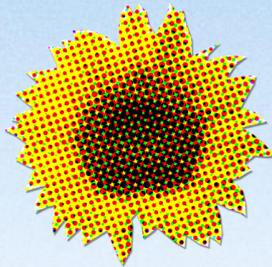
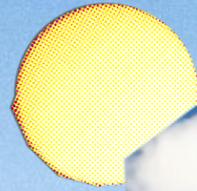


Rachel's
Farm



EDUCATIONAL RESOURCES

FOR

SENIOR SECONDARY SCHOOL

(YEARS 11-12)



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RESOURCE OVERVIEW

INTRODUCTION

While revealing the impact of post-colonial agricultural principles on our natural systems, *Rachel's Farm* presents the possibilities of adopting alternative regenerative farming practices to nurture organic, sustainable and 'climate-positive' food sources for our communities.

As an Australian Curriculum aligned resource for Senior Secondary (Years 11-12) Geography and Science, this documentary and its supporting education tools combine to form a timely and relevant case study for teaching and learning.

OVERVIEW OF THE RESOURCES

Rachel's Farm is a timely and valuable education resource for teachers and students across the nation that investigates, questions and compares post-colonial agricultural principles with an alternative regenerative approach to farming.

As a teaching resource, *Rachel's Farm* aligns directly with the Australian Curriculum Senior Secondary: Geography, Biology, Agricultural Studies, and Earth and Environmental Science. However, as a local Australian case study that reveals positive solutions to natural resource management, it can be easily adapted to meet the learning objectives of any classroom level.

Focusing on the four pillar principles of Regenerative Agriculture through Rachel's personal journey in the film, the documentary also portrays a generational shift in farm practice thinking, and the powerful potential of women farmers in regenerative farming.

To assist with accessibility, the resource is thematically presented in four sections so it can be used pedagogically effectively as individual lessons or as a four-part unit of study. These units, which each have a Fact Sheet and Worksheet activities are:

1. **WHAT** WHAT is regenerative agriculture all about?
2. **WHY** WHY is it a better alternative to conventional farming?
3. **HOW** HOW do we get started?
4. **WHO** WHO is pioneering this change?

This *Rachel's Farm* resource, comprising the film, Facts Sheets with information, quotes and key scene timecodes, and Worksheets with classroom activities, Discussion Topics and an Extension Exercise for deeper research, are designed to be used together to nurture understanding and activate a more sustainable future.

TOPICS AND THEMES



- Regenerative agriculture
- Regenerative farming principles
- First Nations' land management practices
- First Nations' nature custodianship principles
- Ecosystem interconnectedness
- Sustainability
- Environment
- Ecology
- Biodiversity
- Soil health
- Soil degradation
- Land cover
- Land degradation
- Land transformation
- Deforestation
- Native vegetation
- Human-induced environmental changes
- Human alteration to biomes
- Hydrology
- Water resource security
- Environmental management
- Agriculture
- Food production
- Food purchase and consumption
- Women and farming



Before commencing with the units, we recommend that you first facilitate a viewing of the film for you and your class to watch *Rachel's Farm* in its entirety.

WATCHING THE FILM

We recommend that you and your students view the film in its entirety (1 hour 27 minutes) before commencing the first unit of work.

Once the film has been watched, you can dive into the unit of work. There are time-coded scenes from the film that are referenced in each section that you can revisit with your class to refresh and support learning pertaining to these lessons.

There are a few choices in how you might like to share the film with your class:

1) Host a screening for your class (or your wider school community).

Purchase an educational licence which provides unlimited access to the film for educational use and on campus screenings for the wider school community. Schools will receive a digital copy of the film and a downloadable copy of our free School Action Toolkit and Screening Guide.

2) Ask your students to watch the film in their own time as pre-homework before starting the lessons.

A) If your school or institution has a ClickView subscription:

You can access Rachel's Farm via the ClickView platform:

<https://online.clickview.com.au/libraries/videos/58745804/rachel-s-farm>

B) If you do not have access to ClickView:

You can purchase an educational licence to screen the film to your class and request a streaming link to share with your students.

Please complete the Host a Screening form on our website and our team will be in touch to assist you:

<https://theregenerators.org/rachels-farm/host-a-screening-rachels-farm/>

FACTSHEET

WHAT

So, what is regenerative agriculture all about?

INTRODUCTION

In the documentary Rachel is introduced to the concept of regenerative agriculture (or 'regen ag') by her neighbour Mick, who is challenging the conventional ways his father has farmed for decades. Through Mick and other 'regen' experts Rachel learns about the importance of nutrient rich soil, better water management methods, the practice of rotating livestock to foster healthy paddocks, and the ecological need for biodiversity and native plant ground cover. By doing all this, Rachel transforms her land through regenerative agricultural principles and thereby makes her farm more sustainable and more profitable.

"It doesn't have to be the way we've got caught doing things. We can make a profit and we can do it right. The more people that farm this way, the more we're going to heal our landscapes. So, I feel incredibly hopeful." – Rachel Ward

DEFINITION

Regenerative agriculture is an approach to farming and land management that focuses on restoring and enhancing the health of the ecosystem while promoting sustainable agricultural practices.

Regen ag can mean different things to different people and there's an array of practices that are being employed by farmers around the world. Each practice has the potential to help restore the soil's natural ability to sequester carbon.

The goal of regenerative agriculture is to improve soil health, biodiversity, and ecosystem resilience, while also aiming to mitigate climate change and foster sustainable food production.

"Regeneration means putting LIFE at the centre of every action and decision." – Paul Hawken

FACTS AND STATS

Biodiversity Loss: The World Wildlife Fund reports that wildlife populations have declined by an average of 68% since 1970 due to habitat loss (partially caused by land-clearing for agriculture), pollution, and climate change. Regenerative farming seeks to reverse this trend by promoting diverse habitats and crop rotations.

