

KERRY

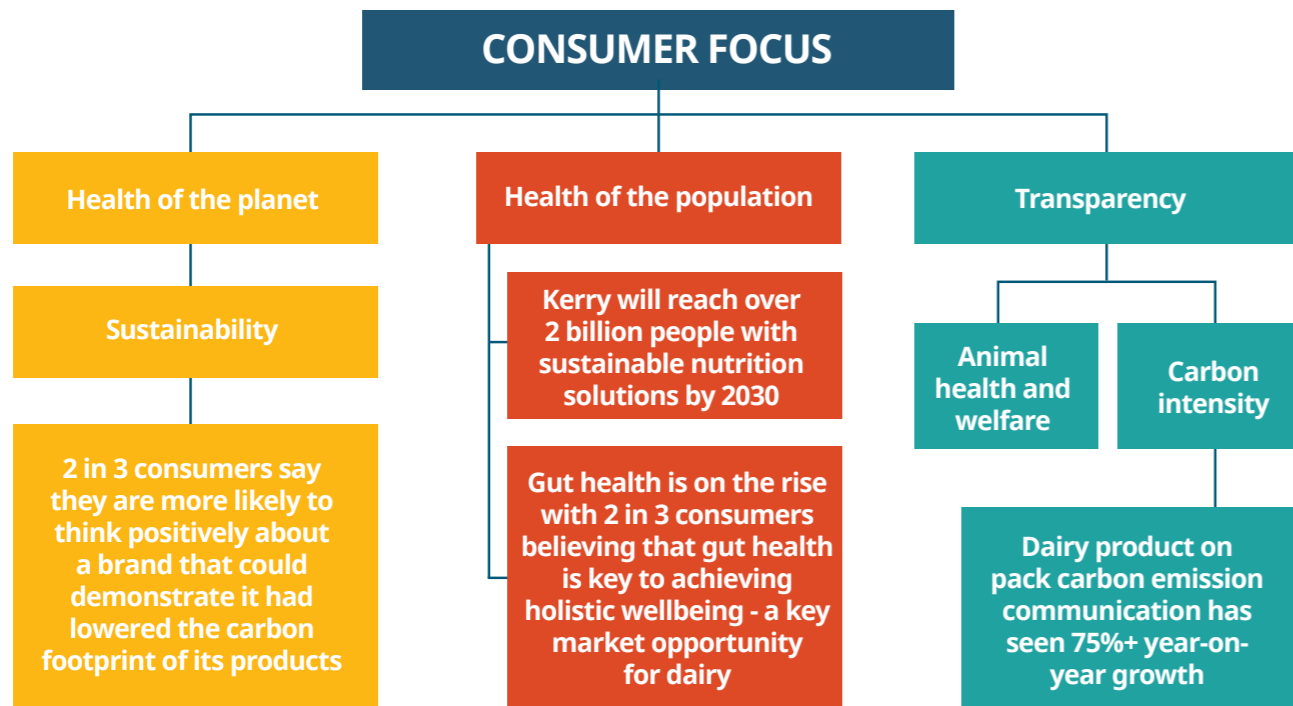
Evolve

Dairy Sustainability Programme

2023



Sustainability is becoming an increasingly prominent issue in the global dairy market as consumers and industry stakeholders are becoming more aware of the impact of food production on the environment and on society. Consumer trends for dairy products are constantly evolving as tastes, preferences, and economic conditions change around the world. Understanding consumer needs and wants is key to ensuring we are well positioned to meet the ever-increasing global demand for sustainably produced food.



Sources: Innova Database, Innova Lifestyles & Attitudes Survey 2020 and 2021
Sources: Innova Trends Survey 2021



Introduction

Kerry has a long and proud history of working with our family farms in the adoption of best practice with regard to quality milk production, financial management, breeding, soil fertility and grassland management.

Feeding a growing population while maintaining human health within a healthy ecosystem presents a huge challenge for our industry. The global environmental impact from agriculture is under increasing scrutiny. Agricultural development plays an essential environmental, social and economic role which is vital for food security.

As part of Kerry's vision for the next decade, we see the possibility for a world of sustainable nutrition, one which is delivered in a way that is mindful for people, the planet and society. In more detailed terms, it is the ability of food systems to provide sufficient energy and essential nutrients to maintain good health of the population without compromising the ability of future generations to meet their nutritional needs.

Already one of the most carbon efficient dairy producers in the world, Kerry is committed to building on past achievements and continuing to provide leadership in making a positive contribution to our future climate objectives whilst ensuring the environmental, social and economic sustainability of our family farms.

Our sustainability strategy, Beyond the Horizon, supports Kerry's ambition to reach over two billion people with sustainable nutrition solutions by 2030. We are committed to working with our milk suppliers to deliver on national and business sustainability commitments into the future.

