REGENERATION INTERNATIONAL

6771 South Silver Hill Dr.
Finland, MN 55603, USA
https://regenerationinternational.org

The Regeneration International Standard

Agriculture must change from chemically intensive degenerative industrial systems to regenerative, biological, biodiverse, nature-based ones to regenerate our ecosystems, climate, health, and communities. Such systems improve resources, reduce, and ultimately avoid synthetic chemicals. It is not based on animal or plant cruelty. Instead, its foundations are biodiversity, plant biology, living soil science, and humane livestock systems.

Overview of Standard

This standard is brief and direct instead of a lengthy, complex regulatory document. It aims to be user-friendly for farmers and landholders. Regeneration International will periodically update this standard.

It has the Definition, General Principles, Guidance, and Clear prohibitions.

Apart from the prohibitions, it uses principles and guidance rather than mandated practices so farmers and land managers can make decisions based on the most appropriate practices and inputs and encourage innovation. The primary purpose of this standard is to assist in a paradigm shift from the current degenerative industrial-agricultural systems into systems that regenerate soil, biodiversity, climate, community, fairness, care, and health.

Operators can get certified to the following levels.
- Regenerative A Grade - meeting all the requirements
- Transition to Regenerative - in the process of meeting all the requirements

Operators can be certified to other standards and schemes.

The Definition of Regenerative Agriculture

Regenerative systems improve the environment, soil, plants, animal welfare, health, and communities.

The opposite of Regenerative is Degenerative
This is an essential distinction in determining practices that are not regenerative.

Agricultural systems that use Degenerative Practices and inputs that damage the environment, soil, health, genes, and communities and involve animal cruelty are not regenerative.

Synthetic toxic pesticides, synthetic water-soluble fertilizers, genetically modified organisms, confined animal feeding operations, overgrazing, exploitive marketing and wage systems, destructive tillage systems, and clearing high-value ecosystems are examples of degenerative practices.

Such systems must be called degenerative agriculture to stop greenwashing and hijacking.

The best way to determine if practices and inputs are regenerative or degenerative is IFOAM-Organics International's Four Principles of Organic Agriculture.

Health
Organic agriculture should sustain and enhance the health of soil, plant, animal, human and planet as one and indivisible.

Ecology
Organic agriculture should be based on living ecological systems and cycles, work with them, emulate them and help sustain them.

Fairness
Organic agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities.

Care
Organic agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment.

General Principles and Guidance on Best Practices

Maximize Photosynthesis
Agriculture starts with plants, which create soil by using photosynthesis to feed the microbiome with the molecules of life.

Plants will hardly grow in freshly ground rock. However, if you add organic matter, they will grow. Plants do this naturally, creating soil.

The key to successful regenerative agriculture is maximizing the capture of solar energy through photosynthesis in plant leaves. This solar energy powers the production system that feeds the soil microbiome, making nutrients, water, pest, and disease management available to plants and animals. Photosynthesis is the basis of most life on our planet—directly and indirectly. We use this energy to power farming and ranching systems. The key to getting the highest productivity is collecting as much photosynthesis energy as possible to power the system.

95% to 98% of plants' biomass comprises water and carbon dioxide (CO_2). Through photosynthesis, plants harness the sun’s energy to create glucose, the essential molecule for life. Glucose is the basis for all molecules of life and is the substance most living organisms need for energy, growth, reproduction, and survival.

Regenerate Soil
Soil is fundamental to all terrestrial life on this planet. It is the source of our food and biodiversity. Soil is not inert dirt—it is living, breathing, and teeming with life. The soil microbiome is our planet's most complex and richest biodiversity area. The rhizosphere, the region around plant roots, has the greatest biodiversity.

Plants feed the soil microbiome with the molecules of life they create through photosynthesis. These molecules are the basis of organic matter—carbon-based molecules—on which all life on Earth depends. Organic matter is fundamental to all life, and SOM is essential to life in the soil.

Farming practices that enhance SOM improve soil fertility, increase water retention capacity, and strengthen resilience to pests and diseases, thereby boosting agricultural systems' productivity. As SOM comes from carbon dioxide fixed during photosynthesis, increasing SOM can significantly benefit the climate by removing this greenhouse gas from the atmosphere.

The fact is that our health and wealth come from the soil.

Cash Crops and Cover Crops
A cash crop is a crop we eat, swap, or sell. A cover crop is a crop we grow to feed the soil microbiome and produce fertility and nutrients for the cash crop. Both can be the same, such as pastures for livestock.

- **Maximize living plants and deep roots**

A key principle is to ensure that agricultural systems include photosynthesizing plants for the longest possible durations within their climates. *Dead plants and bare soil do not photosynthesize.* Consequently, the most productive regenerative systems avoid using herbicides and excessive tillage to kill plants. Instead, plants are managed as ground covers and cover crops to enhance soil fertility, maximizing the carbon compounds that roots secrete into the soil.

As plants grow, 10% to 40% of these molecules of life are secreted into the soil through the roots. Thanks to the depth of the roots, these carbon compounds penetrate deeper into the soil than above-ground or tilled SOM, which can quickly convert back into CO2. Systems with deeper roots are preferred because their carbon compounds help build more durable SOM, making deep soil carbon more stable.

