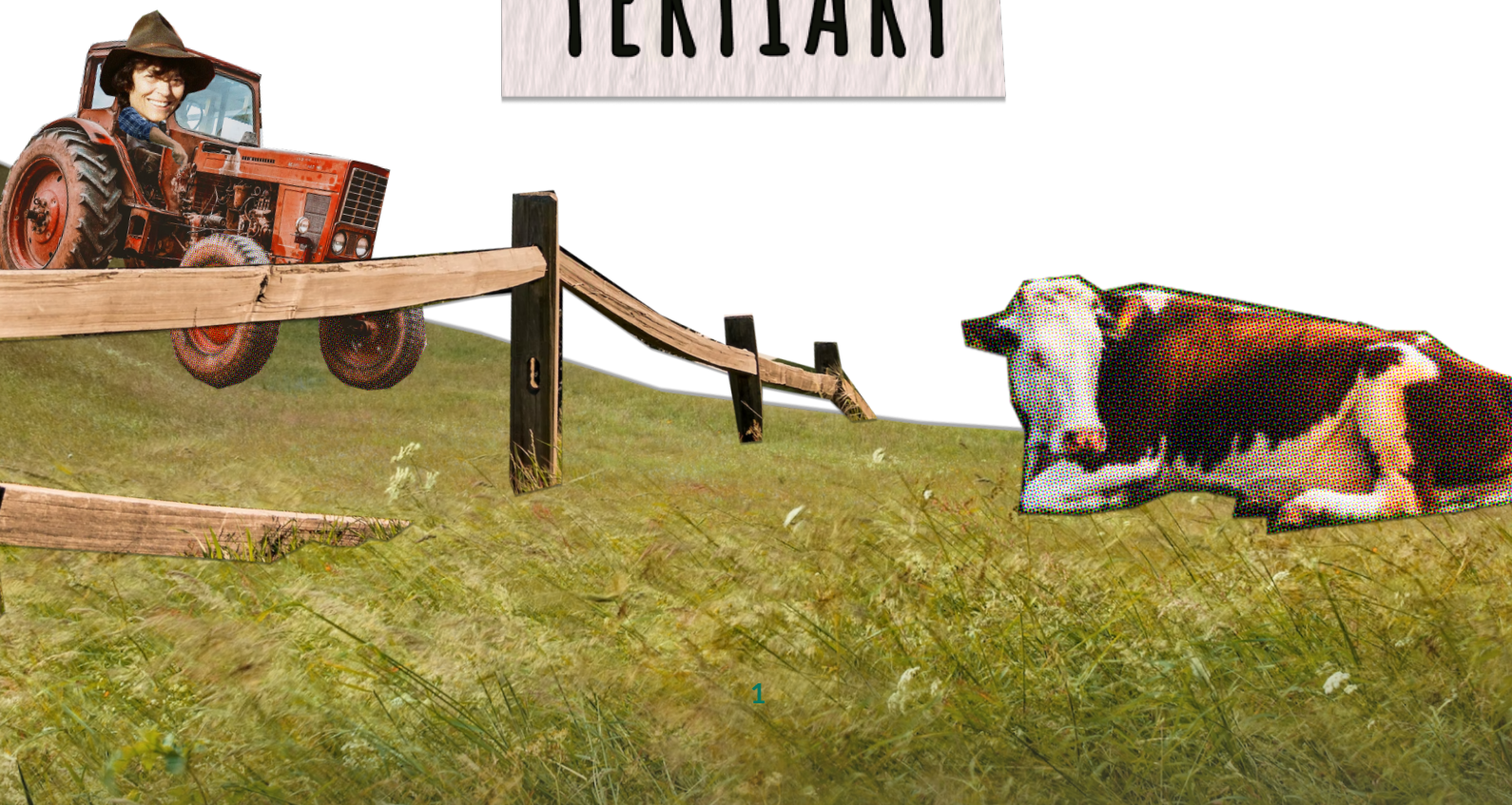
Rachel's Farm

EDUCATIONAL RESOURCES

FOR

TERTIARY



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RESOURCE OVERVIEW

INTRODUCTION

In a time where the degradation of our natural ecosystems is so severe that the number of possible future harvests can be calculated, the impact and domination of conventional agricultural practices is being critically questioned.

