

A-Zero:

A farmer's guide to breaking free from environmental jargon



THE PRINCE'S
COUNTRYSIDE
FUND

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“In this new world, the relationship between farmers and carbon, water and biodiversity, will be of fundamental importance, with bigger challenges and new opportunities. So it is often unhelpful, perhaps, that much of the language being used to describe the situation and the potential remedies is so obscure, sometimes appearing as if it has been chosen to hide the real message and alienate those who most need to hear it.”

HRH The Prince of Wales, Farmers Weekly Awards, February 2021



Introduction



“I hope this guide empowers all of us to get involved in creating real change”

Climate change is a critical issue for all of us. However, we know from our research that we can all struggle to engage with this subject due to the complex language that is often used. That's why we have partnered with The Prince's Countryside Fund to play our part and help farmers and suppliers to understand and talk about climate change.

I hope this guide makes conversations about sustainability across the farming community more open and accessible. But most importantly, that it empowers all of us to get involved in creating real change.

We are at a moment in time when we all need to accelerate our ambitions and work harder to look after each other and our planet. But we can't do this alone. Working in partnership with the 23,000 British and Irish farmers who produce the quality ingredients for our menu is essential in creating real change. It's why I'm so passionate about our partnership with The Prince's Countryside Fund. From our Ready for Change workshops to this new guide, together we want to provide the farming community with the knowledge and confidence to address future challenges head-on.

I believe that our lasting positive impact lies in the communities we serve. With 1,400 restaurants, more than 23,000 farmers and brilliant partners like The Prince's Countryside Fund, we have an opportunity to use our scale and presence in local communities to act on some of the most pressing social and environmental challenges we face. This guide is an important step on that journey and, if we work together, I believe that we can make a real difference.

A handwritten signature in black ink, which appears to read 'Paul Pomroy'. The signature is written in a cursive style and is positioned above a short horizontal line.

Paul Pomroy
Chief Executive, McDonald's UK and Ireland

Welcome



“We are delighted to help break down the often-incomprehensible language that can go hand-in-hand with sustainability and environmental schemes”

At the Farmers Weekly awards in February 2021, our Patron, HRH The Prince of Wales, highlighted the vital role that farmers can, and do, play in managing our environment – and how complicated, confusing, and off-putting the language that goes alongside this can be.

Since The Prince's Countryside Fund was founded in 2010, we have endeavoured to create a real future for rural Britain – for its farmers, food producers, and those who love and choose to live and work in our countryside. What we do to support hundreds of thousands of individuals in need has been focused on practicality: business and environmental support for family farmers delivered by those who understand their specific challenges, grant funding for communities to get essential services off the ground, and creating a network of Farm Support Groups to ensure that assistance is available in local communities when it's most needed.

We are delighted to have responded to The Prince of Wales's challenge to create this 'glossary', to help break down the often-incomprehensible language that can go hand-in-hand with sustainability and environmental schemes. We are immensely grateful to McDonald's UK and Ireland for supporting this project, as well as for their wider support of our activity, and hope that the guide will prove to be a really useful introduction to phrases, techniques, and language that farmers in the UK will encounter more and more frequently as we all address the climate emergency that our world is facing.

We know that family farmers are already doing a lot to care for the environment around them and to produce healthy, sustainable food for their customers. The Prince's Countryside Fund will be by your side as we all move forward on this challenging – yet exciting – journey towards creating a better planet from which we all can benefit.

Keith Halstead
Executive Director, The Prince's Countryside Fund



Please use this glossary for a basic definition of terms used in sustainable farming. It is hoped the guide will be used by farmers and advisers to de-mystify some of the more commonly used terms, or spark an interest to discover more. Certain principles and practices described may differ locally. Most of the terms describe ways of using nature-based solutions to build soil health, support wildlife, and help fight the climate emergency. For further information, please visit www.princescountrysidefund.org.uk

The information in this guide is correct as of 1 July 2021.

Agroecology – Working carefully with nature and people to create a more sustainable and fair food system.



