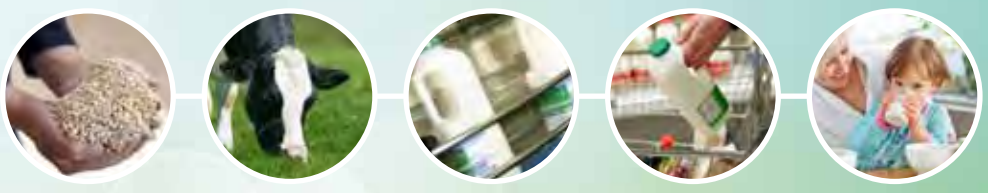
dairy roadmap



our route towards environmental success

The Dairy Supply Chain Forum's Sustainable Consumption and Production Taskforce is chaired by DairyCo (a division of the Agriculture and Horticulture Development Board) and draws membership from the following organisations who have worked in partnership to develop the Dairy Roadmap:

DairyCo

ace UK
THE ALLIANCE FOR BEVERAGE CARTONS AND THE ENVIRONMENT

ADAS

aic agricultural industries confederation

ASDA

BOOTHS

CLA Country Land & Business Association

The co-operative

Dairy UK

IGD

YOUR M&S FARMING FOR THE FUTURE

M MORRISONS

Nampak Plastics packaging excellence

NFU

RABDF Working for British Dairy Farmers

Sainsbury's

TESCO

tfa Tenant Farmers Association

Waitrose

contents

foreword

I am very pleased to acknowledge the achievements of the UK's dairy producers, processers and supply chain partners reflected in this latest product roadmap. Supply chain co-operation of this kind is vital if we are to produce more food while reducing the cost to our environment.

A competitive and sustainable dairy industry can go hand-in-hand with our obligations to each other and the planet. The Foresight report on sustainably feeding the growing global population in 2050 set out the need for more sustainable production. The dairy sector's leadership in developing solutions and setting challenging targets for the whole supply chain puts it at the forefront of the progress we need to see. The Government for its part is investing in research on greenhouse gases, livestock feedstuffs and sustainable forestry to provide the best evidence for industry and others to make informed choices about sustainable solutions.

From its beginnings as the Milk Roadmap in 2008, through 2009's One Year Down the Road report, to today's expanded Dairy Roadmap, the ambition and reach of the dairy industry has evolved. The sector has shown encouraging progress in important areas of Environmental Stewardship, nutrient management, farm health, waste recovery, packaging and water use. I look to it to continue to set the bar high and maintain the leadership it has shown through, for example, encouraging the take-up of measures for on-farm greenhouse gas mitigation by dairy farmers and ensuring that data and best practice information held throughout the supply chain is disseminated as widely as possible.

I am committed to supporting our farmers and food industry, encouraging sustainable food production, while enhancing the environment and biodiversity and supporting a strong green economy that meets our climate change goals. But we can't do it without the skills and enthusiastic support of our farmers, processers, retailers and all those who supply our food and farming industries. The dairy sector's support for these goals through its roadmap and other activities makes it a key partner in these shared objectives.

The Right Honourable James Paice MP, Minister of State for Agriculture and Food

introduction

Since taking on the Chair of the Roadmap Taskforce two years ago, I have been really pleased to see the progress the dairy supply chain has made in reducing its environmental impact.

All sectors of the British dairy industry are committed to minimising their impact on the environment and the enthusiasm – there is no other word to use – that I have encountered from everyone has been tremendous.

This commitment has led to significant developments throughout the supply chain, from the use of nutrient management on-farm to increasing the use of recycled plastic in milk bottles and reducing the emissions from transporting milk to retail outlets.

We started in 2008 as the Milk Roadmap concentrating on the fresh milk component of dairy, which represents 50% of total milk production. During this reporting period, we have agreed to broaden the scope of the Milk Roadmap to encompass all dairy production. Thus, we have become the Dairy Roadmap and this report details the progress made to achieve the ambitious short, medium and long-term targets laid out in the original Milk Roadmap.

However, our targets are under continual review so that we can modify them with the benefit of improved science and better technical developments, making the Dairy Roadmap report a 'living' document under constant scrutiny and development.

I want to thank everyone concerned for maintaining progress but particularly Fergus McReynolds of Dairy UK and Karen Wonnacott of DairyCo for the considerable time they have put into compiling this report. We really could not capture all of the outstanding progress made by the dairy sector in this short document but I would again like to highlight the tremendous achievements that have been made to date and the ambition and determination to reduce and minimise the environmental impact of the dairy supply chain in the future.

Finally, I know the dairy industry will want to maintain progress in this important area, to make this key industry even more sustainable for the many businesses involved and, critically, for our consumers who want to continue to enjoy our excellent products.

Tim Bennett, Chairman of Sustainable Consumption and Production Taskforce

executive summary

The launch of the Milk Roadmap in May 2008 identified the commitment of the entire dairy supply chain to minimise environmental impact throughout the chain. This report details progress made against the 2010 targets established in 2008.

Dairy Farmers

- With a challenging target set for 50% of dairy managed farmland entered into Environmental Stewardship Schemes (ESS) by 2010, an encouraging 61% of farmers are participating in some form of ESS
- Dairy farmers are tackling water use efficiency through a variety of techniques such as re-using water from the plate cooler, harvesting rainwater or installing bore-holes
- They have also already made considerable progress towards the 2015 target of 20-30% of dairy farmers trialling new technologies such as slurry injection, altering feeding systems and use of solar technologies or wind turbines. Of the dairy farmers surveyed, 39% had introduced new technologies in the previous 12-24 months
- Dairy farmers have also met the targets for having manure management plans and Farm Health Plans, while the target for the number of farmers actively nutrient planning is expected to be met when the complete data set is available
- The 2010 target for the number of farms with on-farm anaerobic digesters was not met, due to envisaged incentive schemes not coming forward, though it is hoped that the Renewable Heat Incentive will accelerate adoption

Processors

- Processors have met their 10% target for the incorporation of recycled high density polyethylene (rHDPE) into milk bottles and processors and retailers are investigating opportunities to increase this level further
- Over the last 10 years, dairy processors have made significant investment in new and improved technology and increased their energy efficiency by over 27%, resulting in a reduction in annual emissions of approximately 270,000 tonnes of carbon dioxide (CO_2)
- Dairy UK has made an environmental benchmarking tool available to processors and publishes an annual sustainability report on progress made
- The 2010 Environmental Benchmarking data demonstrates improvements in the key areas of waste recovery, packaging improvements and emissions reductions. Between 2008 and 2010 fresh milk and cheese processors reduced water usage by 16% and 8% respectively and increased waste recycling rates

Retailers

- Retailers are making huge advances by working more closely with their dairy farmers and processors and by providing consumers with the facilities to recycle and reduce environmental impacts wherever possible
- Most major retailers are now working with their dairy farmer suppliers to measure their carbon footprints in order to drive efficiencies and identify areas of potential improvement
- Substantial progress has been made in the incorporation of rHDPE plastic into milk bottles and further work will be undertaken in all other dairy product packaging
- A number of retailers are implementing systems for reducing emissions from the transportation of milk

Consumers

- Approximately 5% of the greenhouse gas emissions from milk are from consumption and disposal. If this could be reduced or avoided through better management and storage in the home by consumers it could help to further reduce the environmental impact of dairy products

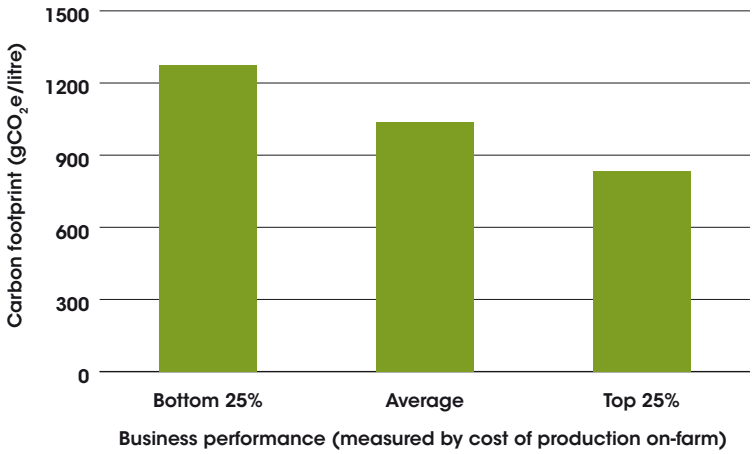
The Road Ahead

- The Dairy Roadmap is a 'living' document and future targets are under constant review to ensure the industry is continually challenging itself and taking account of evolving external factors
- This Dairy Roadmap report highlights the tremendous efforts that have been made by the entire dairy supply chain to meet or beat the 2010 targets.The responsibility and commitment demonstrated by the dairy sector to date, to improve efficiencies and reduce environmental impacts is encouraging, but enthusiasm must be maintained to ensure that future targets for 2015 and 2020 are met or exceeded

dairy farmers

Dairy farmers have demonstrated a commitment to minimising their environmental impact and there is an increasing body of evidence to show that increasing business and production efficiencies has an environmental benefit, representing a 'win-win' for farmers (Figure 1).