Carbon Emissions: Agriculture is responsible for about 24% of global greenhouse gas emissions, with conventional farming practices being a significant contributor. This contributes to climate change and its associated impacts.

Health Impact: The World Health Organization attributes 200,000 deaths annually to pesticide poisoning. Adopting regenerative practices can reduce exposure to harmful chemicals for both farmers and consumers.

Economic Vulnerability: Reliance on a narrow range of crops and high input costs in conventional farming systems can make farmers economically vulnerable. And, with the recent increase in the occurrence of extreme weather events, farmers' economic vulnerability is further exacerbated. Regenerative farming diversifies income sources and can provide more stable livelihoods.

KEY PRINCIPLES OF REGENERATIVE AGRICULTURE

- **Soil health improvement:** Practices that promote the development of healthy soil through techniques such as cover cropping, reduced tillage, composting, and agroforestry.
- **Biodiversity enhancement:** Encouraging a diverse range of plant and animal species within the agricultural system to support a more robust and resilient ecosystem.
- **Water conservation and management:** Employing strategies to conserve water resources and prevent soil erosion, such as rainwater harvesting and contour farming.
- **Waste reduction and recycling:** Minimising waste and recycling organic materials to improve nutrient cycling within the system.
- **Integration of livestock and crops:** Combining livestock and crop production in a mutually beneficial manner, such as rotational grazing and using animal manure as natural fertiliser.
- **Community and economic resilience:** Supporting local communities, promoting fair labour practices, and fostering economic viability for farmers.

PHILOSOPHY

Regenerative agriculture is based on a holistic system of farming that nurtures a harmonious relationship between agricultural activities and the natural environment, with the understanding that a healthy ecosystem will ultimately lead to more sustainable, resilient and abundant food production. It is an invitation to rethink our place in the world and to embrace a more holistic and sustainable way of living.

While 'regenerative' may be the new buzz word, many of these methods aren't new, and have been used by Indigenous cultures for many thousands of years. Indigenous cultures have long understood the importance of working with nature to nurture the land and ensure sustained health and productivity across all systems.

KEY SCENES

The following scenes from the documentary further explain the concept of regenerative agriculture:

Scene 1 A New Way Forward

Description

In this scene, Mick comes to Rachel and tells her that their conventional way of farming is not working, financially or ecologically. He points her to the state of their degraded soil and explains that he wants to try a new way - regenerative farming.

Timecode: 10.12.26 - 10.14.33 **Duration:** 02:07

Scene 2 Livestock as a Tool

Description

In this scene, Rachel and Mick discuss how overgrazing their cattle means their soil doesn't have enough time to recover. They work together to rotate their combined livestock through smaller paddocks, something Mick's Dad struggles with as a concept.

Timecode: 10.19.46 - 10.22.34 **Duration:** 02:48

Scene 3 The Secret Life of Soil

Description

In this scene, renowned scientist and author Charles Massey talks about the complex ecosystem under the ground and how traditional farming destroys that healthy biology. Soil is not just dirt, it's a living complex substrate that has to be nurtured and fed and protected.

Timecode 10.34.49 - 10.37.33 **Duration** 02:44

"I think the collective power of us all, when we're conscious about the world that our grandchildren are inheriting and that we need to do something quickly to turn it around, that power when harnessed, is incredibly powerful. And everybody has their particular bit that they can do. And now is the time to do it." – Rachel Ward

FURTHER INFORMATION

TEDx TALK By Dr Charles Massy

[How regenerative farming can help heal the planet and human health](#)

Regenerative agriculture is an ecological approach to agriculture that enables natural systems and functions to not just be renewed, but also to do the renewing: to self-organise back to healthy function, a radical idea of empowering and not controlling nature. In this talk, Charles Massy OA draws on his decades of farming experience and research to propose new ways of farming that don't harm the land and the planet in the way industrial agricultural practices can.

Learn more at: <https://www.ted.com/tedx>

Published: November 2018

Duration: 17.27 minutes

Downloadable PDF: [NSW Government: Department of Primary Industries Common Attributes of Regenerative Agriculture](#)

Regenerative agriculture can be challenging to define as it means different things to different people. Fundamentally, regenerative agriculture is about restoring and enhancing ecosystem function on farms and in landscapes through practices designed to work with the landscape, climate, people and livestock.

Resource Website: [Regeneration International](#)

A global non-profit organisation promoting regenerative agriculture, Regeneration International offers valuable information, resources, and articles on regenerative farming practices.

Regenerating Investment in Food and Farming: [A Roadmap](#)

This resource focuses on the deep transformative work that is underway to reconfigure our food and fibre systems. Actions that not only 'do less harm' and operate within planetary limits, but actively regenerate – restoring ecological and social communities, sequestering carbon, reconfiguring right relationships, and renewing soil and water cycles.

WORKSHEET

WHAT

So, WHAT is regenerative agriculture all about?

SUMMARY

Humans have relied on the earth's natural resources to survive for millennia. For over 65,000 years First Nations people practised a form of land management that has barely altered our biosphere. However, since colonisation of the Australian continent just over 200 years ago, human activities such as deforestation, expansion and intensification of agriculture, rangeland modification, land and soil degradation, have altered local and regional climates and hydrology, damaged ecosystem services, contributed to the loss of biodiversity, and altered soils.

Regenerative agriculture presents an alternative approach to farming that provides a solution to restoring natural ecologies and developing food production. Drawing on First Nations knowledge and our ever-deepening understanding of the inter-connectedness of natural systems and their interdependence, regenerative agriculture uses innovative scientific methods to transform and nurture environmental health.

1. Pre-viewing discussion topic (provocative)

What was the likely condition of the Australian continent's environmental 'health' prior to colonisation and the introduction of European style agricultural practices? How do we know this?