Agroecology is an approach that learns from, works with and enhances natural processes on the farm. It also considers the social, economic, and environmental effects of food production on farmers, growers, businesses, citizens, communities and countries. It aims to make sure that plants, animals, humans and the environment all exist in harmony together. Examples of agroecological approaches are **integrated pest management**, **organic agriculture**, **conservation agriculture**, **agroforestry** and **regenerative agriculture**.

Agroforestry – Planting trees and hedges on farmland to bring a range of benefits.



There are different ways to integrate trees into farmland and the planting density can vary. The goal is for the trees and agriculture to be more valuable planted together than if planted separately. Value is from both harvestable yield and benefits to nature. An example of agroforestry is introducing a hedgerow to create shelter and improve welfare. The hedgerow can also provide a source of livestock feed, wood fuel, wildlife benefits, **carbon sequestration** and help prevent floods. See also **silvo-arable** and **silvo-pasture** which are both forms of agroforestry.

Beetle bank – A strip of tussocky grasses in arable fields created to encourage pest-beating insects.



A beetle bank provides habitats for insects and spiders that help control pest species, such as aphids, in the crop. It is a form of natural pest control that helps reduce or eliminate the use of insecticides. A beetle bank can also support habitats for other wildlife, such as corn buntings and skylarks.

Benchmarking – Measuring a farm's performance against the industry standard.



Benchmarking is traditionally used to compare financial performance, such as profitability. Farmers can also now benchmark against the wider farming industry on environmental measurements, such as carbon emissions and winter bird counts.

Bi-cropping – Growing two crops together to gain benefits from how they work in partnership.



Growing two (or more) crops together can lead to greater benefits than growing them separately. The benefits can include **nitrogen fixation**, structural support, pest resistance or weed suppression. For example, a cereal, such as barley, is typically sown with a legume, such as peas – the barley provides structural support to the pea and helps to suppress weeds. The two crops can also use the nitrogen in the soil more efficiently if they are sown together. If the varieties mature at the same time, the two crops may be harvested together, and the seed separated. The two crops may also be whole-cropped for livestock feed. Bi-cropping is also known as integrated cropping or inter-cropping, particularly if a farmer is incorporating more than two crops.

Biodiversity – A measurement of different life forms in a particular place.



Biodiversity is commonly used to define the number of different species in a particular habitat. In farming, biodiversity can also refer to the number of different habitats within a landscape, breeds within a region, and genetic diversity within a breed. For example, a meadow with high biodiversity will have a wide range species from plants and birds to insects, fungi, spiders and worms.

Biodiversity net gain – Using development to increase local biodiversity.



To make sure that new development projects (such as building houses) have a positive outcome for nature, special requirements can be put in place before the project starts. For example, a project can be designed to increase **biodiversity** of a site by 10 per cent – a 'biodiversity net gain'. An increase in biodiversity can be achieved by: avoiding harm to the site's original biodiversity where possible; minimising any harm that is unavoidable; and taking measures on the development site to restore, enhance or recreate damaged habitats. If biodiversity cannot be increased on the site, the developer can pay a local landowner to create and manage a new habitat that will achieve the same local biodiversity increase.

Biodynamic – A type of organic agriculture that recognises and makes use of the rhythms and cycles of the immediate environment, the Earth, sun, moon, stars and planets.



Biodynamic agriculture explores subtle interactions between plant and animal growth in the immediate natural environment and beyond, in the wider cosmos. For example, preparing compost with a specific selection of ingredients is a key element of biodynamics. In another example, just as the moon affects the tide, farmers who follow biodynamic principles believe the phases of the moon affect the best time to sow and harvest crops.

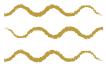


Biofuel – A fuel derived from living (or recently living) materials; a renewable source of energy.



Biofuels are made from materials that can be grown again and are therefore a renewable source of energy, unlike fossil fuels. They also have a lower **carbon footprint** than fossil fuels. Examples include biogas, which is collected from the processing of silage, manure or food waste in a process called anaerobic digestion. Ethanol is a liquid fuel that can be produced from cereals, maize and sugar beet. Straw, miscanthus and woodchip fuels are typically called biomass when burnt for heat energy.

