regenagri

for the health & wealth of the land

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regenagri Standard Criteria

ever-growing beyond standards

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Scope

This document aims to provide insights into the regenagri Standard Criteria. It covers multiple agricultural operations ranging from arable, dairy, other livestock, perennial and fruits, fresh products, to grassland management.
This program and its assessment methodology are designed to evaluate a range of farming operations and can be used by different types of organisations including:
individual farms, groups of farms, cooperatives, agribusiness, and the supply chain (brands, processors, etc..).

Introduction

The regenagri Standard Criteria looks holistically at the entire farming operation, considering the different management strategies and practices used, and assesses the farm's regenerative impact. Regenagri helps secure the health of the land and the wealth of those who live on it. The criteria are supported by practical knowledge of sustainable and regenerative farming methods gained through experience in the field as well as input from trusted advisors and industry experts, research from peer reviewed scientific papers and practical guidance from the governance group. The governance group is made up of a collection of companies each expert in a specific aspect of regenerative agriculture. The governance team is responsible for the technical development of the program and the provision of expertise to support farms and organisations.
The regenagri criteria support the measurement of key indicators through on-farm data, these metrics assess cover cropping, tillage, energy planning and grazing management. These practices all have a direct effect on regenerating soil health, biodiversity and water courses while reducing emissions and sequestering carbon.
Depending on the needs and objectives of the stakeholders, the regenagri standard criteria is intended to be used mainly as:

1. Standard Criteria for third party assessment and certification.
2. Criteria to be used as a reference for the implementation of regenerative agricultural projects.
3. For benchmarking between different regenerative schemes.

The regenagri Standard Criteria have been developed to measure and monitor the implementation of regenerative practices and their ecological outcomes. The impact of each regenagri criteria point, as well as the whole farm, are scored by an algorithm which considers:

- The farm's location - its climatic region and average rainfall,
- The operation type – whether the farm is arable focused or a mixed farm with livestock,
- Soil type - the soil type can have a significant impact on certain practises and the necessity of their implementation.

The outcomes are monitored through a continuous improvement model which allows farmers/farm owners to see how implementing regenerative practises is affecting the agroecosystem of their farm over time. At the end of the assessment the scorecard clearly shows which areas are performing well against the criteria, and which are performing poorly. Taking assessments over time builds a picture of how regenerative practises are impacting the farm and its GHG emissions. The score is assigned to the criteria points, but the outcomes can be drawn from the results over time. For example, if a farm is planting leguminous cover crops in their arable fields, this will be seen in the score card as an improvement in cover cropping but also as a physical

outcome on the farm as a reduction of N applied by the farmer and a reduction in nitrous oxide emissions. regenagri works on a continuous improvement model that includes the standard criteria itself. The standard criteria will be consistently reviewed and revised and is an evolving standard. Full details on how the methodology and algorithm work is explained in the 'regenagri methodology' document.

Assessment methodology

The regenagri assessment evaluates the degree of implementation of practices applicable to different agricultural operations including arable, livestock, dairy, trop fruits, and fresh produce.
The 'regenagri methodology' document explains which criteria are assessed, how a regenerative score is given to each practice, and how different criteria interact with one another. On top of that it explains how each assessment is adapted to specific climate, type of soil and type of operation.
Based on both the standard criteria and methodology the regenagri score will be assigned to an agricultural operation.

For additional information on the criteria please contact info@regenagri.org.

Conservation commitments

Organisations wishing to be associated with regenagri shall commit to Protection of Land with High Biodiversity Value, High Carbon Stock, or other HCVs. The organisation shall provide a public commitment or shall sign a self-declaration stating that it has not been involved in activities destroying the aforementioned values or in activities destroying or converting natural habitats into agricultural production.

Those organisations that implement the regenagri carbon standard will also have to assure that their carbon stock is maintained and any loss in carbon stock will be deducted from the carbon credits potential of their projects.

When agricultural activities are adjacent to HCV areas the organisation shall carry out a risk assessment about the HCV and implement mitigation measures, as required.

From January 1st, 2008, onwards, the organisation has not been involved in conversion of Land with High Biodiversity Value, High Carbon Stock, or other HCVs.

Acronyms

GHG- Greenhouse Gases
N- Nitrogen
HCV(s)- High Conservation Value(s)
SOM- Soil Organic Matter
IPM- Integrated Pest Management
CPP- Crop Protection Products
HHP- Highly Hazardous Pesticide
FAO- Food and Agriculture Organisation
OM- Organic Matter
CO_2- Carbon Dioxide
CEC- Cation Exchange Capacity
DMI- Dry Matter Intake
GM feed- Genetically Modified feed
Global GAP- Global Good Agricultural Practice
SMETA- Sedex Members Ethical Trade Audit
CFT- Cool Farm Tool
IPCC- International Panel on Climate Change
N_2O- Nitrous Oxide

Definitions

Nutrient management plan- A nutrient management plan helps manage nutrient use efficiently to save money and reduce environmental risks. It should include both a Farm Record Sheet, (for the whole farm) and a Field Record Sheet (for each field) which should include nutrient applications and soil analysis, field areas and farm map, crop to be grown and previous crop

grown, soil type, soil nutrient analysis, a manure/litter/slurry application map, details of all imports and exports of organic manure including manure/slurry/litter.

Conventional Tillage- is defined as a tillage system that uses cultivation for seedbed preparation and weed prevention. This includes ploughing and harrowing, where soil is inverted, incorporating and destroying plant debris and exposing soil pests. The average depth of conventional tillage ranges between 15-50 cm.

Conservation Tillage- is a system that minimises soil disturbance (0-20 cm) during field preparation which can help to preserve SOM-contents, facilitate nutrient cycling, and improve water dynamics. The four main types of conservation tillage are mulch tillage, ridge tillage, zone tillage, reduced tillage (tillage which does not turn the soil over) and no-tillage (direct drilling). Along with tillage practices, conservational tillage also involves the presence of crop residue management depending on the context of each specific farm operation (residue integration, soil cover, composting). compost, manure.

Rotation Plan- A crop rotation plan should incorporate the description of what crops should be planted on each field and when. Such plan shall be based on minimum a 3-year term vision and shall take into account the different species and how their rotation benefits the yield, soil health, and overall farm resilience while relying less on synthetic inputs.

Synthetic fertilisers- fertiliser manufactured synthetically containing one or more of the nutrients necessary for plant growth.

Nature-based and organic fertilisers– fertiliser coming from nature-based sources: naturally produced or elaborated or extracted from organic matter or the Earth.

Soil Management Plan- A soil management plan should be field by field and aid the identification and management of soil related issues. Such a plan shall take into consideration local climate and rainfall patterns, soil type, and crop type. It should include field and soil identification and management issues and proposals.

Water Management Plan- For farms using irrigation a plan shall include the list of irrigation efficiency measures, good watershed management in local context (climate, soil, type of farm operation).