Figure 1: Evidence for the relationship between dairy farm business performance and carbon footprint from a small sample of dairy farms[1]



Dairy farmers in the UK are already among the most efficient in the European Union: Breeding, feeding and management improvements have seen average milk yield per cow increase from 5,512 litres per cow per year in 1995/96 to 7,096 in 2009/10. As a result of these improvements, farmers are achieving similar amounts of milk from fewer animals – and have, therefore, been able to reduce their environmental impact.

Experience to date suggests that farmers can go even further, particularly if incentives and voluntary initiatives are employed. Regulatory approaches clearly have a part to play, too; however, these should be proportionate and positively promote the desired changes to avoid being seen as burdensome or bureaucratic.

Dr Duncan Pullar, Director of DairyCo says:

"Dairy farmers have got the message on climate change – efficient production reduces carbon footprint and makes economic sense. DairyCo technical and business tools are designed to enhance the efficiency of production and there is good evidence that it's working well."

1 Source: The E-CO_2 Project data.

2010 targets for dairy farmers

in summary...	
50% of dairy managed farmland entered into Environmental Stewardship Schemes	✓
5-15% uptake of water use efficiency measures	✓
65% dairy farmers actively nutrient planning	✓
95% of dairy farmers have a manure management plan	✓
95% of dairy farmers have Farm Health Plans	✓
30 dairy farms piloting on-farm anaerobic digestion	✗
100% of dairy farmers, through DairyCo, supporting research into new technologies	✓

target 50% of dairy managed farmland entered into Environmental Stewardship Schemes

result 61% target achieved

Result: 61% achieved ✓

According to Natural England, there are 4,962[2] agreements in place where dairy farmers are currently part of an Environmental Stewardship Scheme (ESS). The total area of dairy holdings in ESS is 595,018ha, which represents 61% of the total area of holdings classified as 'dairy'.

2 Data up to the end of 2010 on holdings where the dominant activity is dairying (according to Defra classification of farm type). There will be a few other holdings where dairying takes place but it is not the dominant enterprise. Natural England (NE) statistics do not hold information on agreements by farming type, so this analysis compared NE data against Defra classification data. A caveat with the data is the possibility of holdings having more than one agreement, potentially inflating some of the numbers.

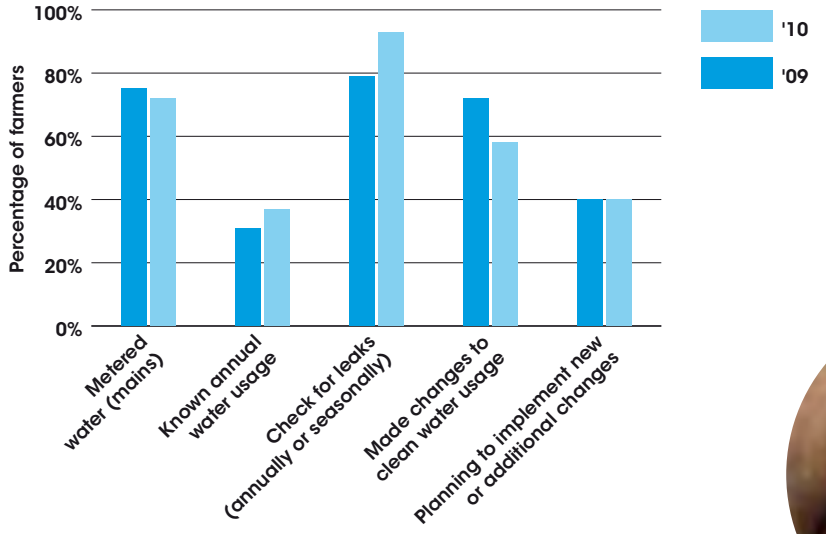
target 5-15% uptake of water use efficiency measures

result 58% target achieved

Result: 58% of respondent farms made changes to make better use of water in the last 12 months ✓

DairyCo undertook its first Water Use Efficiency Survey in 2009. Farmer members of DairyCo Business Groups across England (450 farmers) received a copy of the survey and of these 146 were completed and returned. The 2010 survey was sent to 9,639 dairy farmers in England and 592 farmers completed the survey. It is not possible to undertake a direct comparison between years as the sample sets were so different, however, Figure 2 presents some of the findings.

Figure 2: Water use efficiency on dairy farms in England



Although the figures cannot be directly compared, the survey results indicate that dairy farmers are making positive steps in the way that they use dairy-related water on-farm. According to the 2010 survey:

- 93% of farms checked for leakage either annually or seasonally
- Around three quarters of farms used mains water, while approximately a quarter used other water sources exclusively
- 37% of farms monitored their water usage
- 58% of the farms responding had made changes to make better use of water in the previous 12 months and 40% were planning to implement new or additional changes in the future

Water is the one of the Earth's most precious resources and dairy farmers understand its importance – mains water supply costs average dairy farms £31/cow/year and can be as much as £100/cow/year[3].

With recently observed changes in rainfall patterns and costs associated with the disposal of waste water, it is important for farmers to consider and evaluate water use on-farm to ensure that it is being used in the most efficient way.

An ongoing DairyCo study (carried out by the E-CO_2 project) investigating carbon footprinting on GB dairy farms suggests a saving of £200-£500 can be made by implementing rainwater harvesting techniques. Further information on effective use of water on dairy farms will continue to be provided by the industry and DairyCo will undertake its Water Use Efficiency Survey on an annual basis.

3 Source: DairyCo Annual Water Use Efficiency Survey

target 65% dairy farmers are actively nutrient management planning

result 65% target to be achieved

Result: It is expected, when results are available, that 65% of farms will be actively nutrient management planning ✓

The development of tools to assist farmers, the regulatory impact of Nitrate Vulnerable Zones (affecting about 70% of English dairy farmers), slurry storage challenges, weather impacts and spiralling input costs have led to an increasing uptake of nutrient management planning (NMP).

Sixty per cent of dairy farmers responding to the 2009 Defra farm practices survey had a nutrient management plan. This is higher than the average across the agricultural industry as a whole (Table 1).

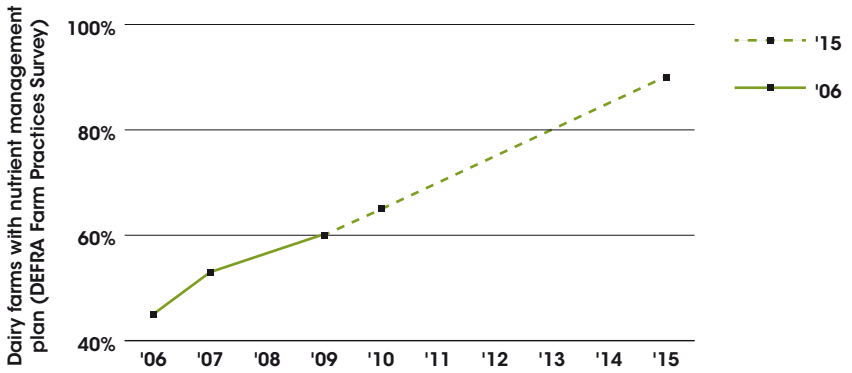
In addition, 77% of dairy farmers are regularly testing their soils, suggesting that some of those without a formal nutrient management plan in place are engaging with some of the elements of nutrient management planning.

