Encyclopedia pratensis

Glossary

A

Access to shade: (a) The possibility, within an agro-ecosystem or on a farm, to provide a shaded area or shelter (natural: hedgerows, trees, vegetative cover, groves; or artificial: structures, tarps, buildings) that protects crops livestock, workers, or biodiversity from climatic constraints such as intense solar radiation, excessive heat, rain, or wind. (b) An ecosystem service delivered by "agro-ecological infrastructures" (habitats within agro-ecosystems where spontaneous vegetation or service-cover crops develop) and incorporated into sustainable intensification strategies, contributing to resilience, animal and human well-being, and agricultural productivity.

Acidosis: A pathologic condition of acid accumulation or depletion of base in the body. The two main types are respiratory acidosis and metabolic acidosis, due to metabolic acid build up. It is frequently met for ruminants when the diet lacks of roughage and cellulosis.

Adaptation: Process by which an agro-ecological system, a community, or an agricultural practice alters its structures, functions, or management approaches in order to cope with environmental, climatic, social, or economic disturbances and to regain or maintain its usual level of activity. In the context of agroecology, adaptation refers to the capacity of an agro-ecosystem (farm, watershed, territory) to adjust its biodiversity, soil health, the knowledge and practices of its actors to address constraints (climate change, market fluctuations, cultural issues) while preserving food sovereignty and the system resilience.

Adapted breeds: An animal breed whose genetic, phenotypic and behavioral characteristics are specifically adjusted to the pedoclimatic and sanitary constraints, as well as the limited resources, of a given environment, allowing production to be maintained with minimal inputs and low care requirements.

Additional feeding: Feed or food supplied to meet the nutrient requirement of organisms for maintenance and growth when initial diet is inadequate.

Agricultural field area: Total surface of the territory devoted to agricultural activity, encompassing the utilised agricultural soils (UAA/SAU): permanent pastures, alpine pastures, summer pastures, low-productivity grassland areas and fallow lands as defined by the Common Agricultural Policy. This area excludes waste lands and lands that are neither cultivated nor grazed and therefore are not part of the UAA/SAU. It represents the spatial measure of the agro-ecosystem at the level of the farm or of the agricultural watershed.

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Agricultural field layout: (a) Spatial organization of fields and cultivated surfaces within an agricultural territory, including the distribution of crops, conservation zones (hedgerows, grass strips, natural meadows), agro-ecological infrastructures (agroforestry, agro-silvo-pastoralism) and soil-management elements (vegetative cover, rotations, crop sequences). (b) Functional arrangement of land intended to optimize ecosystem services (water retention, biodiversity, fertility) while meeting production demands, economic sustainability and social equity.

Agricultural field use: The set of practices, designs, and management approaches applied to cultivated areas or agricultural watersheds, aimed at producing agricultural goods (cereals, fruits, forages, etc.) while delivering ecosystem services (water retention, soil conservation, biodiversity, carbon sequestration). It encompasses cropping systems (crop rotations, inter-cropping, mixed cropping), vegetative covers (service strips, hedgerows, grassy margins), livestock production forms (agro-silvo-pastoralism, grazing), as well as agro-ecological infrastructures (agroforestry, natural pastures) that promote environmental resilience, economic viability, and social equity.

Agritourism: Form of tourism that involves making a working farm a travel destination for paying guests for educational and/or recreational purposes.

Agroforestry: The interplanting of crops and trees. In semiarid regions and on denuded hillsides, agroforestry helps control erosion and restores soil fertility, as well as supplying valuable food and commodities at the same time.

Alfalfa: Perennial forage legume, cultivated all over the world and producing protein rich forage, harvested as hay, haylage or for production of dehydrated pellets.

Analysis: Examination or determination.

Animal breed: A group of animals of the same species with similar appearance and closely related genetics. The affiliation of an animal to a breed may be accompanied by an entry in a herdbook.

Animal behaviour and welfare: The totality of an animal attitudes, reactions, and physiological states, encompassing its subjective experience of the environment, its ability to express natural behaviours, and its level of comfort, health, and satisfaction. This concept covers both the assessment of the animal affective experience (consciousness, perception) and the consideration of its welfare within an agro-ecological farming system, where animal welfare, the wellbeing of the farmers, and environmental protection are regarded as interdependent.

