hour intervals between milking worked well on most farms visited.

To take advantage of night rate electricity, most farmers aim to have milking and milk-cooling finished in the morning before 9am. By starting afternoon milking at a reasonable time, the length of the working day becomes more realistic. Practices like 13 milkings/week, 16hr milking intervals and once a day milking, all have a role to play in improving lifestyle and reducing labour, especially on single person units. "In our second year after the breeding season finished we went to 3 milkings every two days (16hr intervals) and milk solids/cow actually increased," Rob Bradley, (Nov 2014). While it might seem un-orthodox, when the cost savings are factored in, it might be something worth looking at especially if timed right, two out of three milkings can be completed on night rate electricity.

#### 4.5 Grassland Management

"Any time you introduce a machine between the cow and her feed, you introduce costs, which diminish your competitiveness on the international stage. Nationally, by introducing more supplementary feed, we are doing more production, but are we any better off? This is the question everyone needs to ask," Colin Glass. Although this comment comes from the CEO of arguably the best dairy farming corporation in New Zealand, it has equal relevance for Irish farmers. No dairy system can compete on cost/kg/ms with growing grass and letting the cow harvest it herself.

Grass budgeting is a very simple process to learn. Seek out a farmer or advisor that is willing to go through it with you. Ideally accompany them on a 'weekly farm walk'. A number of Co-ops, in conjunction with Teagasc, have set up a series of on farm 'grass pods'. This is an excellent way to learn together with other farmers as they shadow a farm for a period of time. It's great to see how the decisions that were made at the previous meetings have gone on to influence grass supply and more importantly animal performance.

A Pasture Profit Index being developed by Teagasc is the first of its kind in the world. It uses a combination of data from simulated grazing trial plots and



measuring of monocultures growing on commercial farms. Simulated grazing is used to mimic cows grazing and the effect this has on growth habits of different varieties. It's early days yet with only two full years data collected to date, but already trends for specific varieties are emerging, which will be very useful for farmers looking at reseeding.

When reseeding, pick varieties best suited to the specific area. Factors to consider include soil type and purpose of the crop, i.e. silage or grazing or both. Another point worth considering is the difference in seed size between diploids and tetraploid varieties. Tetraploid seeds are much larger and therefore a kilo contains less, approx 265,000 seeds compared to approx 480,000 seeds per/kg of diploid grass seed. If planning a tetraploid monoculture, make sure to adjust the seeding rate accordingly.

Although we may often despair at our Irish weather, it is this damp temperate climate which actually gives us our competitive advantage for growing grass, the main ingredient for low-cost milk production. There are very few areas in the world with similar climates that have the ability to grow c.15ton of dry matter per hectare without irrigation. In reality, we'd be too far north for the type of climate that we have in Ireland (Latitude 52-54 degrees) except for the Gulf Stream.

Proper grassland management is the key to fully exploiting this competitive advantage. There are many different factors which affect grass supply. It's the farmer's ability to adapt to these changes that will define success. "One of the biggest challenges that new entrants actually face is grassland management," Dr. Roberta McDonald (Aug 2015).

#### 4.6 Appropriate Stocking Rate

Match stocking rate to grass growth. It varies with cow size but on average a 500kg cow will require 5-5.5tons of dry matter per annum. "In what form this dry matter is fed to the cow has an enormous effect on the cost of production," O'Donovan et al, (2008). O'Donovan et al (2011) calculated that grazed grass costs 7.5 cents per kg/dm, first cut silage 15.5 cents kg/dm, and rolled barley @ €150/ton cost 18.8 cents kg/dm. Contrast that with a typical 16% protein compound ration which are popular with Irish dairy farmers costing €250 per ton @ 14% moisture which ends up at a cost of 29 cents per kg/dm. It's pretty clear to see that the most

profitable way of feeding dairy cows is by maximising the amount of grazed grass in the cow's diet.

“There is a valid argument for overstocking the farm and feeding more meal during periods of high milk prices provided grass growth and utilisation is being maximised.” Playing with budgets will show when this equation makes sense. “Brought-in feed also helps to feed the farm through imported nutrients,” Rhys Williams, (July 2014).