Tertiary and TAFE students teaching and learning resources based on the documentary *Rachel's Farm* which explores the transformative journey of Rachel Ward as she adopts and regenerative and sustainable practices to heal her degraded land.

OVERVIEW OF THE RESOURCES

Rachel's Farm offers an opportunity to provide Tertiary and TAFE students a valuable Australian case study that provides information around the principles of regenerative agriculture and deeper knowledge around solutions to climate change, the importance of biodiversity, soil health, natural water resource management, our food system - and the links between them all.

The film highlights the innovative and transformative approach to regenerative farming and land management that is gaining significant attention worldwide.

This case study is a useful sample that can be investigated and applied to research assignments.

Find out how to access the film in the next section.

To assist with accessibility the resource is thematically presented in four sections. These themes are:

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

Resources provided:

- how to access the documentary
- facts sheets with information
- quotes and key scene timecodes
- worksheets with activities
- discussion topics
- extension exercise for deeper research.

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.

In each section (WHAT, WHY, HOW, WHO) there are time-coded scenes from the film that are referenced. This means you can revisit and watch these scenes 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) **Ask your students to watch the film in their own time as pre-homework.**

    - **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

    - **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/

2) **Host a screening for your class and the wider university or TAFE community.**

    - Host a screening for the wider community - fill in this form to book your screening. Screening fees are applicable and you will be provided with a quote as well as toolkits and resources to make it 'more than a screening' - but a chance to connect and deepen the experience with your audience.

    - Purchase an educational licence which provides unlimited access to the film for educational use and on campus screenings for the wider community. Universities, TAFE and colleges will receive a digital copy of the film and a downloadable copy of our free Screening Guide.

FACTSHEET

WHAT So, what is regenerative agriculture all about?

INTRODUCTION

In the film Rachel is introduced to the concept of regenerative farming by her neighbour, Mick, who is challenging the conventional ways his father has farmed. Through Mick and other regen experts Rachel learns about the importance of healthy soil, how to better manage water, rotating livestock to foster healthy paddocks, and the need for biodiversity and native plants.
And by doing all this she is making her farm more sustainable and more economically viable.

> *"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 (or 'regen ag') 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

Key principles of regenerative agriculture include:

- **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.

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, 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.

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.

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. Regenerative farming diversifies income sources and can provide more stable livelihoods.

PHILOSOPHY

Small actions have big consequences.
Regenerative Agriculture (or 'regen ag') 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 speak about the concept of regenerative farming as referenced in the film:

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

Sustainable Table

Thinking, Being, Doing, Feeling for Regenerative People and Planet
https://www.sustainabletable.org.au/about

Carbon8

Carbon8's purpose is to transition farmers to regenerative agriculture and support them on their journey. https://carbon8.org.au/regenerative-farming

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/

Kiss the Ground
This nonprofit organization 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/

For a list of further learning resources, please click here.

WORKSHOP ACTIVITIES

Designing Regenerative Farm Systems: Divide students into groups and assign them the task of designing a regenerative farm system for specific types of land (e.g., arid, humid, sloping). They should consider crop selection, rotation, animal integration, and water management strategies.

Community Engagement Project: Encourage students to collaborate with local farmers or organisations to develop a regenerative agriculture project in the community. This could involve designing a community garden, hosting workshops, or implementing sustainable practices on existing farms.

Participatory Workshops with Farmers: Arrange workshops with local farmers who have successfully adopted regenerative practices. Facilitate discussions where students can ask questions, share ideas, and learn from real-life experiences.

Bring in an expert: Organise a guest visit or set up an online session with a regenerative agriculture practice specialist or farmer.

Rachel's Farm website has links to some organisations to help you get started:
Transition your land to regenerative practices

First Nations led organisations can be found here:
Explore First Nations farming resources and organisations

WORKSHEET

WHAT So, WHAT is regenerative agriculture all about?