Animal control: A comprehensive set of measures and practices designed to monitor, regulate, and manage animal populations within a livestock system or agricultural operation. It encompasses disease prevention and control (health management),

reproductive management, feed optimization, monitoring of animal welfare and health, and the adjustment of stocking density or herd distribution so as to reconcile productive performance with animal welfare standards and environmental requirements.

Animal diversity: The set of genetic, taxonomic and functional variations of animals present in a given environment, encompassing species richness, population distribution, and their ecological interactions. In an agro-ecological context, it denotes the diversity of animal species (invertebrates, vertebrates, pollinators, predators, decomposers, etc.) that contribute to ecosystem services (pollination, pest regulation, nutrient cycling) and strengthen the resilience of production systems. Animal diversity therefore constitutes an essential component of biodiversity at the species, population and genetic levels.

Animal health: A conceptual framework that encompasses both animal diseases and their management. The issues related to animal health impact food security, agricultural economics, and the broader array of economic activities that stem from it. Additional concerns include public health (zoonoses, xenobiotics, antibiotic resistance), environmental, and animal welfare issues.

Animal products: Agricultural goods derived from animal husbandry, encompassing foodstuffs and raw materials obtained from animals (meat, milk, eggs, cheese, honey, wool, leather, fur, etc.) as well as the associated by-products, used as food, raw material, or energy sources within an agro-ecosystem.

Animal release: Action consisting of releasing animals from an enclosure or farm so that they can graze, move freely, or access an outdoor environment, with the aim of respecting their natural feeding behavior and improving their welfare.

Animal species: A group of individuals belonging to the same species within the animal kingdom, characterized by shared morphological, physiological, and genetic traits. In an agroecological context, animal species can serve as providers of ecosystem services (pollination, biological control, organic-matter recycling) or, conversely, be perceived as pests when they damage crops or livestock.

Animal welfare: Physical and mental state of an animal in relation to the conditions in which it lives and dies.

Antibiotic: A chemical substance, produced by microorganisms and synthetically, that has the capacity to inhibit the growth of, and even to destroy, bacteria and other microorganisms.

Aquatic habitats: Natural or semi-natural environments characterized by the presence of water (fresh or brackish)—rivers, streams, ponds, marshes, peatlands, lagoons, etc.—that constitute an element of the “blue network” and deliver essential ecological

functions (biodiversity, ecological connectivity, hydrological regulation) by providing living, breeding and feeding spaces for aquatic and semi-aquatic species.

Arable area: Extent of land, natural or artificially modified, that is suitable for plant production, where the depth, soil structure (arable horizons, compacted B horizons, and the absence of obstacles to the penetration of tillage implements) and climatic conditions permit the cultivation of annual or permanent crops. It generally corresponds to the utilised agricultural area (UAA) of a farm, encompassing both cultivated fields and soil horizons that are favorable to germination, root development, and harvest.

Arable crops: A plant or a group of plants grown on the utilised agricultural area (UAA) of a farm, i.e., on arable land (soils that are suitable for cropping). They are part of a crop sequence, contribute to crop rotation, and are managed through a cropping system: an ordered set of technical operations and agronomic decisions aimed at optimising yield, product qualities, sustainability and ecosystem services (for example, by using crop auxiliaries).

Arable farming: Growing crops as opposed to dairy farming, cattle farming, etc.

Arable field: A portion of agricultural land characterized by arable soil, designated for the production of a specific crop (species, variety, or species mixture). It represents an operational unit of generally limited duration (an agricultural campaign or cropping period) and is described through a cultural profile, which analyzes the soil horizons and climatic conditions that affect the development of crops and the living communities within the field.

Arable field configuration: In agronomy, the term designates the total set of spatial, morphological, and functional characteristics of a cultivable territory. It comprises:

- Field distribution and structuring (size, shape, orientation, continuity or fragmentation) resulting especially from processes of land consolidation or the merging of holdings.
- Arrangement of soil horizons, from the surface (seed-bed, mulch) down to the maximum or potential depth reachable by roots, including the upper and lower limits of the cultural profile.
- Organization of crops and agronomic practices (rotations, catch crops, cover crops) that are embedded within this spatial and soil framework.