Achieving the correct stocking rate that maximises the amount of milk produced from grazed grass will deliver the highest profits. To help define the ideal stocking rate for a farm, it's necessary to know the amount of grass that the farm is capable of growing. The table below outlines the tons of dry matter per hectare required to sustain different stocking rates based on feeding 5 ton/DM/cow, 85% grass utilization, 500kg supplementary feed with A, all silage requirements produced on the milking platform and B, 1 ton/DM/cow/Ha. of silage imported.

Table 2

Stocking rate	1.8	2.1	2.4	2.7	3	3.3	3.6
A (4.5t/dm/cow/ha)	9.5	11.1	12.7	14.3	15.9	17.5	19.1
B (3.5t/dm/cow/ha)	7.4	8.7	9.9	11.2	12.4	13.6	14.8

The difference between grass grown and grass utilised can vary greatly as ideal conditions do not always exist for grazing. There are many variable factors to consider. The skills of managing cows at grass take a while to perfect, unlike in confinement systems where a consistent cow diet can be prepared and fed each day.

In a grass-based system, feeding the cow totally on grazed will not be possible for certain periods due to low growth rates, poor weather conditions, etc. During these periods, the cow will need to be supplemented with other feeds. While this is necessary at certain times, especially in the spring and autumn, it should only be the last resort and should be dictated by the availability of grass-based on the grass wedge.

#### 4.7 Soil Fertility

“The soil is our greatest asset,” Henry Walsh, (Jul 2015). As has been discussed, the real driver of profitability in dairying is grass. Good soil fertility is

essential to achieving high levels of grass growth, especially on the shoulders of the season. Analysis of soil fertility trends carried out by Teagasc in 2014 found that only 10% of soil samples had good overall fertility, i.e. (PH > 6.2, index 3,4 for P&K). What's even more worrying is that it's usually the more proactive farmers that soil-sample in the first place!

The first task is to soil-test the ground to assess what is already in the soil or, more importantly, what is not. Soil samples should only be taken 3-6 months after the last application of slurry or artificial fertilizer containing phosphorus or potassium to avoid distorting the results. Early January is often the best time. Choose areas of up to 5 ha per sample, which have similar land use history and soil type.

Based on the results, a fertilizer plan can be drawn up to address any deficiencies which should be rectified at or before any reseeded takes place. Correcting a low PH with lime should be the first action as calcium can often increase the availability of other nutrients that may be un-available in more acidic conditions. Correcting the PH is also a lot cheaper than building other nutrients.

A word of caution for anyone re-grassing tillage land, there is some anecdotal evidence starting to emerge about the effects of low soil organic matter levels on land coming out of long-term tillage that is affecting the productivity of subsequent pasture. Consider chopping straw and importing other forms of organic matter to help combat this problem.

## 5. Stock

Animal breeding is a long-term process, therefore it is crucial to invest in the right stock for the proposed system from the start.

### 5.1 Cow Type

While purists and particular personal preferences will always exist, it is impossible not to recognise the benefits of heterosis (hybrid vigour) that is gained from crossbreeding. All around the world crossbreeding is taking place on dairy farms, be they confinement or grass-based systems. Research continually backs up the benefits. Teagasc Moorepark has conducted many crossbreeding trials over the years.

The latest performance data from 40 commercial dairy herds engaged in long-term crossbreeding found that Jersey × Holstein-Friesian cows produced +25 kg of

milk solids (fat + protein kg), had -7.5 days shorter calving intervals, and had 3.5% higher survival rates compared with the mean of the 'purebred' Jersey and Holstein-Friesian cows. This corresponds to a considerable profit increase of (economic heterosis) €200 per lactation (Buckley et al, Jul 2015).

While everyone will have their own individual preference, those who have the ability to take personal preference and emotion out of the argument will agree that it is hard to overlook the Holstein-Friesian/Jersey cross when planning an efficient low-cost grass-based system. The results of cross breeding trials carried out by Teagasc Moorepark are backed up by independent research from all over the world. "You must choose a cow that suits the system, don't go building a system around the cow," Noel O Toole, (July 2015).