What is Evolve

Evolve is our dairy sustainability programme. It is a new concept designed to support the accelerated adoption of science-based sustainable action and best practice across our family farms.

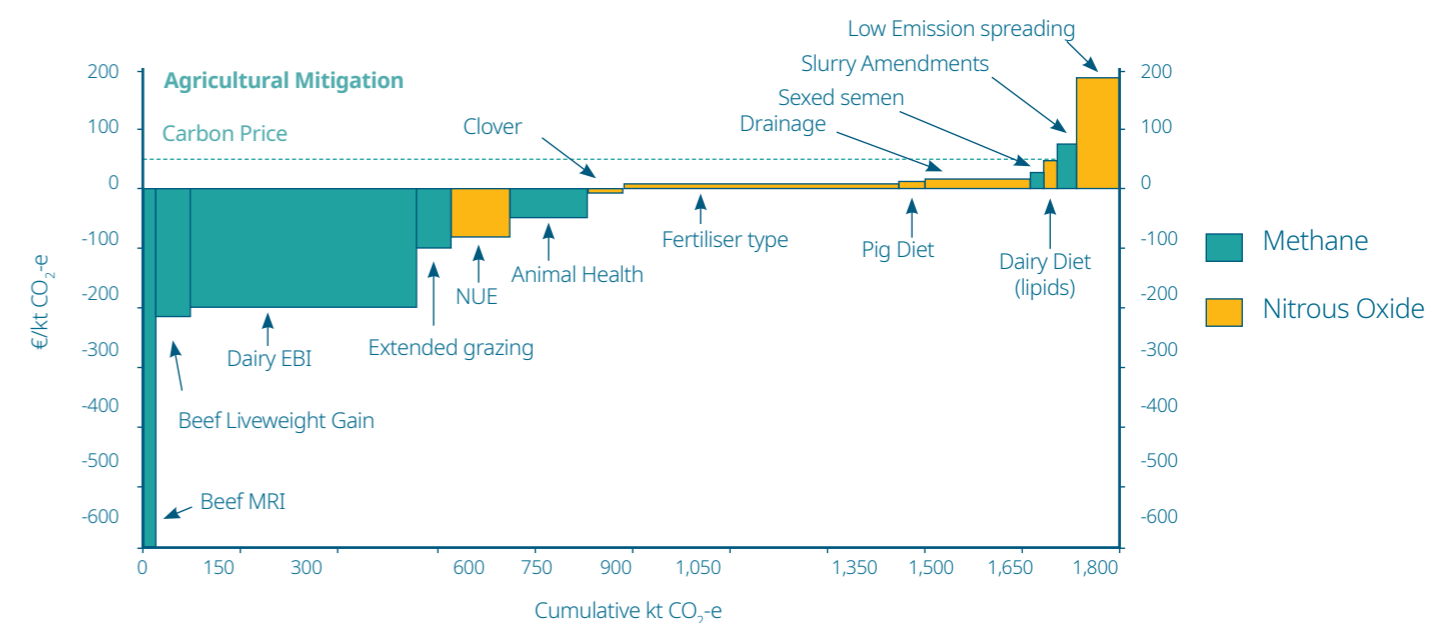
Kerry will lead the transition to and acceleration of more sustainable farming practices by providing targeted financial support to build on existing achievements and grow the knowledge of and engagement with sustainable farming practices.

The Evolve programme is holistic in nature with a broad focus on carbon reduction, ammonia reduction, water quality, biodiversity and animal welfare.

The programme is also underpinned by the Teagasc Marginal Abatement Cost Curve (MACC), which sets out proven, science-based actions that farmers can take to reduce on-farm carbon emissions.

Evolve is designed to enable annual re evaluation and updating of actions in line with legislative changes and scientific developments.

The Teagasc marginal abatement cost curve (MACC)