This concept enables the evaluation of the conditions in which crops and the living communities of a field develop, as well as the possibilities for agroecological optimisation at the scale of an observation station or an agricultural watershed

Arable land: Land used for cultivation of temporary crops in rotation with fallow, meadows and pastures within cycles/rotations of up to five years.

Arable land size: Measurement of the area occupied by soils classified as "arable," i.e., soils suitable for the cultivation of annual or biennial crops intended for agricultural production. It is normally expressed in units of surface (hectares, ares, square metres) and corresponds to the portion of territory that excludes permanent pastures, alpine meadows, fallow lands that are not grazed, and areas designated as "set-aside" or other non-cultivated uses, according to statistical classifications (e.g., Teruti). In an agronomic assessment, arable land size is used to estimate production potential, to plan crop rotations, and to analyse the impact of soil management practices (rest periods, ploughing, drainage, etc.).

Area: A period or geographic space bounded by a set of homogeneous characteristics (pedological, climatic, hydrological, morphological, or usage-related) that condition the ecological or agronomic processes occurring within it. In the agricultural domain, an area may refer to:

- A space where the cultural profile (soil horizons, root depth, mulch, seedbed) interacts with the climate of the cropping year;
- A wetland, defined by soil morphology and the prolonged presence of water (with or without hygrophilous vegetation);
- A region (e.g., mountain zones, arid Mediterranean areas, forest covers) where pedoclimatic conditions (relief, water scarcity, solar exposure, soil depth and fertility) influence agro-silvo-pastoral systems.

Area width: Horizontal dimension measured perpendicular to the main axis of a zone (e.g., a wetland, a cultural profile, an agro-silvo-pastoral area), expressing the lateral extent or physical width of that zone on the ground. It is determined from pedological, hydrological, or morphological reference points and is used to characterize the spatial extent of the studied environments.

Average field size: Statistical measure of the average area of agricultural or land fields within a given territory, obtained by dividing the total cultivated (or total exploitable) land area by the number of fields considered. This information is used to characterize landscape fragmentation, assess the intensity of agricultural exploitation, and guide soil-management, urbanisation, or resource-conservation policies.

Avian habitat features: The ensemble of physical, biological and landscape attributes of a space (linear, areal or point-based) that determine the presence, distribution, behaviour and reproductive success of birds. It encompasses in particular:

- the structure and composition of vegetation (hedgerows, tree rows, copses, flood-prone meadows, wetlands, etc.),
- the availability of food resources (insects, seeds, fruits),

- the presence of nesting or resting sites (isolated trees, low walls, embankments, ponds),
- the configuration of relief and edge features (field margins, banks, ditches),the interaction with agroecological infrastructures (unharvested vegetative cover, semi-natural habitats) that provide biodiversity reservoirs and ecosystem services favourable to bird populations.

B

Balenced diet: In agroecology, a set of foodstuffs (for humans or livestock) that are measured and combined in calculated proportions so as to meet all nutritional requirements (energy, protein, vitamins, minerals) while respecting the economic, environmental, and social constraints of the production system. Its aim is to optimise the health and performance of the organisms being fed while promoting the sustainability and resilience of the agro-ecosystem.

Barn: A general name for a farm building used for housing livestock, storing machinery or crops, etc.

Biodiversity: The variety of all native living organisms and their various forms and interrelationships.

Biodiversity area: A delineated space, natural or managed, within a landscape (particularly agricultural), intended to conserve, promote, and enable the coexistence of the diversity of living organisms (genes, species, populations) and their ecological interactions. It may arise from spontaneous colonisation (associated biodiversity) or from explicit planning (planned biodiversity) and includes semi-natural habitats, ecological corridors, and cultivated plots where ecosystem services (pollination, pest control, soil fertility, etc.) are maintained.

Biodiversity conservation: Planned management (i.e. preservation, maintenance, sustainable use, recovery, enhancement) of a natural resource or of a particular ecosystem to halt, reverse or slow-down the loss of biodiversity from impacts of exploitation, pollution etc. to ensure the future usability of the resource, resilience of communities, and ecosystem integrity.

