

**Monaghan County Council
Environmental Services**

FARMING THE ENVIRONMENT

**“How to protect the
environment, prevent
waste, save money”**



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Cyclus Papers are from 100% post consumer recycled waste



FOREWORD

Matt Carty Monaghan County Mayor



A chairde,

Ba mhaith liom fáilte a chur roimh an Leabhrán ar Bhainistíocht Dramhaíola agus chun gach duine a bhí páirteach leis an obair seo a mholadh.

Monaghan County Council is proud to launch this Farm Waste Management Booklet and we hope that it will prove to be a

useful resource for our farming communities.

The booklet is part of Monaghan County Council's Local Authority Waste Prevention Programme (LAPD) which is 75% funded by the EPA with the remaining 25% funded by Monaghan County Council.

I want to commend the Co. Monaghan IFA and those individual farmers who assisted in bringing this

project to fruition. I also want to thank the staff in the council's Environment Section for their efforts.

We hope that the information in this booklet will assist farmers in their work and just as importantly help reduce consumption and thereby save money in the running of farms.

This document has the aim of educating and creating awareness of prevention and sustainable use of resources in the farming community. It can also be used as a reference booklet for any waste management questions that farmers may have.

I want to take this opportunity to offer my best wishes to the farming families of County Monaghan and to thank you all for the invaluable contribution you make to our county and our communities. Gach dea-ghuí chuig feirmeoir Chontae Mhuineacháin agus a gclanna.

Is mise,

**Cllr. Matt Carthy,
Meara An Chontae Mhuineacháin,
Monaghan County Mayor.**

Monaghan Co Co is one of 14 local authorities funded under the Local Authority Prevention Demonstration Programme to find efficiencies in how various sectors of Irish society use resources.

Further information on these and other National Waste Prevention Programme projects is available on www.prevention.ie. This booklet identifies the various opportunities that exist for farmers to assess how they can maximise profitability while at the same time improving their environmental performance.

Irish farming is facing challenging times with increasing costs for farm inputs and environmental services. It's also a challenging time worldwide as we begin to tackle climate change.

FOREWORD

The solution to both is linked, we need to reduce the amount of each resource we use and be more efficient with the resources we do use in order to prevent waste and protect the environment.

Inevitably some waste materials arise and the best option is to recycle them. Additionally, some materials may have hazardous properties and require special treatment. Through its work on National Hazardous Waste Management Plan, the EPA is committed to working with all stakeholders to find cost efficient ways of dealing with these materials.

I would like to congratulate Monaghan Co Co and all involved in the production of "Farming the Environment" and wish the farming sector every success in preventing waste.

Sincerely,

**Dr. Gerry Byrne
Programme Manager
Environmental Protection Agency**

Declan Nelson Monaghan County Manager



The Local Authority Prevention Demonstration Project (LAPD) funded jointly by the Environmental Protection Agency and Monaghan County Council has been working closely over the past number of months with a number of community, business groups and agricultural enterprises in County Monaghan on programmes for the

reduction and prevention of waste. The project is based on the recommendations contained in the North East Waste Management Plan.

Reducing and preventing waste not alone helps our environment but also results in substantial cost savings to farmers particularly in areas such as energy costs, commercial water costs and waste management costs.

The aim of the booklet is to provide an easy and practical guide on waste prevention for all involved in the agricultural sector.

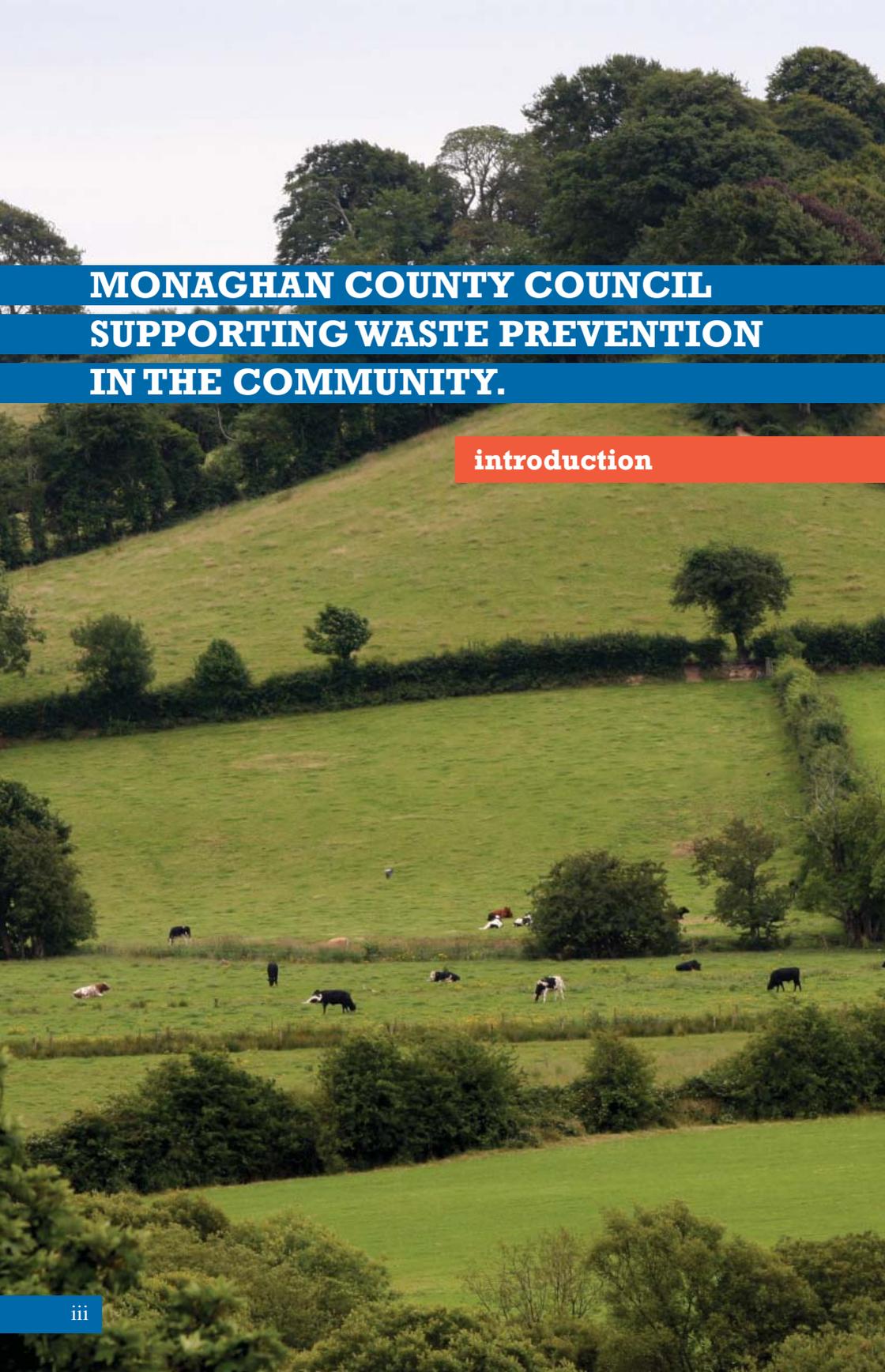
It sets out practical steps where improvements can be made and provides valuable tips on day-to-day operational matters.

I would like to thank the IFA and the farmers who participated in the project for their time and their assistance. I also wish to acknowledge the work of the Environmental Protection Agency, the Clean Technology Centre, Cork and the Environment Section in Monaghan County Council for their commitment to the project. I wish to congratulate all involved.

I trust the readers will find the booklet useful as a resource and I wish the farming sector every success in their endeavours at reducing wastes and implementing cost cutting measures.

Sincerely,

**Declan Nelson
County Manager**



MONAGHAN COUNTY COUNCIL SUPPORTING WASTE PREVENTION IN THE COMMUNITY.

introduction

For the last two years Monaghan County Council has been involved in a waste prevention project which is being funded by the Environmental Protection Agency through the Environment Fund. The Local Authority Prevention Demonstration Programme (LAPD) is an important part of the National Waste Prevention Programme which is supported by the Department of Environment Heritage and Local Government.

Through the LAPD programme Monaghan County Council has assisted companies, institutions, community development associations, schools and farms develop waste prevention related projects.

Monaghan County Council's farm project has identified that many farmers produce some hazardous waste that needs to be disposed of in an environmentally appropriate way. The EPA in their proposed National Hazardous Waste Management Plan has stated that it plans

to commission a comprehensive study of farm waste generation and management, focusing primarily on hazardous farm waste.

Prevention and sustainable resource use is going to become more important over the next coming years as the economy goes through a turbulent period. **As we become more cost conscious waste prevention can reduce cost and save you money.**

This booklet has been produced by Monaghan County Council LAPD project team.