The development of an EBI (Economic Breeding Index), which started in 2001, has revolutionised dairy breeding for Irish farmers and is now attracting interest from overseas farmers too. Although it is not perfect as it always will be a work in progress, it is the most reliable way of identifying animals with the required traits for Irish conditions. Some detractors would criticize it for not taking hybrid vigour into account.

For new entrants looking to build a herd, stock selection has to be the main criteria, "If we maintain current progress on improving fertility, we should achieve the same levels as we had in the Irish herd in 1989," Dr. Donagh Berry, (Mar 2015). "EBI is a single figure profit index aimed at helping farmers identify the most profitable bulls and cows for breeding dairy herd replacements. It comprises of information on seven sub-indexes related to profitable milk production. These are:

- (1) Milk production
- (2) Fertility
- (3) Calving Performance
- (4) Beef Carcass
- (5) Cow Maintenance
- (6) Cow Management
- (7) Health

(ICBF July 2015)

Each of these categories are broken down further and a value and percentage weighting expressed in €given to each. This results in an animal having a total EBI

value relative to the average Irish cow in 2007. “Create the right conditions for the right cow and she’ll look after herself,” Max Jelbart, (Nov 2014).

## 5.2 Stock Sourcing

Prevention is better than cure. The single biggest thing to consider when buying stock is to make sure you’re only getting what you bargained for. By adhering to sensible guidelines when purchasing stock you are minimising the risk of nasty surprises later on.

There are numerous ways of putting a herd together and the most suitable will depend on factors such as circumstance, timelines, capital, facilities, market demand, etc. Options vary from buying calves or yearlings and rearing them through to calving, to buying calved cows and walking them straight into the parlour. It’s nearly impossible to buy a tailor-made ready to go herd except for a full herd dispersal sale, which are hard to come by.

The general advice when trying to build a herd is to limit the number of sources of stock and to quarantine any new animals until satisfied they are healthy, to limit the risk of introducing diseases, etc. into a new herd.

## 5.3 Case Study No.3 Herd Building, Dion Silich

One novel way of building equity, and/or a herd, involved buying ‘empty’ (non-pregnant) cows and running them around to calve down the following year. Dion Silich, from the Waiakato in New Zealand, did just that. “The profit is in the buying.” Dion sourced empty cows for a small premium over factory price, through a livestock agent who specialised in purchasing cull cows. In New Zealand when the threat of drought is imminent, farmers scan their herds to identify any empty cows and immediately remove them to reduce demand for valuable feed. The criteria used to select stock were a combination of age, visual assessment, scanning results and the cows BW (breeding worth), the New Zealand equivalent to EBI in Ireland.

The cows were carried at a minimal cost on a rented block of rough ground. As they weren’t going to be producing milk the following spring, building and maintaining a good condition score during the winter was not as important, which allowed for a higher stocking rate which helps to dilute land rental costs. The arrival of spring grass put the cows on a rising plane of nutrition so that they were well positioned to go back in calf when it came to the start of the breeding season. The

cows were then sold prior to calving the following winter. At an average purchase price of NZ\$660/cow, \$440 carrying cost and a sales price of \$1600, the enterprise netted a 31% return on investment over 17 months.

In the second year, Dion bought 1100 cows, sold 600 on the point of calving for an average of \$1700 and was left with a debt free herd of 500 cows which he went on to sharemilk. While access to that scale in Ireland is a long way off, the principal of buying undervalued assets during a crisis and holding them until the market rebounds is the same.

There are many risks and benefits to consider if taking this route: disease status, suitability for breeding, ability to milk, management through the dry period and price, which will by and large be dictated by beef price. The benefits include: no heifer training, higher milk yields and less management pressure to hit target weights, etc.

## 6. Other Considerations

There are numerous other Items that new entrants to dairying will have to consider. Here are two that will have a huge influence on the enterprise.