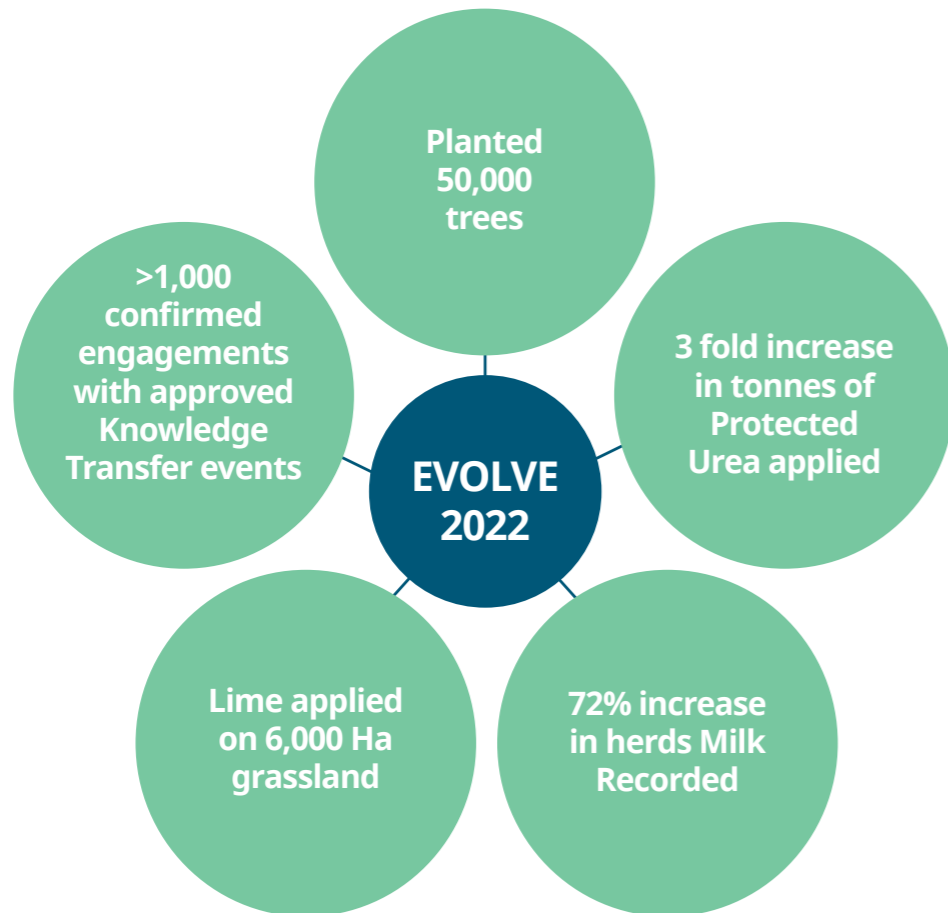


Evolve 2022

Since Evolve's launch in 2022, 94% of our milk suppliers have engaged with the programme and have embraced science-based actions and best practices to better their family farms. With an emphasis on increasing efficiency and lowering the environmental impact of dairy farming, the programme has helped to accelerate the adoption

of sustainable practices across our milk supplier farms and has set a solid foundation for continued progress in the years to come. We are proud of the positive impact the programme has had to-date and are excited to continue working with our milk suppliers as we develop the programme and introduce new and innovative strategies.

Evolve 2022 Key Wins



Evolve 2023

The people element of sustainability is an essential component in achieving a balance between economic prosperity, social well-being and environmental protection. We are delighted to incorporate an increased focus on the people element of our sustainability agenda in Evolve 2023.

Kerry Social Farming is a locally-led, community-based, shared service that promotes and operates social farming in county Kerry. It provides a viable option for achieving improved quality of life, greater inclusion and community networking for people with disabilities and those encountering mental health difficulties. At Kerry we have a proud tradition of community support

and we are delighted to provide dedicated funding through Evolve to this voluntary model of social farming.

For our farmers, Evolve 2023 includes five new incentivisation areas focusing on knowledge transfer and practical actions which can improve the sustainability of their farming businesses.

In addition, we are delighted to announce the establishment of a partnership between Kerry Agribusiness and the Bank of Ireland aimed at providing a sustainability linked loan which will be available to milk suppliers who are part of the Kerry Evolve Dairy Sustainability Programme. Milk suppliers will have the opportunity to access flexible and competitively priced loan funding based on the accelerated adoption of science-based sustainable actions and best practice.