Table 1: Components of nutrient management planning in 2009 (% of all holdings)[4]

	Have nutrient management plan	Take professional advice for NMP	Annually update NMP	Regularly soil test
Dairy	60	75	53	77
All farms	51	80	65	68

The dairy industry is still collating data for 2010 but is expected to meet its target of 65% of farms actively nutrient planning. This is projected to increase to 90% by 2015 (Figure 3).

Figure 3: Percentage of farmers using nutrient management plans, and projected progress towards future targets.



Industry nutrient management campaign coordinator for 'Tried & Tested', Rebecca Wells, NFU, says:

"Successful progress towards the nutrient planning targets demonstrates producers' positive response to industry-led initiatives.

"Dairy farmers are clearly contributing to improving standards of good nutrient management and forging a way forward in reducing the environmental footprint of milk and milk products.

"Continued on-farm focus and support from industry partnerships such as 'Tried & Tested' will be necessary, but achievements to date display the enthusiasm and dedication of the dairy sector in meeting these challenges."

4 Source: Defra Farm Practices Survey

target 95% of dairy farmers have a manure management plan

result 96.6% target achieved

Result: 96.6% achieved ✓

Pass-rate figure at full farm assurance audit for manure management plans in 2010 is 96.6%[5] representing a small improvement on the 2009 figure of 94.8%. Most non-conformances are due to a lack of detail as opposed to the absence of a manure management plan.

Farm assurance is a pivotal part of every dairy farming enterprise and farmers recognise the value and importance of complying with the rigorous assurance standards.

NFU Chief Dairy Adviser, Hayley Campbell-Gibbons, says:

"Dairy farmers see nutrient management as an important part of running their businesses. Farmers can reduce the use of bought-in fertiliser and boost the use and nutrient value of manure and slurry.

"The result is increased grass growth and reduced input costs. It is a win-win for everyone."

5 ADF figures are based on pass rates at full assessments. At point of certification, assured producers should actually be 100% compliant. A remedial period is given after the first full assessment to allow non-conformances to be put right and for certification to be continued. Evidence of rectification must be submitted.

target 95% of producers have a Farm Health Plan

result 94.9% target achieved

Result: 94.9% achieved ✓

The pass-rate figure at full audit for Farm Health Plans in 2010 was 94.9%[6]. Most non-conformances are again down to lack of detail rather than the absence of a Plan.

In April 2010 a requirement for dairy farmers to collate the number of cases of the key health conditions of lameness and mastitis was introduced. It is also now a requirement to determine the culling rate along with the main reasons for culling. This requirement is to encourage farmers to use their herd health records actively within the review element of the herd health planning process and will contribute to more effective and better prioritisation.

There are already a number of initiatives available to dairy farmers to assist them in maintaining high standards of animal health and welfare, including the DairyCo Mastitis Control Plan, mobility scoring and Johne's initiatives.

Proactive farm health planning is further encouraged by the Cattle Health and Welfare Group comprised of farmers, veterinarians, levy body and agricultural industry representatives. A number of retailers have also developed schemes to ensure high levels of health and welfare among their suppliers.[7]

Derek Kennedy, Executive Officer, Assured Dairy Farms says:

"Proactive Herd Health Planning is a fundamental component of the Red Tractor Dairy Farm Assurance Scheme, as it addresses the many health and welfare challenges facing dairy producers.

"While first and foremost improving herd health and welfare benefits to the cows directly, milk production will also be maintained/improved and involuntary culling rates reduced, improving farm efficiency.

"This boosts the economic performance of the business and benefits the environment through lower emissions per unit of milk output."

6 ADF figures are based on pass rates at full assessments. At point of certification, assured producers should actually be 100% compliant. A remedial period is given after the first full assessment to allow non-conformances to be put right and for certification to be continued. Evidence of rectification must be submitted.

7 Source: ADF compliance data, Farm Health Planning Group

target 30 dairy farms piloting on-farm anaerobic digestion

result 9 target not achieved

Result: Nine anaerobic digesters in operation ✘

There are currently nine on-farm anaerobic digesters[8] (AD) functioning in England.

When the Milk Roadmap was launched in May 2008, it was anticipated that AD would be heavily incentivised; however, this has not been the case and incentive schemes are only now coming forward.

Since April 2010, Feed-in Tariffs (FITs) have provided a guaranteed price for a fixed period to small-scale electricity producers. This was intended to encourage the provision of small-scale low carbon electricity, for example, by farmers with anaerobic digesters. However, the initial tariffs for AD facilities were considered inadequate by many and will be revisited during the Government's fast-track review of the FIT scheme, with the results expected in July 2011.

In March 2011 the Government announced the details of the Renewable Heat Incentive, the first financial support scheme for renewable heat of its kind in the world. The £860 million available is intended to provide incentives for systems using alternatives to fossil fuel. Farmers with anaerobic digesters could benefit from this either domestically or by supplying neighbouring buildings with hot water.

Industry experts expect rural communities in particular to benefit from the Renewable Heat Incentive, since many 'off-grid' homes and businesses not connected to the gas network have a limited and expensive choice of fuels at present.

David Ball, Farm Manager, Kemble Farms Ltd says:

"*We strive to get maximum use from all resources, including the slurry generated from our 750 cow dairy unit.*

"*The outputs from the 300kW AD plant, are digestate, electricity and heat. The electricity is exported to the National Grid and is sufficient to power 250 homes.*

"*The benefits to the farming business are increased fertiliser efficiency from the digestate and an additional income stream. We are currently investigating uses for the heat.*"

8 Source: NNFCC AD plant map

target 100% dairy farmers, through DairyCo, supporting research into new technologies

result
target achieved

Result: Increasing investment of the farmer levy by DairyCo in this area ✓

DairyCo makes a substantial investment in research and development. It now commits 16% of annual levy income to research and development and this will rise dramatically in 2011/2012 due to the development of two new Research Partnerships. The areas to be covered will be dairy cow health, welfare and nutrition and grass, forage and soil management.

Continued investment in research, development and knowledge transfer of new technologies is required to move the industry forward and improve the uptake of best practice measures.

target 20-30% of dairy farmers trialling new technologies to reduce emissions from agriculture

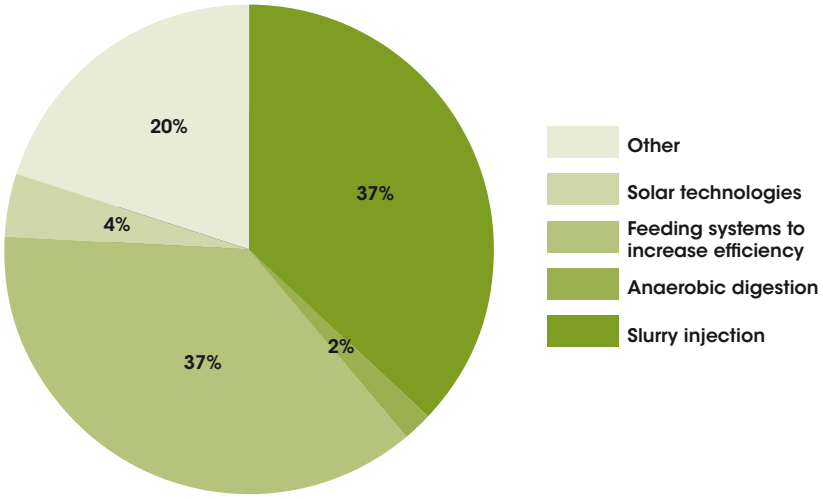
result 39.4% target achieved

Result: 39.4% achieved ✓

Although a 2015 target for dairy farmers, this target has already been achieved, demonstrated through an annual survey by DairyCo and has therefore been included here.