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Bernie O'Flaherty, Executive Chemist*

ACKNOWLEDGEMENTS

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*Gary Brady, Longford County Council
Ann Marie Callan, former Project Officer Monaghan County Council*

*Kathleen Ward, IFA chairperson
All the farmers who took part in the project and assisted Monaghan County Council.*

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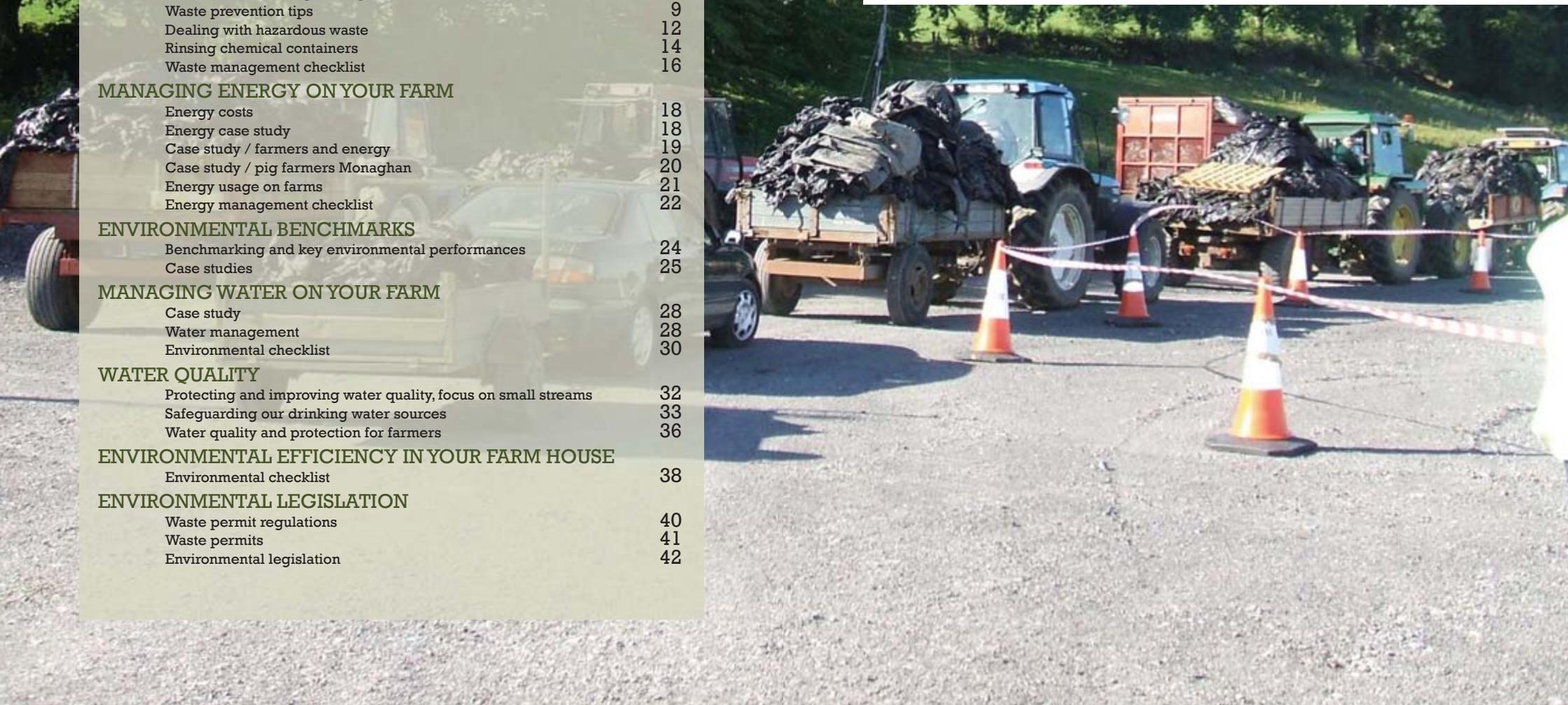
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FARMING THE ENVIRONMENT

Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs.





WHAT IS SUSTAINABLE RESOURCE USE?

For many decades farmers have been at the forefront of sustainable resource use. Reusing and recycling products such as tyres and plastic drums has been an accepted farming practice long before it became popular in the wider community.

Now that topics such as climate change, sustainability, carbon footprints, offsetting, landfills and leaner production are becoming increasingly important in the wider community the farming community needs to reassess how they can operate to the highest environmental standards. This booklet can help



Over the last number of years new waste legislation, increasing landfill costs, plastic film levies, rising fuel prices, water and waste water charges have brought environmental costs to the attention of the media and the wider community. Farmers have not been exempt from this change in awareness and attitudes to the environment and their associated costs.

In a 2007 survey by Monaghan County Council LAPD project, 40% of farmers said they developed new environmental practices to reduce costs. This clearly shows that many farmers are willing to adapt and change when faced with the challenge of rising environmental costs.

ENVIRONMENTAL COSTS

Environmental costs are significant for all businesses including the agri-business sector. The cost associated with energy, waste, water and farm inputs, all eat into potential profits for your farm. To deal with these rising costs farmers need to develop appropriate environmental management skills through training and awareness.

Typical Environmental Costs	
Product	Cost
1 tonne of waste to landfill	Range as from €110-€206
Levy to buy 1 tonne of plastic film wrap	€254
Cost to dispose of plastic film wrap	Ranges as from €35-€120
1000 litres of water in (public supply)	€1
1000 litres of waste water out (public supply)	€1.01
Kwh of electricity	Approx. 14 cent
Diesel costs	Above 90 cent a litre
1 tonne fertiliser	€370-€540

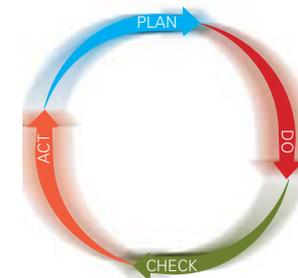
Saving Your Money

Reducing environmental costs not only makes your business more efficient it can also save you money. In business there are many case studies to show the financial benefit of adopting a structured approach to environmental management.

- **Plan** – Identifying your environmental impacts and the goals you want to achieve
- **Do** – begin implementing environmental improvements
- **Check** – Monitor your environmental costs as well as any improvements you have made
- **Act** – Review and monitor and make any changes necessary.

Developing a structured approach to managing your environmental impacts can have many benefits including;

- Improved environmental performance
- Enhanced compliance with environmental legislation
- Prevent pollution and conserve resources
- Increase efficiency and Reduce costs



PLAN / DO / ACT / CHECK

PREVENTION, THE SOLUTION TO ENVIRONMENTAL COSTS

When considering developing an environmental management programme for your farm or agri-business a preventative approach focusing on sustainable resource use and cleaner production has been demonstrated to be the most effective.

Prevention is defined as any action taken to limit harmful environmental effects. It is an approach to environmental management that covers the areas of managing waste, energy and water. By avoiding the creation of waste, farmers can also avoid the financial and environment costs of dealing with it.

Prevention is a central concept of sustainable development which is viewed by many as the answer to the environmental problems such as climate change, biodiversity loss, water shortages, landfill crisis and availability of fossil fuels.

What Is Sustainable Development?

Sustainable development is defined as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

This ideal is reflected in Ireland’s Sustainable Development Strategy published in 1997. This stated Ireland’s aims in relation to sustainable development. These are “to ensure that economy and society in Ireland can develop to their full potential within a well protected environment, without compromising the quality of that environment and with responsibility towards present and future generations and wider international community”



PREVENTING WASTE ON YOUR FARM

“Prevention is the most desirable form of waste management. If you do not create the waste you do not have to deal with it.”



1

PREVENTION

REDUCE

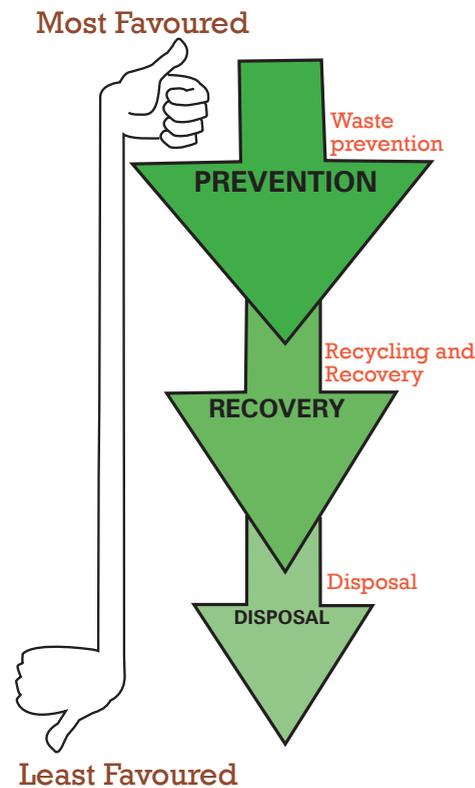
RE-USE

RECYCLE

WHY WASTE PREVENTION ?



- **Reduces the quantity of raw materials you buy.**
Reducing the amount of waste means making better, more efficient use of the raw materials you have bought. If these are expensive, you will soon begin to save a lot of money.
- **Saves time and money involved in managing and handling waste.**
By creating less waste, your farm will be tidier and the time saved can be spent on more worthwhile tasks.
- **Reduces your 'disposal' costs.**
You may already be paying directly to have someone take waste away. It is likely that more waste will have to be taken off-farm in the future. Reducing such waste will help you to contain these costs.
- **Increases the value of crops, animals or produce for sale.**
A production system that creates waste can often result in lower quality products. For example, poor control of grain drying will result in spoilt grain and lower prices.
- **Reduces harmful effects on the environment.**
Minimising the quantity of waste reduces the risk of causing water, air or soil pollution.
- **Helps you to comply with waste legislation.**
Activities that may have been accepted practice in the past such as burning or burying waste is no longer tolerated by environmental enforcement agencies.



Waste prevention

Waste prevention is the most desirable aspect of the waste management hierarchy. If you do not create the waste you do not have the associated environmental problems. Reuse also plays an important part in prevention in that no new resources are used.

Recycling and recovery

Forms the second aspect of the waste hierarchy. The value of waste can be recovered through schemes such as recycling, composting or energy recovery.

Disposal

The last option of the waste hierarchy is disposal to landfill. This should only be an option if none of the other options are available.

What is Waste?