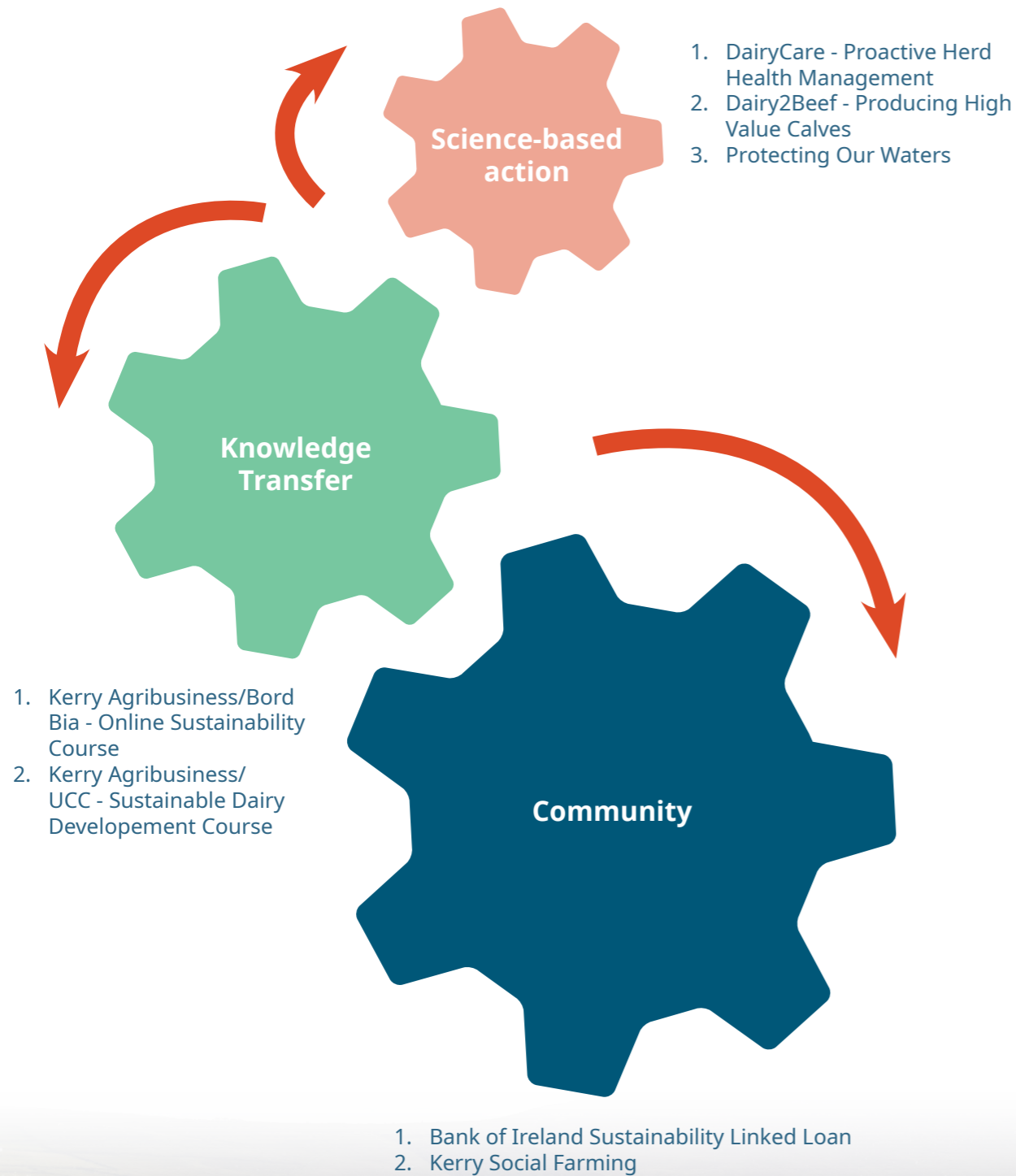


Origin Green

Ireland's food and drink sustainability programme, is fundamental in building Ireland's reputation for sustainably produced grass-fed dairy in overseas markets by providing the proof and progress behind our sustainability credentials. All Kerry Agribusiness milk suppliers are certified under Bord Bia's Dairy Assurance Scheme (SDAS) which tracks and monitors sustainability measures aligned to the Evolve programme.



Evolve 2023 New Initiatives




Biodiversity – Native Irish Trees


Biodiversity is the range of life that exists in any given area. Biodiversity loss is a national challenge, however, farmers can play a vital role in reversing this declining trend as they have the opportunity to create and/or enhance various habitats on their land so that local flora and fauna can flourish.

Through our ongoing partnership with Trees on the Land, our farmers have access to native Irish hardwood trees which can be planted on their farms to provide much needed tree cover for nesting birds and insects. Planting trees in field corners, near watercourses and along roadways, as well as rejuvenating hedgerows are all ways in which trees can be integrated onto the land without compromising production.


- Improved biodiversity - native trees can support birds, mammals, insects and microorganisms such as lichen and fungi.
- Reduced nutrient losses to water as deep-rooted trees absorb rainwater and excess nutrients from the soil.



- Trees can provide an alternative income stream for their timber and material value.
- Trees absorb valuable nutrients from deep in the soil and return them to the field surface through falling leaves. This improves the soil's organic matter content and it's productivity.
- A natural form of shelter for animals.



- Trees regulate the air that we breathe.
- Increasing land biodiversity, increases the resilience to climatic changes such as flooding.



Action for the farmer

- Identify areas on your farm to plant trees/hedgerows.
- Enhance the habitat in existing hedgerows.
- Avoid excess hedge cutting.
- Minimise fertiliser and pesticide use in wildflower areas on the farm.



Protecting Our Waters

Water policy and management in Ireland is guided by the Water Framework Directive, under which Ireland has been set a target of achieving at least 'good status' for all waters in the country by 2027, along with no deterioration. For Ireland to maintain its 'good status', work must be done to protect waterways from industrial and agricultural pressures. Across our catchment, phosphorus loss is the biggest threat to river and stream water quality, with the most significant phosphorus losses being associated with diffuse sources such as nutrient application prior to heavy rainfall.