### 6.1 Who is going to Purchase your milk?

In Ireland, to some extent, farmers control >99% of milk processing through the ownership of Co-Ops and associated PLCs. This is very important as, in theory, every shareholder is guaranteed a market for their milk and any profits are either reinvested or returned to the farmer in the milk price. This is seen as a very attractive proposition for beef and lamb producers who have no say in the processing of their produce. When you become a co-op shareholder don't be afraid to get involved in your industry. Remember, as a part owner of the business, your opinion is more likely to be heard if you're actively involved.

As an industry that produces the dairy requirements of 52 million people, ICOS exports are very important (<http://www.icos.ie/supply-chain/processing/> 18/08/15). In that regard, the quality and provenance of our produce is paramount. It is up to all stakeholders in the supply chain to ensure that our image is not damaged in anyway. Environmental protection, animal welfare and food safety are key concerns for informed consumers and they are willing to pay a premium for it. If we, as

farmers, want to benefit from selling into value-added markets, we need to ensure that Ireland's clean green image is both protected and promoted.

## 6.2 Discussion Group

“Peer to peer learning, better known by farmers as discussion groups, is one of the most effective methods of knowledge transfer among farmers,” Roberta McDonald, (Aug 2015). Seek out a good dairy discussion group in your area. A good discussion group will both challenge and inspire you. It is also a great way to get introduced to open-minded dairy farmers in your area, which is extremely useful to new entrants on so many levels. Many of these farmers become useful mentors for new entrants and are great for bouncing ideas off and getting advice in decisions, etc.

Farmers who actively participate in discussion groups tend to be more innovative, open-minded and, ultimately, more successful than average. Their thirst for knowledge and information is usually the reason they have made the effort to join in the first place. This inbuilt, natural desire for constant improvement always ends up filtering back into their business.

This is backed up by a study carried out by Dr. Pat Bogue on behalf of Teagasc who said, “Farmer members of dairy discussion groups earned statistically significant higher gross margins per hectare than non-members, in the order of €240 per hectare. A higher percentage of group members achieved the physical targets set out in the Teagasc Roadmaps compared to non- members.” He went on to say that participation in a discussion group had, “A positive impact on grassland, breeding and financial management” (Jan 2013). Another attribute of a well-run group is that there will be at least one meeting annually dedicated to analysing both the group's and members' financial performance. The benefit of this is that it allows you to benchmark yourself against other dairy businesses in your area with similar scale, land type, climate, etc.

There is also a social element to discussion groups. As groups mature, friendships are formed. This is very important, especially during stressful periods. Farming can be an isolated experience at times and having this group of farmers that may be experiencing similar challenges to talk to, can literally be a life saver; a problem shared is a problem halved! It also provides the opportunity to visit farms and examine other people's farming systems. Is there some efficiency or cost saving in their system that you could replicate in yours?

## 7. Countries Visited and Key Observations

### 7.1 Australia

Milk production in Australia has actually dropped from a peak of c.12bn litres to c.8.5bn litres. There are many factors that have caused this drop, not least the harsh and unforgiving nature of the Australian climate. For that reason, 65% of Australian milk is now produced in the state of Victoria which has a more temperate climate better suited to dairy cows.

The main challenge facing Australian dairy farmers is the shortage of skilled labour. Strong Global demand for commodities has given rise to a mining boom which has seen many would-be farm labourers leave to work in the mining industry, even the minimum agricultural wage of Aus\$65,000 per annum isn't enough to compete.

It was very impressive to see what is possible when heat and irrigation are combined. Yields of 24t/dm/ha of high protein Lucerne are readily achievable in Northern Victoria. Another surprise was the levels of supplement feeding being carried out. Feeding 1.5 tonnes of concentrate was considered a low input system! In their defence, cereal prices are not as expensive as in Ireland, but are still more expensive than grazed grass.

Another interesting practice witnessed in Australia was a form of land sale called Vendors Terms. It consisted of a contract between a land owner and a purchaser where the purchaser agrees to buy the land in instalments over a given period. The land owner charges interest on the outstanding balance and the transfer is not complete until the final instalment is paid. The land owner is effectively giving a mortgage to the purchaser to buy the property and also collects the interest. It is a type of arrangement that may have potential in Ireland as 48% of farmers have no identified successor according to Macra na Feirme (Land Mobility and Succession in Ireland, p.iv). Overall, there is abundant opportunity in dairy farming in Australia for those who are prepared to take on the challenge.