A question on the implementation of new technologies on-farm was included in the latest DairyCo Water Use Survey. The results showed that 39.4% of farmers had introduced other new technologies in the previous 12-24 months, including slurry injection, new feeding systems, anaerobic digestion and the use of solar energy (Figure 4).

Figure 4: Implementation of new technologies on farms in England (2010)[9]



Some examples of the answers given for the 'Other' category included new technologies such as wind turbines, heat exchangers, variable vacuum pumps, invertors on bore hole pumps, semi-total mixed ration (TMR) feeding systems with feeder wagons, robotic milking systems, ground source heat pumps, the use of activity meters (to measure cow activity using a sensor attached to cow's collar or ankle), dribble bars fitted to slurry tankers and satellite global position systems for fertiliser spreading.

9 Source: DairyCo Annual Water Use Efficiency Survey

processors

Dairy processors across the industry have been taking steps to minimise their environmental impacts, in line with the Dairy Roadmap targets and there has been significant progress.

Since the launch of the Milk Roadmap in 2008, dairy companies have made considerable investments in new dairy processing plant to improve resource efficiency and reduce emissions. Dairy companies have also worked hard to achieve their first set of targets by establishing a market for recycled milk bottles, significantly improving energy efficiency, improving the collection of data and reporting on progress. Through their trade body, Dairy UK, results and best practice are shared and reported on.

2010 also saw dairy companies focusing on the 2015 and 2020 targets through reducing water usage and increasing the levels of renewable energy used in processing. Dairy companies worked with a number of other bodies and sectors throughout 2010 in exploring future technology to reduce further the impact on the environment.

One of these initiatives will take dairy processing beyond the traditional carbon management and energy efficiency approach. This will look in detail at production strategies, processes and equipment to identify and implement innovative and novel technologies in dairy processing.

The industry continues to review progress and targets to ensure they are challenging and fit for purpose.

Jim Begg, Dairy UK Director General says:

"Dairy companies take their responsibility to reduce the impact of processing dairy products very seriously and have committed to meeting or beating the challenges set out in the Dairy Roadmap.

"Already processors have introduced recycled content into packaging and are improving efficiency across the board."

2010 targets for dairy processors

in summary...	
A minimum of 10% recycled plastic in milk bottles	✓
All processors will meet or beat energy and CO_2 reductions of the sector Climate Change Agreement	✓
Dairy UK will operate an environmental benchmarking and best practice performance programme which will publish an annual sustainability report providing evidence of progress towards targets	✓

target a minimum of 10% recycled plastic in milk bottles

result 10% target achieved

Result: 10% achieved in 2010 ✓

The dairy industry is leading the way in reducing the impact of packaging and reducing the amount of plastic used in plastic bottles.

Each year more than three billion high-density polyethylene (rHDPE) milk bottles are manufactured in the UK, using 120,000 tonnes of plastic. Over the past 10 years the dairy sector has saved thousands of tonnes of plastic through reducing bottle weights by 10%.

In 2007, the sector committed to introducing recycled content into plastic milk bottles and in 2010 achieved its target of 10% coming from recycled material. This means that consumers picking up their four pint milk bottle at any of the major retailers that recycle it, are helping the sector to reduce carbon emissions.

In addition, in 2010, over 70% of milk bottles purchased in the UK were recovered for recycling and more than 12,000 tonnes of plastic was recycled into fresh bottles.[10] This helped reduce emissions from packaging in the sector by 27,000 tonnes in 2010 alone.

The industry will continue to increase the levels of recycled plastic used across all its packaging over the next 10 years with continued support from waste companies, re-processors, blow-moulders and Government.

The beverage carton industry, through its industry association the Alliance for Beverage Cartons and the Environment (ACE UK), will also put forward targets for paper-based carton packaging. These will relate to the sourcing of wood fibre from well-managed forests and recycled sources.

Sustainability and Environment Committee Chairman, Richard Laxton says:

"Dairy companies have worked with bottle manufacturers, re-processors and retailers to close the loop on milk bottle recycling.

"Continued success will require the industry to work with waste companies and local government to ensure high quality milk bottles can be collected and recycled."

10 Source: Recoup (2010), UK Plastic Bottle Recycling Survey 2010, Waste and Resource Action Programme (WRAP)

target all processors will meet or beat energy and CO_2 reductions of the sector Climate Change Agreement

result 27% target achieved

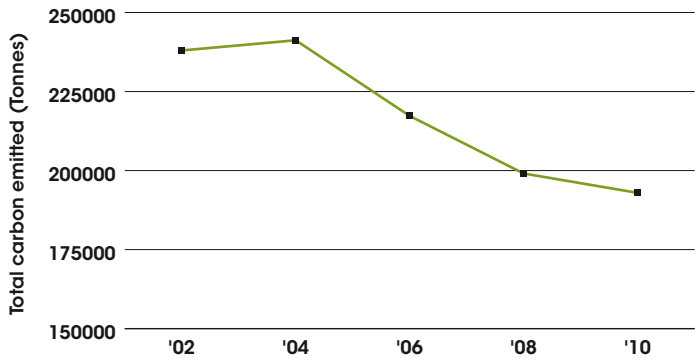
Result: 27% improvement in energy efficiency over 10 years ✓

Significant use of energy is required to pasteurise, manufacture and chill fresh dairy products. Since 2000, the dairy processing sector has been part of the UK's Climate Change Agreement, working with Government to improve the energy efficiency of processing and reduce emissions from the sector.

2010 saw the last reporting period of the current scheme and once again the dairy processing sector beat its target. In the last 10 years, processing sites across the UK have improved their energy efficiency by more than 27%, resulting in an annual carbon saving of 270,000 tonnes of CO_2 a year.

UK carbon reduction mechanisms are currently under review and the dairy sector is committed to working with Government to make continued improvements in energy efficiency and significant reductions in emissions.

Figure 5: Total annual emissions from dairy processing sector[11]



Gerry Sweeney, Chairman of Dairy Energy Savings says:

"Dairy companies have worked hard to meet challenging energy efficiency targets and significantly reduce carbon emissions in the processing sector.

"However you look at it, saving 270,000 tonnes of carbon dioxide a year from entering the atmosphere is a significant achievement. It demonstrates that dairy companies are committed to delivering results."

11 data from Dairy Energy Savings Ltd

target environmental benchmarking and best practice programme

result
target achieved

Result: Wide use of environmental benchmarking tool ✓

In 2009, Dairy UK launched an environmental benchmarking tool which allows dairy companies to measure, monitor and compare performance in resource efficiency.

Collecting data on water use, energy, waste and packaging, the tool ranks processing sites across the UK and establishes best practice against each of the key performance indicators.

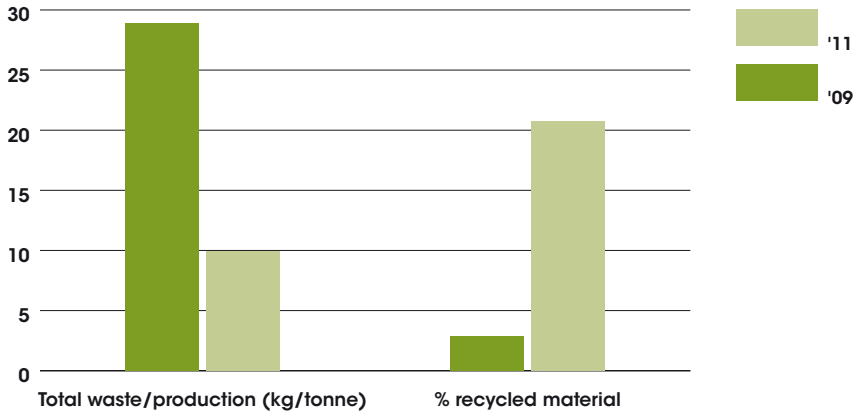
The benchmarking tool gives dairy companies the opportunity to compare their performance with others in the sector and identify areas for improvement.