The definition of waste is a complex issue however the general accepted definition is "Any Substance or object that the holder discards, intends to discard or is required to discard".
(Waste Management Act) (1996).

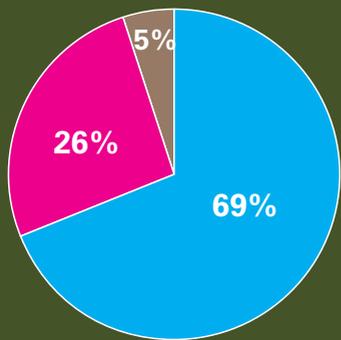


CASE STUDY

DAIRY FARMER - WASTE MANAGEMENT

In a detailed waste characterisation study as part of LAPD project 2007 the following categories of wastes were observed on a dairy farm.

Different categories of waste on a dairy farm

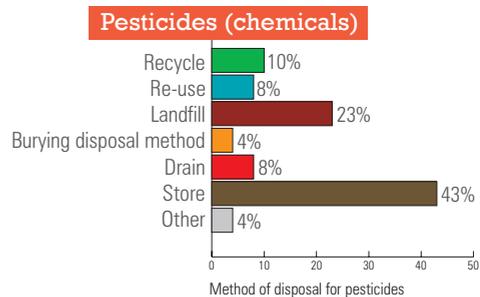
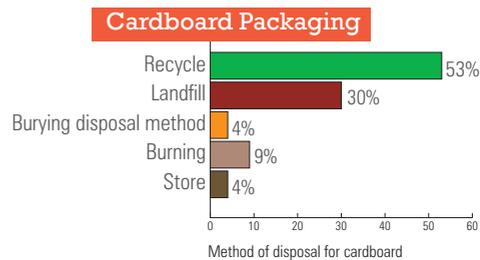


- Recyclable waste accounted for 69% of the waste on the farm
- Landfill waste accounted for 26% on the farm
- Hazardous waste accounted for 5% of the waste on the farm

Whilst every farm is different it can be seen from this example that the majority of waste on a farm is recyclable. Therefore waste prevention and recycling should be the core component of your farm waste management plan.

Current waste management practices

In a survey of 40 farmers in Monaghan in 2007, the following was found to be the case with regard to waste management practices.



These two examples show that most farmers operate to the highest environmental standards - however some don't. If you need help or information on waste management don't be afraid to ask your local authority.

WASTE PREVENTION TIPS

1. When buying bag fertilizer only buy what you need. A soil analysis test will tell you if you need fertilizer for that year saving you hundreds of euro. If you do purchase fertilizer try and buy in **bulk bags** or get it bulk spread as you will have little or no waste afterwards to dispose of.
2. Request a **farm plastics collection** annually through the Irish Farm Films Producer Group (IFFPG) for silage and bale wrap. You should keep all the receipts for the purchase of the farm plastic as this will mean significant savings when it comes to paying for the collection service.
3. When purchasing feed try and buy it in **paper bags** instead of plastic bags as the paper is easier to recycle.
4. Ask your local vet to take away any **needles, syringes or bottles** used by him on the farm. Any veterinary waste created by the vet on your farm is his/her responsibility.
5. Be careful with the storage of old paints and **chemicals** and do not dispose of them improperly. If storing chemicals you should store inside a bund and away from drains. Chemicals should be disposed of through a hazardous waste contractor.
6. Buy **mineral licks** in block format rather than in the buckets, this means that you do not have to dispose of the bucket
7. **Scrap metal** is valuable and you should contact your local authority for the names of collectors who will collect scrap metal from around the farm.
8. The recommended amount of **bales** per hectare is 8- get value out of your plastic wrap.
9. Keep **bale netting and twine** separate from the bale plastic as these must be collected separately to the bale plastic.
10. **Good housekeeping** practices will make materials last longer and reduce costs.



WASTE MANAGEMENT TIPS

WASTE MANAGEMENT TIPS

WASTE TYPE	PREVENTION TIP	WASTE MANAGEMENT - OTHER INFORMATION
Aerosol Cans	Can the product be bought in different type of packaging?	Treat as hazardous waste. Aerosol cans are often classified as hazardous waste and should only be given to a hazardous waste collector.
Asbestos, including asbestos sheeting		Asbestos should only be removed by permitted waste contractors for treatment at a licensed facility.
Batteries	Where possible use rechargeable batteries.	Hazardous Waste, facilities available at Scotch Corner Recycling Centre to accept waste batteries. Currently a small charge applies.
Cardboard (Boxes, cores from twine reels etc..)	Ask your supplier to use returnable packaging: Reuse for storage	Recyclable - clean, dry cardboard can be recycled. Service available from local waste contractor or at local Recycling Centre. Store in a dry area to facilitate recycling. Contaminated cardboard should be sent to landfill.
Chemicals	Only buy what you need. Beware of hazardous content. Operate a good stock control, do not allow chemicals to go out of date.	Chemicals should be treated as hazardous waste and should only be removed by licensed contractor.
Electrical Goods, appliances	Repair where possible	WEEE legislation requires suppliers of electrical equipment to offer a take back scheme or inform you as to alternatives available. Disposable facilities available at Scotch Corner
End of Life Vehicles (ELVs)		Some parts are recycled and car is depolluted. Only give ELVs to authorised facility where you will receive a Certificate of Destruction.
Fertiliser bags	Using less fertiliser means you will have less plastic bags to dispose of	Look out for collection scheme organised by waste contractors and government approved schemes.
Fluorescent bulbs	Ensure you install long life light bulbs – at least 10,000 hours	Treat as hazardous waste. Facilities available at Scotch Corner Recycling Centre to accept waste bulbs.
Glass	Storage containers	Recyclable at bottle banks and at Recycling Centre, Scotch Corner.
Latex Gloves	Can reusable gloves be used?	If contaminated in any way gloves should be landfilled.
Paints	Only buy what you need. Beware of solvent content - ensure paints comply with Deco Paint regulations	Paints containing solvents should be treated as hazardous waste and by permitted contractors.

WASTE TYPE	PREVENTION TIP	WASTE MANAGEMENT - OTHER INFORMATION
Paper	Only use what you need. Can it be reused?	Collection available from waste contractors and Recycling Centre Scotch Corner.
Plastic	Can you buy in bulk?	Plastic recycling is a complex area. Only recycle plastics that have the following labels PET, PE, HDPE, LDPE which are typically plastic bottles and plastic film. Facilities are available from local licensed waste contractors and Scotch Corner, Recycling Centre.
Plastic drums	Can the product be bought in bulk to minimise packaging or can you use less of the product e.g. pesticides?	Ask your supplier about take back schemes. Disposal is dependent on what has been in the drum. Was the material hazardous? If yes please refer to notes on hazardous waste.
Plastic Film wrap	Carefully store part used rolls from year to year to ensure you can utilise them. Set a target of 8 bales per hectare of high quality grass. If using silage pit, reuse plastic sheeting.	Collections are organised by government approved recovery schemes. IFFPG (01) 4089966 Locall 1890 300 4444
Tyres	5 tyres per m ² of silage storage area is the recommended amount needed. Do not exceed this. Use same tyres every year.	New tyre legislation requires farmers to register with local authority if they exceed recommended amount of tyres per m ² of silage storage area.
Veterinary Waste	Only use medicines as required.	Treat as hazardous waste. Ask vet to take back vet waste such as needles, medicines, syringes. Vets are required to do this. Ask about take back scheme for unused medicines
Waste oils	Implement maintenance programme on all machines. Only change oils as per manufacturers recommendations. Waste oils can be reused as low grade lubricant.	Facilities available at Scotch Corner Recycling Centre to accept waste oils. Currently small charge applies.



DEALING WITH HAZARDOUS WASTE

DEALING WITH HAZARDOUS WASTE

Hazardous wastes are defined as wastes that have the potential to cause harm to human health or the environment.

The properties of hazardous waste can be grouped as follows

- Physical properties: flammable, explosive, oxidising
- Health hazard properties: carcinogenic, mutagenic, toxic for reproduction, toxic, corrosive, irritant, infectious, harmful.
- Environmental hazard properties: for aquatic environment, for terrestrial environment, for ozone layer



Pesticides



Needles



Waste Medicines



Waste chemicals

The following are examples of common wastes that can be encountered on a farm.



Waste Oils



Batteries



Fluorescent tubes



Paints

Other types of hazardous waste which may occur occasionally on farms include:

- Refrigerant gases from redundant refrigeration equipment
- Asbestos from maintenance or building works on older buildings
- PCBs contained in old electrical transformers

Hazardous waste should be treated with the respect it deserves. In terms of waste chemicals, the key is to look at the label on the product to determine if it is hazardous or not, i.e. are any of the following on the packaging



Corrosive Material



Dangerous for the environment



Explosive



Flammable



Oxidizing Material



Extremely Toxic



Harmful

What to do with hazardous wastes

The disposal of hazardous waste is a problem for many businesses. Monaghan County Council's Recycling Centre accepts some common hazardous waste such as waste oils, batteries and fluorescent tubes. Those supplying you in some cases will also offer a take back scheme – check with your suppliers.



How to prevent hazardous waste

1. Look for alternatives or products that are less damaging to the environment
2. Use products such as chemicals before they go out of date
3. Only purchase the amounts needed.
4. Store and dispose of hazardous waste through a licenced waste contractor.