Rotational Grazing Management Plan- A plan that subdivides the ground and matches the allocated area with stock, including numbers of animals and days on each plot.

Livestock unit- a standard measurement unit that allows for the aggregation of the various categories of livestock for them to be compared

Holistic Grazing Plan- helps ensure that livestock are in the right place, at the right time, and with the right behaviour and integrates livestock production with crop, wildlife, and forest production

Buffer strips- Also known as riparian zones, are the vegetated region adjacent to water courses and wetlands.

Standard Criteria for Certification

Eligibility criteria

The below listed criteria are a prerequisite for regenagri users. Compliance is mandatory for regenagri certification. All conservation and deforestation commitments must proceed from the 1st of January 2008 or earlier in order to comply with the regenagri conservation commitment. The organisation subject to a regenagri assessment shall:

- Present their conservation commitment and provide evidence of its implementation. Farm group managers may implement this as part of their internal audit procedure.
- Comply to local applicable legislation and confirm in the assessment how it is monitoring and implementing legislative updates.
- Consider/Understand that primary forest or other forested land that has lost its status as forest land from January 2008 onwards (conversion, enlargement of adjacent agricultural land) cannot be included in a regenagri project.
- Consider/Understand that peatlands and wetlands (high biodiversity land) that have lost status after January 2008 cannot be included in a regenagri project.
- Demonstrate the status of the land prior to January 2008, regardless of what the status of the land is at the time of initial validation.
- Consider/Understand that areas with high biodiversity or HCV status, which are subject to official protection, are not regenagri project areas from the point of view of nature protection.

In order to verify the fulfilment of the eligibility requirements, regenagri adopts the definitions of land categories of IPPC.

The types of evidence that are expected to be presented to verify the eligibility criteria include:

- Date verified satellite imagery.
- Official maps of the farm and land area with corresponding dates.
- 3D module mapping and intelligent mapping software.
- Farm records (digital or hardcopies).
- Signed commitments and legal requirements around conservation and deforestation.
- Local government documents.
- Audit records from a third party.

The verification of the compliance to the eligibility criteria shall be done by the certification body prior to the registration of the regenagri project.

Regenerative Crop Production

Cover-cropping

Applicable land: ARABLE, FRESH PRODUCE, SOFT/TOP FRUITS
Introduction & benefits of implementation: Cover crops can be planted between the harvest of one cash crop, and the planting of another on the same piece of land. Examples of cover crops are mustard, wheat, brassica, phacelia, rye, buckwheat.
These crops can encourage soil and crop health in different ways, including:

- Improving the soil's structural and hydraulic properties. Stronger soil structure leads to higher water retention capacity, lower compaction, lower runoff and erosion; prevents nutrient leaching, and contributes to overall soil health and SOM dynamics.
- By cultivating multiple crops, farmers can biologically manipulate the rhizosphere, e.g., by stimulating a higher microbial biodiversity in their soil, a key pillar at the core of regenerative agriculture. Improving soil biology enhances nutrient efficiency and helps fight pests and weeds.
- Cover crops can also provide vital habitats for birds and insects, an important component for the development of local biodiversity and natural capital.

Guidance: To maximise the agronomical and ecological benefits from cover crops, they should be planted for a minimum of two months. Multiple termination methods can be chosen after the growing period. Methods depend on the local climate, soil type, available machinery and the crops that will follow the cover crop.
A diversity of species in the mix should be present to improve resilience, soil health and biodiversity. Things to keep in mind when considering implementation and choice of species are: weather conditions, time of sowing, species (i.e., legume, brassica), and the desired purpose of the cover crop (e.g., for N building, or animal fodder).

Requirements: The farmers should apply cover crops on soils that would otherwise be bare.

Scoring based on:

- Occurs on <10% of applicable land.
- Occurs on 10-30% of applicable land.
- Occurs on >30% of applicable land.
- Occurs on >50% surface area and minimum 5 species (and at least one leguminous plant) are present in the mix.

Objective: Improve soil health, increase SOM, mitigate erosion.

Tillage management

Applicable land: ARABLE, FRESH PRODUCE.
Introduction & benefits of implementation: While there are benefits for farms to be drawn from conventional tillage, there are also drawbacks when it comes to soil health that must be consid-

ered. Practices which disturb the soil such as breaking the natural equilibrium of soil's biodiversity and chemistry are detrimental to soil fertility. Conservation tillage has been highlighted as more sustainable and economically viable than a conventional approach to tillage.
Conservation tillage practices result in multiple agronomical, environmental, and economic benefits. Farmers protect their soil from erosion, increase soil fertility and biodiversity, and augment the plant's natural response to pests and disease. While the initial investment in new machinery can be significant, the reduction of costs can help negate the initial investment in the long term (e.g., outgoings on fuel and labour).
Lastly, conservation tillage has a strong body of scientific research proving its capacity to sequester and store carbon in the soil, contributing to climate change mitigation.
Guidance: Conservation tillage practices are enhanced when implemented alongside the cultivation of cover crops, and these two practices synergise together to maximise their agronomical and environmental benefits. In the same way, crop rotations and a well thought out fertilisation plan can ensure the maximum efficiency and productivity of such systems.

Requirements: Farmers should apply conservation tillage practices on as much arable cropland as possible. Perennial croplands are excluded from this scoring.

Scoring based on:

- Conservation tillage is not used on any land.
- Conservation tillage practices are used on 0% -25% of applicable land.
- Conservation tillage practices are used on >25-50% of applicable land.
- Conservation tillage practices are used on >50% of applicable land.

Objective: Boost soil's biology, increase SOM, enable nutrient cycling.

Crop Rotation

Applicable land: ARABLE, FRESH PRODUCE
Introduction & benefits of implementation: By implementing two or more crops in a crop rotation, farmers can experience higher resistance to diseases (fungi, bacteria, and virus); better weed management (without inputs); higher water conservation levels; better fertiliser efficacy, and limited soil erosion, which can all lead to improved yields.
Guidance: Depending on each specific farm situation, the crops chosen for the rotation can vary widely. The crops chosen should be included in a crop rotation plan. We advise that where possible a farm should consider the integration of at least one leguminous plant as a N fixer, especially when looking at diverse seed mixes, alongside side other species such as Brassicaceae, Poaceae, Solanaceae and/or Umbelliferae. The wider the rotation, the wider the range of ecosystem services that can be harnessed.

Requirements: Farmers should apply broad and complex crop rotation in as much of the agricultural land they manage as possible. The crop rotation shall be done on 75+% of the applicable land. Cover crops are considered as a part of the rotation. Perennial croplands are excluded from this scoring.

Scoring based on:
- 2 crops are in the rotation plan.

- 3 crops are in the rotation plan.
- 4 crops are in the rotation plan.
- 5 crops are in the rotation plan (a crop cannot be planted two times in a row in the same field).
- >5 crops are in the rotation plan. (a crop cannot be planted two times in a row in the same field).

