regenagri

for the health & wealth of the land

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regenagri Standard Criteria

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Introduction

The regenagri standard criteria looks holistically at the entire farming operation, considering the different management strategies and practises used, and assesses the farms regenerative impact. Regenagri helps secure the health of the land and the wealth of those 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 include cover cropping, tillage, energy planning and grazing management. These 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 has 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 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 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 poorly against the criteria, and which are performing well. Taking assessments over a given time builds a picture of how regenerative practises are impacting the farm and its greenhouse gas (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 nitrogen applied by the farmer and a reduction in nitrous oxide emissions. regenagri works on a continuous improvement model and 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.

Conservation commitments

Organisations wishing to be associated to regenagri shall commit to Protection of Land with High Biodiversity Value, High Carbon Stock, or other High Conservation Values (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 HCVs areas the organization shall carry out a risk assessment in regards to the HCVs and implement mitigation measures, as required.

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

Scope

This document aims to provide insights into the regenagri standard criteria. It covers a range of multiple agricultural operations ranging from arable, dairy, other livestock, perennial and fruits, fresh products, and grassland management.
This program and its assessment methodology are designed for evaluating 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..).

Assessment methodology

The regenagri assessment evaluates the degree of implementation of practices applicable to different agricultural operations including arable, livestock, dairy, trop fruits, fresh produce.

The 'regenagri methodology' document explains which criteria are assessed, how a regenerative score is given to each practice, how different criteria interact one another and how the regenerative score is assigned to the whole farm.

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

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 procced 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 confirms in the assessment how it is monitoring and implementing legislative updates;
- Primary forest or other forested land that lost its status as forest land after January 2008 (conversion, enlargement of adjacent agricultural land) cannot be included in a regenagri project;
- 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 that was prior to January 2008, regardless of what the status of the land is at the time of initial validation;
- Areas with biodiversity or intact ecological processes, 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 eligibly requirements, regenagri adopts the criteria on land categories and protection status of IPPC and RED II.

The types of evidence that are expected to be presented in order 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 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

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 percolation; lower runoff and erosion; higher water holding capacity and prevent nutrient leaching.
- By bringing in multiple crops, farmers can biologically manipulate the rhizosphere by bringing a higher microbial biodiversity into their soil, a key pillar at the core of regenerative agriculture. Improving soil biology enhances nutrient efficiency and helps fight pest and weeds.
- Cover crops can also provide vital habitat for birds and insects, an important component for the development 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.

Other things to keep in mind when considering implementation and choice of the species are: weather conditions, time of sowing, species (i.e., legume, brassica), and the desired purpose of the cover crop (e.g., for nitrogen building, or animal fodder).

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

<u>Scoring based on:</u>

- On average over a three-year period, cover-cropping occurs on less than 10% of applicable land
- Over a three-year period, cover-cropping occurs on 10-24% of applicable land.
- Over a three-year period, cover-cropping occurs on 25-49% of applicable land.
- On average over a three-year period, 50+% of applicable land is utilised for the planting of cover crops

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 draw backs when it comes to soil health that must be considered. Practices which disturb the soil - breaking the natural equilibrium of soil's biodiversity and chemistry - are detrimental to soil fertility. Conventional tilling also exposes soil to the elements (sun, air, rain), resulting in higher erosion and nutrient leaching as well as the release of carbon stored in the soils' aggregates, which - consequently - leads to CO_2 emissions entering the atmosphere.
Reduced and no-till practices have also been highlighted as more sustainable and economically viable than a conventional approach to tillage.

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 15-30 cm.
Reduced Tillage is defined as tillage which does not turn the soil over; examples could be strip-till; minimum furrowing; disc harrow or other types of secondary tillage.
No-till practices goes even further without applying any type of soil tillage. Direct seeding via a seed-drill machinery is used to implement this kind of practice, usually seeding directly on the residue of some cover crops or a precedent crop.

Both No-till and Reduced tillage practices result in multiple agronomical, environmental, and economic benefits. Farmers protect their soil from erosion, increasing soil fertility and biodiversity, augmenting the plant's natural response to pests and disease. While on one hand the initial investment in new machinery can be significant, but in the long term the reduction of costs can help negate the initial investment (e.g., outgoings on fuel and labour).