RINSING CHEMICAL CONTAINERS

TRIPLE RINSING – GUIDELINES AND BEST PRACTICE

1. Triple Rinsing of chemical containers may not necessarily render them non hazardous or suitable for recycling. The effectiveness of the rinsing depends on whether or not the chemical has infiltrated the fabric of the container, and this depends on the type of chemical, how long the container has been stored and under what conditions. Your supplier/manufacturer should be able to advise you on whether the chemical is likely to have infiltrated the fabric of the container. You should contact your supplier/manufacturer in advance to establish this information before embarking on any triple rinsing procedure.
2. Empty the pesticide into the sprayer tank and let the container drain for 30 seconds.
3. Fill the container 10 percent to 20 percent full of water or rinse solution.
4. Put the cover on the container.
5. Swirl the container to rinse all inside surfaces.
6. Add the rinsate to the spray tank and let drain for 30 seconds.
7. Repeat steps 2 through 5 two more times.
8. Inspect the container to be sure it is clean. Chemical may remain in the corners, the handle and container threads. This must be removed. Also, be sure drips on the outside of containers are cleaned off.
9. Put the cover back on the container and dispose of according to label directions. If containers are to be recycled, leave the cover off and store in a dry, secure area.
10. It is the responsibility of every farmer to ensure that they do not present contaminated containers for recycling.



WHY IS BURNING WASTE SO BAD ?

Backyard burning is the term applied to burning of waste by householders. Such burning is frequently carried out in backyards and in gardens, in the open or in “rubbish burners”. When we burn most waste, toxic and dangerous by-products are created. These are not destroyed by the fire and are emitted into the air we breathe. They can contaminate our gardens and fields when they precipitate out of the air and land on the ground. These pollutants can have profound long-term health implications. Even tiny amounts of some pollutants emitted by the backyard burning of chlorinated products like certain types of plastics and solvents are sufficient to have undesirable health effects. This type of uncontrolled burning should be avoided at all costs.



YES
NO

WASTE MANAGEMENT CHECKLIST

Do you do the following?

QUESTION	YES	NO
Do you have a permitted waste contractor in place to dispose of your waste in an environmentally friendly way?		
Do you segregate your non hazardous waste into recyclable and non recyclable fractions?		
Do you return your veterinary waste to your vet?		
Are you in full compliance with all waste legislation? See legislation table on page 42.		
Do you dispose of any hazardous waste you may have in a proper environmentally friendly way? (Hazardous waste includes; fluorescent tubes, batteries, pesticides, solvent based paint, old unused chemicals)		
Do you save products for reuse e.g. unused rolls of plastic film?		
Do you have good housekeeping procedures in place so that products can be reused?		
Do you where possible, buy in bulk?		
Have you a stock control system in place for your chemicals?		
Do you work out how much of a product you need before purchasing it?		
Do you calibrate your chemical sprayers any time you make changes, such as adjusting the volume applied?		

If you have answered no, or do not know to any of the above question there is room to improve the environmental performance of your farm. You can access help through Monaghan County Council.

MANAGING ENERGY ON YOUR FARM

“Energy prices have risen significantly over the last 12 months ”

2



ENERGY COSTS

CASE STUDY

FARMERS & ENERGY

Everybody involved in business, including farmers, is concerned about rising energy costs. Over the last 12 months the price of oil has risen to a new record high.

There has been a 60% increase in energy prices in the last 12 months. Managing energy can help you offset these rises.

ENERGY CASE STUDY

Energy costs on Monaghan dairy farm per year

Farm Equipment	Cost per annum
Cooling Milk	€ 160
Milking Machine	€ 245
Lighting	€ 1,254
Muck Scraper	€ 19.03
Power Washer	€ 45
Water Heater	€ 1,596
Water Pump	€ 66
Total	€ 3,385

Some typical energy costs incurred on a farm

Electric fence continually on	€40 a year
Traditional water pump	€490 a year
Submersible water pump	€245 a year
4 x 70 watt fluorescent bulbs on 10 hours a night	€151 a year
4 x 35 watt fluorescent bulbs with sensor @ 2 hours a night	€15 a year
Heat pad for piglets	€25
250 W Infra Red bulb for piglets	€246

Annual energy costs on a dairy farm

Oil prices Jan 2007 to July 2008



In a report by the Tipperary Energy Agency, the following was found to be the case with farmers and energy.



General findings

- Limited or no awareness of energy consumption per unit output
- Low awareness of energy efficiency in general
- No separate meters for energy use on farm and within farm house
- Better maintenance of equipment can reduce energy consumption

Dairy

- No insulation or controls on hot water cylinder
- No timer control on hot water cylinder and not linked to night rate electricity
- Low maintenance of cooling equipment
 - compressors etc.
- No control on lighting
- Water pumping costs high – increased used of gravity systems and timer controls on pumps.

Pig

- High costs for heating – potential for renewable energy

Tillage

- A lot of work contracted out so limited control over energy consumption and maintenance of equipment

Poultry

- Poor insulating of buildings.
- High energy cost associated with ventilation.

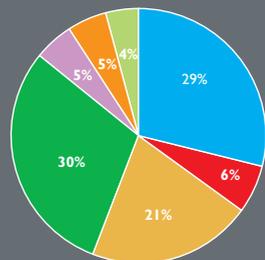
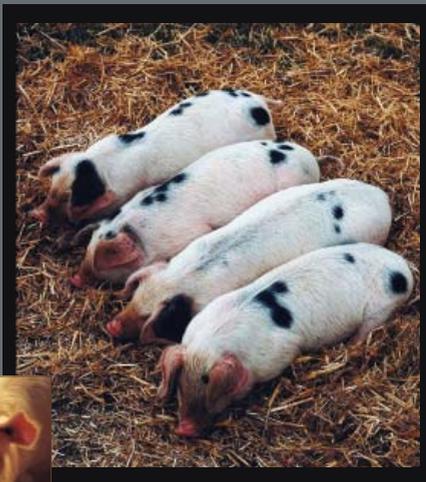
//// CASE STUDY

PIG FARMERS MONAGHAN

Energy profile

Pig Farmer, Castleblayney, Co Monaghan. The farm is an integrated pig unit. The farm has increased from 400 sows in 2007 to 600 sows today. With the increase in sows additional farm buildings have been recently constructed.

- Ventilation fans are the largest use of energy on the farm using 87,600 kWh per year and are temperature controlled by a thermostat. No fans have been installed in the new buildings where a manually controllable vent in the roof apex allows natural ventilation to the fattening pigs.
- All the new buildings are insulated with 100mm thick insulation.
- Under floor heating pads were used which are more energy efficient than infra-red bulbs.
- There is a programme of phased replacement of all lighting over an 18 month period to T5 fluorescent tubes. Energy effluent lighting will save the farmer €776 annually.
- Capacitors are being installed on motors to reduce the excess wattless units identified on the farmers electricity bills.
- The farmer recently changed supplier of electricity which reduced his bills by 1.1% saving him on average €400 a year.



Electricity Costs

ENERGY USAGE ON FARMS

WATTLISS UNITS

What should I do if I am incurring wattless charges on my electricity bill?

If you are incurring wattless charges on your electricity bill you should immediately consult your electrical contractor who will advise you on the appropriate corrective equipment for your business.

What will the electrical contractor do?

Your electrical contractor will fit a device known as a 'capacitor', which will reduce the reactive power being consumed and will help to avoid wattless charges on your bill. This device is also referred to as 'power factor correction equipment'.

How much will it cost?

This depends on the level of wattless charges, but generally speaking if a customer has a consistent wattless charge in every bill the payback period is less than four years. Your electrical contractor will provide you with the cost when advising on the appropriate corrective equipment for your business.

<http://www.agriculture.gov.ie/index.jsp?file=schemes.xml>

The BioEnergy Scheme (BES) provides establishment grants to encourage the growing of willow and miscanthus for the production of biomass suitable for use as a renewable source of energy.

2008 ENERGY CROPS AND NON-FOOD SET-ASIDE SCHEMES

For Further Information contact: Department of Agriculture, Fisheries & Food

<http://www.agriculture.gov.ie/index.jsp?file=schemes.xml>

This scheme allows for claiming aid in respect of crops, which are grown to be used for the production of energy. The Single Payment Scheme introduced an aid of 45 per hectare per year for areas sown under energy crops. An additional top-up of 80 per hectare, funded by the National Exchequer, will also be paid. This additional payment will apply for three years, beginning with the 2007 Scheme. This additional payment is subject to a maximum ceiling per producer over the three years. Beginning in 2007, the three-year maximum area per producer is 37.5 hectares.

Other grants are also available from SEI for the installation of renewable energy technologies such as solar and bio mass boilers. Contact SEI on **1850 734 734**

GROWING ENERGY CROPS

BIO-ENERGY ESTABLISHMENT SCHEME

For Further Information contact: Department of Agriculture, Fisheries & Food

YES
NO

ENERGY MANAGEMENT CHECKLIST

QUESTION	YES	NO
Is your farm meter separate from your farm house meter?		
Do you read your electricity meter on a monthly basis?		
Are you able to read and understand your electricity bill?		
Are you paying for wattless units?		
Have you measured how much energy you use in relation to your outputs e.g. kwh per litre of milk or kwh per unit of poultry?		
Do you use variable speed drive pumps or modern submersible pumps?		
Have you changed all your light bulbs to low energy bulbs such as CFL's?		
Do you use night rate electricity to run appliances such as ice bank bulk tanks?		
Do you have a structured maintenance programme for your machinery and boilers?		
Do you use motion sensors or dawn to dusk sensors for outside lighting?		
If you use compressed air do you check it regularly for leaks?		
Have you insulated hot water tanks and piping?		
Are your coolers, pumps, boilers the right size for the jobs that they are doing?		
Have you considered installing sustainable energy technologies on your farm?		
Do you consider life cycle (i.e. running costs) of any new appliance or machine that you buy?		
Have you installed timers on immersion heaters and other appliances?		
Do you know what temperature your hot water heater is set at?		