### 7.2 New Zealand

Without doubt the world leader in low-cost dairy farming for the past 30 years, it could now be argued that the New Zealand dairy industry could be approaching a



maturation phase. The majority of the best land has now been converted and land prices have reached record levels. High stocking rates and fertilizer use are also starting to attract the interest of the environmental lobby. Further productivity increases from current levels will undoubtedly reduce efficiencies and increase production costs.

The sharemilking model and the career path it offers for new entrants to enter and become established in the dairy industry has to be admired, although it is coming under threat from farm owner debt levels and the increasing differential between cow price and land price. Equity partnerships are becoming more common as the dream of buying a farm is beyond the reach of most sharemilkers. For those with the skills and the drive, sharefarming still offers a great way to create wealth, especially with the help of banks offering chattel mortgages which are secured on livestock.

The need in the past to be ultra-low-cost in the absence of subsidies has ensured that the industry has a huge resilience and a very practical approach to business. There are many lessons for Irish farmers from the expansion that has taken place in New Zealand

### 7.3 The Netherlands

The Dutch dairy industry is very cohesive with >85% of farmers supplying milk to Freisland Campina and >90% banking with Rabo Bank. On-farm debt levels of c. €10,000/cow are not unusual. While outputs are impressive, it is questionable if the level of investment is justified for the level of return. Production costs are high due to a large proportion of the feed being imported. This is giving rise to pollution concerns as soil nutrient levels are high. Some farmers have now started to export slurry by road to Germany in order to comply with environmental regulation.

### 7.4 Chile

The climate of Chile, which is 4,300 km long, is one of huge diversity ranging from desert to alpine tundra. For grass production, an area between 800 to 1100 kilometres south of the capital, Santiago offers the most potential with mild winters and between 1.2 - 1.6 metres of rain annually. Although there is already an established dairy industry there set up by German settlers in the 1800s, the area has recently attracted the attention of overseas investors as an ideal location to try and replicate the success of the New Zealand grass-based low-cost model. Chile's strengths include: a stable

economy, democratic government, capital security, temperate climate, local demand for milk, cheap skilled labour and low land prices which offer plenty of potential for capital growth. Downsides include: under-developed infrastructure, lack of service back up for equipment, scarcity of grass bred stock and cultural differences.

### 7.5 Argentina

Famous worldwide for its grass-fed beef, one would imagine that Argentina would be a perfect location for grass-based dairy farming. Unfortunately, ryegrass swards will not survive the long hot summers without irrigation. However, that is the least of its problems, the potential of Argentina is also limited by its politics. Populous politics rule the day, the economy is in tatters and the tax system discourages business and penalises exports. Argentina also offers little or no capital security.

### 7.6 Uruguay

Uruguay has a developed dairy industry predominantly located in the south west of the country along the coast. Similar to Argentina, ryegrass struggles with the summer heat unless irrigated. Pre-mown alfalfa is the forage of choice with sorghum grazed during droughts. Most dairy farmers have gone down the route of North American Holstein genetics which only works due to the high availability of grain locally.

### 7.7 The UK

Access to scale is a huge advantage that farmers in the UK have compared to Ireland. Many farmers don't actually own the land they farm, instead they lease land through arrangements called Farm Business Tenancies. This has led to greater mobility of farmland. The influence of the salesman is visible on the majority of farms. This has led to many falling into the trap of a high-input system which has eroded margins and forced many dairy farms out of business.

There are, however, a few farmers starting to realise the potential for low-cost dairying, especially along the western half of the UK. The temperate climate with reliable rain, stretching from Cornwall right up to Scotland, is ideal for growing grass. With access to larger blocks of land, many of these farmers are adopting a business model that should see them achieve substantial growth.