2. Post Viewing discussion topic (reflective)

In the film Mick says: *Every bad thing that I see on our farm, always comes back to something that I've done.* (at 10:39 mins)

What is Mick referring to when he says 'every bad thing', and why does he feel this way?

GROUP ACTIVITY

After watching the film and the clips specified in the Fact Sheet, reinforce an understanding of regenerative agriculture by focusing on its Four Pillar principles. These are:

1. **Soil Health:** Utilising cover crops like legumes (e.g., clover) to fix nitrogen in the soil and improve its fertility, reducing the need for synthetic fertilisers.
2. **Biodiversity:** Implementing agroforestry systems that integrate fruit trees, crops, and livestock, creating a diverse and resilient ecosystem.

3. **Water Conservation:** Employing rainwater harvesting techniques to capture and store rainwater for irrigation during dry periods, reducing reliance on external water sources.
4. **Community Resilience:** Establishing local farmers' markets and community-supported agriculture (CSA) programs to promote direct connections between farmers and consumers.

Have students break into four groups.

Each group will need researcher/s, brainstormer/s, writer/s, designer/s illustrator/s and a speaker to contribute and collaborate.

Assign ONE of the Four Pillar principles to each group.

Focusing on its designated pillar, have each group create a graphic model on a poster size sheet that demonstrates their understanding of the components of the pillar ecology when it is in a healthy and regenerative state.

Have a nominated speaker from each group explain the completed graphic model to the whole class.

Hang the four posters on a wall alongside each other to represent the completed exercise of identifying and understanding the Four Pillars of Regenerative Agriculture.

Discuss the relationship, interconnectedness and interdependence of each pillar to each of the other pillars.

EXTENSION EXERCISE

As definitions, regeneration and sustainability overlap, but there is a key difference between the two:

1. Sustainability seeks to maintain systems without degrading them.
2. Regenerative design and development aim to reverse environmental degradation by enabling human systems to co-evolve with nature.

With these definitions in mind, do some investigation into the idea of custodianship of the land as practised by many First Nations peoples. Then, in your own words, explain how First Nations peoples land management aligns with regenerative practice principles.

FURTHER INFORMATION

TEDx TALK By Dr Charles Massy

[How regenerative farming can help heal the planet and human health](#)

Regenerative agriculture is an ecological approach to agriculture that enables natural systems & functions to not just be renewed, but also to do the renewing: to self-organise back to healthy function, a radical idea of empowering and not controlling nature. In this talk, Dr Charles Massy OAM draws on his decades of farming experience and research to propose farming practices that don't harm the land and the planet in the way industrial agricultural practices can.

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Regenerative agriculture can be challenging to define as it means different things to different people. Fundamentally, regenerative agriculture is about restoring and enhancing ecosystem function on farms and in landscapes through practices designed to work with the landscape, climate, people and livestock.

Website resource: [Sustainable Farms](#)

Ways to improve natural assets on a farm.

Website resource: [Regeneration International](#)

A global non-profit organisation promoting regenerative agriculture, Regeneration International offers valuable information, resources, and articles on regenerative farming practices.

Website resource: [Deadly Story – Food and Agriculture](#)

Our First Nations agricultural practices recognised that the land had limited resources and so when we did farm, cultivate and collect food, we always made sure to only take what we needed and nothing more. We had sophisticated practices to allow the land to replenish itself of what we had taken.

For a list of further learning resources, [please click here.](#)

FACTSHEET

WHY

So, WHY is it a better alternative to conventional agriculture?

IN THE FILM

In the film we learn that Rachel's neighbour Mick Jnr took over from his Dad, Mick Snr, ten years ago and has been farming the way his father had always done. But observing that their soil is lifeless and with the farm losing money, Mick Jnr can see that conventional farming is not sustainable. He wants to shift to regenerative farming and Rachel, always up for a challenge, and loving the idea of using their farm to address climate change, is all in.

"If you're observant, you can see things aren't getting better. They're getting worse. And no matter how many new chemicals come out you realise - 'I'm just treating a symptom of something that's underlying' - that it's easy to start letting go of some of those old things and head another way." – Mick

THE RATIONALE

The adoption of regenerative agriculture and farming practices promotes environmental stewardship and addresses some of the challenges posed by climate change, biodiversity loss, and land and soil degradation.

- By prioritising soil health, this method fosters increased organic matter, water retention, and nutrient content, resulting in more productive and resilient soils.
- Regenerative practices involve planting a diversity of plant life which results in higher levels of carbon in the soil and activating sequestration of carbon dioxide from the atmosphere, which helps to balance the climate and mitigate climate change.
- The emphasis on biodiversity conservation promotes natural pest control and reduces the need for chemical inputs, leading to healthier ecosystems.
- Regenerative farming enhances water management, improves water quality, and cultivates long-term sustainability, while also offering economic advantages for farmers.

With its potential to create healthier food, restore natural cycles and ecosystems, and address climate challenges, regenerative agriculture emerges as a transformative solution to build a sustainable and secure future for agriculture and the planet.

FACTS AND STATS

Loss of Arable Land: The United Nations estimates that we are losing 12 million hectares (30 million acres) of arable land every year due to factors such as erosion, urbanisation, and desertification. Regenerative farming practices can help restore degraded lands and make them productive again.

Climate Change Impact: The changing climate poses serious threats to global food security. Erratic weather patterns, increased frequency of extreme weather events and national disasters and shifting growing seasons can disrupt crop yields and supply chains. Regenerative farming's emphasis on resilience can help agriculture adapt to these challenges.

Loss of Biodiversity: The United Nations Environment Program reports that our global food system is the primary driver of biodiversity loss, with agriculture alone being the identified threat to 24,000 of the 28,000 (86%) species at risk of extinction. The global rate of species extinction today is higher than the average rate over the past 10 million years. Regenerative farming's focus on diverse plantings and habitats can help preserve and restore biodiversity.

