

What Is Regenerative Agriculture

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What Are The Benefits?

Regenerative agriculture offers an exciting and sustainable approach to farming and producing food. Over the last few years, it's grown in popularity as environmental and sustainability issues have become more prominent. It's now become somewhat of a buzzword. But for good reason I hope.

I first heard about regenerative agriculture whilst reading about the superb conservation and rewilding work at the Knepp Estate and through watching the [Kiss the Ground documentary](#).

What if I told you that regenerative agriculture could play a key role in restoring biodiversity and creating more resilient habitats to face our uncertain climate whilst providing plentiful food?

It's true – regenerative farming offers a bright beacon of hope for the future.

Let's take a look at exactly what it means, how it works and all the benefits of this sustainable farming approach.

What is regenerative agriculture?

Firstly, regenerative agriculture can go by a couple of different names. These include regenerative farming and sustainable agriculture.

Defining regenerative agriculture is a difficult task as there is no set definition that's agreed upon by a worldwide body. That's not necessarily a downside though, and I can certainly give you crystal clear idea of what regenerative farming is.

The main idea of regenerative agriculture is to revitalise both the farmland and wider ecosystem by placing a firm emphasis on the health of the soil.

Unlike conventional agricultural systems that deplete the soil of nutrients and decrease biodiversity, regenerative farming is a long-term approach that actively benefits the soil, the environment, biodiversity and in growing sustainably produced food.

The secret to regenerative agriculture is the soil.

In fact, soil is the key to life on land – it would not exist without this thin layer of organic matter mixed with minerals, water, gas and organisms that covers the land.

As is often the case, it's the overlooked things that are actually the most important. In the case of agriculture and food production, it's soil health that has been overlooked.

According to the [WWF](#), the world has [lost 50%](#) of its productive top soil in the last 150 years.

This is a terrible statistic, but the beacon of hope is that soil can be created again. Yes, nature is that good. The issue for the impatient human race is that it takes time on the scale of hundreds of years to build up just a centimetre of new soil.

One way of doing this is through sustainable land management that focusses on ecological functions – this is exactly what regenerative agriculture does.

How does regenerative agriculture work?

Most agricultural practices are about one thing – producing as much as one thing as possible. You could argue that this has worked very well for food production.

The main problem is that conventional agriculture is not sustainable when scaled up across huge areas. It causes harm and degradation on a disproportional scale to biodiversity, habitats, water cycles and the wider environment.

Regenerative agriculture aims to have a positive impact on the farmland by creating mutually beneficial relationships across the ecosystem. So, how does it all work?

As there is no set definition of regenerative farming, it can work in a variety of ways.

From direct farming methods, such as no tilling, to processes of integrating trees and shrubland on the farm, there isn't just one way to regenerate agricultural land. It's often achieved through a combination of processes and methods.

That being said, regenerative agriculture has a number of key principles that are common across farms.

5 principles of regenerative agriculture

1) No tilling

Tilling is the practice of turning over and breaking up the soil. It's done to blend the left over harvested crops, weeds and other matter into the field to make way for new seeds.

The problem is that tilling greatly disturbs the below-ground ecosystems and soil structure, as well as leaving the ground completely bare. Without plant cover, soil is much more likely to be eroded by wind and water.

When tilling is continued year after year, the all-important and intricate soil ecosystems of microorganisms, mycorrhiza, earthworms and insects become depleted. The ability to hold water also diminishes. Because of this impact of tilling, chemical fertilisers have to be used to add nutrients back into the soil.

As regenerative farming is all about preserving the soil health, no-till practices are followed. This means that when a crop is harvested, the remnants are left on the surface to keep the earth covered and the plants breakdown naturally, whilst returning their nutrients back to the earth.

Without tilling, soil structures and micro ecosystems can develop and establish their communities. It also keeps the good stuff, including carbon, in the soil systems.

2) No chemicals

Many regenerative farms try to minimise or eliminate where possible the use of artificial chemicals. These include fertiliser, herbicides, pesticides and other biocides.

For farmers, this can save a lot of money.

Instead of chemical fertilisers, natural fertilisers are welcomed. Local compost and organic mulches are excellent additions that will add beneficial nutrients back to the soil over time, whilst keeping the ground nicely covered to slow down erosion and water evaporation.

3) Ecosystems rather than monocultures

Conventional agriculture often focusses on creating just one crop, often over large swathes of land. This involves clearing the area and natural habitats in favour of planting a monoculture.

Plants, their root systems and accompanying mycorrhizal networks bring different specialisms to the area. This is why ecosystems work so well, as plants can benefit from each other. It's said to be mutually symbiotic. Diversified crop systems can also help protect farms against pests and diseases.

When you have just one plant over a large expanse of land, you don't get the mutual beneficial behaviour, which leads to nutrient depletion and soil degradation.

Regenerative agriculture favours the planting of multiple, diversified crops to create healthier, nutrient rich ecosystems. Often using perennial plants, life and the complicated systems are allowed to develop – this benefits both life above ground and below ground.

4) Cover crops

In order to conserve soil, it needs to be covered. By keeping plants on the ground after harvesting, or even as permanent fixtures in between rows, top soil is kept intact and erosion is limited.

Popular cover crops, include legume fixing plant such as white clover, that can act as a living mulch and continually benefit below-ground systems.