Lastly, No-till and Minimum tillage have a strong body of scientific research proving their capacity to sequester and store carbon in the soils, contributing to climate change mitigation.

Guidance: No-till/Minimum 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 fertilization plan can ensure the maximum efficiency and productivity of such systems.

Requirements: Farmers should apply No-Till / Reduced till practices on as much as cropland as possible.

Scoring based on:

- No/minimal tillage is not used on any land.
- No/minimal tillage practices are used on >0% - 25% of applicable land.
- No/minimal tillage practices are used on 25-50% of applicable land.
- No/minimal tillage practices are used on 50-75% of applicable land.
- No/minimal tillage practices are used on >75% of applicable land.

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 fertilizers 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. We advise that (where possible) a farm should consider the integration of at least one leguminous plant as a nitrogen fixer, especially when looking at diverse seed mixes, alongside side other species such as Brassicaceae, Poaceae, Solanaceae and/or Umbrelliferae. The wider the rotation, the wider the range of ecosystem services that can be harnessed.

Requirements: Farmers should apply broad crop rotation in as much of the agricultural land they manage as possible.

Scoring based on:

- 60-79% of land adheres to a minimum 3-year crop rotation strategy. The same crop is not planted on the same working area for two successive seasons throughout the duration of this strategy.
- 80-89% of land adheres to a minimum 3-year crop rotation strategy. The same crop is not planted on the same working area for two successive seasons throughout the duration of this strategy.
- 90+% of applicable land adheres to a minimum 3-year crop rotation strategy. The same crop is not planted on the same working area for two successive seasons throughout the duration of this strategy.

Inter-cropping

Applicable land; ARABLE LAND, FRESH PRODUCE, TOP FRUITS

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.

Direct effects are perceived on nutrient cycling capacity; pest resistance, and weed suppression resulting in higher yields than monocultures per crop, without depending on synthetic fertilizer 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 and oats and 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 less than 2% of applicable land.
- 2-4% of applicable land is incorporated into an intercropping approach.
- 5-9% of applicable land is incorporated into an intercropping approach.
- 10+% of applicable land is incorporated into an intercropping approach.

Agroforestry & Perennial Cropping

Applicable land; ARABLE, PASTORAL, FRESH PRODUCE, TOP FRUITS

Introduction & benefits of implementation

Perennial crops are plants that do not require replanting each year, ranging from perennial grasslands, shrubs, perennial biomass crops and even trees. 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 small percentage of land towards the installation and maintenance of perennials crops.

Scoring based on:

- Perennial cropping is incorporated into less than 2% of applicable land.
- 2-4% of applicable land incorporates plants that have remained in the ground for a minimum of 18 months.
- 5-9+% of applicable land incorporates plants that have remained in the ground for a minimum of 18 months.

- 10%+ of applicable land incorporates plants that have remained in the ground for a minimum of 18 months.

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 nitrogen 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 to choose trees/shrubs which are appropriate to your local context and to consider effects such as light competition with adjacent cultures.

Requirements: The farmers should be able to show a tree management plan composed of planting density and annual growth measurements.

Scoring based on:

- No net gain in trees per hectare over the last 3 years
- 0.5 – 0.9 trees/ ha net gain of trees over a 3-year period, with some being integrated into the farming system (field margins or crop area).
- 1-1.9 trees/ha net gain over a 3-year period, with some being integrated into the farming system (in field margins or crop area).
- Net gain of 2-3 trees/ ha tree are planted over a 3-year period, with some being integrated into the farming system (field margins or crop area).
- Net gain of trees >3 trees per hectare over a 3-year period, with some being integrated into the farming system (field margins or crop area).

Manure/Compost application

Applicable land; ALL

Introduction & benefits of implementation:
Soil fertilised with compost contains a very high 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.

While compost can be considered an inoculant of beneficial bacteria, manure application is classified as fertilizer, bringing plants' essential nutrients back into cropland and re-connecting livestock and crops.

Guidance: If manures and compost are brought onto the farm from external sources, consideration should be given to 1) the distance travelled to the farm, and 2) the production methods used in creating the compost and manure.

Requirements: Farmers should be able to show a manure and compost management plan composed by sourcing; application method, and rate of application.