Objective: Yield optimisation and stabilisation, boost to soil's biology, pest and disease control, reduced need for synthetic inputs.

Inter-cropping

Applicable land: ARABLE LAND, FRESH PRODUCE, TOP FRUITS, WOODLAND
Introduction & benefits of implementation: Intercropping is the practice of planting two or more cash crops species together in rows or strips. The wider vegetal diversity within the cropland is a building block for a stronger soil biodiversity below ground and the different species can benefit from the ecosystem services they each provide above ground.
Direct effects are perceived on nutrient cycling capacity, pest resistance and weed suppression resulting in higher yields than monocultures, without depending on synthetic fertiliser or pesticides.
Guidance: Research and field trials around the topic of intercropping have, in the past, been focused on vegetable crops. But new trials are showing positive results in conventional arable crops, such as beans, oats, maize, and soyabean. Inter-cropping is sometimes also referred to as "companion planting or cropping".

Requirements: Farmers should apply intercropping to a significant percentage of its cropland.

Scoring based on:

- Intercropping occurs on <2% of applicable land.
- >2-4% of applicable land is incorporated into an intercropping approach.
- >4-10% of applicable land is incorporated into an intercropping approach.
- >10% of applicable land is incorporated into an intercropping approach.

Objective: Diversify farm's income, increase biodiversity, pest and disease control, yield stabilisation.

Perennial Cropping

Applicable land: ARABLE, PASTURE, FRESH PRODUCE, TOP FRUITS
Introduction & benefits of implementation: Perennial crops are plants that do not require replanting each year, ranging from perennial grasslands, shrubs, fruit and nut trees, wood trees, and biomass perennials. These plants have numerous benefits, from drawing-up moisture and nutrients to the topsoil, to extending deep root apparatus and improving soil structure. At the same time, their high efficiency results in lower costs through less/no fertiliser being required.
Perennials also offer security and resilience as they produce crops and timber continuously for years, whilst simultaneously creating an agroecosystem which is more resistant to extreme weather events and capable of storing greater amounts of carbon in both their deep root systems and the above ground biomass.

An example of a system that profits from incorporating perennials is agroforestry. Agroforestry is where agricultural systems incorporate the cultivation of trees, this could be within the croplands (alley cropping/ silvoarable) or using trees to provide food, shelter and sometimes housing for livestock (silvopasture). Perennial crops can also be grown for biofuel production (with suitable plants being giant miscanthus, vetiver, and bamboo).
Guidance: The type of perennial suitable for a region varies greatly so, before planting, the farm should research the most suitable varieties and/or request advice from a CU advisor. Funding and planning for the planting of perennial crops can be difficult, so farmers should look to incorporate perennials when and where possible, within the scope of the farm operation.

Requirements: The farmers should dedicate a percentage of land towards the installation and maintenance of perennial crops. When the farming operations is fully composed of perennial crops, the agricultural land dedicated to perennials shall not be higher than 85% to avoid monocultures.

Scoring based on:

- 0-2% of applicable land is dedicated to perennial cropping.
- >2-5% of applicable land is dedicated to perennial cropping.
- >5-15% or >85-100% of applicable land is dedicated to perennial cropping.
- >15-85% of applicable land is dedicated to perennial cropping (perennial pastures are excluded from this).

Objective: Farm diversification, improve water and nutrient dynamics, increase biodiversity.

Natural fertiliser strategies

Applicable land: ARABLE, FRESH PRODUCE, SOFT/TOP FRUITS, PASTURE
Introduction & benefits of implementation: Soil fertilised with natural and organic fertilisers contains a higher concentration of beneficial microbial life and are rich in organic material. This combined effect will boost soil's biodiversity, allowing soils to store greater quantities of carbon and cycle nutrients more effectively.
Guidance: Organic and natural sources can include organic fertilisers, compost, bio stimulants and manure digestates or any other compounds that is extracted from nature without the need of a synthetic process. While compost and bio stimulants can be considered an inoculant of beneficial bacteria, manure, digestate and organic fertiliser's application is classified as fertiliser, bringing plants' essential nutrients back into cropland.

Requirements: Farmers should be able to show a nutrient management plan composed of sourcing; application method, and rate of application for all the fertilisers used.

Scoring based on:

- <25% of fertiliser originates from organic or natural sources.
- 25-50% of fertiliser originates from organic or natural sources.
- >50-75% of fertiliser originates from organic or natural sources.
- >75% of fertiliser originates from organic or natural sources.

Objectives: Yield optimisation, improve fertiliser efficiency, increase biodiversity and SOM, avoid nutrient leaching.

Synthetic Fertiliser Reduction

Applicable land: ARABLE, FRESH PRODUCE, SOFT/TOP FRUITS, PASTURE
Introduction & benefits of implementation: The use of synthetic fertiliser on land has a number of implications on soil health. Synthetic fertiliser use can lead to a reduction of OM and microbial life as well as altering the pH. There are also implications on the wider environment including nutrient leaching and contamination of water sources as well as the release of GHGs in the production phase.
Guidance: Synthetic fertiliser use can be reduced either by using natural alternatives or through a synergy of regenerative practices that improve soil health and improve yields, therefore reducing the need for additional fertilisers. National averages sourced from FAO's Fertilisers Data (2017) are used to compare a farm's pesticide application rate and decreases against the national baseline are awarded.

Requirements: The farmer must show supporting evidence of application records and variants of fertilisers used. Spraying should be minimised where possible and must also avoid areas of natural habitat and or conservation.
If the FAO dataset is not in line with real crop baselines, then the baseline reference can be drawn from yearly datasets declared from the client through synthetic fertilisers invoices or from other baselines that can be verified.
If such baselines are adopted, then the same scoring system will be in place.

Scoring based on:

- Above country baseline.
- Equal (with a 5% margin) to the crop baseline.
- >5-25% less than baseline.
- >25-60% less than baseline.
- >60% less than baseline.

Objective: Reduce dependency on synthetic fertiliser, boost soil's biology, higher nutrient cycling, avoid nutrient leaching and watershed pollution.

Natural Crop Protection Strategies

Applicable land: ARABLE, FRESH PRODUCE, SOFT/TOP FRUITS
Introduction & benefits of implementation: Replacing chemical CPPs with the use of natural ones has consequences on multiple aspects:

- Reduced pressure on above ground and below ground biodiversity.
- Positive impact on human health through higher quality food and decreasing the contamination of aquifers.

Guidance: When the appropriate regenerative practices are implemented in the correct context, the result will be the reduced pressure and self-regulation of pests and diseases through the work of natural plant immunity, the presence of beneficial organisms within the soil, and insects. Nature-based CPP strategies include for example: IPM, certified organic products, and bioactive compounds (bacteria, fermentation, plant's extracts, and others)

Requirement: The farmer must show supporting evidence of application records, the type of CPP used, and strategies that are in place. A management plan should also show consideration of environmental conditions and crop type when applying products.