SUMMARY

Rachel's Farm highlights the resilience of nature and the positive change that can occur when individuals embrace regenerative practices to heal the land and create a more sustainable and secure food future.

1. **Pre-viewing discussion topic (provocative)**
   Is regenerative farming the key to a sustainable and resilient future for agriculture, or are conventional methods still the most viable option?

2. **Post Viewing discussion topic (reflective)**
   How has learning about regenerative agriculture transformed your perspective on the relationship between farming practices and environmental sustainability?

GROUP ACTIVITY

Breakout Groups

- After watching the film, divide students into small breakout groups of 3-5 participants.
- Assign each group a specific principle of regenerative agriculture (e.g., soil health, vegetation, water conservation, livestock) to focus on during the activity.

Concept Mapping

- Instruct each group to create a concept map on a large sheet of paper or whiteboard, illustrating their assigned principle of regenerative agriculture.
- Encourage students to include subtopics, examples, and connections that demonstrate their understanding of the principle.

  For example:

  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.

  Biodiversity: Implementing agroforestry systems that integrate fruit trees, crops, and livestock, creating a diverse and resilient ecosystem.

  Water Conservation: Employing rainwater harvesting techniques to capture and store rainwater for irrigation during dry periods, reducing reliance on external water sources.

Community Resilience: Establishing local farmers' markets and community-supported agriculture (CSA) programs to promote direct connections between farmers and consumers.

Group Presentations

- Allow each group to present their concept map to the rest of the class.
- Facilitate a short discussion after each presentation, encouraging feedback and questions from other students.

Final Discussion

- Conclude the activity with a whole-class discussion.
- Encourage students to share their reflections on the principles of regenerative agriculture and how they see these practices as potential solutions to current agricultural challenges.

EXTENSION EXERCISE

"One of the things about regenerative agriculture is that it's very much a contesting philosophy, a contesting paradigm and, and that's why it gets hammered so strongly because we are threatening the biggest power and the biggest wealth on Earth." — Dr. Charles Massy

Duration: 45 minutes
Format: Group Discussion

Begin by sharing the quote and asking participants to reflect on its meaning and implications.

Emphasise the idea that regenerative agriculture challenges existing paradigms and power structures, which can lead to resistance and strong reactions from various stakeholders.

Initial Reactions
Open the floor for students to share their initial thoughts and reactions to the quote.
Encourage them to consider who the "biggest power" and "biggest wealth" might refer to and why regenerative agriculture is seen as a threat to them.

Breakout Groups
Divide participants into small groups and assign each group a specific aspect to discuss:

- How might regenerative agriculture challenge established agricultural practices and paradigms?
- What are the potential economic implications of adopting regenerative practices, especially for industries tied to conventional agriculture?
- In what ways does regenerative agriculture challenge dominant systems of power and wealth in the global food system?
- Consider the role of vested interests, policy inertia, and fear of change in influencing reactions to regenerative practices.

After the group discussions, reconvene and ask each group to share their insights.
Invite students to reflect on the complexity of regenerative agriculture as a contesting paradigm.

Extra Workshop Activities
Designing Regenerative Farm Systems: Divide students into groups and assign them the task of designing a regenerative farm system for specific types of land (e.g., arid, humid, sloping). They should consider crop selection, rotation, animal integration, and water management strategies.

Community Engagement Project: Encourage students to collaborate with local farmers or organisations to develop a regenerative agriculture project in the community. This could involve designing a community garden, hosting workshops, or implementing sustainable practices on existing farms.

Participatory Workshops with Farmers: Arrange workshops with local farmers who have successfully adopted regenerative practices. Facilitate discussions where students can ask questions, share ideas, and learn from real-life experiences.

Bring in an expert: Organise a guest visit or set up an online session with a regenerative agriculture practice specialist or farmer.

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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 ten years ago and has been farming the way his father had always done. But with his soil turned to dirt and the farm losing money, he can see that conventional farming is not sustainable. He wants to shift to regen and Rachel, always up for a challenge, and loving the idea of using their farm to fight 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 promotes environmental stewardship and addresses some of the challenges posed by climate change and resource depletion. Practising regenerative farming offers numerous benefits to both farmers and the environment.