Buffer strip – A strip of permanent vegetation, such as grass, which can help prevent soil erosion or provide a habitat for wildlife.



A buffer strip sits next to a farm habitat feature, such as a river, stone wall, hedgerow or wood, and is typically a grass mix of four to six metres wide. Buffer strip management can control woody growth or improve the habitat value. It can bring many environmental benefits, such as preventing soil erosion or providing a safe haven for wildlife of ungrazed, uncultivated habitat.

Carbon calculator – A tool to work out a farm's greenhouse gas emissions.



Carbon calculators are often available online. In addition to counting **greenhouse gas** emissions, some carbon calculators also estimate carbon captured from the atmosphere and stored in the soil (**carbon sequestration**). Farm data – such as diesel use, livestock numbers and fertiliser – can be entered into a carbon calculator. The calculated score provides a value to benchmark and helps farmers to manage greenhouse gas emissions.

Carbon credits – One tonne of carbon dioxide removed, reduced or avoided from the atmosphere and traded on a carbon market.



Removing, reducing or avoiding carbon dioxide (or an equivalent **greenhouse gas**) in the atmosphere are activities that can qualify for carbon credits. Critically, carbon credits are only issued from activities that are measurable and verifiable. Projects that generate carbon credits must adhere to a strict set of criteria and be verified by an independent third-party agency. The methods to calculate carbon removal, reduction or avoidance are scrutinised by panels of experts. Once a carbon credit has been purchased by an organisation or individual to balance a tonne of carbon emissions, it is permanently 'retired' so it cannot be used again. Reducing emissions (for example, from using less diesel and fertiliser), planting trees and sequestering carbon in soils are examples of projects that can be registered by farmers through an accredited carbon credit scheme. The farm can then sell the carbon credits on the carbon markets.



Carbon footprint – The amount of carbon emitted into the atmosphere by an activity.



Measuring the contribution of an activity to **climate change** is called 'carbon footprinting'. It is called a 'carbon' footprint because the different contributing **greenhouse gases** (including methane, nitrous oxide and carbon dioxide) are all calculated as an equivalent amount of carbon dioxide released into the air. The carbon footprint is given as a total weight of carbon dioxide (or equivalent) released in grams, kilograms or tonnes throughout the activity. For example, calculating the carbon footprint of one glass of milk would include a proportion of carbon emitted from producing cattle feed, using diesel to scrape the yard, methane from the cattle, electricity for milk pasteurisation, diesel for transport and electricity to refrigerate the milk at home.

Carbon sequestration – Capturing carbon dioxide from the air and storing it on the land.



Carbon capture happens naturally when plants take carbon (as a gas) from the air and turn it into a liquid or solid form (for example, plant material) as part of the carbon cycle. (As a quick reminder, carbon cycles through the environment in different ways. It travels from plants and animals into the atmosphere through respiration; it passes into the soil when plants and animals die and decompose; and it moves from the atmosphere into plants during photosynthesis.) Carbon dioxide is a key contributor to **climate change**, so when carbon is captured, or 'sequestered', from the air and stored in the soil indefinitely, it helps fight climate change. Examples of activities that encourage carbon sequestration on farmland include hedgerow planting and tree growth, and farming practices such as grass leys in an arable rotation and shifts to permanent grassland, that increase the amount of carbon in the soil (also see **soil organic matter**).

Catchment management – Managing areas of land to avoid flooding and improve water quality.



In farming, a catchment normally refers to an area of land from which water drains before it enters a river or other body of water. For example, water from a field in the River Wye Catchment might drain into a stream and then into the River Wye. Catchments may include several farms as well as land used for other purposes. How the land that makes up a catchment is managed affects water quality and flooding. As a result, addressing issues in a particular catchment, such as frequent flooding of a town, can involve many farms working together under the same Water Catchment Management Plan. Working collaboratively can sometimes help secure funding and support. **Natural flood management** is an example of a farming and land management technique that works more effectively when carried out through a whole catchment.





Climate change – The change in the average weather conditions over a long period of time.