Biological control: The use of biological agents (e.g. insects, micro-organisms and/or microbial metabolites) for the control of mites, pests, plant pathogens and spoilage organisms.

Bird: Any of the warm-blooded vertebrates which make up the class Aves.

Bird conservation: A set of actions and strategies aimed at protecting bird species and their natural habitats, with the goal of maintaining or restoring their populations,

preserving biodiversity, and ensuring the ecosystem services they provide (such as pollination, biological pest control, regulation of nutrient cycles, etc.) in both agricultural and natural settings.

Bird shelters: Structures or installations (nesting sites, perches, shelters, nest boxes, hedgerows, grassy strips, ditches, stone piles, etc.) placed or maintained in agricultural or natural landscapes in order to provide birds with refuge, nesting, resting sites and protection from predators and inclement weather. These shelters contribute to biodiversity, promote ecosystem services (pest control, pollination) and are part of agro-ecological practices that aim to create habitats complementary to permanent vegetative cover.

Bloat: This is a condition in which the abdomen feels full and tight because of swelling of the abdomen, usually due to an increased amount of intestinal/ruminal gas, but occurs sometimes when fluid, substances or mass are accumulating or expanding in the abdomen.

Blooming vegetation: The assemblage of plants in a given environment (grassland, herbaceous strip, agro-ecosystem, etc.) that are at the flowering stage, i.e., bearing flowers. This phenological phase marks the period of sexual reproduction for the species, ensures the availability of resources (nectar, pollen) for crop auxiliaries and pollinators, and serves as an indicator of ecological health, biodiversity, and the functional integrity of natural or agricultural habitats.

Buffer zone: A strip of land, typically grassed and/or edged with a hedge, sited along the margin of a watercourse or wetland to curb pollutant inputs, reduce soil erosion, and safeguard aquatic biodiversity. Within the framework of the Common Agricultural Policy (CAP), it constitutes an Ecological Focus Area (EFA) and is subject to specific requirements: a minimum width of 5 m, establishment in spring, prohibition of an exclusively Fabaceae composition, prohibition of ploughing and fertilizer application, and maintenance by mowing (not to be used as forage, except by derogation).

Building: Something built with a roof and walls, such as a house or factory.

C

Calf rearing: An animal-husbandry practice that involves feeding, growing, and managing young bovines (calves) from birth until weaning or placement on pasture, usually within extensive or semi-extensive systems that aim to limit inputs, preserve soil health, and ensure animal welfare while enhancing ecosystem services and the plant diversity of pastures.

Calf welfare and health: The whole physical, physiological, behavioral, and environmental conditions that ensure calves achieve an optimal state of balance,

encompassing comfort, the fulfillment of their nutritional, social, and natural expression needs, as well as the prevention, detection (screening), and treatment of diseases. This concept is embedded in an agroecological "One Health" approach, in which animal welfare, soil health, and the environment are interdependent and aim to guarantee sustainable, life-respecting production.

Catch crop: An intermediate, often short-duration crop sown or planted between the harvest of a main crop and the sowing of the subsequent crop, during the so-called interculture period. It is used primarily to temporarily exploit the agricultural surface, to protect the soil, to improve fertility, or to diversify the crop rotation.

Cattle: Domesticated bovine animals, including cows, steers and bulls, raised and bred on a ranch or farm.

Cheese: Cheese is the ripened or unripened soft, semi-hard, hard, or extra-hard product, which may be coated, and in which the whey protein/casein ratio does not exceed that of milk, obtained by coagulating wholly or partly the protein of milk, skimmed milk, partly skimmed milk, cream, whey cream or buttermilk, or any combination of these materials, through the action of rennet or other suitable coagulating agents, and by partially draining the whey resulting from the coagulation.

Chemical: Any substance used in or resulting from a reaction involving changes to atoms or molecules.

Chemical fertiliser: Fertilizer manufactured from chemicals. It mainly includes nitrogen, phosphorus and potassium fertilisers; excessive use of them can cause pollution, when all the chemicals are not taken up by the plants and the excess is leached out of the soil into rivers and may cause algal bloom.