Global Food Security: As the global population continues to grow, there's increasing pressure on agriculture to produce more food. Meanwhile, the increasing frequency of extreme weather events adversely affects the productivity of farmlands and centralised food supply chains are exposed to the risk of global and national disasters, like we experienced during the COVID-19 pandemic. Regenerative agriculture, with its focus on sustainable practices and localised food supply chains, can contribute to long-term food security.

KEY SCENE TIMECODES

The following scenes speak about why regenerative farming is so beneficial as outlined in the film:

Scene 1 Combat Climate Change

Description

In this scene, Mick and Normie talk about soil as a storer of carbon, but the soil has to be healthy. Cattle are walking compost heaps so moving them around improves the soil's ability to absorb carbon, something we desperately need to combat global warming.

Timecode 10.14:44 - 10.16:13 **Duration** 01:29

Scene 2 Gain Healthy and Fertile Soil

Description

In this scene, Mick explains how water storage and filtration is key to a healthy soil. He introduces us to Landscape scientist, Peter Andrews who will help Rachel add contours to hold onto her water and ensure any rain does not wash the soil fertility away.

Timecode 10:59:08 - 11.01.27 **Duration** 02:19

Scene 3 Carbon as Income

Description

In this scene, Dr Terry McCosker talks about how trees and plants pull down carbon dioxide and then healthy soil sequesters that carbon which is accumulated and can be measured. This carbon offset can then be traded, giving farmers a welcome opportunity to earn additional income.

Timecode 11.07.58 - 11.09:46 **Duration** 01:48

"It really was not until I heard about how responsible agriculture had been for our climate crisis and how much regenerative farming could be responsible for fixing so many of the problems that I actually went, 'That is it. That is the most hopeful thing I've heard and that is what I'm going to commit every part of my being to". – Rachel Ward

FURTHER INFORMATION

Regeneration International (RI)

A global nonprofit organisation promoting regenerative agriculture, RI offers valuable information, resources, and articles on regenerative farming practices.

<https://regenerationinternational.org/why-regenerative-agriculture/>

Milkwood Permaculture (Australia)

Education on regenerative agriculture practices offering courses, workshops, and resources for farmers, growers, and homesteaders.

<https://www.milkwood.net/>

Soil Land Food

Offering courses, workshops, and consulting services to help farmers and land managers implement regenerative practices that improve soil health and ecosystem resilience.

<https://soilandfood.com.au/>

Sustainable Table

An organisation that encourages sustainable food choices and practices in Australia. They promote regenerative agriculture and sustainable farming practices and offer resources and information to farmers and consumers alike.

<https://www.sustainabletable.org.au/>

Carbon8

Carbon8's purpose is to transition farmers to regenerative agriculture and support them on their journey.

<https://carbon8.org.au/regenerative-farming>

WORKSHEET

WHY

So, WHY is it a better alternative to conventional agriculture?

SUMMARY

Like Rachel, who is embracing regenerative agriculture because she believes in working with nature and leaving a positive impact on the land for future generations, a growing number of farmers and communities are transitioning towards regenerative agriculture. Motivated by compelling factors, such as the estimation that environmental degradation caused by conventional farming practices has reduced farming future potential to merely fifty harvests, these farmers and communities are embracing the regenerative agriculture model as a more sustainable and resilient approach to resource management that will ensure an on-going and reliable food production source.

1. Pre-viewing discussion topic (provocative)

If regenerative agriculture is good for the planet and also us, in what ways could our government help farmers to transition from conventional farming practices to a regenerative approach?

2. Post Viewing discussion topic (reflective)

With science proving that regenerative agriculture promotes environmental stewardship for the benefit of us all, why are some large-scale farmers resistant to adopting regenerative principles?

GROUP ACTIVITY

As a class group, make a collective decision about purchasing a farm property in your local region or State. Hypothetically, opt for the group to manage this farm as a Farm Co-op Business. In such a business model, the 'owners' will need to collectively agree and decide on the farming practices and resource management of the property.

Have students split into groups of 2-3. Each group needs to prepare their own opinion for this collective decision. Do this by having each group draw up a table of two columns to compare conventional farming practices with regenerative farming practices.

In the first column, list the advantages and disadvantages of conventional farming practices.

In the second column, list the advantages and disadvantages of regenerative farming practices.

When the groups have completed their tables, have them discuss and select the farming method that proves to be the best option for the environment and future food production.

Then, bring the class group together to collaboratively discuss and make a collective decision about the preferred way to manage the property.

EXTENSION EXERCISE

Regenerative farming is increasingly being practised around the world as all types of landowners – individuals, farmers and communities, recognise the critical ecological breakdown of our natural environmental systems.

Rachel says: I think the collective power of us all - when we're conscious about the world that our grandchildren are inheriting and that we need to do something quickly to turn it around - that power is incredibly powerful. And everybody has their particular bits that they can do. And now is the time to do them.

For the individual, becoming a part of this collective action can be daunting. Write a (300 word) article for a regeneration farming association website, identifying ways governments, businesses and institutions can support individual efforts for a sustainable future.

FURTHER INFORMATION

Regeneration International (RI)

A global nonprofit organization promoting regenerative agriculture, RI offers valuable information, resources, and articles on regenerative farming practices.

<https://regenerationinternational.org/why-regenerative-agriculture/>

Milkwood Permaculture (Australia)

Education on regenerative agriculture practices offering courses, workshops, and resources for farmers, growers, and homesteaders. <https://www.milkwood.net/>

Soil Land Food

Offering courses, workshops, and consulting services to help farmers and land managers implement regenerative practices that improve soil health and ecosystem resilience.

<https://soilandfood.com.au/>

FACTSHEET

HOW

So, HOW is regenerative farming done?