In 2010, data was collected from 47 sites, covering 70% of UK processing as measured by milk volume:

Table 2: Specific water consumption of processing sites (m^3/tonne)

	Industry	Liquid milk	Cheese	Mixed dairy
2008	1.18	1.03	1.25	1.54
2010	1.29	0.86	1.15	2.36

Figure 6: Total waste per unit of throughput and total recycled material in 2009 and 2011



target annual sustainability report

result
target achieved

Result: First report published 2009 ✓

Dairy processors are committed to reporting progress on resource efficiency, above and beyond the targets measured in the Roadmap.

Each year, Dairy UK collates industry performance and publishes a sustainability report highlighting the progress of the sector. The first report, published in 2009, set the baseline for improvement and reported data covering 60% of UK processing. Data for 2010 showed improvements in waste recovery, packaging improvements and reduction in emissions. Copies of the reports may be downloaded from the Dairy UK website, www.dairyuk.org

retailers

Retailers have made significant strides in tackling the environmental impact of their dairy farms, processor suppliers and retail outlets. Retailer involvement has grown substantially in 2010 highlighting the importance of the Dairy Roadmap across the supply chain. The examples mentioned in this section detail just some of the efforts being made by retailers who are rising to the environmental challenge.

2010 targets for retailers

in summary...

All major multiple retailers should establish positive, direct (where appropriate) relationships with dairy farmers and processors	✓
All major retailers should recognise the work of the Roadmap and, where possible, incorporate targets within their own Corporate Responsibility targets, covering points such as greenhouse gas emissions, reductions in energy and water use and reduction in waste going to landfill	✓
All major retailers should consider the use of technological interventions to reduce CO_2 emissions associated with the transport of liquid milk	✓
Retailers should support supply chain delivery of environmental benefits	✓

target all major multiple retailers should establish positive, direct (where appropriate) relationships with dairy farmers and processors

result
target achieved

Result: Positive supply chain relationships established by all major multiples ✓

The objectives of these relationships are to improve transparency, communication and efficiency in the supply chain.

Agreements between retailers and their dairy farmers and/or processors add value and improve efficiencies associated with the production of dairy products.

Case study: ASDA

ASDA funds best practice groups for all of its supplying dairy farmers throughout Great Britain. Some benefits to participating dairy farmers include:

- Keeping abreast of developments in the industry
- Discussion and debate of the latest thinking
- Discussing issues affecting animal welfare and milk production at farm level
- Brainstorming ideas for individual case studies (ASDA farms)
- Exchanging ideas and solutions
- Adoption of best practice
- Helping to manage business change and development

In addition, ASDA undertakes carbon footprint measurement annually on a sample of its supplying farms and has been doing so for the last three years.

ASDA's dairy farmers have been encouraged to reduce water usage by rainwater harvesting and the use of bore-holes. Those farmers who are able to are using bore-hole water in the milk cooling process, as water from underground is usually cooler than mains water, thus saving electricity.

ASDA has also held study group meetings looking at alternative energy supply. This has resulted in several wind turbine installations, with many more in various stages of planning. There are also ongoing investigations into anaerobic digestion.

Chris Brown, Head of Ethical and Sustainable sourcing, says:

"At ASDA we hold over 100 meetings a year with our DairyLink farmers who supply the milk on ASDA shelves, jointly working on the solutions to the environmental issues facing the industry and how, together, we can make the necessary changes to secure a sustainable industry for generations to come.

"All links in the supply chain must play their part, this goes beyond competition."

Case study: Booths

In 2001, a small group of farmers from the Forest of Bowland formed their own company to develop their own brand of milk. Booths is involved in an initiative with Connect Plus, the consortium of milk suppliers that produces Bowland Fresh milk, to explore practical improvements that can be implemented on-farm to ensure sustainable dairy farming.

Case study: The Co-operative

The Co-operative is planning to implement a dedicated milk supply chain from August 2011. The Co-operative Food team is developing an approach that will deliver Co-operative farmers business opportunities and associated cost savings. They plan to undertake energy and water audits on-farm and carbon footprint measurement to help secure a sustainable future for their dairy farmers.

Tim Hurrell, Chief Executive Officer of Co-operative Food, says:

"Under our supply model, we will recruit a pool of farmers and, in partnership with our processors, develop long-term, transparent relationships. The foundation for this will be our own Food Ethical Policy and the dairy industry's Dairy Roadmap, with a focus on animal welfare, environmental stewardship and carbon footprint reduction."

Case study: Marks & Spencer

All dairy producers supplying M&S are encouraged to become more carbon efficient. This action underpins the global M&S Plan A agenda. All suppliers involved in the supply of conventional milk to M&S have undertaken a carbon footprint assessment and there are plans to undertake another footprint on these farms in 2011. Each supplier receives a report on their own farm and a benchmark comparison against the overall pool. This allows suppliers to evaluate their own performance against their contemporaries and consider potential areas of improvement.

Case study: Sainsbury's

Since 2007, Sainsbury's has been working closely with its 334 Sainsbury's Dairy Development Group (SDDG) farmers to reduce its environmental impact.

In partnership with independent consultant AB Sustain, Sainsbury's has developed an exclusive carbon footprinting model specifically for milk production. The model is accredited to the highest level (Tier 3) by the Carbon Trust and is based on a 'monitor, review and improve' cycle which is driving continual improvement and carbon reduction.

All SDDG farmers receive an annual carbon footprint assessment in order to identify areas of improvement, share best practice and track performance.

Between 2007 and 2010 the SDDG achieved direct savings of 8,500 tonnes of carbon dioxide equivalents (CO_2e) through improved farming efficiencies.

The SDDG has also achieved indirect savings of 36,757 tonnes of CO_2e through:

- A 2.3 day reduction in calving interval (24,757 tonnes CO_2e)
- Improved fuel efficiencies (468 tonnes CO_2e)
- Reduced fertiliser usage through improved soil and grassland management (11,352 tonnes CO_2e)

In terms of financial savings these reductions in CO_2e equated to an overall group saving of £1.2 million over the three years.

Following the success of the SDDG carbon footprinting project, Sainsbury's extended the initiative to include its 93 Sainsbury's Cheese Development Group farmers in 2010.

Annie Graham, Head of Agriculture for Sainsbury's, says:

"Sainsbury's is delighted with the depth and breadth of what we've achieved through our carbon footprinting initiative. It demonstrates how farmers can reduce their overall environmental impact, while becoming more efficient and making financial savings. A win-win for all parties."

Case study: Tesco

Tesco conducts an annual environmental survey of its milk suppliers, which in 2010, showed that 73% of farmers had made changes to their management of clean water in the previous 24 months. Progress includes:

- 84% of Tesco Sustainable Dairy Group members re-use plate cooler water
- 40% re-use wash water
- 26% harvest rainwater
- 84% are actively preventing clean water from entering the slurry lagoon (without causing any negative impact on the environment)

In addition, a large proportion of Tesco farmers recycle non-natural waste:

- 16% recycle between 60-80% of non-natural waste
- 43% recycle between 80-100% of non-natural waste

Tesco is in the process of measuring the individual carbon footprints of most of its dairy farmer suppliers. Through Tesco's direct supply arrangements, it is possible to use existing and new data collected from 420 farms (which supply more than 50% of Tesco's milk) to identify an individual carbon footprint.

Once farmers have this information, they will be able to compare their performance within the group and identify those areas where they perform well and any areas for improvement. A best practice guide will be issued to producers, detailing potential areas of focus on-farm.

The commitment of the Tesco Sustainable Dairy Group is further reinforced by Tesco's work with Liverpool University through its 'Dairy Centre of Excellence'. This exclusive agreement brings together the dairy sector to look at issues from animal welfare to consumer trends.

Michelle Waterman, Agricultural Manager for Tesco, Dairy, says:

"Through the Tesco Sustainable Dairy Group we are committed to supporting our dairy farmers in today's challenging world and this includes helping them address the issue of climate change.

"The Tesco Sustainable Dairy Group and our Climate Change Team are working in partnership to address this issue, conducting ground-breaking research, providing practical support and sharing best practice. We support the industry's Dairy Roadmap and its role in bringing the industry together to tackle carbon reduction challenges."