Climate change is often used to describe the rise in global temperatures over the last 100 years, however, it can also be specific to a region. Shifts in the volatility and extremes of weather over a long period of time can also be a measure of climate change. The 'climate crisis' and 'climate emergency' are terms that some campaigners use to reinforce the urgency to act on climate change.



Conservation agriculture – An approach to protect and rebuild the health of soil.

There are three core principles of conservation agriculture which all work together to build soil health. These are minimising soil disturbance, maintaining permanent soil cover, and diverse crop rotations.



Conservation tillage – A technique of reducing tillage and maintaining soil cover.

Conservation tillage requires a certain amount – usually 30 per cent or more – of crop residues to remain on the soil surface. This can help to reduce the loss of soil and water in comparison with deeper tillage and bare soils. See also **reduced tillage** and **zero tillage**.



Cover crop (or catch crop) – A crop that is grown to protect the ground between two regular cropping windows.

Cover crops are sown between two main crops to cover the soil, often during autumn and winter, and are not harvested to be sold. Cover crops can help to build **soil organic matter**, recycle nutrients and manage weeds, pests and diseases. They can also enhance the environment by creating habitat and food for wildlife, providing **natural flood management** and preventing soil and nutrients escaping to watercourses. Livestock may graze the cover or catch crops to get more value out of them, and to help knock the vegetation back before the next crop is drilled. Catch crops are a fast-growing cover crop that may be sown to 'catch' nitrogen before it washes out of bare soils, or to replace a failed crop to 'catch' the growing season. Mustard is an example of a cover crop that grows quickly to cover and protect the soil surface. Mustard's strong rooting system helps to improve soil structure, can reduce the loss of beneficial nutrients such as nitrates, and prevents soil erosion.



Ecosystem services – The actions of nature that benefit people.

Living biology (for example, plants and animals) and non-living elements (such as water, air and minerals) interact in nature and create an 'ecosystem'. Humanity is dependent on the natural processes of ecosystems to produce air to breathe, clean water, food and to regulate the climate. These benefits to people are known as ecosystem services. Farming can support many different ecosystem services,



for example **carbon sequestration, natural flood management**, and pollination. In the latter example a bee visits a flowering fruit bush, the natural process of pollination occurs, and the bush yields a fruit crop for people to eat.

Greenhouse gases – The gases that warm the Earth’s atmosphere.



Greenhouse gases in the atmosphere allow sunlight to reach Earth but don’t let the heat escape back into space. A rise in greenhouse gases in the atmosphere causes the Earth’s climate to warm. Greenhouse gases come from a range of natural and human sources. Examples of greenhouse gases created by farming include carbon dioxide emissions from vehicles, methane emissions from livestock, and nitrous oxide emissions from manures and fertilisers. Even though farming can contribute to the rise in greenhouse gases, farming can also help reduce them (see **carbon sequestration**).

Herbal ley – A diverse mixture of grasses, legumes and herbs that can bring different benefits to less diverse grass leys.



Instead of simple ryegrass, or ryegrass and clover, a herbal ley can bring benefits of additional plant species. If the ley is to be used for livestock feed, some plants in the mix could be selected for natural anti-parasitic properties. The mix may also bring different nutritional qualities. Selecting different species in the right conditions can also bring benefits to soil health, wildlife and **climate change**. For example, sainfoin can be used in a herbal ley mix, which can root to more than 20 feet deep and help improve soil structure, resistance to drought and waterlogging. Sainfoin is highly palatable for livestock, has natural anti-parasitic properties, and its flowers provide a rich source of pollen and nectar for pollinators.

Holistic grazing – The management of grazing livestock to improve grass regrowth, soil health, and to bring other environmental benefits.



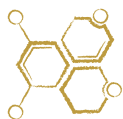
Holistic grazing mimics the behaviour of animals in the wild by concentrating livestock in a small area for a short period of time. The aim is to achieve a balance between vegetation that is trampled to feed the soil; vegetation remaining to continue growing; vegetation to feed the livestock; and manure deposited evenly to fertilise the pasture. The pasture is then rested for between four weeks and a year to allow it to recover. Mob grazing, adaptive multi-paddock grazing, conservation grazing, and tall grass grazing are similar practices. Examples of benefits from holistic grazing include improved grass production, water management, **carbon sequestration** and increases in **biodiversity**.