Scoring based on:

- Less than 25% of manure originates from organic sources, such as FYM, compost, biochar, or AD digestate.
- 25-49% of manure originates from organic sources,
- 50-74% of manure originates from organic sources.
- 75+% of manure originates from organic sources.

Absence of Pesticide/Chemical use

Applicable land; ALL

Introduction & benefits of implementation: By encouraging biodiversity within an agroecosystem, regenerative practices can keep weeds and pests under control through harnessing key ecosystem services from a broad range of animal and plant species, and a varied suite of regenerative practices.

There is ever growing evidence that industrial pesticides, herbicides, and fertilizers carry a heavy burden both for people and the environment, and that they also contribute to global GHG emissions: impacting on human health through the contamination of aquifers and causing the loss of insect life and biodiversity when applied heavily.

Guidance: When the appropriate practices are implemented in the correct context, the result will be the self-regulation of pests and diseases through the work of beneficial organism and insects. Longer term benefits can also include increased nutrient efficiency in crops. Farms can achieve this through using Integrated Pest Management (IPM) plans and by taking careful consideration of infield and weather conditions before any applications.

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.

Scoring based on:

- If any land has more than 1 crop protection product (CPP) applied.
- If one synthetic CPP is being applied.

- Only natural fertilisers/pesticides (substances derived from mineral, plant, or animal matter and does not undergo a synthetic process) such as Rock Phosphate, neem oil or Integrated Pest Management (the use of natural predators) are used on applicable land.
- No chemicals/pesticides are used on any (100%) applicable land.

Soil Sampling

Applicable land; ALL

See REGENAGRI Programme Manual for full details on the soil sampling procedure.

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 CO2 Burst), (3) Cation Exchange Capacity (CEC), (4) pH scale of the soil, and (5) albeit to lesser degrees, by ratios of Carbon to Nitrogen and Calcium to Magnesium.

Guidance: We suggest setting-up a soil sampling schedule and technique, and this 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 soil's health.

Requirements: Farmers need to be able to show the results both of their soil analysis and of their soil management plan. The results need to either be 1) published through the online assessment tool, or 2) 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.

<u>Scoring based on:</u>

- Soil from applicable land has never been sampled.
- Records are present of on-site soil sampling tests.
- Records are present of on-site soil sampling tests. A management system and a mid-long-term plan are in place to improve the soil's organic matter.
- Records are present of on-site soil sampling tests, and it is certified by a CU auditor/verified in the digital hub that SOM is increasing.

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 grasslands systems.

To accomplish this, it is recommended to fence larger fields into smaller paddocks with temporary and or moveable fencing. Then, as the livestock move through the paddocks, you can move the fences to ensure that the same land is not repeatedly/over-grazed. 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 and need thorough planning and constant monitoring.

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 each rotation within each plot and monitoring of the land assigned to rotation.

Scoring based on:

- Less than 25% of livestock follows a rotational/strip grazing pattern.
- 25-49% of livestock follows a rotational/strip-grazing pattern. The same herd moves daily and is not left in the same paddock for more than 4 days throughout the duration of this strategy.
- 50-74% of livestock follows a rotational/strip-grazing pattern. The same herd moves daily and is not left in the same paddock for more than 4 days throughout the duration of this strategy.
- 75+% of livestock follows a rotational/strip-grazing pattern. The same herd moves daily and is not left in the same paddock for more than 4 days throughout the duration of this strategy.

Grazing Capacity

Applicable land; PASTURE, MIXED

Introduction & benefits of implementation: If livestock are densely packed and move quickly through a landscape, then soil can regenerate. Grazing capacity refers to the average number of animals that can be rotationally grazed on a given area of pasture for a year without harming it. 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.

Guidance: The type of land being grazed; the weather conditions, and the species of livestock are also 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 decision being made on grazing capacity.

Requirements: The Farm needs to be able to present a grazing management plan which includes the grazing capacity figures.

Scoring based on:

- Grazing capacity is less than 2.5 units/ha
- Grazing capacity is equal to, or greater than, 2.5 units/ha
- Grazing capacity is between 1.5 – 2.5 units/ha
- Grazing capacity is equal to, or less than, 1.5 units/ha

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 heath, it is important for all monogastric and ruminant species to be outside as much as possible, and not stuck on the same pasture. However, it is also good practice to avoid grazing cattle throughout the wet winter months as if the grazing area is likely to be poached, this will negatively impact the land.