IN THE FILM

In the film Rachel engages Tony Hill and his team from Land to Market to assess her farm and gain accreditation to show the farm's health is improving. The low score she receives from Tony is all the motivation Rachel needs to make significant changes to her farm practices, with the goal of improving her soil health, water conservation, biodiversity of plants and animals, and carbon sequestration, and hopefully receive an EOV (Ecological Outcomes Verification) certificate.

"It was pretty confronting when he just said, 'If you've got no life in your soil, you've got dead soil'. Both Mick and I felt like very bad parents. We had not looked after our soils. And he was going to come back the following year to see how we were improving." – Rachel Ward

FOUR PILLARS – Soil, Livestock, Water and Vegetation

By focusing on these four elements and implementing regenerative practices, farmers can improve soil health, protect water resources, support biodiversity, and foster sustainable agricultural systems for future generations.

Soil

By focusing on these four elements and implementing regenerative practices, farmers can improve soil health, protect water resources, support biodiversity, and foster sustainable agricultural systems for future generations.

- **Nutrient Cycling:** Regenerative practices, like cover cropping and crop rotation, enhance nutrient cycling, ensuring essential nutrients are available to plants and minimising the need for synthetic fertilisers.
- **Carbon Sequestration:** Healthy soil acts as a carbon sink, absorbing and storing carbon dioxide from the atmosphere. This helps mitigate climate change by drawing down greenhouse gas emissions.
- **Water Retention:** Improved soil structure and organic matter content enhance water-holding capacity, reducing soil erosion and increasing resilience during droughts and heavy rainfall events.
- **Biodiversity Support:** Healthy soils support diverse plant and microbial life, contributing to overall ecosystem health.

Livestock

Livestock integration in regenerative farming is based on mimicking natural grazing patterns and ecosystem dynamics. Here's why livestock are important:

- **Nutrient Cycling:** Grazing animals help fertilise the land with their manure, contributing to nutrient cycling and soil health.
- **Grassland Restoration:** Properly managed grazing can restore grasslands and improve biodiversity by mimicking the natural grazing behaviour of wild herbivores.
- **Carbon Sequestration:** Integrating livestock with regenerative practices can improve soil carbon storage, as grazing stimulates plant root growth and organic matter deposition.
- **Economic Benefits:** Livestock can provide farmers with additional income streams and contribute to a diversified and resilient farming system.

Water

Water management is critical in regenerative farming, as water scarcity is a significant challenge in many regions. Here's why water is essential:

- **Water Efficiency:** Regenerative practices like conservation tillage and mulching help retain moisture in the soil, reducing water usage and increasing water efficiency.
- **Erosion Control:** Practices such as contour farming and terracing help prevent soil erosion, protecting water quality and reducing sedimentation in water bodies.
- **Flood and Drought Mitigation:** Regenerative practices can improve the water-holding capacity of soils, reducing the risk of both floods and droughts.

Vegetation

Plant diversity and healthy vegetation are crucial in regenerative farming. Here's why vegetation matters:

- **Biodiversity:** Diverse plant species promote beneficial insects, pollinators, and wildlife, fostering a more resilient ecosystem.
- **Crop Resilience:** Crop diversity reduces the risk of crop failure due to pests, diseases, or extreme weather events.
- **Ecosystem Services:** Plants contribute to various ecosystem services, including carbon sequestration, soil stabilisation, and water retention.
- **Companion Planting:** Strategic planting of compatible crops can improve soil fertility, pest management, and overall yields.

FACTS AND STATS

- **Soil**

Soil Degradation: Conventional farming practices have led to the degradation of around 33% of global soils, according to the United Nations. This has serious implications for food security and ecosystem health.

Rebuilding Soil Carbon: According to The Rodale Institute, if the world's farmlands converted to regenerative agriculture, more than 100% of global CO2 emissions would be sequestered.

- **Livestock**

Livestock Integration: Well-managed rotational grazing systems, where livestock are strategically moved across pastures, can increase soil organic matter content by up to 30% within a few years.

- **Water**

Water Scarcity: Around 2.2 billion people globally lack access to safely managed drinking water services, and agriculture accounts for about 70% of global freshwater withdrawals. Regenerative farming's focus on water conservation can play a part helping to mitigate this issue.

Erosion and Runoff: Conventional tillage practices leave soil exposed, making it susceptible to erosion by wind and water. This not only leads to soil loss but also carries sediments and pollutants into water bodies. Regenerative practices like cover cropping and no-till farming can prevent erosion and runoff.

- **Vegetation**

Loss of Biodiversity: The United Nations Environment Programme reports that our global food system is the primary driver of biodiversity loss, with agriculture alone being the identified threat to 24,000 of the 28,000 (86%) species at risk of extinction. The global rate of species extinction today is higher than the average rate over the past 10 million years. Regenerative agriculture's focus on diverse plantings and habitats can help preserve and restore biodiversity.

Land Use: FAO also reports that globally agricultural land area takes up a staggering 38% of the global land surface. Land conversion from natural ecosystems to agriculture has historically been the largest cause of greenhouse gas emissions. Regenerative agriculture's aim to promote biodiversity and plant a diverse variety of plant species can help in reverting some of this land back into healthy ecosystems.

KEY SCENE TIMECODES

The following scenes show how Rachel took up regenerative farming practices as outlined in the film:

Scene 1 Rotating Your Livestock

Description

In this scene, Rachel and Mick watch a talk by Allan Savory, scientist and farmer about overgrazing and that it has nothing to do with numbers, it is the movement and the timing that matters. Inspired, they decide to adopt Allan's methodology and combine their herds.

Timecode 10.17.03 - 10.20.22 **Duration** 03:19

Scene 2 Increasing Your Biodiversity

Description

In this scene, Rachel speaks with local Gumbaynggirr man Kenny about native grasses and the importance of caring for Country. As he says, the more diversity you have in trees, plants, insects and nutrients for the soil, the more life we get in the bush.