Case study: Waitrose

Waitrose operates a small, segregated supply chain which facilitates knowledge transfer events and general sharing of best practice.

The entire Waitrose conventional dairy farming group has carried out carbon footprint measurement. Different models are currently being trialled by the organic group with the aim of all organic farms being carbon footprinted in 2011.

Output from this carbon work is used to highlight opportunities to drive efficiencies and optimise performance on-farm. Waitrose dairy farmers are very positive about the environmental initiatives and particularly strong on farm wildlife diversity.

Duncan Sinclair, Agriculture Manager for Waitrose says:

"All Waitrose dairy farmers take great pride in their environment - dedicating time and energy to manage their farms in a positive and responsible way that safeguards the countryside and encourages increased numbers and varieties of wildlife."

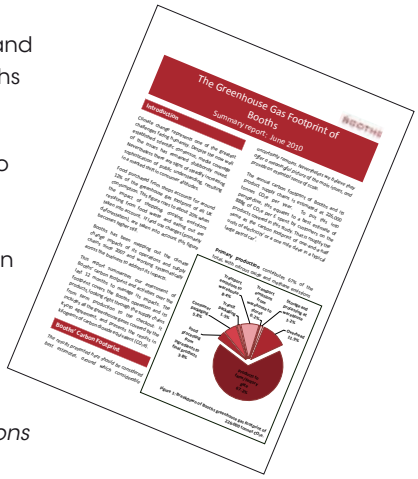
target all major retailers should recognise the work of the Roadmap and, where possible, incorporate targets within their own Corporate Responsibility targets

result
target achieved

Result: Increased retailer commitment to the Roadmap ✓

A large number of retailers recognise the importance of the Dairy Roadmap and 2010 has seen five more commit to the current targets and agree to be involved in the modification or development of future targets.

Case study: Booths


The Greenhouse Gas Footprint of Booths
Summary report, June 2010

Booths carried out a detailed greenhouse gas mapping of operations and product supply chains and the full report is publicly available from Booths website, www.booths.co.uk

Since 2008 Booths has been working systematically across its business to manage environmental impact and to integrate its response to climate change and other sustainability issues into business activity. The report details actions across the business, which is estimated to have resulted in around a 5% reduction in GHG emissions year on year.

Edwin Booth, Chairman of Booths, says:

"*Since 2006 we have taken a practical and comprehensive approach to understanding the greenhouse gas emissions of our retailing operations and for all product groups.*

"*We have made the results publicly available. We are now implementing decision support methodology to reduce GHG impact so as to maintain a satisfactory level of choice for consumers.*"

Case study: The Co-operative

The Co-operative has been involved in the recycled High Density Polyethylene (rHDPE) part of the Roadmap since June 2009 when WRAP held a summit meeting of retailers, dairy companies, bottle blowers and recyclers.

The Co-operative has supported and encouraged the increased use of rHDPE and its milk bottles currently contain 10%, to comply with 2010 Roadmap targets. Work is being undertaken to move towards 15% rHDPE in milk bottles in future.

The Co-operative is also working with suppliers to use lightweight bottles and caps to reduce their environmental impact and is actively involved in the development of the On Pack Labelling for Recyclability (OPRL) system to help to improve recycling rates of all packaging, including milk bottles and milk cartons.

target all major retailers should consider the use of technological interventions to reduce CO_2 emissions associated with the transport of liquid milk

result
target achieved

Result: Technological innovations have led to major reductions in emissions ✓

Road haulage is a major contributor of CO_2 emissions and considerable reductions have been achieved from transport improvements of dairy products, with retailers improving transport efficiency by moving more goods with fewer vehicles. In conjunction with processors, retailers are implementing or trialling:

- Computer tracking of drivers to ensure most efficient use of accelerator and brakes to minimise diesel usage
- Route planning to minimise raw milk collection from farm and delivery to store or reduce deliveries to stores by convening collections at depots and dispatching with other chilled goods
- Improved aerodynamics on vehicles to reduce diesel usage
- Use of dual fuel vehicles

Case study: Marks & Spencer

Positive steps are being taken by M&S hauliers to reduce the impact of milk transportation on the environment. Actions include the replacement of the milk collection fleet fitted with Euro 5 engines (the cleanest lean burn engines currently available), the introduction of telematics, the closer monitoring of vehicle use, driver training targeted at habits that could otherwise lead to inefficient burning of fuel and modification to speed limiters reducing the top speed of vehicles from 56mph to 52mph. In addition and where practically feasible, consideration is also being given to the use of alternative energy sources e.g. biodiesel.

Steve McLean, M&S Agriculture Manager, says:

"M&S and our suppliers both recognise the importance of adopting practices that minimise the impact on the environment.

"By working closely together we aim to protect the environment while delivering an efficient and sustainable supply chain for the future."

target retailers should support supply chain delivery of environmental benefits

result
target achieved

Result: Retailers lead by example on waste and packaging ✓

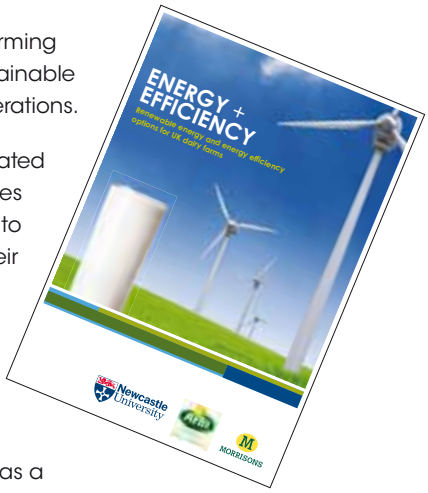
Retailers are committed to not sending waste to landfill and have made significant progress in this area in recent years. They are also actively encouraging consumers to recycle, with the introduction of improved recycling facilities at retail stores across the UK. Most retailers already re-use and/or recycle cardboard and plastic from their operations and are striving to ensure that waste is diverted from landfill.

Retailers and their suppliers are signatories to the Courtauld Commitment – a responsibility deal aimed at improving resource efficiency and reducing the carbon and wider environmental impact of the grocery retail sector. Retailers are working in partnership with Waste and Resource Action Programme (WRAP) to develop new packaging systems and technologies across the whole supply chain. All participating retailers are operating at the minimum of 10% recycled plastic (rHDPE) and some would be operating at 15% if they could source the volume of recycled material required.

Case study: Morrisons

The Morrisons Farming Programme is a cross farming industry initiative aimed at helping build a sustainable British farming industry able to feed future generations.

Morrisons' dairy farmer groups are highly motivated by opportunities to increase use of different types of renewable energy, recognising the potential to boost farm business profitability and reduce their impact on the environment.



Morrisons' Energy + Efficiency: Renewable energy and energy efficiency options for UK Dairy Farms report indicates that greater use of renewable energy has the potential to help dairy farmers cut costs by as much as 30%, a yearly saving of over £3,000 on a typical dairy farm. This report is proving to be immensely popular and is acting as a catalyst for further activity. Potential annual CO_2e savings of nearly 13 tonnes could be made on a typical dairy farm from making efficiencies in areas such as vacuum pumping, cooling, water heating and lighting.

Arla farmer supplying Morrisons, Robert Morris-Eyton, said:

"This report has answered a lot of the questions I had about energy efficiency and renewable technology and it has given me some excellent practical advice on notoriously complex areas such as grid connection."

consumers

Consumers have their own part to play in reducing the environmental impact of the dairy industry.

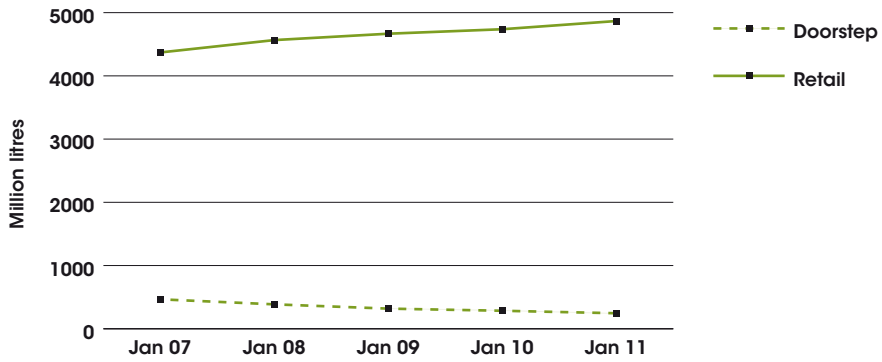
Dairy consumption is driven by consumers who express their preferences in the market for different types of products. Consumer preferences change over time for a variety of reasons including relative prices, convenience and health and ethical (including environmental) considerations. These factors alter consumption patterns which in turn affect changes in dairy's environmental impact.