If you have answered no to any of the above or you do not know the answer there is room to improve the environmental performance of your farm. You can access help through Monaghan County Council.



ENVIRONMENTAL BENCHMARKS

“If you do not measure you cannot manage”



BENCHMARKING AND KEY ENVIRONMENTAL PERFORMANCE INDICATORS (KPI)

CASE STUDY

What are the benefits of benchmarking and Environmental Indicators?

When generated and used properly indicators and benchmarking can be of great benefit to any commercial enterprise. They act as a tool to measure eco-efficiency and as well as measuring improvements they can measure performance against similar businesses or operations e.g. across dairy sector or mushroom sector.

How to benchmark

A benchmarking exercise should not take you too long and will benefit you in knowing where your exact costs are. For example if you would like to benchmark your waste, find out how much you are disposing of annually and divide it by your unit of production e.g. you dispose of 2000 kg of waste per annum and you have 60 dairy cows then you are producing 33 kgs of waste per cow which is €3 per cow in landfill costs.

IRISH BENCHMARKS FROM WEXFORD ENERGY AGENCY, TIPPERARY ENERGY AGENCY, MONAGHAN COUNTY COUNCIL AND LONGFORD COUNTY COUNCIL LAPD PROGRAMME 2007

Dairy KPI

KPI in kWh	Wexford	Tipperary	Monaghan	Longford
kWh / Litre of milk produced	0.054	0.074		0.040
kWh / cow	274	303	360	306
kWh / acre of land farmed	186	169		

KPI in €	Wexford	Tipperary	Monaghan	Longford
€ / cow	40	36	52	36
€ / Litre of milk produced	0.0077	0.009		0.0047
€ / acre of land farmed	28	20		

Tillage KPI

KPI in kWh	Wexford	Tipperary
kWh / Tonne of cereal produced	1,240	235
kWh / acre of land farmer	2,218	840

Mushroom KPI

KPI in kWh	Tipperary
kWh / 1b of mushrooms	1,240

Pig KPI

KPI in kWh	Wexford	Monaghan
kWh / piglet	35.2	28.5
Litre (diesel) / piglet	0.62	

KPI in €	Wexford	Monaghan
€ / electricity / piglet	4.9	3.7
€ / diesel / piglet	0.54	
Total cost / piglet	5.54	

//// CASE STUDY 2004

BENCHMARKS FROM CARBON TRUST UK

Typical and good practice benchmarks for pig farming

Production Stage	Energy range per pig produced (kwh)		Main influence
	Typical	Good practice	
Farrowing	8	4	Use of box creepers with thermostatic control gives the lowest running cost. Under-floor heating pads are generally more energy efficient than infrared bulbs
Weaning	9	3	Major issues are the insulation of buildings (or kennels) and most importantly, the control of ventilation
Finishing (fan ventilated)	10	6	Efficient fan selection, good design of inlets and outlets and system cleaning are the key points to minimising energy use
Feeding System	3	1	Dry feeding system uses a small amount of energy for conveying. Wet feeding is generally more energy intensive because of the need to mix pump feed and pressurise pipe work
Waste Management	6	2	Selection of high efficiency pumps, aerators and separators

MANAGING WATER ON YOUR FARM

“We will never know the value of water until the well runs dry”

4



Water is a precious resource that needs to be conserved and protected. Treating water to a drinking water standard is an energy intensive enterprise that is costly both financially and environmentally.

In Co. Monaghan the following is the breakdown of water supply sources for the 5,000 farmers in the County. 73% are on group water scheme, 19% are on public supplies and 8% are on private wells.

To manage any resource like water it needs to be measured. "You cannot manage what you do not measure". In Ireland a clean and abundant supply of clean water has been taken for granted and many of us have been guilty of wasting this valuable resource.

With the introduction of water and waste water charges for all non domestic connections water conservation has become a major issue for any person in business. Again research has shown that a prevention approach pays.

CASE STUDY : WATER SAVINGS IN AGRI - BUSINESS SECTOR

One of the major problems facing agencies promoting water conservation is the lack of awareness amongst the general public of the reasons why water conservation is needed.

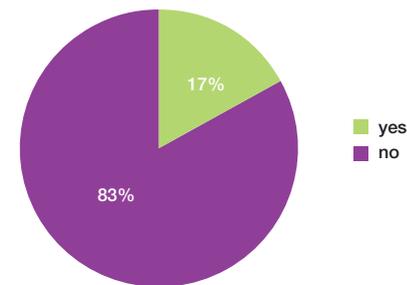
By developing a water conservation programme and by understanding how and where you use water you can reduce your water related costs.

Examples of control devices

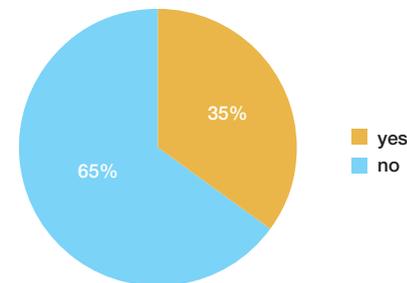
- Flow restrictors
- Trigger hoses
- Low volume pressure washers

CASE STUDY : WATER SAVINGS IN AGRI - BUSINESS SECTOR

In a survey of 40 farmers by Monaghan County Council only 17% of farmers said that they reused water on a farm and only 35% used water control devices.

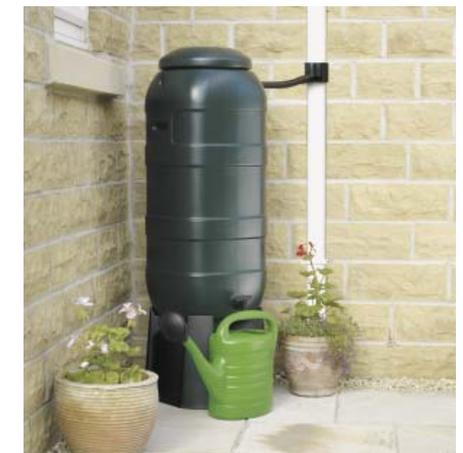


Percentage of farmers that reuse water on farms



Control devices used on farm

In Ireland we have a lot of rain that can be harvested. With water charges being introduced to all non domestic connections, rain water harvesting is becoming increasingly popular. By diverting and storing rain water farmers can reuse this on their farm.



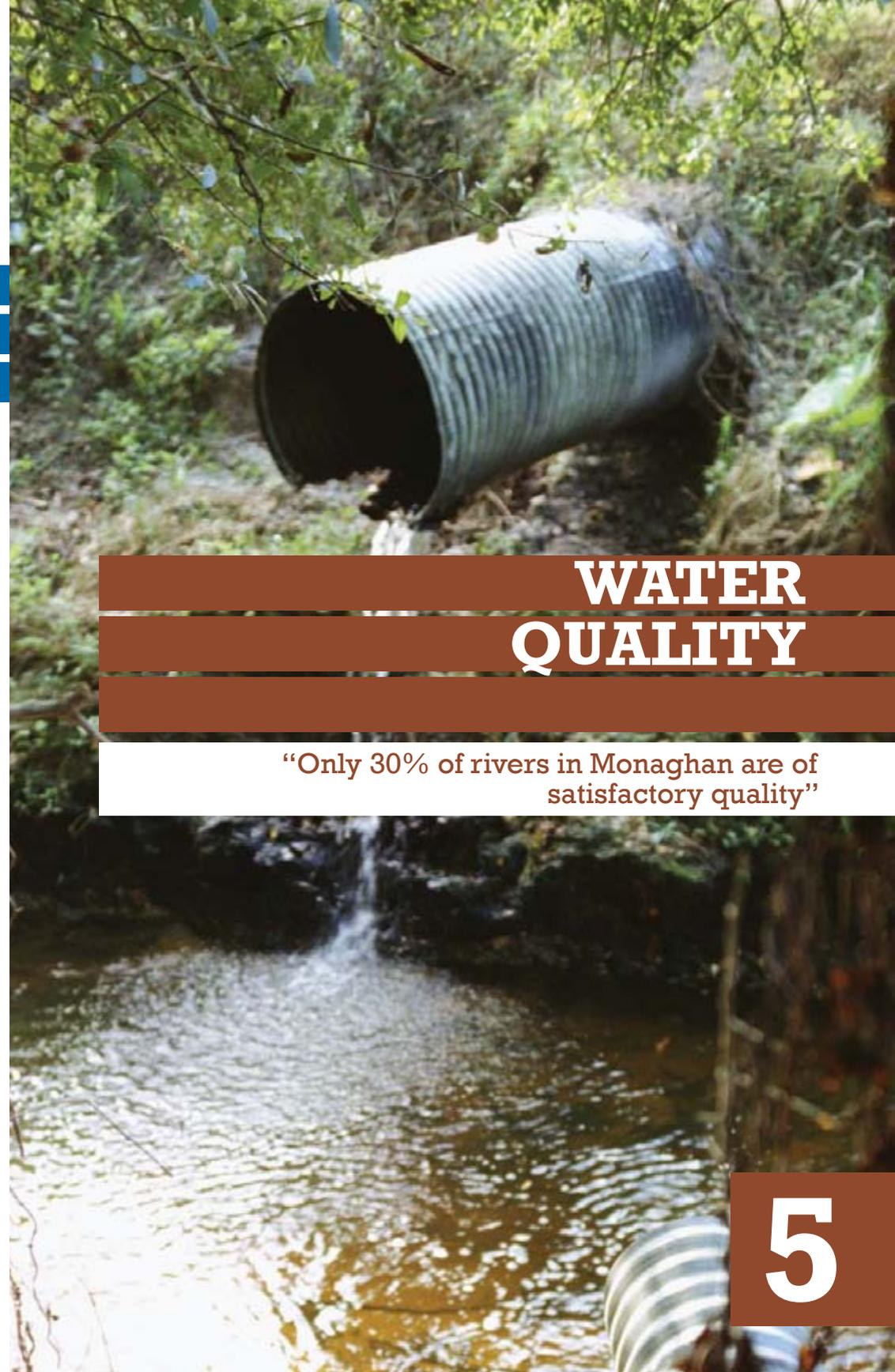
Typical household water butt

YES
NO

WATER MANAGEMENT CHECKLIST

Water Management	Yes	No
Do you know how much water costs you and are you aware of how much water you are using per unit of product?		
Do you have a water meter?		
Do you read your water meter on a regular basis to ensure that you have no leaks?		
Do you use water saving devices such as trigger houses, flow restrictors etc?		
Do you collect or harvest rain water to reuse on your farm?		
Do you fix water leaks immediately upon discovery?		
Is water conservation a priority on your farm?		