To aid in the protection of water bodies across our catchment area, we are delighted to introduce a water quality measure to the Evolve programme in 2023 with the support of ASSAP (which provides practical tips and practices that farmers can implement to improve water quality).

Milk suppliers will be guided through a water quality farm assessment with the support of a Kerry Agribusiness Water Quality Advisor. Upon completion of the assessment, if required, remedial action(s) that can be holistically integrated into their farming practices will be agreed upon and implemented (in 2023) to improve water quality.



- Improved nutrient use on farm.
- Reduced eutrophication.
- Improve and protect water quality.



- Education on local water quality.
- Practical advice on water quality measures.
- Awareness of critical source areas and flow pathways through the use of Pollution Impact Potential (PIP) Maps.

Action for the farmer

- Complete a farm assessment with Kerry Agribusiness Water Quality Advisor and undertake agreed action(s) to improve and protect water quality.

Nutrient Management Planning

Nutrient Management Planning is a useful tool for dairy farmers to ensure they maintain an efficient production system. It involves soil sampling paddocks and deriving a nutrient application strategy based on the soil pH, P and K indices to achieve optimal forage production.

Nutrient management planning can aid in decision making when looking for opportunities to reduce fertiliser inputs. For example, spreading lime to correct soil pH will improve the availability of nutrients to plants, increasing the crops nutrient use efficiency.



- Reduces nitrous oxide emissions and nitrate losses to water.
- Slurry application targeted to paddocks with low P and K.



- Every €1 invested in lime is worth €4 to €7 in extra grass.
- Increased grass dry matter production - 2t DM/ ha more with optimum versus poor soil P.
- N recovery by grass plant is doubled with optimum versus poor soil fertility.



- Data to make informed decisions.

Action for the farmer

- Soil sample your farm and develop a Nutrient Management Plan.
- Use colour coded maps to aid fertiliser and slurry spreading decision making and correct deficiencies in pH, P and K.
- Take a slurry sample for nutrient analysis.

In conjunction with Grassland Agro, we are offering a nutrient management planning service to interested farmers as part of our 2023 Evolve programme.



Use of Protected Urea

The use of fertiliser is an essential component in grass based dairy systems. Fertiliser is used to provide additional nutrients to soils for grass plants to utilise, producing high quality and plentiful forage for grazing animals.

Protected urea is a urea nitrogen (N) fertiliser made safe from ammonia loss through the addition of a urease inhibitor. There are a range of protected urea products on the Irish market with the nitrogen content ranging from 29% to 46%. Protected urea works by slowing the rate at which urea is converted to ammonium, reducing nitrous oxide and ammonia losses.



- Protected urea is the only fertiliser type that reduces both nitrous oxide and ammonia emissions.
- Protected urea has 73% lower nitrous oxide emissions than CAN and reduces ammonia losses by 79%, compared to ordinary urea.



- Per kilogram of N utilised, protected urea is more cost effective than calcium ammonium nitrate (CAN) and standard urea.
- Protected urea has the potential to grow more grass than CAN in the long term.
- Protected urea N rate can be reduced by 12.5% compared to standard urea while still delivering the same amount of effective N.

Action for the farmer

- Replace all straight N with protected urea across the fertiliser season.

Low Emission Slurry Spreading (LESS)

Cattle slurry is a valuable source of nitrogen (N), phosphorus (P) and potassium (K) produced on farm.

The N in cattle slurry is in the ammonia form similar to N in urea fertilisers, which can be easily lost to the atmosphere. LESS application techniques such as the dribble bar or trailing shoe reduce the surface area of the slurry leading to reduced volatilisation and N loss as ammonia to the atmosphere.



- Overall ammonia N losses reduced by up to 60% and nitrous oxide emissions reduced through lower chemical N requirement.



- 1000 gallons of slurry applied using LESS gives 50% extra N in spring and 100% in summer - worth €4.20/cow.



- Slurry can be applied to paddocks with higher grass covers using LESS, therefore simplifying farm management decisions.

Action for the farmer

- Switch to LESS equipment for all slurry spreading.



Incorporating Clover

Clover rich swards have a range of sustainable and productive benefits within dairy systems as they are naturally nitrogen rich. The clover plant has small nodules (lumps) on its roots which contain symbiotic nitrogen-fixing bacteria. These bacteria fix atmospheric nitrogen and convert it into nitrate in the soil. This nitrate is a source of nitrogen for grass and reduces the need for alternative nitrogen sources such as chemical fertiliser.