Our understanding of these environmental impacts remains incomplete but there is a great deal that consumers can do themselves to reduce the environmental impact of dairy products; campaigns like 'Love Food Hate Waste' led by WRAP are aimed specifically at reducing household food waste, for example. Liquid milk (74%), yogurt (10%) and cheese (5%) account for around 90% of household dairy consumption in the UK, measured in grams per person per week.

Milk

Milk consumption over the long term has been declining, although data for 2010 indicates there was an increase in household consumption compared with 2009 (Figure 7). Doorstep delivery now accounts for less than 5% of the milk market, indicating that the majority of people shop for milk at supermarkets (around 65% of the market) and convenience stores (around 23% of the market).

Figure 7: Retail and doorstep milk sales[12]



Some key market trends that will impact on milk's environmental footprint include:

- Consumers switching from whole milk to skimmed and semi-skimmed milks
- Increasing domination of the market by retailers' own label products, although consumers now have access to a greater range of products, choosing between different pack sizes, organic options and reduced fat options
- Increasing shelf life of milk as the efficiency of supply chains has improved and new milk products like filtered milk are increasing their market share.

12 Source: DairyCo

About 5% of the greenhouse gas emissions from milk across its complete life cycle arise from consumption (3%) and disposal (2%). The 3% of emissions arising from consumption include:

- Cooking – milk is cooked for a variety of reasons, though the three most popular uses for milk are tea/coffee, on breakfast cereals and on its own as a cold drink which do not involve cooking
- Storage – which will involve refrigeration, as milk will be kept in domestic fridges, which will have varying degrees of efficiency
- Transportation – milk is a staple purchase bought from a variety of grocery outlets – one estimate suggests that transporting food from retail outlets to the home involves around 10 billion car kilometres a year, thereby making a significant contribution to emissions[13]

Around 2% of emissions arise from disposal. While only accounting for a relatively minor proportion of emissions, figures from WRAP show that milk is the greatest single food type poured down the sink and drain by households (some 330,000 tonnes a year or about 25% of all liquid food types). All of this milk waste, including the embedded carbon and water, can be avoided if it is better managed and stored in the home, e.g. bought little and often.

Yogurt

Yogurt consumption has increased by about one-third over the last 10 years and continues to grow. Yogurt overtook cheese in about 1990 as the second most important consumer product derived from raw milk. It is not clear what proportion of greenhouse gas emissions arises from yogurt consumption; because of the flavouring typically added to yogurt, it is possible the footprint has a different profile from milk. WRAP data indicates that around 74,000 tonnes of yogurt are wasted by households, the vast majority of which is avoidable because it relates to product not being consumed by its 'use by' date.

Cheese

Cheese consumption has increased slightly over the long term and was also about 3% higher in 2010 compared with 2009. The market is dominated by Cheddar sales. It is not clear what proportion of greenhouse gas emissions arise from cheese consumption though it is unlikely to be significantly different from milk. WRAP data indicates that around 36,000 tonnes of cheese are wasted by households, the vast majority of which is avoidable for the same reasons as yogurt.

Primary packaging on these products is disposed of by households. The UK currently recycles 33% of its household waste, which is almost double the amount recycled five years ago. The amount of household waste recycled or composted in England has tripled from 57kg to 157kg per person over the same period. An increasing number of local authorities now collect food waste as part of their recycling activity.

Milk bottles constitute the largest amount of waste packaging emanating from dairy products but are widely recycled. Yogurt pots are typically made from polystyrene and as there are limited reprocessing facilities that can deal with mixed plastics, these are not yet widely collected by local authorities. Cheese is often vacuum packed and can be covered in a wide variety of material including plastic and paper/cardboard. Typically such material can be recycled, although it is not widely collected.

13 Source: Pretty et al., (2005)

the road ahead

The dairy supply chain has made significant progress since it set out its Milk Roadmap in 2008. Indeed, that report's evolution into the Dairy Roadmap indicates the extent to which the whole industry has bought into the need to reduce its environmental impact and introduced wide-ranging initiatives to do just that.

But the Dairy Roadmap must not be set in stone. The industry must continue not only to challenge itself but also to adapt to external factors.

Using the Dairy Roadmap to support the Greenhouse Gas Action Plan

The 2009 UK Low Carbon Transition Plan sets out how the UK will meet the emissions reduction target of 3 million tonnes CO_2e for agriculture by the third carbon budget (2018-2022).

The Greenhouse Gas Action Plan (GHGAP) details the agricultural industry's commitment to a voluntary approach to secure this reduction by 2020, without compromising domestic production.

The GHGAP comprises 19 agricultural organisations and this group published a Framework for Action in February 2010. The objectives of the GHGAP are to establish a robust partnership to achieve a voluntary approach that encourages the adoption of practices that increase production efficiency.

The Dairy Roadmap provides a vehicle for delivery of the Greenhouse Gas Action Plan's targets in the dairy sector. The Dairy Roadmap is a 'living document' and will be updated at regular intervals, ensuring that it and the GHGAP are aligned and remain challenging and forward-looking.

future Dairy Roadmap targets

Dairy farmers 2015

Target	Data	Details/limitation
65% of dairy managed farmland into Environmental Stewardship Schemes	Natural England data	Options available will determine uptake - Making Environmental Stewardship More Effective (MESME) may have an impact. The proposed greening of the Common Agriculture Policy (CAP)
90% of producers have nutrient management plans in place	Assured Dairy Farms data	Non-conformances
20-30% of producers trialling new technologies	DairyCo annual survey and carbon footprinting study	Uptake dependent on investment in R&D and advances in feeding technologies as well as impact on farm businesses, dairy cow yields and herd performance
Continued declining trend in serious pollution incidents on-farm	Environment Agency data	Existing trend data for 2008/2009 can be obtained from the Environment Agency (EA). Limitation may be availability of data from the EA
Dairy farmers encouraged to calculate carbon footprints	Engaging with carbon footprint tool providers and retailers to capture positive efforts	Farmer understanding of carbon footprints, how they can be used to assist farming businesses and not be seen as a threat

Dairy farmers 2020

Target	Data	Details/limitation
20-30% reduction in GHG (carbon dioxide equivalents including CO_2, CH_4, N_2O) balance* from dairy farms between 1990 and 2020	UK National Inventory for Agriculture/DairyCo carbon footprinting study	Climate change events or disease outbreaks may impact on achievements of this target
70% of non-natural waste is recycled or recovered as standard practice	DairyCo Annual Survey	This target will be challenging if recycling infrastructure is not put in place
40% of energy used on dairy farms is from renewable sources	DairyCo Annual Survey	Dependent on infrastructure, ability to invest and incentive availability

* Source: Milk Roadmap report (2008). A carbon footprint (or GHG balance, depending on the range of GHG considered) measures emissions per unit of product, from all aspects of production up to the farm gate and onward throughout the supply chain to the consumer. There are a number of interventions available to dairy farmers that provide an opportunity to reduce carbon dioxide equivalents (CO_2e) per litre of milk produced.