Climate: The average weather condition in a region of the world. Many aspects of the Earth's geography affect the climate. Equatorial, or low, latitudes are hotter than the polar latitudes because of the angle at which the rays of sunlight arrive at the Earth's surface. The difference in temperature at the equator and at the poles has an influence on the global circulation of huge masses of air. Cool air at the poles sinks and spreads along the surface of the Earth towards the equator. Cool air forces its way under the lower density warmer air in the lower regions, pushing the lighter air up and toward the poles, where it will cool and descend.

Climate condition: The set of atmospheric characteristics (temperature, precipitation, humidity, sunshine, wind, etc.) that describe the state of the climate of a specific location and time period, and that determine the suitability of the land for agricultural activities (e.g., availability of working days, crop growth, pedoclimatic constraints).

Climate stress: Pressure exerted on living organisms, crops, soils, or ecosystems resulting from abnormal or extreme climatic variations (elevated or low temperatures, irregular precipitation, drought, flooding, etc.). This phenomenon, intensified by climate change, disrupts the pedoclimate, alters soil micro-climates, and creates hydraulic, thermal, or oxidative constraints that impair biological performance, reduce agricultural productivity, and undermine the stability of ecosystem services.

Clover: A very large family of legumes, annual or perennial, some species of which are used as a source of fodder and for sowing grassland.

Competition: a) active demand by two or more organisms for a material or condition, so that both are inhibited by the demand, e.g. plants competing for light and water; b) active demand by two or more substances for the same binding site on an enzyme or receptor. alt. competitive binding.

Complementarity: In agroecology, complementarity refers to the property whereby different elements (plant species, hedge strata, forage resources, scientific approaches, etc.) combine in such a way that they cover distinct functions or periods in time and space, so that their interaction generates productivity, resilience, and ecosystem services that exceed the sum of their individual contributions.

Complementary activities: A set of actions or practices carried out alongside a primary activity (e.g., agricultural production) in order to exploit local resources, link diverse potentials, and incorporate exogenous products or techniques. It seeks to enhance the autonomy, resilience, and sustainability of the system by addressing environmental, social, or economic constraints.

Concentrate: Feed that supplements fodder, with a high content of at least one nutrient: energy (UFL), protein (PDI and MAT), minerals.

Connectivity: In agroecology, the degree of spatial and functional interconnection among the various habitats, crops, agro-ecological infrastructures, and surrounding environments of an agroecosystem, enabling the movement and exchange of organisms, genes, pollinators, nutrients, energy, and other ecological flows, as well as the continuity of associated socio-economic processes.

Consumer: A consumer is a person or a group who intends to order, or use purchased goods, products, or services primarily for personal, social, family, household and similar needs, who is not directly related to entrepreneurial or business activities. The term most commonly refers to a person who purchases goods and services for personal use.

Cost: In economics, the value of the factors of production used by a firm in producing or distributing goods and services or engaging in both activities.

Control of invasive species: The set of practices and interventions aimed at limiting, eradicating, or containing the spread of non-native or exotic species that become established unchecked in an environment, to the detriment of local species, biodiversity, and ecological functions. It relies in particular on biocontrol methods (use of natural enemies), habitat management (creation or restoration of agro-ecological infrastructures such as service plants), regulation of human activities (monitoring, restrictions on introductions), and ecological monitoring (assessment of impacts on agricultural yields and ecosystem services).

Creek: A narrow inlet or bay, especially of the sea.

Crop rotation: An agricultural technique in which, season after season, each field is sown with crop plants in a regular rotation, each crop being repeated at intervals of several years. Crop rotation minimizes the risks of depleting the soil of particular nutrients and avoids pest proliferation.

Cross-breeding: Mating between members of different populations (lines, breeds, races or species).

Crude protein: Complex, organic compound made up of amino acids that contain carbon, oxygen, nitrogen, hydrogen and sometimes phosphorus and sulphur.

Cubicle: A division or compartment for an animal or animals, usually within a building.

Cultivated field shape: Spatial configuration of cultivated fields or surfaces, characterized by their size, shape (rectangular, elongated, irregular, etc.) and arrangement. It results from agricultural land-use planning (land consolidation, property aggregation, pedological and topographic constraints) and influences cropping practices as well as agro-ecosystem functions.

Cutting date: Dates during which harvest of the crop actually occurs - combining, picking, cutting, pulling, and so on.