Scoring based on:

- No natural CPP strategies are in place
- 1 natural CPP strategy is in place
- 2 or more natural CPP strategies are in place

Objective: Reduce dependency on synthetic pesticides, boost soil's biology and surrounding biodiversity, avoid nutrient leaching.

Synthetic pesticide reduction

Applicable land; ARABLE, FRESH PRODUCE, SOFT/TOP FRUITS
Introduction & benefits of implementation: Limiting the amount of industrial CPPs by using a varied range of regenerative agriculture practices can keep weeds and pests under control allowing for a further reduction in chemical application. Where CPPs are used less, self-regulation of pests and diseases will be greater.
Guidance: The reduction of CPPs per hectare allows a quantitative way to understand the success of the implementation of regenerative practices. National averages sourced from FAO's Pesticide Application Rates Data (2017) are used to compare a farm's pesticide application rate and decreases against the national baseline are awarded. A list of the most harmful chemicals that are still widely used in some regions of the world has been created. These chemicals have detrimental impacts on the environment and therefore the use of these should be avoided.

Requirement: The farmer must show supporting evidence of application records and variants of chemicals used. Spraying should be minimised where possible and must also avoid areas of natural habitat and or conservation.
If the FAO dataset is not in line with real crop baselines, then the baseline reference can be drawn from yearly datasets declared from the client through synthetic fertilisers invoices or from other baselines that can be verified.
If such baselines are adopted, then the same scoring system will be in place.

Scoring based on:

- Above country baseline.
- Equal (with a 5% margin) to the crop baseline.
- >5-25% less than baseline.
- >25-60% less than baseline.
- >60% less than baseline.

If any highly hazardous pesticides (HHPs) from the harmful chemicals list described in the regenagri methodology is being used the following scoring will be implemented:

-minus when 1 HHP is used
-minus when 2 or more HHPs are used

Objective: Reduce dependency on synthetic pesticides, reduce biodiversity loss, boost soil's biology and nutrient cycling capacity, phase out harmful chemicals

Irrigation efficiency measures

Applicable land: ALL (ONLY IF IRRIGATION IS UTILISED)
Introduction & benefits of implementation: Water resources are becoming more scarcely available and less affordable due to aquifer depletion and unreliable weather conditions. To secure a future for agricultural land in arid and dry climates there is a strong need to better manage water resources, starting with water use efficiency and monitoring. The implementation of such measures will bring higher rentability and resilience to farmers.
Guidance: Water management is site-specific, so we advise farmers to build a water management and monitoring plan based on their own specific context.
The practices included are moisture sensors, adding mulch and OM, high efficiency water systems (drip irrigation), establishment of windbreaks, calculating infiltration rates, observing crop needs, following an irrigation schedule, irrigation equipment maintenance, and keyline system design.

Requirements: Farmers needs to show the presence of water management techniques that have been identified due to their positive impact on the environment and yield performance. A water management plan and/or irrigation plan is also requested.

Scoring based on:

- Farm utilises 0-1 of the specified water management practices are utilised.
- Farm utilises 2-6 of the specified water management practices.
- Farm utilises >6 of the specified water management practices.
- Farm utilises more than >6 of the specified water management practices and water savings are being monitored/ quantified.

Objective: Lower dependency on external water, increase resilience to drought and heatwave events, smaller water footprint in local watershed, yield optimisation.

Soil Sampling

Applicable land: ALL
Introduction & benefits of implementation: Sampling the soil is an effective and accurate method for measuring the health of the soil. Soil health can be measured by (1) the percentage of soil organic matter increase, (2) microbial activity (Solvita CO_2 Burst), (3) CEC, (4) pH scale of the soil, and (5) albeit to a lesser degree, by ratios of Carbon to N and Calcium to Magnesium.
Guidance: See regenagri Program Manual for full details on the soil sampling procedure.
We suggest setting-up a soil sampling schedule and technique, which should be consistent every year. Where possible, GPS should be used to ensure consistent testing. Soil sample analysis gives a farm a direct insight into how these regenerative practices are affecting the soil's health.

Requirements: Farmers need to be able to show the results both of their soil analysis (maximum 5 years old) and of their soil management plan. The results need to either be 1) published through the online assessment tool, or 2) recorded during an on-site audit.
The soil samples must be taken from productive land, and sampling should occur at the same time of year. Ideal times for soil-sampling are during the spring and autumn months. The sample should not take place shortly after a significant disturbance to the soil has occurred. Sampling on arable land should be done across a range of 0-30cm depth, ideally at a multiple depth of 15-30cm.

Scoring based on:

- No soil test have been done in the last 5 years.
- Presence of soil tests in the last 5 years.
- Records are present of on-site soil tests. A soil management plan is in place to improve the SOM.
- Records are present of on-site soil tests, and it is observed that SOM is increasing.

Objective: Collect information and evidence on soil health performance, evaluate effects of farming practices on carbon objectives.

Regenerative Livestock Management

Rotational grazing

Applicable land: PASTURE, MIXED
Introduction & benefits of implementation: Rotational grazing can regenerate land and build diverse agroecosystems, as this practice aims to strategically mimic nature: Livestock herds are supposed to move constantly from field to field under the pressure of low availability of herbaceous resources and from predators: constituting a seasonal grazing pattern. By adopting a rotational grazing plan, we are re-aligning animal needs with the ecology of grassland systems.
To accomplish this, it is recommended to fence larger fields into smaller paddocks with temporary and or moveable fencing. After a certain period of days, the livestock will receive a new paddock to ensure a beneficial grazing rate for the pasture and livestock and avoid overgrazing on the same patch of pasture. This type of grazing requires logistic planning before deployment, and the provision of water troughs or a portable watering system.

Guidance: Rotational grazing plans are dependent on many site-specific factors such as climate, soil type, animal species and plant species and need thorough planning and constant monitoring. The shorter the animals spend on one paddock the better, as the longer animals graze on the same land the less nutritional value they receive. This also allows the maintenance of more constant intake rates as they graze most intensely when first moved- this enables milk yields for example, to remain more constant.
Requirements: A rotational grazing management plan should be in place for as much of the livestock and grazing land where possible. A management plan should include the rotation of the livestock between plots, the duration of that paddocks is grazed, and monitoring of the land assigned to rotation.

Scoring based on:

- Animals graze on the same plot for an average of more than 14 days.
- Animals graze on the same plot for an average of 8-14 days.
- Animals graze on the same plot for an average of 4-7 days.
- Animals graze on the same plot for an average of 3 days.