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.

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

Scoring based on:

- Livestock are outside and grazing for less than 150 days a year.
- Livestock are outside and grazing for 150 or more days a year.

Multi-Species Livestock Integration/Holistic Grazing Plan

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 grass 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 vegetal they prefer is essential before deciding what will be effective on a particular farm.

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:

- No holistic grazing plan is in place.
- Holistic grazing plan integrates the grazing of 2 or more livestock species (i.e., cows, chicken, sheep, pigs, horses, or goats), including both ruminant and monogastric species.
- 2 or more livestock species are grazing in the same field.
- As well as meeting the above, the holistic grazing plan integrates the grazing of 1 or more livestock species into an area of land being used for crop production.

Multi-species herbal leys and diverse sward production

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 devoiced of their vegetal diversity. To help restore this, herbal leys and diverse swards can be sown. These leys are a seed mixture of grasses, legumes and herbs which are often made of up to 20 different species. Leys and swards can be used for grazing and winter feed production.

Multiple benefits are observed when a diverse herbal ley 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. Herbal leys 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 to take 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:

- Less than 2 species of plants are sown in a forage ley.
- 2-9 species of plants are sown in a forage ley.
- 10-15 species of plants are sown in a forage ley.
- 15 or more species of plants are sown in the forage ley.

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 bought in, from deforestation-free suppliers and try to and use local suppliers where possible. We also encourage the dry matter intake (DMI) of the livestock to be from forage as often as possible.

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:

- If any livestock are given GM feed or antibiotics/hormones for growth.
- All animal feed is free of GM and antibiotics.

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 dieses 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 less than 6 weeks.
- Calves fed on milk powder or suckling for 6-10 weeks.
- Calves fed on milk powder or suckling for 10+ weeks.

Biodiversity

Buffers around watercourses

Applicable land; ARABLE, FRESH PRODUCE AND SOFT/TOP FRUITS, GRASSLANDS

Introduction & benefits of implementation: Buffer strips, also known as riparian zones, are the vegetated region adjacent to water courses and wetlands. The presence of such zones has rarefied in the last decades due to the high pressure of mechanized 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 nitrogen 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 to choose trees/shrubs which are appropriate to your local context and to consider their wider effects, such as light competition with adjacent cultures.

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:

- No buffers /All buffers adjacent to any body of water are less than 10m wide.
- All buffers adjacent to any body of water are at least 10-15m wide.

- All buffers adjacent to any body of water are 15-20m wide.
- All buffers adjacent to any body of water are 20m+ wide.

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 zone untouched by agricultural management that is provides habitat for biodiversity and allows it to thrive. Examples of natural habitat include riparian buffers, prairie, shrublands, woodlands, grasslands, pollen, and wildflower strips. Another practice that respects/encourages biodiversity is cutting hedges only once every 2 years.

Guidance: The list of practices given above here is not exhaustive and may vary depending on the climate and geographical location. We invite each farm to find what is best for their own local biodiversity and apply practices that suit both their farm and the local area.

Requirements: A small percentage of the land owned by the farmer should be devoted to biodiversity conservation. The presence and management of natural habitat zones will be later verified through on-site audit by regenagri.

Scoring based on:

- Less than 1% of land is in natural habitat.
- 1-3% of land is in natural habitat.
- 3-5% of productive land is in natural habitat.
- >5% of total land is in natural habitat.

Community Involvement

Introduction*:* It is an important component of regenerative agriculture that all stakeholders are rewarded and participate collectively to the development of the food system. The involvement of the farm within its local community is key for the benefits of this type of farming to be shared.

Guidance: More and more national policies are directed to the development of local food systems. We advise farmers to adapt to each specific context and take part in initiatives that works best for their own situation. Working with local communities can also allow for those communities to reap the benefits from enhanced natural capital and their ecosystem services.

Requirement: Farmers needs to show proof of participation in community involvement or local development.

Applicable land; ALL

Scoring based on:

- Farm is not involved in any community activities.
- Records/Evidence that the farm is actively participating in regional schemes that are working to restore land and/or water resources. Examples of community involvement can include local nature schemes, community projects, school educational visits. apprenticeship schemes.