Processors 2015

Target	Data	Details/limitation
Every major liquid milk processing company will have in place an Environmental Management System (EMS) covering carbon, energy, water, effluent, waste and packaging, with large processors progressing to an externally certified/verified EMS by 2015	Environmental benchmarking	
Small and medium enterprises (SME) investigating EMS	Environmental benchmarking	Dairy UK to encourage SME to adopt EMS
Remove all hydrochlorofluorocarbons (HCFC) at large processors	Environmental benchmarking	Improved definition of target in original Roadmap document. Good progress at processors: Replacement of R22 with drop in replacements – R417 and R422D HFCs. Some dairies replacing with ammonia glycol systems (R717) and some dairies trialling natural refrigerants (CO_2)
All processors will meet or beat energy and CO_2 reductions of the sector Climate Change Agreement (CCA)	Environmental benchmarking	Discussions with DECC ongoing regarding CCA, could radically alter approach, and may affect other Roadmap targets (e.g. renewables, packaging) and will impact on anything using energy
20% reduction of Chemical Oxygen Demand (COD) in pre-primary treatment effluent for large processors	Environmental benchmarking	Environmental benchmarking will show results – extra line incorporated into benchmarking to ascertain level of achievement
Implement carbon management programme and benchmark efficiency for large processors	Already implementing carbon management programmes and benchmarking tool	Develop new targets
To send zero ex-factory waste to landfill where environmentally advantageous for all large processing sites	Environmental benchmarking	Challenging for smaller and more remote sites. Some dairy sites have achieved already and many others at 90% + recycling and recovery
20% absolute reduction of water brought onto site	Environmental statements	Improved definition of target in original Roadmap document, some dairies now reusing water from process and effluent treatment for grey water applications
Three anaerobic digesters at processing sites	Processor data	Improved definition of target in original Roadmap document, two running, one commissioning in 2011, more could be planned
Renewable energy generated on site or under a specific arrangement between the purchaser and the generator	Environmental benchmarking	Logistics of establishing renewable energy generation and ability to invest
Environmental Management System to be encouraged for small and medium processors and externally certified for large processors	Dairy UK workshops for small and medium processors to help them work towards targets	Currently working towards this target
30% recycled material in packaging	Refers specifically to plastic milk bottles so will be developing alternative packaging materials	Sourcing of the amount of recycled plastic needed is becoming challenging

Processors 2020

Target	Data	Details/limitation
To send zero ex-factory waste to landfill	Environmental benchmarking	Will be challenging but processors trying to reduce waste
All processors will meet or beat energy and CO_2 reductions of the sector Climate Change Agreement (CCA)	Environmental benchmarking	Changes to the management of CCA may impact on the success of this target, therefore, may need reviewing
Processors to achieve an absolute reduction in water use of 30% brought onto site	Environmental benchmarking	Improved definition of target in original Roadmap document, some dairies now reusing water from process and effluent treatment for grey water applications. Processors to examine reuse of water in food contact areas
50% recycled material will be used in packaging materials	Environmental benchmarking	Sourcing of the amount of recycled plastic needed is becoming challenging
All tertiary packaging is to be reusable or recyclable	Environmental benchmarking	Working with WRAP and packaging manufactures to develop new packaging types which are readily reusable or recyclable
Processors will reduce transport emissions per litre of milk by optimisation or vehicles and transport routes	Environmental benchmarking	Dairy companies will work with haulage associations to develop targets for reducing the impact of transport
10% of non-transport energy use to come from renewable sources	Environmental benchmarking	Significant progress being made: AD plant at BV Shaftesbury operating successfully, trials at four other dairies completed or in progress, biomass power installed at Davidstow and wind turbine operating at Dewlay Cheese
All liquid milk processing sites will carry out benchmarking of Biochemical Oxygen Demand (BOD) and Chemical Oxygen Demand (COD) discharged per tonne of product	Environmental benchmarking	Data already collected through Dairy UK Environmental Benchmarking tool
The COD load in discharged effluent will be reduced by 20% at all liquid milk processing sites	Environmental benchmarking	Environmental benchmarking will show results – extra line incorporated into benchmarking to ascertain level

Retailers 2015

Target	Data	Details/limitation
Retailers should look to reduce emissions from existing retail stores – including new refrigeration technology and interventions	Corporate Social Responsibility (CSR) reports	Most retailers are carrying this out already so may wish to consider generating a new target
All major retailers should explore options to increase the amount of recyclate used and encourage recyclability, in product packaging from a 2007 baseline to close the recycling loop	CSR reports	Most retailers are exploring options

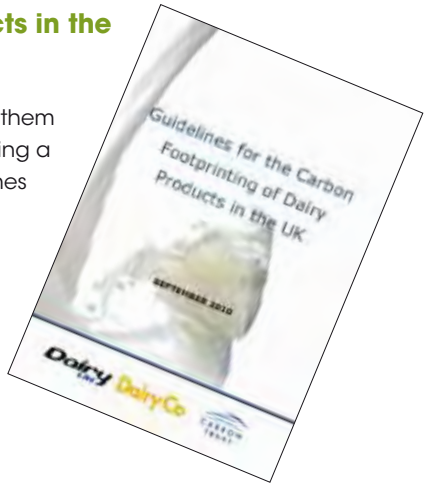
Retailers 2020

Target	Data	Details/limitation
Retailers should make visible commitments to support environmental achievements by their suppliers	CSR reports/farmer data	Retailers are capturing this data as highlighted in the case studies in this report
Retailers should make a commitment that all new stores built between 2008 and 2020 will emit less carbon than an equivalent store in 2006	Environmental data/CSR reports	Retailers are committed to this target, so may wish to consider generating a new target

other industry initiatives

Guidelines for the carbon footprinting of dairy products in the UK (published September 2010)

The guidelines are being used by dairy processing companies to help them measure carbon emissions across their supply chains. As well as ensuring a consistent approach to carbon footprinting in the industry, the guidelines are designed to help those involved at every stage of production to understand the importance of carbon footprint measurement and explain how it is done in a clear and accessible way.



Dairy UK Policy Director, Peter Dawson says:

"Dairy companies and their farm suppliers are committed to reducing the environmental impact of dairy products in the UK and this guidance document will help the sector measure, monitor and manage carbon out of the supply chain."

DairyCo carbon footprinting study (September 2010-March 2013)

DairyCo is investing considerable time and funds in a three-year project to determine the carbon footprints of 415 dairy farms varying in size, system and geographical location.

The findings of this study will be shared with all British dairy farming businesses to ensure that they can all benefit from the work.

DairyCo anticipates that there will be 'win-win' of efficiencies and environmental savings on the participating farms. The information gained from this project will aid all dairy farmers in identifying key areas for improvements that can be implemented at little or no cost.

DairyCo research and development manager, Dr. Karen Wonnacott, says:

"This project will enable us to identify key 'hot spots' on-farm to improve business efficiency, which will also reduce the farm's carbon footprint.

"The GB dairy industry is already a world leader in its efforts to tackle the environmental impact of dairy farming and this project demonstrates our continued commitment to reducing our carbon footprint.

"It shows that we are a responsible industry, committed to actively addressing the environmental challenges we face."

Dairy 2020

A number of leading organisations in the dairy industry have agreed to collaborate to develop thinking about sustainability. Dairy 2020 is an initiative designed to identify key strategic short, medium and long term objectives and accompanying action plans for the development of a profitable, environmentally and socially sustainable dairy industry.

Corporate Communications Manager for Volac, Andy Richardson says:

"This important initiative aims to develop a common understanding of what will make a successful and thriving industry.

"This will enable clear and consistent messages to be communicated and aims to answer the question, 'what does a sustainable dairy industry look like?'"

further work and potential developments

There is currently significant debate surrounding issues such as the sustainable sourcing of proteins and carbon sequestration of agricultural land. The 'living' nature of the Dairy Roadmap places the dairy industry in a strong position to address and overcome some of these challenges.

As the science progresses, knowledge in specific areas improves and farmer, processor and retailer behaviours change; targets will need to be updated, modified or new ones developed. The requirement for relevant and focused research and development is as important as ever and will ensure the sustainability of our dairy industry into the future.

The future of our industry looks bright!

The tremendous efforts of the entire dairy supply chain have been detailed in this report and we are now seen as international leaders in reducing the environmental impact of dairy. However, the momentum must be maintained in order to ensure the dairy sector continues to meet and exceed the targets laid out in the Dairy Roadmap and to ensure we all profit from a sustainable future!

Additional copies of this publication can be obtained from:

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