If you have answered no or don't know to any of the above question there is room to improve the environmental performance of your farm. You can access help through Monaghan County Council.



WATER QUALITY

“Only 30% of rivers in Monaghan are of satisfactory quality”

5



PROTECTING AND IMPROVING WATER QUALITY FOCUS ON SMALL STREAMS

Our high quality environment is a prized national resource.

It is especially important to farmers as they promote quality Irish food from a clean pollution free countryside. Water is an integral feature of this environment and a major natural asset. It provides a healthy source of drinking water, and is essential for agriculture and industry and a valuable recreational and amenity resource.

There has been a worrying increase in slight and moderate pollution over the past 30 years. Much of this is caused by enrichment of water with excessive nutrients such as phosphorus and nitrates. Sources of these nutrients include sewage, industrial waste discharges and agriculture.

The Water Framework Directive, Nitrates Directive and the Drinking Water Regulations all require the protection of waters. There will be increased focus on water protection in the coming years.

Co Monaghan faces particular challenges as **70% of its rivers** are slightly or moderately polluted. Many of our lakes are over enriched with nutrients. Unique soils, low river flows, drumlin topography, climatic conditions and the intensive nature of agriculture in some areas all contribute to water quality problems.

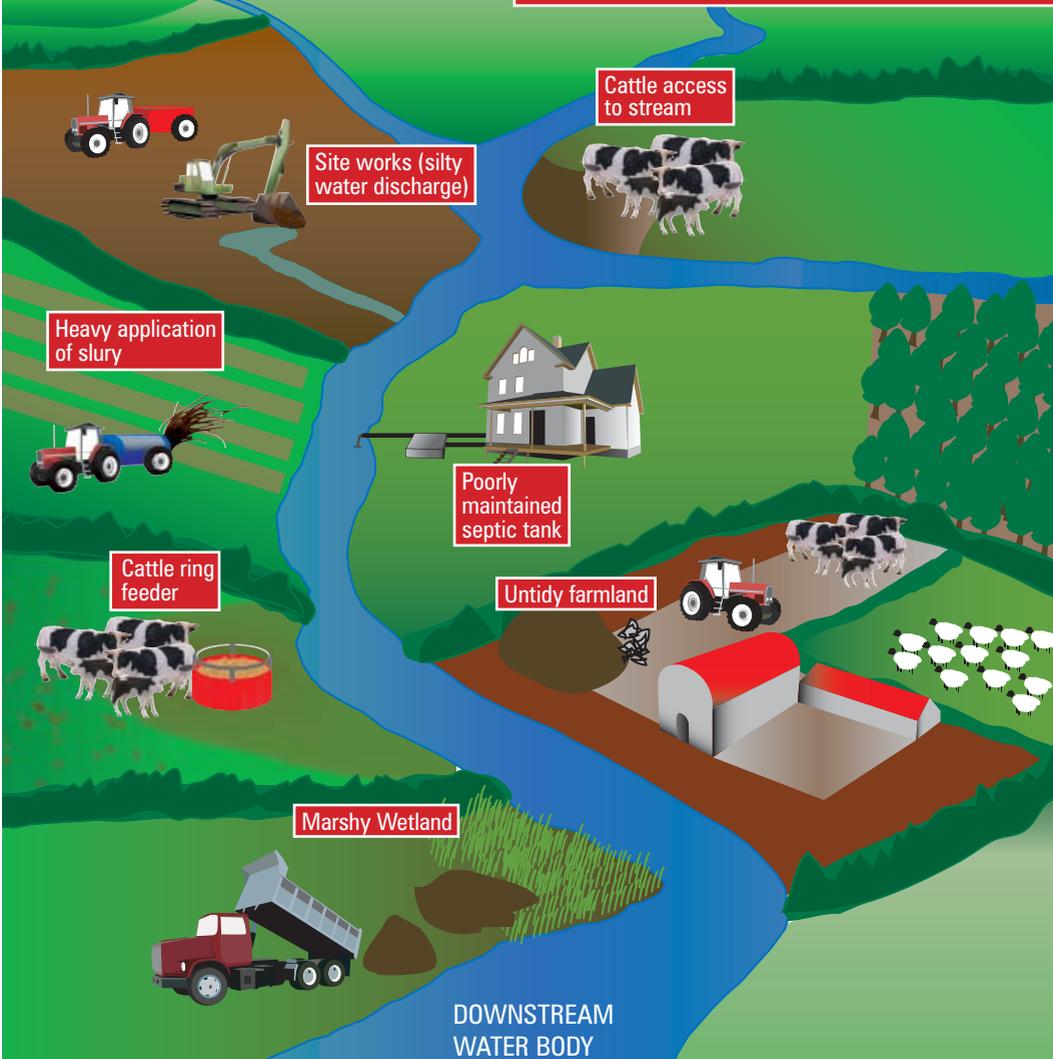


Protecting our drinking water sources is also vitally important. It is essential that we minimise the contamination of drinking water sources by nutrients and micro organisms such as e-coli, cryptosporidium and viruses. Animal and human wastes contain large amounts of microbial pathogens which enter waters from direct discharges, from runoff after land spreading, from poached lands and from direct access of livestock to waters.

SAFEGUARD OUR DRINKING WATER SOURCES

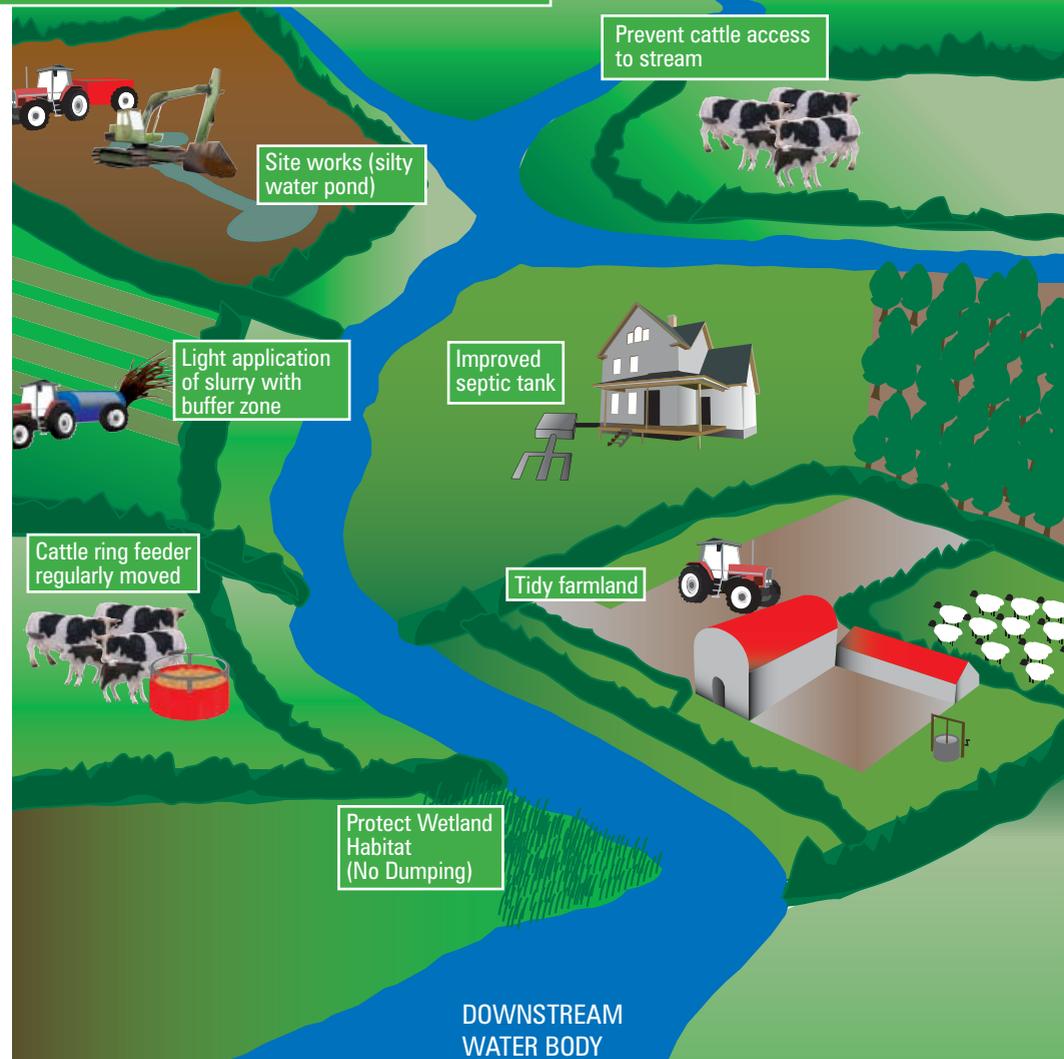


**SAFEGUARD OUR STREAMS
POOR PRACTICES**
"It all adds up"



Water Health Check	
	Suitability
Drinking water supply source	X High Risk (unsuitable)
Bathing Area	X Unsuitable
Biodiversity	↓ Reduced

**SAFEGUARD OUR STREAMS
GOOD PRACTICES**



Water Health Check	
	Suitability
Drinking water supply source	✓ Suitable with treatment
Bathing Area	✓ Suitable
Biodiversity	✓ Good

WATER QUALITY AND PROTECTION FOR FARMERS

Farmers play an essential role in water protection by employing good farming practices in and around the farmyard and when land spreading chemical or organic fertilisers. Farmers using fertilisers or land spreading pig or poultry manures need to be extra vigilant to avoid excess application of nutrients.