Note: If the certification route is taken, the auditor can reward extremely proactive farmers who are working hard to provide community services.

Other Farm management practices

Utilisation of rainwater harvesting for irrigation and livestock

Applicable land; ALL

Introduction & benefits of implementation: Utilising rainwater for irrigation and livestock needs 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 swale 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:

- 0% of irrigation needs are met through rainwater harvesting.
- >0-50% of irrigation needs are met through rainwater harvesting.
- More than 50% of irrigation needs are met through rainwater harvesting.

If the average annual rainfall in your region is between 475-1475mm

- No management system is in place for the effective harvesting of rainwater.
- A management system is in place and rainwater harvesting meets 1-50% of water requirements.

- A management system is in place and rainwater harvesting meets 50+% of water requirements.

If the average annual rainfall in your region is above 1475mm

- No management system is in place for the effective harvesting of rainwater.
- A management system is in place and rainwater harvesting meets 1-50% of water requirements.
- A management system is in place and rainwater harvesting meets 50+% of water requirements.

Irrigation is based on need and efficiency measures are taken

Applicable land: ALL (<u>if irrigation is utilised only</u>)

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. These can include practises like weather monitor and soil moisture testing.

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.

<u>Scoring based on:</u>

- Less than 25% of the specified water management practices are utilised.
- Farm utilises 25-50% of the 10 specified water management practices.
- Farm utilises 6-8 (50-75%) of the 10 specified water management practices.
- Farm meets 9+ (>75%) of the 10 specified water management practices.

Pollution Prevention

Introduction & benefits of implementation: Waste from water is a significant source of pollution from agricultural practice. Examples of wastewater include sediment (soil) and nutrient runoff, animal waste and pesticides contaminating water bodies.

Guidance: Management of farm waste should be implemented according to the rules and regulations of the country the farm is located in and avoid pollution to the environment.

Requirements: Farmers need to show proof of a waste management plan and system that ensure that no wastewater contaminates water bodies or aquifers. Such 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 on-site audit by regenagri. The auditor will consider the following: slurry and manure storage, dirty water storage, pollution risk, historic pollution incidents, the farms written waste management plan and its crop application details

Scoring based on:

- 1 or less practices are being implemented.
- 2-3 practices are being implemented.
- 4-5 practices are being implemented.
- 6 or more practices are being implemented.

Renewable Energy

Applicable land; ALL

Introduction: 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.

Requirements: Farmers should be able to show if 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 power used on productive land is sourced from renewable sources.
- 0-25 % of power used on productive land is sourced from renewable sources.
- >25-50% of power used on productive land is sourced from renewable sources.
- 50+% of power used on productive land is sourced from renewable sources.

Existing certifications

Applicable land; ALL

Introduction: To have a deeper understanding of the farm system and its management, we bring into consideration the presence of other certifications that are relevant to good and sustainable agricultural practice.

Guidance: Examples of such certification are Organic and/or GlobalGap. The certifications can also be country and/or crop specific.

Requirements: Farmers should be able to show proof of existing certifications to the auditor.

Scoring based on:

- No nationally recognised certifications are held.
- Holds 1 certifications from an established certification body (such as Organic, SMETA, Red Tractor, GRASP, Global GAP and PFLA, etc.).
- Holds 2 or more certifications from an established certification body (such as Organic, SMETA, Red Tractor, GRASP, Global GAP and PFLA, etc.).

Emissions verification

Greenhouse gas emissions

Applicable; currently only for crops and dairy

Introduction: 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 Cool Farm Tool 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 their 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 corelation in the scorecard to a low score on applicable criteria point. This data can then be verified by Control Union 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 feedback in 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:

• N2O emissions based on an empirical model built from an analysis of over 800 global datasets. These datasets refine IPCC Tier 1 estimates of N2O emission by factoring in the guiding drivers of N2O emissions such as rate of N applied, soil texture, soil carbon, moisture and soil pH,

• Soil carbon sequestration based the results of published studies built from over 100 global datasets
• Embedded fertilizer production emissions based on the most up to date, peer reviewed industry data.
• Fuel and electricity use utilizing 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

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