- By prioritising soil health, this method fosters increased organic matter, water retention, and nutrient content, resulting in more productive and resilient soils.
- As well as the eradication or reduction of harsh chemicals and pesticides, new research confirms the link between soil health and nutrient density of our food, making regeneratively farmed food the healthier choice.
- Regenerative practices actively sequester carbon dioxide from the atmosphere, contributing to climate change mitigation.
- The emphasis on biodiversity conservation promotes natural pest control and reduces the need for chemical inputs, leading to healthier ecosystems. Farmers can also be rewarded for improving the biodiversity on their land.
- Regenerative farming enhances water management, improves water quality, and cultivates long-term sustainability while offering economic advantages for farmers.

With its potential to create healthier food, restore ecosystems, and address climate challenges, regenerative agriculture emerges as a transformative solution to build a sustainable 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, urbanization, and desertification. Regenerative farming 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 events, 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 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.

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.

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

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 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://soillandfood.com.au/

For a list of further learning resources, please click here.

WORKSHOP ACTIVITIES

Regenerative Business Models:
Discuss the economic aspects of regenerative agriculture and explore different business models that integrate sustainability, social responsibility, and profitability.

Carbon Farming Exercise:
Students can calculate carbon footprints of various agricultural practices and propose ways to transition to more carbon-neutral methods.

Comparison exercise:
Research comparisons between the potential yields of conventional farming methods and regenerative agriculture methods. Create a diagram to compare two timelines showing differences.

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

SUMMARY

Rachel embraces regenerative agriculture because she believes in working with nature and leaving a positive impact on the land for future generations.

1. **Pre-viewing discussion topic (provocative)**
   What compelling factors are motivating a growing number of farmers and communities to challenge conventional farming practices and transition towards regenerative agriculture?

2. **Post Viewing discussion topic (reflective)**
   Why did Rachel Ward make the bold decision to adopt regenerative agriculture on her farm, and what concerns might have driven her towards this significantshift in farming practices?

GROUP ACTIVITY

This activity provides an interactive and participatory approach for Tertiary students to explore the various motivations and factors driving the shift towards regenerative agriculture. It fosters critical thinking, collaborative learning, and a deeper understanding of the transformative potential of sustainable and regenerative farming practices.

After watching Rachel's Farm, divide students into small groups of 4-5 individuals. Assign each group a specific theme related to why people shift towards regenerative agriculture (e.g., environmental concerns, food security, economic benefits, community empowerment).

Brainstorm

- Instruct each group to brainstorm reasons and motivations within their assigned theme, noting them on the large sheets of paper.

Group Presentations

- Allow each group to present their brainstormed ideas to the whole workshop.
- Encourage interactive discussions and questions from other participants after each presentation.

Facilitate a guided reflection session

- Ask students to think about their personal motivations for embracing sustainable and regenerative farming practices.
- Encourage students to visualise their ideal regenerative agricultural system and the impact it could have on their communities and the environment.

Open Discussion

- Conduct an open discussion where students can share their insights, ask questions, and exchange ideas on the motivations for shifting towards regenerative agriculture.

Conclusion

- Each group summarises the key findings and insights from the workshop
- Encourage participants to consider how they can contribute to promoting regenerative agriculture in their future careers or local communities.

Extension Exercise

"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." — Rachel Ward

Discussion Activity: Harnessing Collective Power for a Regenerative Future

Objective

Engage participants in a thought-provoking discussion about the potential of collective action and individual responsibility in addressing urgent global challenges, focusing on environmental sustainability and the legacy we leave for future generations.

Introduction

Ask each student to take a few minutes to reflect on Rachel's quote above and consider the following questions:

- What are some aspects of the world today that concern you about the legacy we're leaving for future generations?
- What "particular bits" or actions do you think you, as an individual, can contribute to creating a brighter and more regenerative future?