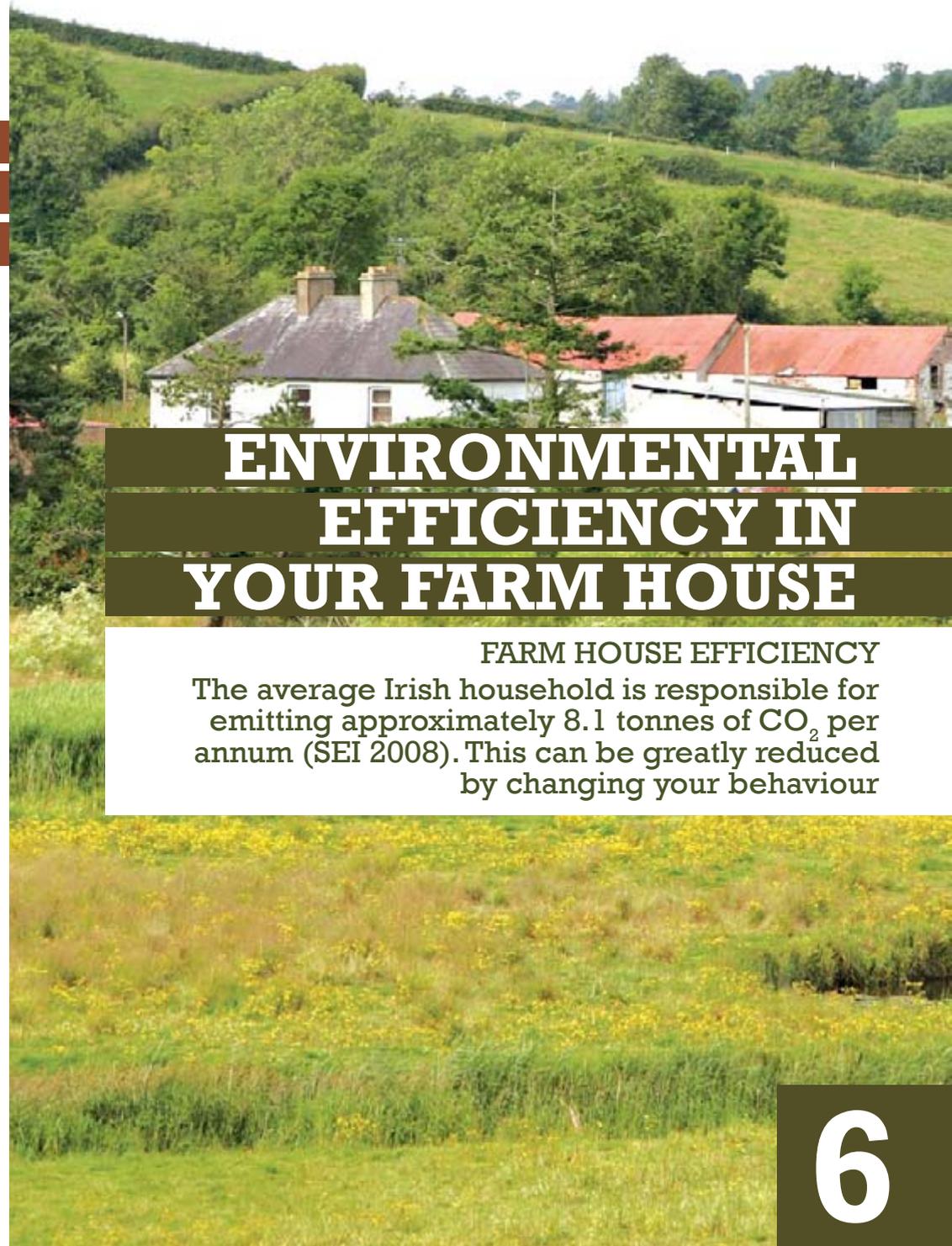
Good Agricultural Practices protect water, ensure compliance with the law and protect the Single Farm Payments. The Good Agricultural Practice Regulations, 2006 are now part of cross-compliance requirements.

A Lot Done But More To Do!

Monaghan Co. Council has received excellent co-operation from farming organisations and the farming community in their drive to improve water quality. Since 2002 over 2,000 farmyards have been surveyed - many are farming to high standards while others are undergoing farm yard improvements. Improvements around the farmyard need to be accompanied by good practice in land spreading manures. Fertilisers Plans and the protection of riparian areas along farm watercourses are needed.

The adoption of Total Quality Management in waste management and nutrient management planning needs more attention on farms.

Farmyard management	YES	NO
Do you minimise soiled yard areas?		
Do you separate clean and soiled waters?		
Do you provide adequate storage for manures and soiled waters?		
Nutrient Management Planning		
Do you carry out soiled testing?		
Do you prepare a Fertiliser Plan?		
Do you apply animal manures at correct rates and correct times?		
Could you reduce chemical fertiliser inputs and benefit from reduced costs?		
Protect Water Bodies		
Do you maintain recommend Buffer Zones around wells, streams and lakes?		
Do you know where the water supply sources are in your area?		
Do you minimise cattle access to streams?		
Do you fence streams and allow recovery of riparian zones where they have been trampled and overgrazed?		
General Good Management		
Have you considered joining an Environmental Scheme?		
Do you keep required records?		
Do you keep informed by reading the Explanatory Handbook for Good Agricultural Practice circulated by the Dept. of Agriculture and Food?		
Do you attend information meetings?		
Do you seek information from your Local Authority?		



ENVIRONMENTAL EFFICIENCY IN YOUR FARM HOUSE

FARM HOUSE EFFICIENCY

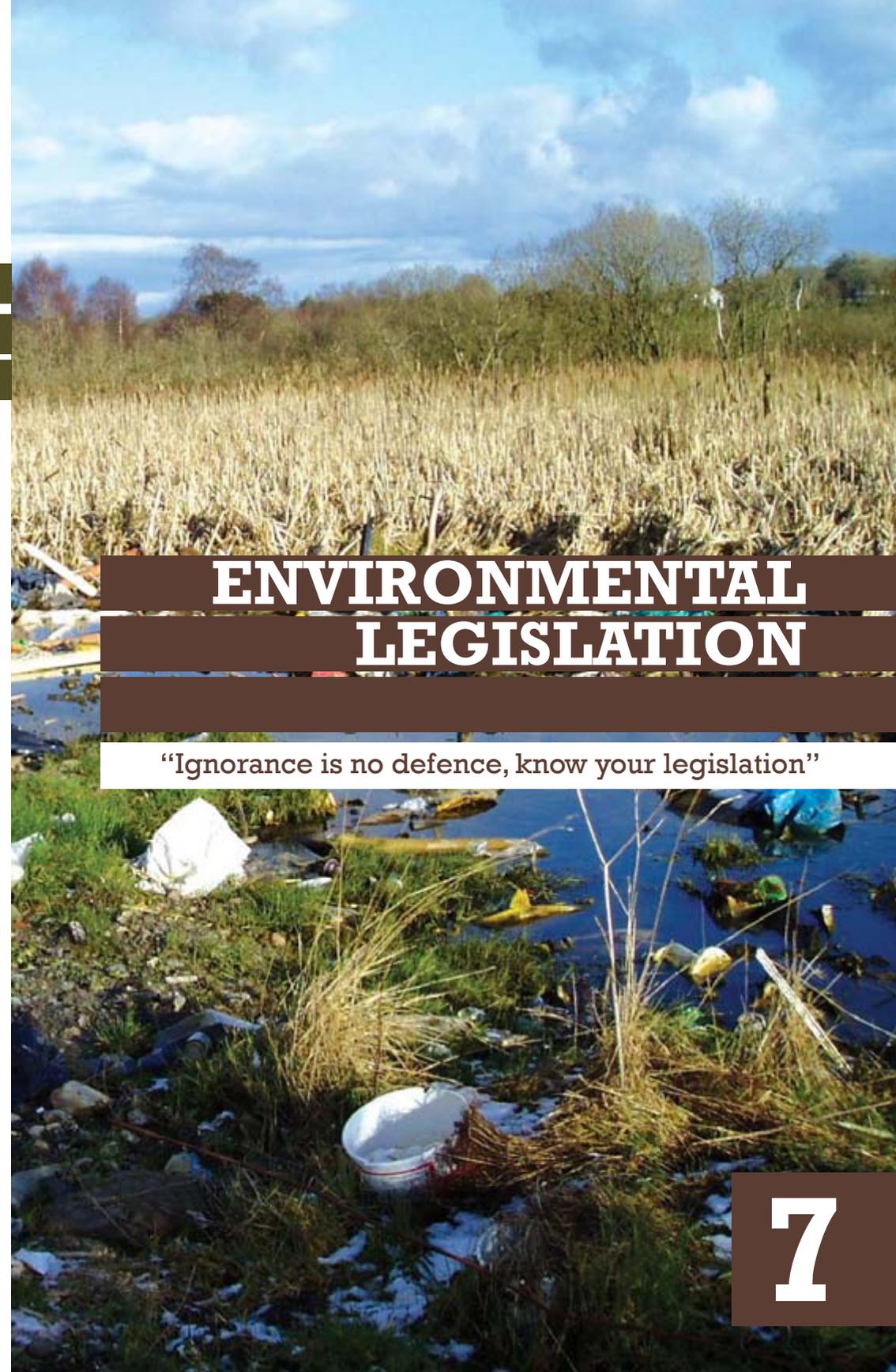
The average Irish household is responsible for emitting approximately 8.1 tonnes of CO₂ per annum (SEI 2008). This can be greatly reduced by changing your behaviour

YES
NO

ENVIRONMENTAL EFFICIENCY IN YOUR FARM HOUSE.