Integrated farm management – An approach that considers all areas of farm management that affect productivity, profitability and the environment.



Integrated farm management tools can help farmers to understand, manage and improve their farm’s overall sustainability by taking into account things like soil management and animal husbandry, as well as financial measures (such as the cost of feed and income from sales).





Integrated nutrient management – This optimises the supply of nutrients to plants using a combination of different ways to boost soil fertility.

Soil gains nutrients from a range of sources including organic (such as manure), inorganic (fertiliser) and biological (plant matter or beneficial soil life). A farmer using integrated nutrient management will consider all these possible sources over a complete cropping rotation, allowing for different demands on the soil, the nutrients available and soil management practices.



Integrated pest management – Applying different techniques to pest management to improve a farm's productivity and sustainability.

Farmers can manage pests more effectively by trying out a range of different strategies and reviewing which is the most successful. Techniques could include non-chemical methods (such as biological control), applying reduced amounts of pesticide only when necessary, understanding pest resistance, preventing pest attack, monitoring crops and understanding crop tolerances and thresholds.



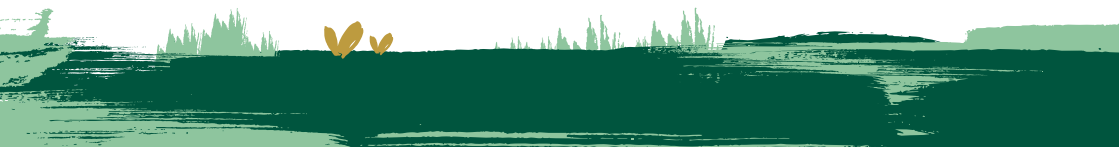
Land sharing and land sparing – Two different approaches used by farmers and conservationists to encourage a greater diversity of wildlife in the landscape.

Land sharing incorporates conservation practices and techniques into farming that encourage **biodiversity**. This may be more diverse cropping, reducing the use of agrichemicals, planting more trees in and around fields or introducing more diverse species in a grass sward. At the other end of the spectrum, land sparing aims to intensify farming practices to obtain the same yield from a smaller area of farmland, so that less productive areas can be reserved specifically for wildlife conservation.



Landscape-scale approaches – Groups of farmers working together on environmental projects to achieve greater impact.

Managing wildlife and habitats has traditionally been carried out by farms in isolation from one another. But wildlife and other aspects of the environment do not recognise farm boundaries. Landscape-scale approaches to conservation and environmental protection create partnerships between neighbouring farms so that groups of farmers (sometimes referred to as Farm Clusters) can work together to achieve common goals while also exchanging ideas and building community relations. Some new financing schemes require multiple farms to work together, such as utilities companies investing in Water **Catchment Management** Plans, and it is likely to be a future requirement in certain publicly funded environmental schemes. An example of a landscape-scale approach is grey partridge conservation. Grey partridges require extensive habitat for nesting and rearing young, over-winter cover and protection from predators; several thousand acres of habitat might be needed to rebuild a thriving population. A landscape-scale approach to conserving grey partridges, with a cluster of farms working together, is often more effective than farmers working in isolation.



Natural capital – The planet’s resources that are valued by humans including soil, air, fresh water and all living things.



Natural capital is the planet’s stock of natural resources, for example, the amount of peat in a moorland landscape, clean water in an aquifer, or wild fish in a river. Natural capital puts a measure and value on the stock of nature. The stock can be reduced or increased – particularly by human activity. The goods or services that people draw from natural capital are called **ecosystem services**. Farming depends on the natural capital of soil. The health and value of the soil ‘stock’ can be increased with sustainable farming practices (for instance with **agroecology** and **regenerative agriculture**). The natural capital of soil can also be decreased, through erosion, loss of **soil organic matter** and damage to the **soil biome**. The ecosystem services delivered by the natural capital of soil include **carbon sequestration** and production of food.