Small Group Discussions

Divide participants into small groups of 4-6 people. Each group should discuss their thoughts and insights from the personal reflection. Encourage participants to share:

- Their concerns about the current state of the world and its impact on future generations.
- Concrete actions they believe individuals can take to contribute to positive change.
- Ways to encourage collective action and raise awareness about the importance of a regenerative future.
- What challenges do you foresee in mobilising collective action on a global scale?
- How can individuals overcome feelings of helplessness or insignificance in the face of massive global issues?
- What role do governments, businesses, and institutions play in supporting individual efforts for a sustainable future?

- How can we ensure that our actions today truly benefit our children and grandchildrens' world?

Wrap up the discussion by emphasising the importance of collective power, individual responsibility, and the sense of urgency in addressing global challenges.

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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

Soil health is at the core of regenerative farming. Healthy soil is teeming with diverse microorganisms, such as bacteria, fungi, and animals such as earthworms and dung beetles, which contribute to nutrient cycling and soil structure. Here's why soil is important:

- **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

The four pillars:

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 help 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.

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.

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.

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.

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

Sustainable Table's 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.

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Regeneration International (RI)
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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

Patience and Resilience: *Rachel's Farm* highlights how she transitioned her denuded land to regenerative farming and how it is a gradual process that requires patience, perseverance, and a willingness to learn from both successes and challenges.

1. **Pre-viewing discussion topic (provocative)**
   What challenges might arise during the process of a farm attempting to transition to regenerative farming?

2. **Post Viewing discussion topic (reflective)**
   After witnessing the transformative journey of Rachel's farm transitioning to regenerative farming, what key insights or lessons have you gained about the practical steps and challenges involved in adopting regenerative practices?

GROUP ACTIVITY

Designing a Farm Plan

- Divide students into small groups of 3-5 people.
- Provide each group with a large sheet of paper and markers.
- Assign each group a hypothetical farm scenario (e.g., size, location, climate, existing practices).
- Instruct the groups to design a regenerative farm plan for their assigned scenario, incorporating specific regenerative practices they have learned about (soil, water, livestock, vegetation).

Group Presentations

- Each group presents their farm plan to the class.
- Presentations should include their design choices, including how regenerative practices address environmental challenges and support holistic, sustainable farming.

Reflection and Discussion

- Lead a group discussion on the process of designing regenerative farm plans.
- Ask students to reflect on the challenges and benefits they encountered while incorporating regenerative practices into their plans.
- Encourage open dialogue and exchange of ideas.

Conclusion

- Summarise the main takeaways from the activity and emphasise the significance of regenerative agriculture in promoting environmental and agricultural sustainability and a more secure food future.

EXTENSION EXERCISE 1

> *Soil, it's not just dirt, it's a living complex substrate that has to be nurtured and fed and protected.*
> — Dr. Charles Massy

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.

Step 1. Group Brainstorming

List down all the roles and functions of soil beyond being a mere medium for plants to grow. Encourage students to think about its ecological, agricultural, and even cultural significance.

Step 2. Analysing Metaphor

Discuss the metaphorical aspect of the quote above. Why do you think the speaker compared soil to a living complex substrate? What might be the implications of such a metaphor on how we treat and value soil? Encourage participants to think critically about the language used in the quote and its implications.

Step 3. Personal Reflection

Ask participants to take a few moments to reflect individually on their personal connection to soil. Have they ever thought of soil in the context of nurturing and protection? How can each person contribute to the betterment of soil health?

Allow students to share their reflections if they feel comfortable doing so. This can lead to interesting insights and personal anecdotes related to soil.

EXTENSION EXERCISE 2

See Hydration Equation Experiment on p32.

FURTHER INFORMATION

Kiss the Ground

This nonprofit organization 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 organizations 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://soillandfood.com.au/

For a list of further learning resources, please click here.

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 custodians, 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) practice 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 labor force globally. In many cases, women are leading efforts in regenerative and sustainable farming due to their strong ties to the land and communities.