Objective: Optimise pasture fertility, increase soil health and SOM, optimal use of on-farm resources

Grazing Density

Applicable land: PASTURE, MIXED
Introduction & benefits of implementation: If livestock are densely packed and move quickly through a landscape, then pastures and soil can regenerate. Grazing density management shall be in place to avoid overgrazing and maximise recovery time for grasslands. The farmer is trying to achieve the optimum graze-plant recovery ratio (with shorter grazing periods for livestock and longer recovery periods for plants). This is a measure of a pasture's ability to produce enough forage to meet the requirements of grazing animals. Reducing grazing density allows forage to grow taller which increases structural complexity, while reducing habitat fragmentation and increasing biodiversity.
Guidance: The type of land being grazed, the weather conditions, and the species of livestock are important considerations. Different species of livestock will graze an area of land differently and, as such, will favour different varieties of plants. This should be factored into any decisions being made on grazing density. Grazing density should be calculated by the number of livestock units of the land area.

Requirements: The Farm needs to be able to present a grazing management plan which includes the grazing density figures based on the capacity of its grasslands.

Scoring based on:

- No grazing management plan is in place.
- Grazing management plan is in place that justifies and implements most appropriate grazing density.

Objective: Optimise nutrition and health of livestock, make optimal use of local resources.

Grazing Period

Applicable land: PASTURE, MIXED
Introduction & benefits of implementation: For the welfare of animals and to maintain both (1) the quality of land and (2) soil health, it is important for all monogastric and ruminant species to be outside as much as possible, and additionally not to be stuck on the same piece of pasture. However, it is also good practice to avoid grazing cattle throughout the wet winter months as soil in the grazing area may become poached and compacted, which might impact the land negatively.
Guidance: The capacity of a farm to extend its grazing period throughout the year highly depends on its climate. We suggest 1) adapting to each specific climatic situation, and 2) to pay particular attention to the areas of land that can easily become waterlogged. A shelter can be a physical structure, trees, hedgerows that can allow livestock to cool down in summer or shelter during the winter.

Requirements: Farms should be able to prove through a grazing period management plan the overall days of open-air grazing of their livestock.

Scoring based on:

- No grazing management plan is in place.
- Grazing management plan shows that livestock graze outside in the adequate periods, dependent on weather and climate.
- Grazing management plan shows that livestock graze outside in the adequate periods, dependent on weather and climate, and that they also have access to a shelter.

Objective: Improve grassland's ecology dynamics, optimize livestock nutrition and health, boost soil's biology.

Multi-Species Livestock Integration

Applicable land: PASTURE, MIXED
Introduction & benefits of implementation: Integrating multiple species of livestock into a rotational grazing management plan results in a more efficient use of grasslands. Multi-species grazing models have shown a positive result on grassland fertility and - therefore - its carbon stocking potential. There is also a direct effect of multiple species livestock integration on the quantity and quality of pasture available for the animals.
The animal diversity can also result in better control of unwanted weeds, forage, and brush, and can decrease pests from spreading (e.g., cows' internal parasites are often grazed by chicken).
This does not mean animals should be in the same section of land at the same time. For example, cows could be kept on a paddock for 2 days. Then, when they are moved, chickens are brought onto this patch of land. Livestock can also roam on land which is being used for crop production/woodland.

Guidance: When deciding which species to add to a grazing system, it is best to consider current plant species on the farm and determine which are not being grazed. Knowing how different species graze and which plant species they prefer is essential before deciding what will be an effective plant species combination on a particular farm. Where possible it is also beneficial for animals to graze on areas of land used for crop production.

Requirements: When grazing land is available, farmers should integrate 2 or more species of livestock into as much grazing land as possible.

Scoring based on:

- Only one livestock species is present in the farm
- Grazing plan integrates at least 2 livestock species.
- Grazing plan integrates 2 or more livestock species, including both ruminant and monogastric species.
- 2 or more livestock species are grazing in the same field. Holistic grazing plan integrates 2 or more livestock species, including both ruminant and monogastric species.

Objective: Improve grassland's ecology dynamics, optimize livestock nutrition and health, boost soil's biology.

Grassland Botanical Diversity

Applicable land: PASTURE, MIXED

Introduction & benefits of implementation: In the same way that we've lost biodiversity in croplands with monocultures, many grasslands have been devoid of their vegetal diversity. To help restore this, areas of pasture can be sown. These are a seed mixture of grasses, legumes and herbs which are often made of up to 20 different species. These grasslands can be used for grazing and winter feed production.

Multiple benefits are observed when a diverse grassland is sown. Farms can see increased nutrient cycling along with a higher photosynthetic efficiency, higher water retention capacity in the soil, and more carbon sequestration opportunities. Grasslands can also have anthelmintic properties which can see a decrease in veterinary bills. There is extensive scientific literature on the subject which also covers both the significant economic benefits for the farmers and the resilience against droughts, especially in arid climates.

Guidance: We advise taking a site-specific approach, considering the soil; the climate; the species of livestock that will be grazed, and the ecosystem service a farm wishes to harness. This will inform the farm to which combination of plants will work best in their context.

Requirements: Farmers should have a management plan to diversify the plant species in grassland agroecosystems. Evidence such as: label of the seeds, purchase receipt, or other means may be necessary. The complexity and mix of the herbal leys will be later verified through on-site audit by regenagri.

Scoring based on:

- <2 species of plants are present within the grassland.
- 2-9 species of plants are present within the grassland.
- 10-15 species of plants are present within the grassland.

– >15 species of plants are present within the grassland.

Objective: Improve grassland's ecology dynamics, improve resilience through diversification, provide diverse and functional fodder, increase biodiversity and soil health.

Animal Feed

Applicable land: PASTURE, MIXED
Introduction & benefits of implementation: It is important for the health of livestock and the environment that animals are fed with quality feed combined in a good ratio along with supplements to supports good health and, therefore, lower the need for antibiotic utilisation.
Guidance: Farms should look at sourcing feed, if brought in, from deforestation-free suppliers and try to and use local suppliers where possible. We also encourage the DMI of the livestock to be from forage (plant material not including grains) as often as possible. Types of forages include hay, haylage, silage and crop residue.

Requirements: Farmers should be able to show proof of the composition of the animal feed, its sourcing and additional supplements, or veterinary intervention related to nutrition.

Scoring based on:

- Livestock are in a no grazing system.
- Livestock graze and are supplemented with a maximum of one third concentrates, and two thirds forage and grains.
- Livestock graze and are supplemented with just forage and grains, no concentrates and all forage fed is produced on land managed by the farm or within 100km.

Objective: Prioritise the use of local resources, ensure sustainability of sourced inputs, ensure animal's health.

Calf Feed

Applicable land: PASTURE, MIXED (DAIRY FARMS ONLY)
Introduction & benefits of implementation: Calf development is key for not only animal welfare, but for the economic stability on the farm. Good animal husbandry early on can help prevent diseases and keep mortality rates low.
Guidance: To improve animal health and welfare for calves, points will be awarded for extra milk fed to calves. This aids their growth rates that cannot be made up later. If fed a hard feed in this time (i.e., hay grass straw) this can help calves to develop their rumens in a gradual transgression to ruminant animals.