D

Decision support system: A coordinated assemblage of people, devices or other resources that analyzes, typically, business data and presents it so that users can make business decisions more easily.

Diagnosis: Identification of the nature and cause of a problem or a disease.

Dicots: A plant with two cotyledons. One of the two major classes of flowering plants (along with the monocotyledons). Examples include many crop plants (potato, pea, beans), ornamentals (rose, ivy) and timber trees (oak, beech, lime).

Diet composition: The set of elements (feedstuffs, ingredients, additives, and nutrients) that are combined according to a rational calculation to form a ration—that is, the precise blend of commodities intended to satisfy the nutritional requirements of a livestock animal or a human population.

Digestion: Digestion is the process of mechanically and enzymatically breaking down food into substances for absorption into the bloodstream.

Diploid: An organism or cell whose chromosome number comprises two complete sets (2n), i.e., two copies of each chromosome of a species. In teosinte, the diploid number is 2n = 20, the same as in maize, whereas tetraploid forms possess four sets (2n = 40).

Direct seeding: An agricultural technique that involves planting a crop directly into plant cover without first tilling the soil. There are two types: one where the cover is destroyed and its biomass is left on the soil surface, and one where the cover is kept alive.

Dung: Excrement from the intestines, containing unabsorbed solids, waste products, secretions, and bacteria of the digestive system.

Dung and urine removal: A set of practices and techniques aimed at removing, transporting, treating, or valorising animal excreta (manure, slurry, and urine) from livestock areas in order to prevent environmental contamination, reduce health risks, and promote the reuse of these organic inputs (composting, fertilisation, etc.) within a framework of sustainable resource management and bio-security.

E

Ecosystem: A dynamic assemblage of abiotic components (soil, climate, water, nutrients) and biotic components (plant, animal, and microbial species) that interact with one another and with their surroundings, constituting a functional system of energy, material, and flow exchanges (nutrient cycling, pollination, population regulation) within a defined spatial area.

Ecosystem service: A benefit or good that humans obtain, directly or indirectly, from ecosystems. It encompasses the functions of the natural environment that contribute to provisioning (food, fiber, water), regulating (climate, air- and water-quality, pollination, erosion control), cultural services (aesthetic value of landscapes, recreation, spiritual values), and supporting services (soil fertility, biogeochemical cycles). These services can be assessed, sometimes in monetary terms, and are often co-produced by ecological processes and human activities.

Effluents: Wastewater (sewage or other liquid waste, esp. toxic waste) that flows into a body of water such as a river or lake.

Environment: A concept which includes all aspects of the surroundings of humanity, affecting individuals and social groupings. The European Union has defined the environment as "the combination of elements whose complex interrelationships make up the settings, the surroundings and the conditions of life of the individual and of society, as they are or as they are felt". The environment thus includes the built environment, the natural environment and all natural resources, including air, land and water. It also includes the surroundings of the workplace.

Environment protection: Measures and controls to prevent damage and degradation of the environment, including the sustainability of its living resources.

Equipment: Any collection of materials, supplies or apparatuses stored, furnished or provided for an undertaking or activity.

Extensive farming: A system of raising crops and animals, usually on large parcels of land, where a comparatively small amount of production inputs or labor are used per acre. Compare intensive farming.

F

Facilitation: Facilitation means “to free from difficulties or obstacles; make easier, aid, assist.” Facilitation aims to make processes or discussions easier and more effective. In ecology, facilitation refers to the process through which a species improves the living conditions for other species within the same community and ecosystem.

Farm: A spatial unit of agricultural production, typically a single plot or a collection of plots managed by an individual farmer or a collective entity, where activities such as cropping, livestock rearing, processing, and marketing of agricultural goods take place. It constitutes an agro-ecosystem: a cultivated system whose ecosystem functions (soil fertility, nutrient cycling, biodiversity, pollination services, etc.) are harnessed and valued by humans to deliver agricultural products (cereals, vegetables, meat, milk, etc.) and ecosystem services (carbon sequestration, hydrological regulation, etc.).

