



**Regenerating
Together
Programme**
BY SAI PLATFORM



A GLOBAL FRAMEWORK FOR REGENERATIVE AGRICULTURE

Linking agriculture practices to
regenerative agriculture outcomes

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Context

As an outcome-based framework, SAI Platform's Regenerating Together Framework (RTF) emphasises the improvement of farms or farm groups in relation to prioritised regenerative agriculture outcomes.

The framework consists of a four-step process (Figure 1) designed to make it both globally applicable and locally adaptable:

1. **Context analysis** to identify key inherent environmental risks associated with specific farm or production systems.
2. **Outcome selection** to prioritise regenerative agriculture outcomes, based on the outputs of the context analysis.
3. **Practice adoption** by selecting appropriate agriculture practices to achieve improved performance against the prioritised outcomes.
4. **Monitor and assess progress** by developing and actioning locally applicable continuous improvement plans.

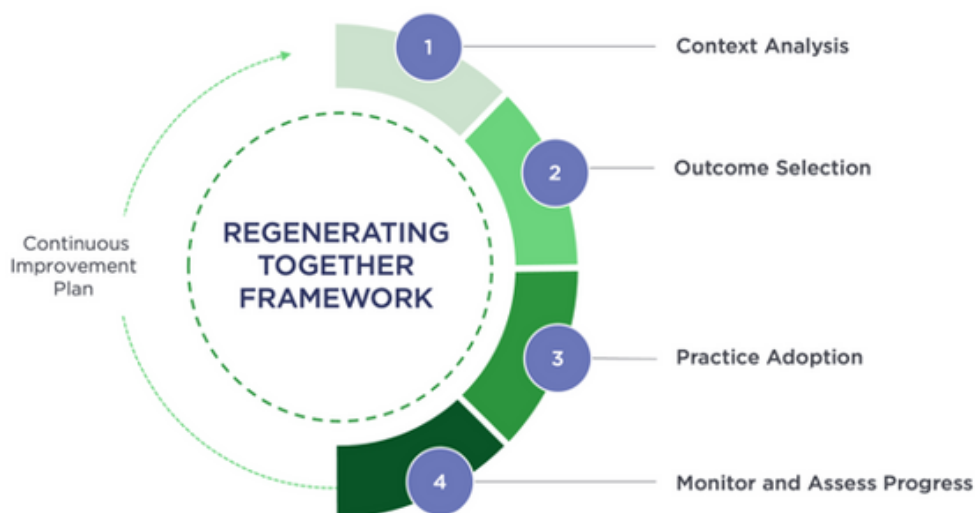


Figure 1. SAI Platform's Regenerating Together Framework 4-step process.

Version 1.1 of the RTF focuses on 8 outcomes and 16 regenerative agriculture practices (Table 1).

Outcomes are environmental improvements that result from the implementation of regenerative agricultural practices. **Practices** include on-farm actions or management decisions that contribute towards improved performance against outcomes.

The purpose of the RTF is to support farming transitions that deliver improved regenerative agriculture outcomes. Yet, several practical challenges of measuring improvement highlight the importance of leveraging the growing scientific evidence connecting regenerative farming practices to specific outcomes. For example, measurable improvements against certain outcomes can take time to manifest and are often influenced by external factors beyond a farmer's control, such as pest outbreaks and extreme weather. In addition, farms may reach a saturation point for certain outcomes, such as soil organic carbon, meaning further significant improvements may not be possible. Alternatively, farms may be implementing good practices but lack the outcome data to demonstrate their efforts. This poses a challenge when monitoring progress over time and rewarding farmers for their efforts.

Increasing evidence shows that certain practices directly contribute to the improvement of regenerative agriculture outcomes. A common example is the implementation of soil conservation measures to prevent erosion in sloped areas (Iijima et al., 2023). The RTF aims to promote an enabling environment for farms to receive the necessary support to adopt practices beneficial to their context, supporting them in making progress on their prioritised outcomes. Collaboration between farms and their trusted advisers will strengthen a shared understanding of risks and opportunities across the landscapes, which serves as the foundation for a co-created continuous improvement plan. The continuous improvement plan is the tailored roadmap for delivering impact. As such, it describes how improvement against the prioritised outcomes will be achieved, how the regenerative practices will be implemented, and how progress will be monitored over time.

This review aims to generate an evidence base that links practices and outcomes, allowing subjective judgements to be made for the effect strength of a practice on an outcome and the weight of evidence. The tables generated aim to support farmers or groups of farmers and their trusted farm advisors to select practices to improve against their prioritised regenerative agriculture outcomes. It aims to act as a supporting document when developing locally adapted continuous improvement plans. This work was inspired by Giller et al. (2023) who operationalised the concept of regenerative agriculture for coffee and cocoa production systems. The objective of this research is to strengthen Step 2 – *Outcome Selection* and Step 3 – *Practice Adoption* of the RTF.

An overview of the regenerative agriculture outcomes and practices included in the RTF v1. can be found in Table 1. The list does not include all the possible on-farm actions that farmers can implement but highlights some major practices that can contribute to regenerating agricultural systems, which must be adapted to the local context. We are committed to growing the list of practices and strengthening their connection to outcomes based on growing scientific and on-farm evidence.

Table 2 presents an overview of regenerative practices and their correlation to outcomes, as found in published scientific literature. It includes effect strength links between practices and outcomes as well as their evidence strength. The RTF can be applied to all terrestrial farming systems, yet the bulk of the existing evidence, and thus the focus of this review, is concentrated on annual arable crops. This table can be used to identify practices to include in continuous improvement plans and to implement on farm but should be further validated in terms of applicability in the local context.