Requirements: Farmers should be able to show proof of this practise on-farm to an auditor.

Scoring based on:

- Calves fed on milk powder or suckling for up to 8 weeks.
- Calves fed on milk powder or suckling for >8-12 weeks.
- Calves fed on milk powder or suckling for >12-16 weeks.

- Calves fed on milk powder or suckling for >16 weeks.

Objective: Animal welfare, optimal livestock development and animal health.

Animal Health

Applicable land: PASTURE, MIXED
Introduction & benefits of implementation: Animal health is an important part of animal welfare and can also result in increased yields without increasing inputs. Livestock health shouldn't just be treated, but also promoted. Furthermore, taking antibiotics too often or for the wrong reasons can reduce the effectiveness of them, so usage should be limited.
Guidance: Health should be treated with high importance and always managed; livestock should be checked a minimum of once per day and any issues observed should be managed efficiently and effectively and there should also be an annual health check carried out by a vet.
Requirements: There should be a farm specific and regularly updated animal health plan (signed, dated and reviewed annually by a vet). This should include information on nutrition, vaccinations, stress avoidance (for example handling methods), biosecurity, foot/ hoof care, disease records, mortality records and cause (including euthanasia). It should also identify potential future problems (risks and diseases) and how the farm will prevent the occurrence of these along with plans to improve overall herd health and reduce reliance on veterinary treatment. Up to date medicine records should also be present including the name of person administering, name of product, date of purchase and expiry date, batch number, quantity bought, identity and number of animals treated, quantities used, reasons for treatment, date of treatment(s) and withdrawal period.

Scoring is based on:

- No animal health plan is in place and/or no up to date medicine records are present.
- A comprehensive animal health plan and up to date medicine records (if applicable) are present.
- A comprehensive animal health plan and up to date medicine records (if applicable) are present and there is no prophylactic or sub-therapeutic use of antibiotics and no hormones used for growth.

Objective: Animal welfare, optimal livestock development and animal health.

Landscape management

Biodiversity

Applicable land: ALL
Introduction & benefits of implementation: Biodiversity is essential for all processes that support life on Earth. Furthermore, by encouraging biodiversity within an agroecosystem, regenerative practices can keep weeds and pests under control through harnessing key ecosystem services, whilst boosting the numbers of pollinator species, and increasing yields.

Guidance: This section is aimed at measuring additional interventions done to enhance biodiversity. To improve biodiversity on a farm multiple actions can be taken depending on local ecosystems and farm type. This section aims at collecting data related to proactive and meaningful efforts to boost local biodiversity.
Practices can include planting wildflower meadows, creating wildlife corridors and strips, ditch restoration, installation of beetle banks and bird nest boxes, creation of wetlands and scrapes, taking field corners out of management, increasing margin size and diversity, woodland improvements (pollarding and tree surgery), absence of use of GMOs, establishing permanent pasture, organic conversion, increase and creation of landscape elements such as ponds, terraces, windbreaks etc.
Points are awarded for practices that target insects, mammals, vegetation, birds, water life, reptiles, amphibians, soil life and genetics (within arable crops, trees, livestock).

Requirements: Practices already implemented in the standard criteria document are not accepted unless they go further than their own scope.
Example: planting hedgerows is not considered valid. The diversification of hedgerows species can be considered as an action.
To unlock the score of points, farmers shall show to the auditor supporting documents attesting outcomes of their implemented biodiversity measures. Such documents shall include 3 key points:

- Monitoring plan
- Methodology of data collection
- Results

Scoring based on:

- No practice implemented.
- 1 practice implemented.
- 2 practices implemented.
- 3 or more practices implemented.
- 3 or more practices implemented with 1 supporting document attesting verified positive outcome.
- 3 or more practices implemented with 2 supporting document attesting verified positive outcome.

Objective: Biodiversity integrated in agricultural management, quantification of outcome.

Buffers around watercourses

Applicable land: ONLY APPLICABLE WHEN WATER BODIES ARE PRESENT ON FARM.
Introduction & benefits of implementation: The presence of buffer zones has rarefied in the last decades due to the high pressure of mechanised and intensive agriculture.
Nonetheless, these buffers provide key environmental services that extend beyond the farm itself, and their demise is becoming more of a public concern. These zones are effective at intercepting and filtering both N and other nutrient surpluses from entering water bodies. Such nutrient surplus is responsible not only for environmental damage via eutrophication harming

fish, amphibians, and shellfish, but also it poses a significant price for water utility companies, who struggle to remove such compounds.
Buffer zones also offer other benefits: they aid biodiversity by providing habitat; reduce the impacts of flooding; stabilise stream banks and hold sediments. From an agronomic viewpoint, these buffer zone can help reduce the impact of wind on crops (windbreakers) and can help the beneficial insects and birds which control pests. Examples of popular buffer strip plantings are mulberry, willow, oak, elm, hazel, lilac, and cottonwood.
Guidance: We advise choosing trees/shrubs/grasses which are appropriate to your local context and to consider their wider effects, such as light competition with adjacent cultures. Waterbodies adjacent to the farm should also be considered. Waterbodies include ponds, rivers, lakes and streams.

Requirements: Farmers should plant and maintain as many as buffers zone around watercourses as possible. Key criteria for the evaluation will not only be their coverage along a watercourse, but also their width. The presence and management of buffers will be later verified through on-site audit by regenagri.

Scoring based on:

- All buffers adjacent to any body of water are <5m wide.
- All buffers adjacent to any body of water are at least 5-15m wide.
- All buffers adjacent to any body of water are >15-25m wide.
- All buffers adjacent to any body of water are >25m wide.

Objective: Ecological corridors for biodiversity, reduce waterways and watershed pollution.

Hedgerows and Windbreaks

Applicable land: ALL
Introduction & benefits of implementation: A hedgerow or a windbreak is usually a line of bushes and shrubs that can include trees with no considerable gaps. These landscape elements can substantially improve micro-climatic conditions, ecological connectivity, and ecosystem resilience. Hedgerows and windbreaks help move wind above ground level helping prevent soil erosion, increase yields, reduce nutrient losses and improve soil health. They also provide shelter for livestock, provide food and corridors for wildlife, including pollinators and predator species, reducing the need for pesticides. These elements can also be harvested for biomass or secondary crops. They can also act as carbon sinks and provide visual aesthetics for rural landscapes.
Guidance: Hedgerows should be thick and bushy and managed appropriately to help biomass or fruit growth whilst respecting hedgerow cutting restrictions to not disturb nesting birds. The efficiency of windbreaks is related to height, length, density, number of rows, continuity, orientation and species composition Windbreaks can also include stonewalls, banks and in some cases fences, but living forms of windbreaks should always be the preferred method. The size, denseness and quality of the hedgerows will be checked to ensure they are able to provide the required services.