The processing industry in the UK differs quite a lot from Ireland in that most dairies are privately owned. This has led to many farmers not having a guaranteed

market for their milk during times of over-supply. This is not a very sustainable system long-term and is a situation we, as farmers, should try to avoid here in Ireland.

## 8. Conclusions

- Farmers need to have a clear focus on factors within their control and be realistic regarding the scale necessary to provide a sustainable future for their business.
- The key to profitable dairy farming is producing and utilizing as much grazed grass as possible.
- There are many more valuable lessons to learn from failure than success. No two farms or seasons are the same; land type, weather, stocking rate, milk price, etc. all vary. It is the timely response to circumstance that matters.
- Low-cost grass-based dairy farming has huge potential to create sustainable growth in rural Ireland, to replace subsistence farming and the social and economic erosion that it promotes.

## 9. Recommendations

### 9.1 Personal

- Make time for family and friends, they are the ones you'll be relying on if faced with a challenge
- Look out for others who may be in difficulty
- Maintain a healthy balanced lifestyle, eat well and get plenty of exercise.
- Extricate yourself periodically from the day-to-day running of your farm to focus on the strategic direction of your business. Conduct an annual review involving partners, advisors, mentors and staff. In a spring calving system, an ideal time to do this is in December/January, during the dry period.
- Continuously seek to improve your skills. Get into the habit of up-skilling yourself in both theory and practical hands-on experience whenever possible.
- Surround yourself with positive, open-minded people from all walks of life. Avoid negativity at all costs; it is a most destructive influence.

## 9.2 Inside the Farm Gate

- Set realistic goals for yourself and your business, then work backwards to achieve them. Just as we as individuals are much more likely to succeed when we set ourselves goals, so too will a business. It is up to you as a business owner/s to develop realistic, strategies and tangible goals for your dairy enterprise.
- Search for innovation that promotes efficiency. Strive for simple replicable systems that can be easily operated in your absence.
- Identify any competitive advantages in your system and stay focused on exploiting them.
- Seek out, evaluate and adopt the latest research relevant to your enterprise. Measure, monitor, and improve to find the sweet-spot for your particular circumstances.
- Evaluate every purchase. Be very wary of salespeople, remember no matter how friendly they may come across they are not your acting in your best interests; they are specially trained and their success is rated by their ability to take your money!
- Join a discussion group. The advice and guidance of fellow farmers is invaluable. Many of them will have been in your shoes at some stage and may be able to give accounts of how they dealt with particular challenges. This simple, practical, informal advice delivered by farmers in their own language is, without doubt, the most effective method of knowledge transfer.
- Benchmark yourself and your progress against your plan and other comparable businesses to identify areas for improvement. At least aim to be in the top quartile of your peers.

## 9.3 At Industry Level

- A review of tax policy needs to be conducted specifically around tax reliefs for expanding businesses and measures to protect expanding farmers from volatility, i.e. a tax deferral scheme in high-income years to be reclaimed in low-income years.

- Banks and lending institutions need to allow customers to unlock the equity that they have tied up in stock, i.e. chattel mortgages.
- Immediate investment in Teagasc to maintain the quality and value of the independent practical research and support that it provides for Irish farmers. Its influence is immeasurable, and is the envy of farmers worldwide.
- New entrants have a duty to act responsibly to maintain and improve Ireland's reputation for safe, sustainable products, ensuring access to premium markets for Irish exports.
- Farmers need to maintain ownership and impose strong governance on the processing industry to ensure operating efficiency to maximise returns to farmer shareholders.