Cover crops can act as an alternative for tilling in the way that they can keep the soil loose and aerated with their root systems. This in turn allows earthworms to play their vital role.

Just as nature intended, cover crops and organic mulch keeps the soil covered but also decomposes over time and returns nutrients and organic matter back to the earth.

5) Integration of animals on the land

Animals are a key part of natural ecosystems. This is why regenerative agriculture aims to integrate livestock and other animals back into the land, rather than banishing them.

However, animal integration does need to be managed correctly if the land is to be utilised for growing food and providing crops.

The main way to do this is through grazing rotation, which mimics natural patterns of herd movement. By fencing off certain areas, animals don't have the chance to overgraze one area.

There are multiple benefits to grazing rotation. Firstly, plants have the chance to continuously grow back, which absorbs carbon dioxide. This is similar to how [cork oak trees](#) absorb lots of carbon – their bark is harvested but the trunk roots are kept intact and given a decade or so to regenerate back.

Secondly, the ground is stimulated through animal movement and trampling. This kickstarts the decomposition process and eventual soil formation.

Thirdly, animals deposit lots of organic compost back into the earth directly from their non-eating end! As long as the animals are kept on the move, the land and environment will benefit enormously from livestock integration.

What are the benefits of regenerative farming?

According to the [latest figures](#), agricultural land (cropland and pastures directly controlled by humans) occupies around 37% of the world's land area. In the UK, agricultural land accounts for [75%](#) of land use.

The impacts of agriculture are therefore significant. However, the impacts don't always have to be negative, they can be net positive with a switch to regenerative farming practices.

The many benefits of regenerative agriculture include:

- **Healthier soil**

Hopefully you've got the message of how important soil is. Regenerative farming's main priority is soil health. The practices of regenerative agriculture aim to develop soil that is full of microorganisms working in unison to the benefit of the plants above.

- **Carbon drawdown**

As plants grow, they absorb carbon from the atmosphere. By absorbing excessive carbon, the greater use of plants in regenerative agriculture could offset a large amount of carbon emissions and increase soil carbon levels. It's worth stating that full scientific understanding is still being developed on this.

It's true though that healthier soils hold more carbon (many more times that atmospheric carbon), which is a key component of soil organic matter. Carbon is often seen as the bad guy, when in fact, it's essential for life on earth.

As part of the symbiotic relationship, plants use carbon to make carbohydrates available for bacteria and fungi, who in turn provide plants with nutrients and minerals which they can't directly access.

- **Better water management and reduced flood risk**

The practice of keeping the soil covered and not tilling results in less soil erosion and prevents moisture lost. Farmland that isn't managed sustainably becomes depleted and dry, which increases the amount of water that runs off and causes problems downstream.

Healthier earth holds more water. The more organic matter in the soil, the more carbon and water it can hold. This allows it to deal with excessive water more efficiently, which is why sustainable urban drainage systems work so well. It all helps to fill up ground water storage and supply the water system naturally.

- **Better quality crops**

When you have healthier, nutrient-rich soils and better below-ground ecosystems, the result is increased fertility of the land. With more available nutrients, crops can grow stronger and produce better yield.

- **Reduces chemical usage, artificial fertilisers and pesticides**

Any opportunity to reduce the use of artificial, inorganic chemicals is good for the environment and the organisms living there. Some kind of fertiliser or pesticide may be used occasionally by regenerative farmers, but by in large they are greatly reduced. If no chemicals are used at all, this is called [organic](#) regenerative agriculture. It can also save the farmer money.

- **More biodiversity**

It's said that we are currently going through a period of mass extinction thanks to the phenomenal way humans are impacting the planet.

Regenerative agriculture aims to benefit the whole ecosystem, which includes other plants and animals, as well as the main crops being grown. Because of the more diverse use of plants, integration of trees and shrubs, regenerative farming can see increases in biodiversity on the land, air, and in the soil. Important organisms such as birds, bees, insects, and microbes all thrive – the sign of a healthy ecosystem.

- **Community benefits**

Regenerative farming can bring wider benefits to local communities. It can help build stronger ties and relationships between regenerative farmers as well as customers and workers who help out on the land.

This is similar to the ties that [community supported agriculture](#) works. There's evidence to suggest that regenerative agriculture can boost local economies.

Wrap up on regenerative agriculture

On paper, regenerative agriculture looks like a fantastic approach to managing farmland. A no-brainer really.

But it's not without its issues. In the UK, we're still waiting for more farms to take up the regenerative approach.

We know there isn't a one-size fits all method to regenerative farming but it does require a completely different mindset. It's no easy switch and requires almost a steppe change in approach for traditional farmers.

However, it is growing. In June 2021, more than 3,500 people gathered for Groundswell, a regenerative agriculture show and conference in Hertfordshire. This is certainly positive.

Not all agricultural systems are degenerative. But it's imperative that agricultural practices become more sustainable, and even more, enhance the ecosystems they exist in.

Full regeneration of the land would be [rewilding](#), whereas full degeneration would be desertification. What we need if we are still to produce food whilst looking after the environment and benefitting our ecosystems, is an approach that sits in the middle. The answer here could be regenerative agriculture.

[What Is Regenerative Agriculture + What Are The Benefits? \(tinyecohomelife.com\)](#)