Methodology

A quick evidence assessment was used to understand links between farming practices and regenerative agriculture outcomes following systematic principles outlined by James et al. (2016). This approach was chosen to capture as many relevant publications as possible within the limited project timeframe. The following types of publication were considered:

1. Systematic reviews
2. Descriptive reviews
3. Meta-analyses

Targeted screening of key publications was used to cross-check that proposed search terms were appropriate and that no key terms had been omitted. Search strings were created to reflect the farming practices and regenerative agriculture outcomes framework (Table 1), including a range of truncations and synonyms. The full search was carried out in Scopus and search strings were replicated in ResearchGate and Google Scholar.

Search returns were reviewed and included if a practice-outcome link was recorded across any of the four farming systems included within the RTF framework:

1. Annual crops (arable or horticulture)
2. Semi-perennial & perennial (forage/energy or trees)
3. Livestock (grazed or housed)
4. Mixed (i.e., a combination of more than one farming system)

Each publication was ranked subjectively against two categories:

'Effect strength' summarised the clarity and strength of the practice-outcome links across all the publications returned for each category.

'Evidence strength' summarised the weight of publications returned for practice-outcome links for each category.

Table 1. Agriculture practices and regenerative agriculture outcomes included in SAI Platform's Regenerating Together Framework v1.1

REGENERATIVE AGRICULTURE OUTCOMES	AGRICULTURE PRACTICES
    Increase soil health and fertility	Minimise soil disturbance Any crop establishment approach that reduces the intensity of soil movement.
    Increase nutrient use efficiency	Controlled traffic farming Confine soil compaction to the least possible area by imposing permanent traffic lanes for field operations.
    Optimise crop protection	Cover and catch cropping Management practice or collection of practices that retains an element of soil surface cover either between cash crops or during a cash crop.
    Increase water use efficiency	Mulching and soil residue cover Management practice or collection of practices that retains an element of soil surface cover either between cash crops or during a cash crop.
    Enhance on-farm habitat provision	Diversified crop rotation The diversity of the series of crops (cash and non-cash crops) that are grown in rotation per land parcel.
    Increase cultivated crop and pasture diversity	Protection of on-farm habitat Any practice or collection of practices aimed to characterise and protect biodiversity in the farmed landscape.
    Improve manure management	Agroforestry and silvopasture Integration of trees with agricultural crops and/or livestock either simultaneously or sequentially on the same unit of land.
    Reduce greenhouse gas emissions	Hedgerows and green buffers Any landscape boundary feature and any in-field/field adjacent non-cash crop buffer area.
	Riparian buffers Any landscape river boundary feature that contains perennial/semi-perennial plants, to protect river water.
	Integrated grazing management Management practice or collection of practices that proactively plans livestock integration as part of a wider farming system.
	Manure management and management of manure application on farm Management practice or collection of practices that proactively plans manure storage, handling and application to optimise positive outcomes and minimise negatives.
	Integrated nutrient management Management practice or collection of practices that proactively plans nutrient cycles for cash crops.
	Integrated pest management Management practice or collection of practices that proactively plans for the prevention, detection and control of pests, weeds and diseases.
	Irrigation management Management practice or collection of practices that proactively plans for water need, water sourcing.
	Feed from sustainable sources Farming system used to grow source material for livestock feed.
	Herd/flock management Management practice or collection of practices that proactively plans for elements of herd/flock health and welfare.



Table 2. Correlation indication matrix for the effect strength links between agriculture practices and regenerative agriculture outcomes included in SAI Platform's Regenerating Together Framework v1.1.

AGRICULTURE PRACTICES	REGENERATIVE AGRICULTURE OUTCOMES															
	Increase soil health and fertility		Increase nutrient use efficiency		Optimise crop protection		Increase water use efficiency		Enhance on-farm habitat provision		Increase cultivated crop and pasture diversity		Improve manure management		Reduce greenhouse gas emissions	
	Effect strength	Evidence strength	Effect strength	Evidence strength	Effect strength	Evidence strength	Effect strength	Evidence strength	Effect strength	Evidence strength	Effect strength	Evidence strength	Effect strength	Evidence strength	Effect strength	Evidence strength
Minimise soil disturbance	+++	+++	~/+	+	-	+	++	+	++	+					+	++
Controlled traffic farming	+++	++	++	+	++	+	+	+							+	+
Cover and catch cropping	++	+++	+	++	+	++	+	+	+	++	+	+	+	+	+	++
Mulching and soil residue cover	++	++	+	+	+	+	++	+++	+	+	+	+			~	+
Diversified crop rotation	+	++	++	++	+	++	++	++	+	+	=				+	+
Protection of on-farm habitat	++	+					+	+	++	+					++	+
Agroforestry and silvopasture	+	++	~	+	~	+	+	++	+	++	+	+			~	++
Hedgerows and green buffers	++	+	+	+	~	+	+	+	++	++					++	+
Riparian buffers							++	+++	+	+			+	+	+	+
Integrated grazing management	+	++	+	++	~	+	+	++	+	++	+	+	+	+	+	++
Manure management	++	+++	+	++	+	+	+	++	+	+			=		~	+++
Integrated nutrient management	+	++	+	++			++	+	+	+			++	++	++	++
Integrated pest management	+	+			+	+++	+	+	+	++	+	+			+	+
Irrigation management	++	+++	++	+	+	+	++	+++	+	++					++	+
Feed from sustainable sources	+	++	+	+			+	+	+	+			+	+	+	++
Herd/flock management	+	+	+	+			~	+	++	+	++	+	+	++	+	++

Effect strength	Effect metric (subjective - publication and evidence type)	Evidence strength	Evidence metric (subjective - publication and evidence type)
=	Non-applicable evidence	+++	High
+++	High positive	++	Moderate
++	Moderate positive	+	Low
+	Low positive		No evidence
~	Mixed		
-	Low negative		

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