Reseeding or carrying out sward renovation, also referred to as 'stitching in', are ways to include clover within swards. The establishment of clover swards requires a good understanding of clover management as well as the correct seed mix. Kerry Agribusiness offer a range of grass/clover seed mixes through our Top Sward range.



- Nitrous oxide emission reduction is achieved through lower fertiliser requirements (up to 100kg N/ha saved) - achieving up to 40% reduction.



- Increased milk solids of 20-48Kg/cow.
- Increase farm profit by €108-€305/ha.

Action for the farmer

- Target 100% of paddocks with clover incorporated (clover content 20%+) over 4 years through a combination of reseedling (10%) and oversowing (15%) each year.

Improving Genetic Merit of the Dairy Herd

Economic Breeding Index (EBI) is a single figure profit index aimed at helping farmers identify the most profitable bulls and cows for breeding dairy herd replacements.

Careful selection of high EBI sires coupled with the use of the highest EBI cows in the herd will produce calves with the highest genetic merit on the farm. Although this method requires a long implementation period, the benefits are permanent and cumulative. Sexed semen will accelerate the process of boosting herd EBI.



- Higher EBI cows have a lower carbon footprint due to better fertility, improved herd lifetime milk performance and improved efficiency.
- EBI now contains a Carbon sub-index which will account for 10% of the overall EBI.



- Every €10 increase in EBI will reduce carbon emissions by 1% per unit of output and increase profit by €20/cow.

Action for the farmer

- Increase the EBI of your herd by €10 per year.
- Milk record and use high EBI AI sires.
- Use sexed semen.



Extended Grazing

Extended grazing refers to maximising the herds days at grass at either end of the grazing season.

This involves the provision of good grazing infrastructure including spur roadways and multiple access points to allow animals to graze at the shoulders of the grazing season. During very wet weather it involves the use of on/off grazing and selection of paddocks which have greater shelter, are generally drier and have several access points to avoid poaching.



- Every additional week at grass reduces total carbon emissions by 1%.
- Less slurry stored and less silage in the diet means reduced greenhouse gas emissions.



- Every extra days grazing is worth €2.70/cow/day in spring and €1.80/cow/day in autumn.
- Improved animal performance.



- Less slurry management required.

Action for the farmer

- Use autumn and spring rotation planners to optimise grazing.
- Develop a good roadway network throughout the farm.
- Use on/off grazing.
- Graze drier paddocks on your farm at the shoulders of the season.

Grazing Management

Grass is the lowest cost feed source for dairy cows and has excellent nutritional quality. With Ireland having a climate to grow grass in abundance, its utilisation must be maximised.

Rotational grazing practices are effectively used on dairy farms across Ireland and provide many benefits to the farmer as well as the environment. The use of new technologies such as PastureBase have further enhanced grassland management practices and their uptake can prove instrumental in decision making across the farm.



- Home grown grass negates the need for supplementary feed, reducing the environmental footprint of milk production.



- Every extra tonne of grass Dry Matter grown and utilised is worth €173/tonne.
- Good grazing management means a more resilient system during periods of poor grazing conditions.

Action for the farmer

- Walk your farm regularly and use PastureBase to support decision making.
- Manage pre-grazing covers in mid season.
- Improve grazing infrastructure.
- Implement a good reseeding policy.



DairyCare - Proactive Herd Health Management

Good animal health and welfare allows animals to reach their full genetic potential and maximise productivity. Our milk suppliers abide by the Farm Animal Welfare Advisory Council (FAWAC) guidelines, which clearly set out the five freedoms of animal welfare. In addition, the recording and evaluation of herd health and disease incidences ensures that health issues are easily managed and mitigated.

DairyCare is a proactive herd health management programme which provides support to enable animal health and welfare to be prioritised and optimised. Through participation in the programme, milk suppliers will gain greater visibility of herd health metrics on farm through enhanced recording of disease incidence. The data collected can then be used by suppliers for an independent consultation with their local vet.



- Reduced carbon emissions per unit of output by reducing replacement rate.
- Healthy animals are more productive.



- Reduced animal mortality.
- Increased output per cow.
- Reduction in costs associated with disease.



- Availability of data to support an effective independent herd health consultation.
- Improved knowledge of antimicrobial use.
- Improved labour efficiency.

Action for the farmer

- Proactively record disease incidence in cows and calves.
- Participation in the Munster Bovine Herd Health Programme (payments tiered based on participation in Gold, Silver or Bronze programmes).

Dairy2Beef - Producing High Value Calves

Production efficiency underpins the profitability of Dairy2Beef systems and is largely determined by the breeding decisions made on dairy farms. To enhance the market for dairy-beef calves, the relationship between dairy and beef farmers must be synergised.

Utilising the Dairy Beef Index (DBI) when making breeding decisions will improve the value of the dairy-beef calf crop. Subsequently, calves with a higher Commercial Beef Value (CBV) will attract greater interest from dairy-beef producers, therefore helping to establish and maintain a direct relationship between these farmers.