Traditional Knowledge: Indigenous peoples have long practised regenerative farming techniques that prioritise ecological balance and sustainability. Their land management practices are based on a deep understanding that the Earth is a fully functioning ecosystem and their 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. Here are some examples of communities that have adopted and benefited from regenerative agriculture:

The Morrises 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.

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 practised soil conservation.

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
https://www.theguardian.com/australia-news/2022/jan/15/the-myth-of-the-manly-farmer-why-do-we-still-assume-women-dont-work-on-the-land

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
https://www.theguardian.com/sustainable-business/2017/apr/27/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 organisation 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/

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/

Outback Academy Australia
An Aboriginal-led organisation that works with Aboriginal farmers to build agricultural and horticultural regenerative farming businesses.
https://outbackacademy.org.au/follow-the-flowers/

WORKSHOP ACTIVITY

Panel Discussion: Invite a diverse panel of farmers, including younger, First Nations, and female farmers, to share their experiences, challenges, and successes in adopting regenerative practices.

Encourage panellists to discuss their motivations for choosing regenerative agriculture, the benefits they have witnessed, and how they overcame obstacles.

Facilitate an open Q&A session, where participants can ask questions and engage in dialogue with the panellists.

Small Group Discussions: Divide students into small groups and provide them with guiding questions related to the panel discussion.

Encourage students to reflect on what they have learned, identify key takeaways, and discuss strategies to support and amplify the voices of younger, indigenous, and female farmers in regenerative agriculture.

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)**
   Why is agriculture still predominantly male-dominated? Whßat are the barriers or systemic challenges that hinder women's active participation in ag, that might be less prevalent in the regen ag movement?

2. **Post Viewing discussion topic (reflective)**
   Rachel talks about how regenerative farming is rooted in an Indigenous way of thinking and how much there is to learn from the First Peoples of Australia, Aboriginal and Torres Strait Islanders. How does recognising that there has been regenerative farming happening in Australia for millenia influence your perspective on the value of these practices in shaping more holistic and sustainable approaches to agriculture?

GROUP ACTIVITY

This activity provides an interactive and engaging way for Tertiary students to learn about the significant role of women in regenerative farming. It fosters awareness, empathy, and support for gender equality within the agricultural sector, while also inspiring students to take action to create a more inclusive and sustainable future for farming.

Introduction
Introduce the topic of women in regenerative farming, emphasising the importance of gender equality and recognising women's achievements in the agricultural field.

Explore Notable Women in Regenerative Farming
Divide students into small groups and assign each group a different notable woman in regenerative farming. Instruct each group to research their assigned woman, learning about her background, contributions to regenerative agriculture, challenges faced, and achievements. Direct students to reputable online resources or choose from this list:

- Tanya Massy: Writer and regenerative agriculture Industry Development Manager, Sustainable Table
- Mary-Howell Martens: Co-owner of Lakeview Organic Grain, leading figure in the organic and regenerative agriculture movement
- Karen Washington: A well-known urban farmer and activist
- Leah Penniman: As the co-founder of Soul Fire Farm
- Vandana Shiva: A prominent environmental activist and advocate for sustainable agriculture
- Severine von Tscharner Fleming: Founder of Greenhorns

Group Presentations

- Allow each group to present their findings to the rest of the class.
- Encourage creative presentation formats, such as short skits, posters, or multimedia slideshows, to make the presentations engaging and memorable.

Discussion

- Facilitate a group discussion after the presentations. Encourage students to reflect on the diverse roles and impact of women in regenerative farming.
- Discuss the challenges women might face in the agricultural sector and the importance of promoting gender equity to create a more inclusive and sustainable farming community.

EXTENSION EXERCISE

"I think one of the bonuses of regen farming is that 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 revolution for women to be able to join this space." — Rachel Ward

Write 400 - 500 words analysing the potential revolutionary impact of regenerative farming as a space that is less reliant on heavy machinery and brute strength, and explore the broader implications for gender equality and sustainability in agriculture.

FURTHER INFORMATION

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
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
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 ant to do the full experiment)
- 2 cut off water bottles
- String
- Dirt - find the poorest direct 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.