Timecode 10.52.29 - 10.54:13 **Duration** 02:08

Scene 3 Managing Your Water

Description

In this scene, Landscape Scientist Peter Andrews guides Rachel and Mick on how to contour their land so rain will filter into the soil instead of running off into the Nambucca River. They check the land after a big rain and it has worked!

Timecode 11.01.57 - 11.04:01 **Duration** 02:04

"Our soil health, our landscapes, our biodiversity, our water retention, our microbial health are all moving in the right direction. And we got it - our EOV came through." – Rachel Ward

FURTHER INFORMATION

Regenerating Investment in Food and Farming: [A Roadmap](#)

This resource focuses on the deep transformative work that is underway to reconfigure our food and fibre systems. Actions that not only 'do less harm' and operate within planetary limits, but actively regenerate – restoring ecological and social communities, sequestering carbon, reconfiguring right relationships, and renewing soil and water cycles.

Milkwood Permaculture (Australia)

Education on regenerative agriculture practices offering courses, workshops, and resources for farmers, growers, and homesteaders. <https://www.milkwood.net/>

Regeneration International (RI)

A global nonprofit organisation promoting regenerative agriculture, RI offers valuable information, resources, and articles on regenerative farming practices. <https://regenerationinternational.org/why-regenerative-agriculture/>

Regenerative Agriculture Alliance

A regenerative industry alliance for thriving businesses, people, and planet.

<https://www.regenagalliance.org/>

Savory Institute

Focused on holistic management and regenerative practices, the Savory Institute offers training programs, research, and resources for farmers and practitioners.

<https://savory.global/our-mission/>

Soil Health Academy

An educational initiative that provides training on soil health and regenerative practices. Their workshops are designed to help farmers improve soil health and productivity.

<https://soilhealthacademy.org/>

WORKSHEET

HOW

So, HOW is regenerative farming done?

SUMMARY

As we see in the documentary, Rachel needs to make significant changes to her farm practices in her goal to receive an EO (Ecological Outcomes Verification) certificate that verifies her regenerative farming management. She does this by adopting the Four Pillars of regenerative agriculture as her guide – soil health, water conservation, biodiversity, and carbon sequestration. By focusing on these four elements and implementing regenerative practices, farmers like Rachel, improve soil health, protect water resources, support plant and animal biodiversity, and foster sustainable agricultural systems for future generations.

1. Pre-viewing discussion topic (provocative)

What potential obstacles could hinder a farm's transition to regenerative farming?

2. Post Viewing discussion topic (reflective)

Thinking of the four pillars of regenerative farming, what are the first practical steps that need to be done when adopting regenerative practices?

GROUP ACTIVITY

This activity focuses on the Four Pillars of regenerative philosophy – soil, livestock, water and vegetation.

Divide the class into four groups. Give each group a 'pillar' to investigate.

Using the Fact Sheet as an information guide, have the groups investigate and identify the initial action required (according to their assigned pillar) to establish a regenerative farming practice.

In each group, nominate students to identify the action, and also nominate students to identify the positive consequences of this action.

Collate this information in a diagrammatic model on the white/black board for all to see.

As a class group, discuss and summarise the main takeaways from the activity and emphasize the significance of regenerative agriculture in promoting environmental and agricultural sustainability.

EXTENSION EXERCISE 1

In the film Dr Charles Massy says: *Soil, it's not just dirt, it's a living complex substrate that has to be nurtured and fed and protected.*

Selecting either soil, or one of the other key pillars of regenerative agriculture, consider the metaphorical aspect of the quote above.

In a short form essay focusing on soil or any of the other three pillars, explain what Dr Massy is referring to when he says soil should be *nurtured and fed and protected* like a living being.

EXTENSION EXERCISE 2

See Hydration Equation Experiment on p32.

FURTHER INFORMATION

Kiss the Ground

This nonprofit organisation focuses on regenerative agriculture education and awareness. They offer online courses, webinars, and resources to help people understand and implement regenerative practices. <https://kisstheground.com/education/>

The Regenerative Agriculture Alliance (Australia)

A collaboration of farmers, researchers, and organisations dedicated to advancing regenerative agriculture in Australia. They advocate for policies that support regenerative practices and promote the adoption of sustainable farming methods. <https://farmingtogether.com.au/our-work/regenerative-agriculture-alliance/>

Holistic Management International

Offering training in holistic management practices, which include regenerative agriculture techniques and sustainable land management strategies. <https://hmeducators.com.au/>

Soil Land Food

Offering courses, workshops, and consulting services to help farmers and land managers implement regenerative practices that improve soil health and ecosystem resilience. <https://soilandfood.com.au/>

FACTSHEET

WHO

So, WHO is pioneering this change?

IN THE FILM

In the film Rachel talks about how regenerative farming started with Australia's traditional owners, First Nations peoples and how much we have to learn from them. She also talks about how regen ag offers a role for women not as prevalent in conventional farming and that any farmer wanting to try new techniques can be a part of the regen movement.

"I think one of the bonuses of regen farming is it has a much more active and valuable role for women. I just don't think it's as reliant on heavy machinery and brute strength and conventional farming is. It seems to just have a lighter touch. And I think that it's going to be a sort of revolution for women to be able to join this space." – Rachel Ward

FACTS AND STATS

Youth: A survey conducted by the National Young Farmers Coalition in the United States found that 78% of young farmers (those under 40) practise regenerative farming techniques to enhance soil health, improve water management, and promote biodiversity.

Women: According to the Food and Agriculture Organization (FAO), women constitute about 43% of the agricultural labour force globally. In many cases, women are leading efforts in regenerative and sustainable farming due to their strong ties to the land and communities. In Australia, 49% of real farm income is being contributed by women (Newsome, L. The Guardian. 1/2022).

Traditional Knowledge: Indigenous peoples have long practised regenerative farming techniques that prioritise ecological balance and sustainability. Their traditional knowledge often aligns with the principles of regenerative agriculture, making their contributions invaluable to modern sustainable farming.