Requirements: Farmers should maintain or build back these landscape elements which provide strong ecosystem services and ecological connectivity.

Hedgerows bordering a forest will not be counted.

Scoring based on:

- <30% of the field is bordered by hedgerows or windbreaks.
- 30-60% of the field is bordered by hedgerows or windbreaks.
- >60-80% of the field is bordered by hedgerows or windbreaks.
- >80% of the field is bordered by hedgerows or windbreaks.

Additional points:
hedgerows or windbreaks are present at least every 750m within the field boundaries.

Objective: Creation of intra-farm microclimates, Landscape diversification, natural pest and disease protection, Ecological corridor for biodiversity.

Conservation of natural habitat

Applicable land: ALL
Introduction & benefits of implementation: At the heart of regenerative agriculture is the concept of 'restoration'. Surrounding lands need to be respected, protected, and encouraged to flourish. We consider a natural habitat as a zone untouched by agricultural management, therefore providing a habitat for biodiversity to live, move and reproduce. Examples of natural habitats include hedgerows, riparian buffers, shrublands, wild woodlands, wild grasslands, and any other land that is left untouched by anthropic activities.
Guidance: We invite each farm to find what is best for their own local conservation area strategy to match with local climate, biodiversity, and ecosystem services.
Requirements: A percentage of the land owned by the farmer should be devoted to conservation of natural areas without any anthropic activities. The presence and management of natural habitat zones will be later verified through on-site audit by regenagri.

Scoring based on:

- Locally applicable policies for natural habitat conservation are not fulfilled.
- Locally applicable policies for natural habitat conservation are fulfilled.
- The farm allocates more than 2% of the natural habitats required by local laws, regulations, or policies.

Additional Points:
The farm has been enlarging (more than 0.5% of the total) the land dedicated to conservation area in the last year.

Objective: Wildlife diversity, Ecological connectivity, Landscape diversification, Increased systemic resilience.

Afforestation

Applicable land: ALL
Introduction & benefits of implementation: Trees are one of the most effective natural carbon stocks, with afforestation being one of the primary tools for sequestering CO_2 from the atmosphere. Trees enrich soil with nutrients and are invaluable for the health of human and non-human species alike, providing habitat, fuel, food, and ecosystem services.
It can be beneficial for livestock to be integrated into areas of crop production/woodland. Trees can, for example, be planted in fields or in field margins, and this technique of integrating trees into the farm system, as mentioned in the perennial section above (criteria 5), improves soil quality and nutrient retention (i.e., increasing nutrients such as N in the soil); reduces pests; utilises solar energy more efficiently than mono-cultural systems, and offers both greater water management and a more diverse farm economy. Planting trees in fields can also reduce the risks associated with wind erosion and drought.
Guidance: We advise choosing trees/shrubs which are appropriate to your local context and to consider effects such as light competition with adjacent cultures. Also, trees planted in the conservation area can be kept into account.

Requirements: The farmers should be able to show a tree management plan composed of planting density, location, type of trees and annual growth measurements. Please note that these ratios will be considering all the enrolled farmland: productive and non-productive.

Scoring based on:

- No net gain in trees per hectare over the last 5 years.
- 0.1 – 1.5 trees/ ha net gain of trees over a 5-year period.
- >1.5-3 trees/ha net gain over a 5-year period.
- Net gain of trees >3 trees per hectare over a 5-year period, with some being integrated into the arable or livestock farming system (agroforestry alley cropping, silvopasture, hedgerows and windbreaks).

Objective: Diversification of the farm, increase carbon sequestration in biomass, boost local biodiversity, optimise water and nutrient dynamics.

Other Farm management practices

Water Quality & Pollution Prevention

Applicable land: ONLY FOR LAND USING SYNTHETIC CPP AND/OR SYNTHETIC FERTILISER.
Introduction & benefits of implementation: Wastewater is coming from the application of synthetic chemicals and washing machinery used for CPP application and needs to be treated before being released back into the environment.
Fertiliser applications need to be adapted to each context in order to avoid leaching, runoff and overuse.

Guidance: Management of farm wastewater should be implemented according to the rules and regulations of the country the farm is in and avoid pollution to the environment. Pollution prevention measures included are:

- Key practice: wastewater management plan, nutrient management plan.
- Additional practices: reed bed systems, settling ponds, collection to redistribute later, existing waste system, water quality analysis.

Requirements: Farmers need to show proof of a waste management plan and system that ensure that no wastewater contaminates water bodies or aquifers. Such a system needs to be adequately contextualised to the type of waste produced by the farm. The presence and management of adequate waste management procedures will be later verified through an on-site audit by the certifying body.
The auditor will consider the following: slurry and manure storage, dirty water storage, pollution risk, historic pollution incidents, the farm's written waste management plan and its crop application details.

Scoring based on:

- No key practices are place.
- At least 1 key practice is in place.
- At least 1 key practice is in place and at least one additional practice.

Additional points:
No water analysis.
Water analysis is present.
Water analysis is present and positive outcomes are observed.

Applicability clause for optional water analysis

- If the farm is <500 hectares
- If the farm is applying synthetic inputs
- If streams, rivers, natural canals are present

Applicability clause for mandatory water analysis

- If the farm is >500 hectares
- If the farm is applying synthetic inputs

AND (one of the two following options is enough)

- If the farm has a still water body (pond, lake, wetlands)
- If the farm is one of the first 10 farms ahead in the watershed and the stream and is not shared by any other farms

Objective: Reduce environmental pollution, boost water biodiversity

Plastic Pollution Prevention

Applicable land: ALL
Introduction & benefits of implementation: Plastic pollution is a significant and growing problem globally. When improperly disposed of, plastic waste ends up in ecosystems causing damage to biodiversity and impacting landscape aesthetics. As plastic breaks down harmful chemicals and microplastics are released into the surrounding soil and watercourses. The greenhouse gas emissions related to plastic production should also be considered as a contribution to climate change. There are many benefits to be gained from reducing plastic on a farm including reducing costs, reducing environmental impacts and implementing a positive culture for responsible practices.
Guidance: A plastic action plan should take a three-step approach: reducing use of plastic where possible and replacing with sensible alternatives, where this is not possible, ensuring plastic is reused and/ or recycled, and finally if this is not possible, ensuring plastic is disposed of responsibly.

Requirements: The farm needs to establish, document, maintain, and continually improve a Plastic Action Plan according to the principles of refusal, reduction, reuse, recycling, and recovery of plastics. A Plastic Action Plan should focus on accounting, reduction, implementation, system management, and involvement of staff. This document should include: a demonstration of commitment to seeking alternatives to single-use and non-recyclable plastics, an assessment of alternative options that include economic, environmental, and health and safety analysis, a plastic purchase, use and waste review, and key plastic use reduction methods and time-bound targets.
Such supporting documentation shall be collected by the auditor.