## 10. Helpful Guidelines and Best Practice Tips

### 10.1 Professional Checklist

Here is a list of professional services that a new entrant may need when getting started:

Service	Roles in the business
Advisor	Technical support
Accountant	Financial and management reports
Mentors	Go to person for personal and business advice
Family	Personal support
Vet	Put a herd health plan together
Discussion group	Learning experience, source of motivation and peer support
Contractor	Slurry, silage, reseedling, drainage, etc.
Labour/relief help	Relief milker, student for spring, etc.
Planner	Preparation of plans and permission for development work
Milking machine technician	7 day/week emergency support
Banker	Provide finance
Milk purchaser	Income

### 10.2 Milking

- Complete a Farm Relief Services Best Practice in Milking course and an Animal Health Ireland Cell Check workshop.
- Use the paddle/Californian Milk Test to check all freshly calved cows before they go into the bulk tank to prevent any sub-clinical mastitis cases going unnoticed.
- Always follow the specified wash routine for the milking parlour to keep the thermophilic bacterial count (TBC) low. Any residue in the milking and milk storage equipment will cause it to increase.
- Watch the cell count results for each milk collection to help identify any mastitis cases early. 'Cell count' is the number of white cells in the milk. White cells are produced when the body is fighting infection, therefore the higher the cell count, the higher the infectious pressure on the animal's immune system. Normal range is 80,000-100,000. If cell count moves above 120,000 it starts to impact negatively on production.
- Use teat spray/dip.

### 10.3 Grazing

- Walk the farm measure growth rates weekly when cows are at grass.
- Apply nitrogen in spring once soil temperatures hit 6 degrees.
- When applying nitrogen, use urea as much as possible to reduce costs.
- Nitrogen is cheaper than concentrate.
- Base decisions on the wedge of feed available.
- Complete spring and autumn rotation planners.
- Never allocate more than 36 hours grazing at a time.
- Use 12 hour strip-wires and on/off grazing when ground conditions are challenging.
- Avoid allocating grass in long thin strips.
- Supplement cows with Cal-Mag during risk periods to prevent grass tetany (magnesium deficiency).

### 10.4 Calving

- Preparation is key.

- Ensure you are fit, healthy and ready, both mentally and physically, for a busy few months.
- This is not a time to skimp on labour.
- Ensure cows are in good condition (3.25-3.5).
- Dry cow minerals to correct any deficiencies and reduce any complications.
- Ensure a clean, dry, calm space for cows to calve in.
- Have proper facilities to restrain any cow that may need assistance calving.
- Feed 3 litres of colostrum to every calf within the first two hours.

### 10.5 Calf rearing

- Provide draught free sheds for calves with adequate airspace.
- Use milk replacer for replacement heifer calves to reduce disease risks e.g. Johnes disease.
- Move calves outside as soon as the weather allows.
- Give calves access to fresh feed from about 10 days.
- Aim to wean calves at 90 -100 kg depending on breed.
- Give calves preferential treatment at grass for the first summer. Consider a leader-follower system.
- Weigh regularly and batch calves based on weight.
- Supplement any that are not meeting target weights.
- Would contract heifer rearing be worth looking at? It saves labour, allowing more time to concentrate on the cows which are the real cash generators.

### 10.6 Mating

- Preparation for mating starts during the previous pregnancy. Ensure any cows that have complications due to difficult calving or retained afterbirth are dealt with early. Tail paint cows three weeks pre mating start date.
- Scan any cows calved over 30 days that failed to show a heat, and rectify any issues immediately
- Ensure cows are on a rising plain of nutrition in the lead up to breeding. Supplement if necessary. High energy is important.
- Use once a day milking to build condition on thin cows.

- Compact calving has a huge impact on profitability, it starts with compact mating. Set a target of getting 90% in calf in six weeks.
- After the first three weeks, consider using vasectomised bulls to aid heat detection.
- Synchronise maiden heifers and start to breed heifers a few days before cows using short gestation, easy calving, high EBI AI bulls to breed replacements. Remember up to five AI straws are required to have one replacement calving down.
- Consider sexed semen on heifers as they are highest genetic stock and breeding replacements from them will increase the rate of genetic gain in your herd.

#### 10.7 Business Management.

- As soon as possible, build a cash reserve for emergencies/opportunities.
- Complete a budget and update it regularly to compare budget performance v actual performance.
- Complete a profit monitor or similar package to benchmark your performance against other similar businesses to identify cost savings and areas for improvement.
- Give regular updates to your sources of finance and creditors, especially if you predict any difficulties meeting commitments.
- Do not try to undertake capital investments out of cash flow!



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