[**Note:** It's important to note that while these statistics and facts provide insights into the contributions of young people, women, and indigenous peoples in regenerative farming, challenges and inequalities still persist. Supporting these groups through targeted initiatives, access to resources, and knowledge sharing can further enhance their involvement in sustainable agricultural practices.]

REGENERATIVE FARMING PIONEERS

Recently, there has been an increasing presence of younger, indigenous, and female regenerative agriculture farmers. This trend is part of a recognition of the valuable contributions these groups can make to regenerative farming practices.

Younger Regenerative Agriculture Farmers: Many young farmers are embracing regenerative agriculture as a means to address environmental challenges and build sustainable farming systems. They bring fresh perspectives, technological savvy, and a willingness to experiment with innovative practices.

Indigenous Regenerative Agriculture Farmers: Indigenous communities around the world have a long history of traditional agricultural practices that are inherently regenerative and sustainable. Many indigenous farmers are reclaiming and reviving their traditional knowledge and practices. Integrating indigenous wisdom into modern regenerative agriculture practices can yield valuable insights and contribute to sustainable land management.

Female Regenerative Agriculture Farmers: Women have always played a crucial role in agriculture, yet they have often been underrepresented in decision-making roles and have faced gender-specific challenges. In recent years, there has been a growing recognition of the vital role women play in agriculture and the need to promote gender equality in the sector. More female farmers are actively engaging in regenerative agriculture, and organisations are supporting their participation through training, resources, and advocacy.

COMMUNITY EMBRACING REGEN

Communities around the world are increasingly embracing regenerative agriculture practices as a way to address environmental challenges, enhance food security, and promote sustainable livelihoods. From farmers, to retailers and ultimately consumers, awareness of the global and local benefits of regenerative agriculture is generating a mindful review of the practices involved in getting food from the farm to the table.

Here are some examples of communities that have adopted and benefited from regenerative agriculture:

Malawi Farmer-to-Farmer Agroecology Project, Malawi:

<https://www.fao.org/3/br095e/br095e.pdf>

In Malawi, smallholder farmers faced challenges from mono-crop farming and overreliance on chemical inputs. The Farmer-to-Farmer Agroecology Project promoted regenerative practices like cover cropping, crop rotation, and intercropping. Farmers who adopted these practices reported increased yields, reduced dependence on expensive inputs, and improved soil health.

Ethiopia's Green Economy <https://rainwaterrunoff.com/ethiopias-green-revolution/>

Facing severe land degradation and food insecurity, communities in the Tigray region of Ethiopia implemented large-scale soil and water conservation projects. They built stone terraces, planted trees, and practiced soil conservation.

The Morrisises at Gleneden - A New Farmer Case Study, Maryvale, QLD

<https://soilsforlife.org.au/gleneden/>

Exposed to the environmental implications of conventional farming on a family's farm, the benefits of organic farming on their health, and the challenges of accessing fresh food in rural areas, Fiona and Rohan Morris decided to grow their own healthy food for their family and local community.

The Maynards at Willydah - An Australian Cropping Case Study, Narromine, NSW

<https://soilsforlife.org.au/willydah/>

Through a strong sense of curiosity and a bit of luck in his early farming years, Bruce was able to change the trajectory of his family farm, and paradigms of cropping.

KEY SCENE TIMECODES

The following scenes show how Rachel and Mick feel regenerative farming has much to offer different communities as outlined in the film:

Scene 1 The First Farmers

Description

In this scene, Rachel talks with Ngambri Elder Shane Mortimer about indigenous farming practices including fire-stick farming, and with Dr. Charles Massey OAM, Scientist, Sheep Farmer and Author about how Traditional Custodians were farming for millennia, not harming the land, but as part of the land.

Timecode 10.33.16 - 10.35.30 **Duration** 02:14

Scene 2 Regen for Women

Description

In this scene, Rachel talks about the traditional role of women in farming and how regenerative farming is not as reliant on heavy machinery and is more inclusive for women to get involved. And it's not just the farm, the process has made Rachel herself feel regenerated.

Timecode 11.17.14 - 11.20.15 **Duration** 04:01

Scene 3 The Role of the Consumer

Description

In this scene, Rachel says one of the most powerful things that consumers can do is to know their farmer and to buy from farmers that are using best practice. Not only are they competitive pricewise, you can feel good knowing you are making a difference.

Timecode 11.23.46 - 11.25.53 **Duration** 02:07

"This regenerative movement, it's not exclusive. Anyone can do it. So, once you can unlearn all the stuff that's been so ingrained and open your mind a bit and see, it just starts to flow." – Mick

WOMEN FARMERS TODAY

Article: [The Guardian](#)

The myth of the manly farmer: why do we still assume women don't work on the land? Lucie Newsome

Article: [The Guardian](#)

Until 1994 women could not even list 'farmer' as an occupation on the census.

'Invisible farmers': the young women injecting new ideas into agriculture

FURTHER INFORMATION

Initiatives, organizations, and platforms are emerging to promote the involvement of younger, indigenous, and female regenerative agriculture farmers:

Young Farmers Connect

A network that supports young farmers in Australia. They provide resources, training, and networking opportunities to help young farmers succeed in their agricultural ventures. The organisation also advocates for policies that promote the interests of young farmers and sustainable farming practices.

<https://sustain.org.au/directory/organisations/young-farmers-connect>

Regenerative Agriculture Alliance

A collaboration of farmers, researchers, and organisations dedicated to advancing regenerative agriculture in Australia. They advocate for policies that support regenerative practices and promote the adoption of sustainable farming methods.

<https://farmingtogether.com.au/our-work/regenerative-agriculture-alliance/>

Future Farmers Network

An organization that represents and supports young people involved in agriculture. They aim to empower young farmers through education, training, and networking opportunities, including those related to regenerative agriculture.