Natural flood management – The use of natural materials and techniques to manage flooding risk.



Natural flood management is the opposite to hard-engineering solutions such as concrete barriers, levees, artificial weirs and dredging. Examples include ‘leaky dams’ made with branches that imitate beaver dams and help to slow the flow of water in streams high up the catchment. Water courses can be encouraged to go over riverbanks to store flood water in places where it can cause less harm. Good soil health with year-round vegetation cover and high permeability helps water to be absorbed. Carefully positioned woodlands and hedgerows help to intercept the flow of water over land and prevent flooding.

Nature recovery – Reversing the decline of the range and abundance of plants and animals.



Encouraging nature recovery can sometimes mean promoting a radical increase in areas that are left wild and uncultivated to encourage plants and animals to naturally re-establish themselves. ‘Wild’ areas may include plots of land that are fenced off from traditional farming areas and saved for wildlife conservation. Nature recovery can also be used to refer to encouraging nature into farms. For example, instead of a single species ryegrass as a silage crop, a field that includes other forage varieties, such as clover or sainfoin, can increase the value of the field for wildlife while still generating a productive crop.

Net zero carbon (and carbon neutral) – Achieving zero carbon by reducing emissions as far as possible before balancing unavoidable emissions with carbon credits.



To combat **climate change**, humanity needs to stop increasing the levels of carbon dioxide and equivalent **greenhouse gases** in the atmosphere. Some people or organisations – including certain farms – have unavoidable **greenhouse gas** emissions and will not achieve a balance of **zero carbon** by

reducing emissions or capturing carbon themselves (**carbon sequestration**). Therefore, organisations reduce their own **greenhouse gas** emissions as much as possible and then buy **carbon credits** to balance their emissions and become 'net' zero carbon. Net zero carbon is similar to the term 'carbon neutral', however with carbon neutral, there is no emphasis on reducing emissions before balancing the emissions with **carbon credits**.



Nitrogen fixation – A process where bacteria turn nitrogen gas from the air into ammonia, nitrates and nitrites in the soil, improving soil fertility.

Nitrogen fixing bacteria are present in nodules on the roots of legumes, including clovers, sainfoin, lucerne, peas and beans. A ryegrass and clover ley, for example, will require less artificial fertiliser than a pure ryegrass ley because the clover is a legume and fixes nitrogen naturally.



Organic agriculture – A globally recognised set of standards for food and farming focusing on building soil, plant and animal health to benefit the environment and people.

An organic producer is inspected annually under an independent certification scheme. Examples of organic standards – which are set in a legislative framework – include the ban of some agrichemicals, such as artificial fertiliser and herbicide. Animal stocking density is lower than the industry norm and other inputs, such as antibiotics, are more restricted.



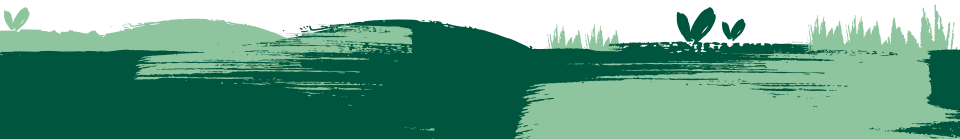
Productivity – A measure of a farm's input to output ratio.

Farming inputs are wide ranging and include labour, land, diesel, feed, fertiliser and replacement livestock. Outputs (such as finished lambs or litres of milk) are traditionally measured as their market value. Using fewer inputs, more efficiently, to produce the same amount of output increases productivity. Reusing and recycling inputs can also increase productivity. As the recognition of sustainability becomes more urgent, farm productivity is beginning to also consider the impact on the environment in terms of inputs and outputs. For example, a farm's productivity can now be gauged by the measure of **greenhouse gas** emissions per litre of milk, kilo of meat or tonne of crop produced.



Public goods – Goods provided for the benefit or well-being of the general public.

Public goods include **carbon sequestration**, improving the beauty of the landscape, access to land by the general public, increasing **biodiversity** or flood prevention. For example, if a farmer plants trees on a hillside to prevent flooding beyond the farm's property, the farmer has created a public good by saving houses and land downstream from flooding.