- GHG's per kg carcass are 29% lower for dairy-beef versus suckler beef.
- Calves with higher beef merit will be heavier, more conformed and younger at finishing.
- The local sale of calves to Dairy2Beef producers reduces transportation emissions.



- Direct farm to farm sales ensure a higher degree of biosecurity and lower vet costs.
- A dairy-beef animal of high genetic merit is proven to be more profitable than a low genetic merit animal.
- Commercial beef value reflects the animals beef merit and value.



- Market security for dairy farmers as there is improved retention of Dairy2Beef farmers.
- Reduced labour intensity on dairy farms.
- A source of healthy, quality calves from quality assured farms for beef farmers.

Action for the farmer

- Utilise the Dairy Beef Index when making breeding decisions.
- Use the Kerry/ICBF App for the sale of high quality dairy-beef calves.



Kerry Agribusiness/UCC Sustainable Dairy Development Course

Kerry Agribusiness is delighted to partner with Duhallow Skillnet and Adult Continuing Education (ACE) at University College Cork (UCC) in developing an exciting new accredited programme. This will provide an in-depth understanding of the challenges and opportunities associated with sustainable dairy and equip our milk suppliers with the skills and knowledge to independently manage and future proof their farming enterprises.

The programme will be delivered online over a nine-week period coupled with an in-person networking and best practice workshop event. The programme will provide participants with an extensive knowledge of the history of the climate crisis, current and evolving Irish and EU climate policies and sustainability concepts.



- Reduced carbon emissions.
- Improved water quality.
- Improved soil health.
- Improved farm biodiversity.



- Improved production efficiencies.
- Improved nutrient use on farm.
- Improved soil health, more productive soils and better grass growth.
- Understanding of the economics of sustainable agriculture.



- In-depth understanding of sustainability.
- Understanding of climate policy and how to navigate climate challenges.

Action for the farmer

- Complete and pass the Kerry Agribusiness/UCC Sustainable Dairy Development Course.



Kerry Agribusiness/Bord Bia Sustainability Course

In collaboration with Bord Bia, Kerry Agribusiness has developed a free online farm sustainability course which will provide suppliers with on-demand access to information and resources to support them in the transition to a more sustainable future.

This interactive course is designed to give suppliers an opportunity to expand their understanding of sustainable dairy production and gain access to practical advice on how to implement sustainability into their own farming practices. The course covers the following topics:

- Greenhouse gases mitigation
- Optimising soil health
- Improving and protecting Irish waters
- Sustainable energy use

As our understanding of sustainability develops, so will the course. Additional modules surrounding animal health and welfare are scheduled to be released throughout the year, providing our suppliers with a wealth of information covering government legislation, new research and case studies from farmers themselves.



- Reduced carbon emissions.
- Improved water quality.
- Improved soil health.



- Identification of opportunities to reduce energy costs.
- Improved soil health means more productive soils and better grass growth.



- Improved understanding of sustainable farming practices.

Action for the farmer

- Complete and pass the Kerry Agribusiness/Bord Bia Sustainability Online Course.