Scoring based on:

- No plastic management plan in place.
- Plastic management plan present.
- Reduction in plastic use is already present and can be demonstrated.

Objective: Reduce plastic pollution in the agroecological system, Support the transition to nature-based plastic alternatives

Rainwater harvesting

Applicable land: ALL
Introduction & benefits of implementation: Utilising rainwater will lower costs and increase self-sufficiency and resilience of the farm. This can be achieved in numerous ways, for example, by utilising water butts or harvesting tanks. A pond system and/or drip-irrigation system is also advisable for sustainable water management. Depending on the type of farm and its location, the presence of permaculture swales and keyline earth work could be adopted as well. See appendixes F and G for additional information.
Guidance: As agricultural water management is strictly related to site-specific conditions; we advise farmers to build a water harvesting system and plan which is based on their own specific context.

Requirements: Farmers should have an active methodology of monitoring the water harvesting and its utilisation to limit the pressure on public water sources. The presence and management of water harvesting techniques will be later verified through on-site audit by regenagri.

Scoring based on:
Please specify the average annual rainfall for your region: ……. mm

If the average annual rainfall in your region is between 0-475mm:
- No system is in place for the effective harvesting of rainwater.
- A system is in place and rainwater harvesting meets 0-15% of water requirements.
- A management system is in place and rainwater harvesting meets >15% of water requirements.

If the average annual rainfall in your region is between 475-1475mm
- No system is in place for the effective harvesting of rainwater.
- A system is in place and rainwater harvesting meets 0-15% of water requirements.
- A management system is in place and rainwater harvesting meets >15% of water requirements.

If the average annual rainfall in your region is above 1475mm
- No system is in place for the effective harvesting of rainwater.
- A system is in place and rainwater harvesting meets 0-15% of water requirements.
- A management system is in place and rainwater harvesting meets >15% of water requirements.

Objective: Lower dependency on external water, lower input cost and energy requirements, increase resilience and self-sustaining model for a farm.

Community Involvement

Applicable land: ALL
Introduction It is an important component of regenerative agriculture that farms participate in community schemes so that all stakeholders are rewarded and participate collectively to the development of the food system at a local and global scale. It allows the knowledge and benefits of this type of farming practice to be shared, allowing regenerative agriculture to scale faster and contribute to climate action and nature restoration goals at landscape and planet level.
Guidance: We advise farmers to adapt to each specific context and take part in initiatives that work best for their own situation.

Requirement: Farmers needs to show proof of participation in local development or global sustainability commitments related to agriculture. Records or evidence that the farm is actively participating in schemes is needed as proof.
Examples of community involvement can include:
Partnership initiatives dedicated to regenerative agriculture, women's empowerment in agriculture, youth employment, end products consumed within 100km, research schemes or partnerships with schools or universities, programs involving indigenous communities, agriculture education programs for children, and engagement initiatives to increase the revenue for farmers,

knowledge sharing campaigns, ESG (environment, social, governance) schemes on farm and supply chain, charity programs, food waste reduction scheme, premium schemes aimed at increasing economic benefits for farms whilst rewarding environmental stewardship.

Scoring based on:

- Farm is not involved in any community activities.
- 1 initiative is carried out.
- 2 initiatives are carried out.
- 3 or more initiatives are carried out.

Objective: Increase social cohesion and livelihoods, restore nature-human relationships, spread knowledge about regenerative agriculture

Renewable Energy

Applicable land: ALL
Introduction & benefits of implementation: Regenerative agriculture is highly focused on creating positive outcomes for the environment at a global and local scale. It is for this reason that the source of a farm's energy must also be considered. Renewable sources of power include solar, wind, bioenergy (e.g., methane harvesting), hydropower, tidal, geothermal.
Guidance: Moving towards renewable energy is also a key steppingstone for limiting on-farm emissions. Grouping with other farms and/ or applying for grants is a good way to minimise the initial investment which is often required for setting up renewable energy infrastructure. Hydropower should be treated with caution as a result of the wider environmental implications damming a river can have.

Requirements: Farmers should be able to show whether the energy they use for on-farm operations comes from renewable sources or non-renewables. The percentage of energy being sourced from renewable sources used should also be accounted for and provided.

Scoring based on:

- 0% of energy used on is sourced from renewable sources.
- 1-10% of energy used is sourced from renewable sources.
- >10-25 of energy used is sourced from renewable sources.
- >25-50% of energy used is sourced from renewable sources.
- >50% of energy used is sourced from renewable sources (but not hydropower).

Objective: Avoid GHG emissions coming from fossil fuels, reduce dependence on fuel price fluctuations, stimulate renewable energy adoption.

Emissions verification

Greenhouse gas emissions

Applicable land: currently only for crops and dairy

Introduction & benefits of implementation: The regenagri assessment has a series of questions built into the assessment that are applicable to the above criteria points but are linked to the CFT emissions calculator through an API link. On completion of an assessment, if the member has entered the correct level of information, they will be able to view the emissions figures for their operation. The figures will be broken down into different categories of on farm management such as fertiliser use and machinery. Where figures for emissions are high there will also be a corelation in the scorecard to a low score on applicable criteria. This data can then be verified under ISO 14064/5, which will allow farms to access additional income new carbon markets.

Guidance: A member filling out an assessment or during a verification audit should supply as much applicable information as possible to ensure the most accurate results are fed into the emissions results.

Requirements: If the member applies for verification of their emissions data, then supporting and/ or supplementary evidence may be required in order verify emissions totals. If there is an adequate level of historic data, up to two years previous, then a member can have their data verified. If there is not or it is an initial baseline year, then the member will submit a Project Design Document outlining their strategy to reduce emissions and/ or sequester carbon, which will be verified, and then the following year those changes in emissions will be verified and a verification statement is issued.

Emissions calculation methodology: The CFT greenhouse gas emissions calculator is based on empirical research from a broad range of published data sets and IPCC methods. Unlike many other agricultural greenhouse gas calculators, the CFT includes calculations of soil carbon sequestration, which is a key feature of regenerative agriculture that has both mitigation and adaptation benefits. The tool calculates emissions estimates from:

• N_2O emissions based on an empirical model built from an analysis of over 800 global datasets. These datasets refine IPCC Tier 1 estimates of N_2O emissions by factoring in the guiding drivers of N_2O emissions such as rate of N applied, soil texture, soil carbon, moisture and soil pH.

• Soil carbon sequestration based on the results of published studies built from over 100 global datasets.

• Embedded fertiliser production emissions based on the most up to date, peer reviewed industry data.

• Fuel and electricity use utilising standard conversion factors, taking into account the energy mix of each country and territory.

For a complete technical description of the method, please contact info@regenagri.org

regenagri 2022

Edit history

Version 1.0: October 2020
Version 2.0: August 2021
Version 2.1: February 2022
Version 3.0: October 2022

ever-growing beyond standards