Reduced tillage – Preparing a seed bed with fewer and shallower cultivations than the norm to improve soil health.



Tillage over the last century typically used a plough to invert the soil and has often been followed by secondary tillage with a harrow or discs. Reduced tillage, non-inversion tillage, minimum tillage and reduced cultivation are all terms used to describe cultivation techniques that do not apply deep inversion ploughing but cultivate to a shallower (often specified) depth. See also **conservation tillage** and **zero tillage**.

Regenerative agriculture – A range of farming principles and practices that aim to optimise food production and improve the environment.



The fundamentals of regenerative agriculture are increasingly seen as good practice, such as **reduced tillage**, leaving crop residues on the soil, and the use of **cover crops**. Examples of environmental improvements from regenerative agriculture include increased **biodiversity** and **carbon sequestration** in the soil.

Reintegrating livestock into arable – Introducing forage leys, catch crops or cover crops in an arable rotation to feed livestock.



Forage leys may be grazed or cut and conserved for feed. As some arable farms no longer have the skills or equipment to manage stock themselves, grazing agreements with nearby livestock farms are becoming increasingly popular. An example is including a two-year grass and clover ley into an all-arable rotation. The ley may be grazed or cut and carted. There are other potential benefits including breaking pest, weed and disease lifecycles (such as black grass), building **soil organic matter**, soil structure and **nitrogen fixation**.

Rewilding – Aiming to rebuild natural habitats and processes that existed in ancient times before human cultivation.



Rewilding is regarded as an alternative approach to traditional nature conservation practices. It means different things to different people, from reintroducing lynx, wolves and wild boar, to simply allowing nature to take over an area with no human interference. If no animals are introduced and there is less human interference, the rewilding process is known as passive rewilding, ecological rewilding or land abandonment. See also **nature recovery**.

Riparian – The area of land along the banks of a water course.



This term is used in several different ways, such as riparian trees, grazing, fencing, zone, **buffer strips** and management. An example of riparian management is fencing off livestock or avoiding cultivation along the watercourse edge. This can help to improve the water quality, wildlife habitat and flood management.



Short supply chain – When there are just a few steps from the farmer's field to the customer's plate, allowing more connection between the two.



In modern food systems there can be many steps necessary to take an item of food from the farm to the customer's plate, with lots of separate intermediaries, such as processing, transport, wholesale and retail companies. A short supply chain has fewer steps and fewer intermediaries. For example, a livestock farm which sells meat boxes directly for customers to collect may only involve an abattoir and butcher in its short supply chain.

Silvo-arable – Planting trees in arable fields to boost natural and commercial value.



When trees are planted into arable fields, they are spaced according to the width of cultivations. The farm's annual arable yield continues to provide an income before the trees are cropped – this is a longer-term investment. Farmers often prefer deciduous trees, as there is less shading for a significant period of the year.

Silvo-pasture – Planting trees in livestock pastures to boost natural and commercial value.



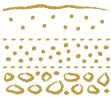
Similarly to the **silvo-arable** approach, the trees can bring benefits to the farm. Trees create shade and shelter for livestock in adverse weather. Their foliage can also provide protein, minerals and vitamins for the livestock.

Soil biome – The living part of soil, from microscopic life to larger animals and plants.



The biome of healthy soils contains a range of microscopic life such as viruses, bacteria, fungi and algae. It also includes bigger, more complex animals and plants, like earthworms and plant roots. It influences the soil's health through texture, structure, porosity and chemistry. The soil biome affects the soil's carbon storage and its contribution to the cycles of nutrients and minerals for crops and livestock.

Soil organic matter – The part of soil which is alive, was once living or is the residue from living organisms.



Soil is composed of minerals, water, air and organic matter. Soil organic matter changes due to shifts in farming practice such as tillage, grazing, crop rotation and pasture management decisions. The organic matter can include materials that have been added to the soil from somewhere else, such as manure. Levels of soil organic matter can be an important indicator of soil health and increases in the carbon component (called soil organic carbon) are used to measure soil **carbon sequestration**.