Evolve 2023 Incentivisation Areas



	Action	Detail	Evolve Incentive*	How do I redeem the Evolve incentives in 2023?
Biodiversity & Water Quality	Planting Native Irish Trees	Kerry is partnering with Trees on the Land to fund a biodiversity programme across our catchment	Fully funded	You will receive a link (Sept/Oct) to Trees on the Land where you will be able to fill in an online application for a quantity of trees you will be required to plant (T&C's apply)
	Protecting Our Waters <i>NEW FOR 2023</i>	Complete a free farm assessment with a Kerry Agribusiness Water Quality Advisor and undertake agreed action(s) to reduce nutrient loss to waterbodies from the farm	€200/farm	Rebate to milk account on month following confirmation by Kerry Agribusiness Water Quality Advisor that the agreed remedial action(s) completed
Soil & Fertiliser Management	Nutrient Management Plans	Undertake soil sampling in the period Sept 2022 to April 2023 (T&C's apply)	€100/NMP	Present Soil Sample Report (pH, P & K) to designated staff at Area office. Rebate to milk account in December 2023 (min requirement of 1 sample/10 cows)
	Lime	Purchase lime via an approved supplier up to a maximum of 1 tonne/cow	€5/tonne	Submit verified receipts from an approved lime supplier to designated staff at Area office for a rebate to milk account in December (max 1t/cow over 3 years)
	Protected Urea	Purchase of protected urea via Kerry Agribusiness	Up to €40/tonne	Rebate to milk account in month of purchase (>40% nitrogen PU €40/t rebate; 30-40% nitrogen PU €20/t rebate; <30% nitrogen PU €10/t rebate) Max 80kgN/cow
	Slurry Analysis	Slurry analysed via approved laboratory	€20/sample	Confirmation of analysis from an approved laboratory. Rebate to milk account following month (max €100/annum)
Herd Production & Grass Management	Milk Recording	Participation in Munster Bovine Milk Recording (min 4 tests)	€3/cow	Rebate to milk account in December
	Low Protein Feed	Purchase feed from Bloom Feeds low protein range	€10/tonne	Rebate to milk account in month of purchase (selected Bloom Dairy Feeds with crude protein of 14% or less) Max 500 kg/cow
	Grass Measurement	Greater than 5 covers on PastureBase Ireland (May to June)	€100/herd	Submit proof from PastureBase Ireland to designated staff at Area Office in Oct/Nov for a rebate to milk account in December
Animal Health & Welfare	Herd Health	Participation in approved Munster Bovine Herd Health Programme	Up to €100/herd	Rebate to milk account in December based on participation in Munster Bovine Herd Health Programme (Gold €100/herd rebate; Silver €75/herd rebate; Bronze €50/herd rebate)
	DairyCare <i>NEW FOR 2023</i>	Participation in DairyCare programme	€100/herd	Between Feb and April 2023 record incidents of milk fever, retained afterbirths and clinical mastitis in cows and disease in calves. Upon verification of disease capture by ICBF, milk supplier will receive a rebate to milk account
	Culture & Sensitivity	Engage in Culture and Sensitivity Testing	€5/sample	Rebate to milk account in December (max €50/annum)
	Dairy2Beef Scheme <i>NEW FOR 2023</i>	Sell dairy-beef calves directly to Dairy2Beef farmers through the ICBF/Kerry App	Up to €100/herd	Milk supplier receives rebate to milk account and Dairy2Beef farmer receives Farm & Home Store Voucher(s) (T&C's)
Knowledge Transfer	Approved Development Event	Participation in approved sustainability related event (Breeding, Biodiversity, Financial, Grassland, People Management, Health & Safety)	€50/event	You will be informed via text message/MilkedIn App of upcoming events which will qualify for incentivisation. Register your attendance at the events to receive a cumulated rebate to milk account in December (max €200/annum) 2023
	Kerry Agribusiness/Bord Bia Sustainability Course <i>NEW FOR 2023</i>	Complete and pass the Sustainability Course	€50/milk supplier	You will receive a link to the Bord Bia Learning Hub via text message/MilkedIn APP where you will find Kerry's Sustainability Course. You must complete the course and pass the short quiz - €50 rebate to milk account
	Kerry Agribusiness/UCC Sustainable Dairy Development Course <i>NEW FOR 2023</i>	Complete and pass the Kerry Agribusiness/UCC Sustainable Dairy Development Course	Course fully funded	You will receive a link via text message/MilkedIn APP in February 2023 to register your interest to participate in the course - numbers are limited.

* Terms and Conditions apply.

Beyond the Horizon

Kerry Group's sustainability strategy, includes ambitious sustainability targets that address key impacts by 2030 in the areas of nutrition and health, emissions, circular economy, raw materials, and social impact.



<p>Better for People</p>	<p>Reaching over two billion people with sustainable nutrition solutions by 2030</p>  <p>1billion+ We currently reach over one billion consumers with positive and balanced nutrition solutions.</p>				
<p>Better for Society</p>	<p>Upholding our values and internationally recognised human rights</p>	<p>Ensuring a safe and healthy workplace</p>	<p>Achieving the highest levels of diversity, inclusion, belonging and engagement</p>	<p>Engaging in community partnership that deliver impact</p>	<p>Making the science of healthier food accessible through Kerry Health and Nutrition Institute</p>
<p>Better for Planet</p>	<p>Climate Action</p> <p>Scope 1 & 2 (Kerry owned facilities ie. milk processing sites) Adopting a Science Based Target for a 55% carbon reduction by 2030 and achieving net zero before 2050</p> <p>100% Renewable Electricity by 2025</p> <p>Scope 3 (farm related emissions) Working with suppliers to reduce emissions intensity by 30% across our supply chain</p> <p>Water Intensity Achieving a 15% reduction in water intensity by 2025</p>		<p>Circular Economy</p> <p>-50% Cutting our food waste by 2030</p> <p>100% of our plastic will be reusable, recyclable or compostable by 2025</p> <p>Zero Waste to Landfill by 2025</p> <p>-25% Achieving 25% reduction in virgin plastic use by 2025</p>		<p>Responsible Sourcing</p> <p>100% of priority raw materials are responsibly sourced by 2030</p>

Evolve Reward Potential



*Based on the average Kerry Agribusiness Milk Supplier (80 Cows/420K Litres).

KERRY

Kerry Agribusiness

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