- **Maximize Soil Cover**

A general principle is to cover the soil with the highest possible amount of living plants for as long as possible. Bare soil is vulnerable to wind and water erosion. Plant cover protects the soil and serves as a silt trap to prevent erosion. *Bare soil and dead plants do not photosynthesize*.

- **Increase Diversity**

Utilizing a diverse range of well-managed plant species ensures maximum sunlight capture per acre or hectare. This captured sunlight provides the energy needed to convert CO2 into organic compounds that contribute to SOM through the soil microbiome. Maintaining permanent covers of living plants and implementing limited tillage systems are the most effective methods for increasing SOM. Properly managed polycultures are more resilient and produce higher yields than monocultures.

- **Increase Perennials**

Perennials have longer photosynthesis periods and deeper root systems. Choosing the right species can yield fruit, fodder, and nitrogen, which boosts resilience to climate extremes like droughts, floods, and storms. Overall, they need less management than annuals.

Minimize Disturbance

Short-term soil disturbances, such as animal trampling in pastures and effective tillage practices, help aerate the soil. This process encourages soil microbes to decompose organic matter, releasing essential nutrients. There is considerable misunderstanding about the role of microbes in oxidizing soil organic matter. Some degree of oxidation is necessary to free minerals vital for crop growth. Without sufficient oxidation, many minerals remain trapped within organic matter. The key is to effectively manage the cycles of both short-term and long-term soil organic matter fractions. The labile fraction should continuously cycle and release nutrients to support crop growth, which can be achieved while enhancing the stable soil organic matter fractions.

Strip tilling

Strip tilling minimizes soil disturbance during cultivation. Most soil remains uncultivated as the crop is sown in the tilled strips. The most effective weed management strategies involve turning them into cover crops. Pasture cropping is one of the best examples of implementing this approach.

Maximize Recovery

Ecosystems naturally regenerate once a disturbance stops. Consequently, regenerative agriculture not only maintains resources but also improves them. Understanding how to manage this powerful force is essential. Maximizing recovery after grazing, tillage, and other disturbances allows the plants and soil to reach their full production potential.

Integrate Livestock

Livestock can manage weeds, pests, and diseases, supply nitrogen via manure, and increase SOM.

Various strategies are used to manage weeds and use them as cover crops to build fertility. Grazing is a widespread management tool for these regenerative systems. Many systems, known by different names, fall under the heading of regenerative grazing, such as Holistic Planned Grazing, AMP grazing, cell grazing, mob grazing, and rotational grazing.

Overgrazing occurs when animals graze for too long without allowing the ecosystem sufficient time to recover. When many animals graze briefly, allowing the vegetation adequate time to heal before returning them to the field mimics the natural grazing patterns of herding animals and enhances biodiversity. Even a low stocking density of animals that continuously eat their favored species can damage plants because they cannot recover.

Maximize Efficiency
The best regenerative farmers redesign farming systems to create a series of integrated systems that prevent pests and diseases, giving the cash crop a significant advantage. They aim to take a whole-systems approach, resulting in a resilient, low-input, high-output farm. This is where effective traditional practices, scientific rigor, and farmer-led innovations combine to produce new systems, applying an ecological approach to agriculture.

Ecosystem-based regenerative production systems manage biodiversity to achieve the optimal utilization of ecosystem services. The aim is to maximize the multi-functional benefits of ecological functions rather than synthetic chemical intensification.

These services encompass pest and disease management, water retention and drainage, soil enhancement, soil biology and fertility, nutrient cycling, nitrogen fixation, photosynthesis, CO_2 removal, diversity in crops and animal species, pollination, and many others.

Education to Train Farmers in Best Practices

This standard is based on a culture of continuous improvement. Certified operators are encouraged to take courses and workshops on best practices such as but not limited to:

- Regenerating soils
- Nutrient balancing
- Organic agriculture
- Agroecology
- Regenerative grazing
- Animal husbandry
- Cover and pasture cropping
- Permaculture
- Agroforestry
- Biodynamics

Prohibitions

- Synthetic pesticides
- Synthetic animal feed supplements
- Synthetic food additives
- Water soluble chemical fertilizers, except for correcting deficiencies with trace elements
- Sewerage sludge/biosolids
- GMOs, including gene editing and GMO vaccines
- Nanotechnology
- Animal cruelty - all animals must be able to express their natural habits.
- Confined Animal Feeding Operations - all animals must spend adequate time on pasture and/or their natural habitat.
- Hydroponics - all systems must be soil-based.
- Clearing old growth and high-value ecosystems,
- Damaging tillage
- Burning crop residues, except for cool-season mosaic burns in First Nation agroecosystems
- Grazing that produces bare soil

Management Plan - Continuous Improvement, Accountability, and Practices

This standard's most critical aspect is that it helps operators manage the transition to a fully regenerative system. Certified operators will be inspected and evaluated for progress based on their management plan.

Please describe how you manage and intend to improve the following:

Operators can choose their preferred format for documenting their practices, plans, and maps. You must document and improve them every year.

Environmental

- Increasing soil organic matter
- Building soil fertility
- Increasing plant and animal biodiversity
- Ground cover and weed management
- Pest and disease management
- Traditional ecosystem mosaic burning - where appropriate
- Minimize plastic

Social
- Fair wages
- Gender equity
- Community engagement

Governance
- Farm and Ecosystem Management Plan and Map
- Marketing Management Plan
- Financial Management Plan

Transition Plan
Describe with time frames how you will reduce and eliminate any prohibited products or production methods.