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



This definition of sustainable development is from the Brundtland Report, a 1987 publication by the United Nations World Commission on Environment and Development, and it helps to explain the very closely associated concept of sustainability. Sustainability often considers three key areas: environment, ethics and economics. Without continued stability of all three areas, sustainability cannot exist. For example, a sustainable farm yield would ensure protection of the soil and water (the environment), provide healthy food with high welfare (for ethical reasons), and be sold for as much as or more than it cost to produce (economics).

Wildlife corridors – A feature that links one habitat to another to support wildlife to spread and move.



Wildlife corridors include ditches and streams that are sensitively managed to act as a link between ponds and wetlands. These could help the movement of water voles to expand their range. Further examples are hedgerows and field margins. They can provide a valuable wildlife corridor for a wide range of animals, from foraging bats and barn owls to small farmland birds navigating safe passage between feeding grounds.

Zero carbon – Where an organisation as a whole, such as a farm, contributes no carbon dioxide or equivalent greenhouse gases to the atmosphere.



This occurs if the farm's emissions, such as the fuels that it consumes, are balanced by the carbon captured and stored in the farm's trees and locked in the soil by growing pastures and crops (**carbon sequestration**).

Zero tillage – Having no cultivation or tillage after harvest and before the next seed is drilled to maintain soil health.



In this approach, drilling is carried out directly into the residues of the previous crop, without any soil cultivations. This means there is little mechanical disturbance to the soil surface. It is also known as direct drilling or no-till. See also **conservation tillage** and **reduced tillage**.



About The Prince's Countryside Fund

Founded by HRH The Prince of Wales in 2010, The Prince's Countryside Fund is the only UK-wide charity that empowers family farms and rural communities to ensure their future.

The countryside is our most valuable asset, and farmers and rural communities are the lifeblood of the British countryside. They maintain our iconic landscapes – 70 per cent of the land in the UK is under the stewardship of farmers. The countryside forms a vital part of our heritage and the very fabric of our British identity. It is farmers who created this harmony between humanity and nature, and who look after our countryside to ensure it is there for future generations to enjoy.

The countryside, what it does, what it produces and what it offers, has an impact on us all. The Prince's Countryside Fund wishes to see a thriving countryside – a living, breathing, working place that it is there for everyone. Our work coalesces around three pillars: enabling family farms to thrive, building confident rural communities, and inspiring support. We achieve these aims through our programmes and initiatives, from providing free business skills and environmental management training to farming families, to investing in essential rural services.

We have significant ambitions for the next three years: extending our reach to help 10,000 family farms, increasing our work with rural communities to assist them in becoming more self-sufficient and viable through community-led solutions, investing at least £500,000 each year through our grant programmes, and strengthening our networks of support.

To find out more and support our work, visit www.princescountrysidefund.org.uk



About McDonald's UK and Ireland

McDonald's is one of the world's largest restaurant companies. Our first UK restaurant opened in Woolwich, London in October 1974 and today, we operate a network of more than 1,400 quick service restaurants across the UK and Ireland. We employ over 130,000 people and work in partnership with more than 23,000 British and Irish farmers, to combine great tasting food, made from high quality ingredients with service that our customers know and trust.

McDonald's is committed to the futures of the farmers they work with and that of the industry, building relationships and investing in research which aims to change farming for the better. Its Farm Forward programme has three aims that include developing skills and knowledge, raising animal welfare standards, and making environmental improvements, while its Progressive Young Farmers Programme supports those looking to enter the industry with a 12 month placement.

McDonald's has worked on a range of research projects with FAI for over two decades, including the Range Enrichment programme for laying hens and the Regenerative Beef Project, which was awarded the Sustainable Food and Farming Award 2021 from Compassion in World Farming.

A large proportion of our UK and Ireland restaurant estate is run by franchisees, who play a vital role in ensuring we run sustainable, environmentally conscious restaurants which provide employment opportunities to local people and make a positive contribution to the communities in which they operate.

For more information about McDonald's, please visit
www.mcdonalds.com/gb/en-gb.html





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