<https://futurefarmers.com.au/>

National Farmers' Federation (NFF) - Young Farmers Committee

The NFF is the peak national body representing farmers in Australia. Their Young Farmers Committee focuses on addressing the needs and challenges faced by young farmers. While not exclusively dedicated to regenerative practices, they play an essential role in advocating for policies that support sustainable agriculture, including regenerative methods.

<https://nff.org.au/>

Sustainable Table

An organisation that encourages sustainable food choices and practices in Australia. While not solely focused on young farmers, they promote regenerative agriculture and sustainable farming practices and offer resources and information to farmers and consumers alike.

<https://www.sustainabletable.org.au/>

Regenerating Investment in Food and Farming: [A Roadmap](#)

This resource focuses on the deep transformative work that is underway to reconfigure our food and fibre systems. Actions that not only 'do less harm' and operate within planetary limits, but actively regenerate – restoring ecological and social communities, sequestering carbon, reconfiguring right relationships, and renewing soil and water cycles.

Landcare Australia

Landcare is a community-driven movement that works to promote sustainable land management and conservation in Australia. They support farmers in adopting regenerative practices and play a crucial role in building networks and sharing knowledge among the agricultural community. <https://landcareaustralia.org.au/>

For a list of further learning resources, [please click here.](#)

WORKSHEET

WHO

So, WHO is pioneering this change?

IN THE FILM

As we see in the documentary, Rachel is keen to know how First Nations People, Australia's traditional custodians, apply their knowledge and environmental understanding to 'work' with nature sustainably and regeneratively to ensure the sustained health and productivity of the land. Considering this, Rachel recognises that this type of farm resource management does not require machinery nor males to function. She says:

I just don't think (regen farming), is as reliant on heavy machinery and brute strength and conventional farming is. It seems to just have a lighter touch. And I think that it's going to be a sort of revolution for women to be able to join this space.

1. Pre-viewing discussion topic (provocative)

As agriculture is still a predominantly male-dominated occupation, in what ways can this imbalance hinder women from actively participating in this transformative movement?

2. Post Viewing discussion topic (reflective)

What are some of the barriers that women currently face in becoming farmers, and how can these barriers be removed?

GROUP ACTIVITY

Recently, there has been a growing trend of the increasing presence of younger, indigenous and female regenerative agriculture farmers. According to The Guardian (Newsome, L. 1/2022), for example, 49% of real farm income in Australia is being contributed by women.

Use the Fact Sheet, and further references below, as a guide and to access case studies and information about individuals and groups adopting regenerative farming principles.

Give students an opportunity to learn about what others are doing by investigating the regenerative farming practices of a particular person or a community.

Divide the class into groups of 2-3. Have each group select a focus topic such as:

1. Younger Regenerative Agriculture Farmers,
2. Indigenous Regenerative Agriculture Farmers, or
3. Female Regenerative Agriculture Farmers.

Have each group create a 10-12 page PowerPoint or Keynote slide deck on their focus area, and present it to the class as a whole.

At the end of all the presentations, sum up by discussing any discovered insights and arriving at three key positive 'take-aways' about young, Indigenous and female farmers and their participation in regenerative farming. Write these on the board

EXTENSION EXERCISE

Traditionally, and in many societies around the world, women in agriculture have faced gender-specific challenges and are often underrepresented in farming decision-making roles. In recent years, there has been a growing recognition of the vital role women play in agriculture and the need to promote gender equality in the sector. More female farmers are now actively engaging in regenerative agriculture, and organisations are supporting their participation through training, resources, and advocacy.

Do some online research to find a female regenerative farmer.

Then, create two profiles – create one profile on Rachel, and another profile on the female regenerative farmer you have discovered through your research.

Include images and information to demonstrate:

Name, age and farm location,

Farm type and size,

Work entailed in nurturing the farm, its crops and animals, and if possible,

Her aspirations for the future.

Summarise each profile with a short paragraph describing the positive influence these women are having on young and emerging regenerative farmers.

FURTHER INFORMATION

Article: [The Guardian](#)

The myth of the manly farmer: why do we still assume women don't work on the land? Lucie Newsome

Article: [The Guardian](#)

Until 1994 women could not even list 'farmer' as an occupation on the census.

'Invisible farmers': the young women injecting new ideas into agriculture

Women in Regenerative Agriculture

Soils For Life: This organisation promotes regenerative landscape management practices in Australia, including initiatives that support women in agriculture through education and networking opportunities. <https://soilsforlife.org.au/yabtree-west/>

Youth in Regenerative Agriculture

Regenerative Agriculture Alliance: The alliance is working to support and engage young farmers in regenerative practices, including hosting events and providing resources to promote sustainable farming among the youth. <https://www.regenagalliance.org/>

Indigenous Peoples in Regenerative Agriculture

Indigenous Carbon Industry Network: This network supports indigenous involvement in carbon farming and land management, including regenerative practices, to create economic opportunities for indigenous communities. <https://www.icin.org.au/>

HYDRATION EQUATION

A great experiment for kids, families, farmers markets, community gardens and schools

YOU WILL NEED

- 2 cut-off containers (or 3 if you want to do the full experiment)
- 2 cut off water bottles
- String
- Dirt - find the poorest dirt in your backyard
- Rich soil - from your garden or potting mix
- Mulch
- Favourite Salad Green seed mix
- Time

WHAT TO DO

Follow the picture. Fill one container with your poorest soil.

Fill one container with anything in the middle.

1. Plant your seed mix evenly in all three.
2. Water them everyday.
3. Watch what happens.

KITCHEN TABLE CONVERSATIONS

What is going on in the soil?

Why is this happening?

Which container has higher levels of carbon in the soil?

What is photosynthesis?



Experiment written by Carbon8; an organisation created for farmers by farmers.