On many small farms waste, energy and water use is usually bundled in with the farm house. Therefore if you are improving your farm buildings it is important to look at your house as well.

Question	YES	NO
Do you query the amount of packaging you purchase and look at ways to reduce it?		
Do you have a waste collection service or do you use your local Recycling Centre?		
Are you aware of what household hazardous waste you produce?		
Are the wastes that are deemed recyclable segregated and collected by a permitted waste contractor?		
Do you use the local bottle bank for your glass?		
Do you end up throwing out uneaten food because it has gone out of date?		
Do you compost your organic waste?		
Have you checked your attic insulation? Attic insulation should be at least 300 mm.		
Is your hot water tank insulated? A lagging jacket for a hot water tank will pay for itself within a couple of weeks		
Have you draught proofed your home especially doors and windows. You can loose up to 20% of your heat due to draughts.		
Do you get your boiler serviced annually?		
If you have night rate electricity do you use your immersion heater to heat your hot water during the night?		
When buying new appliances do you buy A rated?		
Do you use Compact Fluorescent Bulbs instead of tungsten bulbs?		
Do you use a water butt to harvest rain water so that you can use it in your garden?		



ENVIRONMENTAL LEGISLATION

“Ignorance is no defence, know your legislation”

7

WASTE PERMIT REGULATIONS

Any person collecting waste in County Monaghan should hold a Waste Collection Permit issued by a nominated authority (waste includes liquid waste e.g. slurries and disposal includes land spreading).

Scenario	Is a permit Required
Farmer collecting his own waste and spreading it on his own land	NO
Contractor spreading waste for a farmer on the farm which the waste arose	NO
Contractor collecting waste from a farmer and transporting it for disposal to another site or farm	YES
Farmer collecting waste from another farmer or another site and transporting it for disposal	YES
Contractor/Farmer collecting septic tank sludge for recovery or disposal off site	YES
Farmer transporting waste for recovery off site	YES
Contractor collecting waste from an IPPC licensed facility and spreading on his/her own land or on the licensee's land or on another farmland.	YES
Farmer collecting waste from an IPPC licensed facility and spreading on his/her own land.	YES

You can access help through Monaghan County Council on 047 30592

WASTE PERMITS

Many landowners are unaware that accepting subsoil for the benefit of agricultural improvement requires either a certificate of registration or a waste licence. These licences can be obtained from Monaghan County Council's environment section 047 30592. Do not send waste to an unauthorised facility as Monaghan County Council prosecutes those that break the law.

Scenario	Legal Requirements
Recovery of less than 25000 tonnes of inert material such as subsoil	Certificate of registration available from Local Authority
Recovery of between 25,000 and 10,000 tonnes of inert material such as subsoil	Waste Permit available from Local Authority
Recovery of over 100,000 tonnes of inert materials such as subsoil	Waste License available from Environmental Protection Agency
Recovery of less than 10,000 tonnes of inert material such as construction and demolition wastes	Certificate of registration available from Local Authority
Recovery of between 10,000 and 50,000 tonnes of inert material such as construction and demolition wastes	Waste Permit available from Local Authority
Recovery of over 50,000 tonnes of inert material such as construction and demolition wastes	Waste License available from Environmental Protection Agency
Recovery to land of less than 1000 tonnes per annum of organic waste sludge for use in eco-benefit or agriculture, food crops & forestry	Certificate of Registration
Recovery to land between 1000tpa and 50,000tpa of organic wastes	Waste Permit available from Local Authority
Recovery of sludge for use in agriculture	Exempt from requirement to hold a Waste Licence, Permit or COR



ENVIRONMENT LEGISLATION

Legislation	Explanation
Waste Management Act 1996 – 2008	The main piece of waste legislation in Ireland.
Waste Permit and Certificate of Registration Regulations 2008	Gives power to local authorities to permit specified waste recovery and disposal activities including the disposal of sub soil for agricultural improvement.
Waste Tyre Regulations 2007	Provision has been made in the regulations to enable a farmer who requires waste tyres to anchor silage covering to store up to 8 waste tyres for every square metre of the floor area of his or her silage pit, without the need to have to register with the Local Authority.
Waste Management (use of sewage sludge in Agriculture) Regulations 2001	These Regulations prescribe standards for the use of sewage sludge in agriculture. The Regulations give protection to the environment, and in particular to soil, when sewage sludge is used in agriculture.
Waste Management (Movement of Hazardous Waste) Regulations 1998	Establishes a consignment note system for the movement of hazardous waste within Ireland also prohibits unauthorised mixing of hazardous waste types.
Waste Management (Hazardous Waste) Regulations 1998 - 2000	Implement's management provisions relating to asbestos, batteries, polychlorinated biphenyls, waste oils and general hazardous waste.
Waste Management (Collection Permit) Regulations 2001	Anybody collecting waste for reward must have the correct licence to do so.
Waste Management (End of life Vehicles) Regulations 2007	The Waste Management (End-of-Life Vehicles) Regulations 2006 places obligations on producers - vehicle manufacturers and importers - to establish National Collection Systems for the appropriate treatment and recovery of end-of-life vehicles. Typically, an end-of-life vehicle will be a passenger car or a light commercial van that the registered owner wishes to dispose of as waste. From 1 January 2007 owners of intact end-of-life cars and vans can deposit them free-of-charge at authorised treatment facilities.

ENVIRONMENT LEGISLATION

Legislation	Explanation
Waste Management (Packaging Regulations) 1997- 2007	If you put over 10 tonnes of packaging onto the market and have a turnover of €1 million you must comply with these regulations
Waste Batteries Regulations (currently in draft format)	The legislation introduces measures to curtail excess levels of mercury, lead and cadmium in batteries placed on the market from 26 September 2008 onwards. The Directive also requires producers to be responsible for the financing of the collection, treatment, recovery and environmentally sound disposal of waste batteries from 26 September 2008. It means that holders of waste batteries will be entitled to leave that waste back free of charge, either to the place of purchase or to other authorised collection points from that date onwards.
Litter Pollution Act 1997	Main piece of legislation governing litter. Under the Act all landowners are responsible for keeping their land free of litter.
Air Pollution Act 1987	Legislation governing air quality in Ireland. Landowners can be prosecuted if they cause a nuisance by lighting fires.
Integrated Pollution Prevention Licensing Regulations 1992-2007	IPPC licences aim to prevent or reduce emissions to air, water and land, reduce waste and use energy/resources efficiently. An IPPC licence is a single integrated licence which covers all emissions from the facility and its environmental management . Thresholds for agricultural activities Poultry 40,000 birds Pigs 750 sows in a breeding unit 285 sows in an integrated unit 2,000 production pigs
Fisheries Act 1956	Deals with the protection of fisheries including inland fisheries in Ireland.



ENVIRONMENT LEGISLATION

Legislation	Explanation
Water Pollution Act 1997	Main piece of legislation dealing with water pollution in Ireland. Any direct discharge to a river, lake or drain requires a discharge licence and any discharge greater than 5m ³ /day to a percolation area requires a licence.
Nitrates Directive 1991	Concerning the protection of waters against pollution caused by nitrates from agricultural sources – was adopted in 1991 and has the objective of reducing water pollution caused or induced by nitrates from agricultural sources.
Phosphorus Regulations 1998	The Phosphorus Regulations require local authorities to prepare Phosphorus Implementation Reports, outlining progress towards combating phosphorus pollution, with targeted reduction of phosphorus for Rivers and Lakes.
Planning and Development Act 2000	Each Local Authority has a responsibility to determine policy in its area through the making of a Development Plan and for applying that policy, through planning control, in deciding on planning applications and enforcing planning decisions. Both the process of drawing up Development Plans and of development control are open and allow for the involvement of third parties.
Wildlife Act 1976	It is an offence for a person to cut hedges from the 1st March to 31st August unless for road safety purposes.

ENVIRONMENT LEGISLATION

Legislation	Explanation
Roads Act 1993	It is an offence to deface, damage or dig up a public road without the permission of the County Council. It is also an offence to allow any material, such as clay, slurry or fodder onto a public road, where such material is or could be a hazard to road users or interferes with the safe use or maintenance of the road. Landowners should therefore ensure that trees, hedges or other vegetation are maintained in such condition that they are not a hazard to road users or that they do not interfere with the maintenance of the road. In particular branches which jut out onto the road should be cut back.