From a circular-economy perspective, the farm integrates environmentally-responsible practices (e.g., small-scale anaerobic digestion, use of co-products, tool sharing, short supply chains, agritourism, etc.) aimed at optimizing efficiency, profitability, and resilience while reducing its environmental footprint. The “High Environmental Value” (HVE) certification may be awarded to farms that achieve an advanced level of agro-ecology and sustainability.

Farm management: The administration or handling of a farm, considering the productive, economic, environmental and social dimensions. It includes the management of soil, crops and livestock.

Farm product: Agricultural products that are either in their original form or have undergone only primary processing. Examples include cereals, coffee beans, sugar, palm oil, eggs, milk, fruits, vegetables, beef, cotton and rubber.

Feeding: The collection of foods and practices that ensure to every individual an access to sufficient, quality food that is appropriate to their physiological needs and sociocultural preferences, encompassing the dimensions of rights, justice and food security within food systems.

Fertilisation: The application of any organic or inorganic material of natural or synthetic origins to a soil to supply one or more elements essential to the growth of plants.

Fertiliser: Substance added to soil for the purpose of promoting plant life, usually containing nitrogen, potassium and phosphorus, e.g. manure, guano, rock phosphates.

Fertiliser management: Set of practices and strategies aimed at planning, applying, and monitoring the use of fertilisers (organic, mineral, or mixed) so as to meet the nutritional needs of crops while respecting the principle of minimum input and the recycling of nutrients. It integrates crop succession, soil work, and agro-ecological objectives (preserving soil health, reducing environmental impacts, optimising ecosystem services, and taking social and economic dimensions into account).

Fertiliser use: The set of practices involving the application of substances (synthetic mineral fertilizers, organic fertilizers, green manures) to soils or crops in order to supply the nutrients required for plant growth. Within agroecology, fertiliser use is designed to reduce inputs of mineral fertilizers by favoring organic sources (e.g., inter-cropping with legume sowings) while maintaining productivity, soil sustainability (formation of stable organic matter), and farm competitiveness. It also encompasses the management of environmental impacts, such as limiting the impact on water quality and preserving local resources.

Field: A limited area of land with grass or crops growing on it, which is usually surrounded by fences or closely planted bushes when it is part of a farm.

Field area: An area inherent in a field, expressed in m2 or ha.

Field layout: Spatial and functional organization of agricultural parcels within a territory, encompassing their allocation, arrangement, and management (rest periods, crop rotation, fertilisation, renewal) in order to optimise soil fertility, limit degradation, and meet the requirements of sustainable production.

Field management: A set of cultural practices and operations aimed at preparing, maintaining, and optimizing the physical, biological, and agronomic conditions of a field in order to ensure its productivity, quality, and sustainability. It includes soil work (plowing, harrowing, tillage, etc.), management of soil fertility and structure, weed

control, plant protection, irrigation regulation, seedbed preparation and monitoring, as well as conservation and restoration actions for the vegetative cover, all generally organized over a seasonal period corresponding to the duration of the crop.

Flora: The sum total of the kinds of plants in an area at one time.

Flowering: The process involved in transforming a meristem that produces vegetative structures, such as leaves, into a meristem that produces reproductive structures, such as a flower or an inflorescence.

Flowering plant species: Taxon of individuals of the same species belonging to the plant kingdom that exhibit the distinctive characteristic of angiosperms, namely the production of flowers (specialized reproductive organs) which, after pollination and fertilization, develop into fruits containing seeds. This category includes all plant species whose life cycle incorporates a flowering phase, whether cultivated (cereals, legumes, service crops, etc.) or wild, and it plays a central role in agrobiodiversity, and the ecosystem services associated with agro-ecosystems.

Flowers: The reproductive structure of angiosperm plants, consisting of stamens and carpels surrounded by petals and sepals all borne on the receptacle.

Fodder production: In livestock farming, the set of activities and practices aimed at generating the roughage intended for the herd (green forages, dehydrated forages, straw, fibrous by-products, hay, silage, baled hay, etc.). It includes the management of forage areas (forage crops, pastures, seed-bed crops), agronomic optimisation (fertilisation, variety selection, crop rotation), harvesting, conservation and the year-round availability of forage in order to meet the animals nutritional requirements.

Food losses: Portion of food commodities that, at any stage of the agri-food chain (production, harvest, storage, processing, transport, distribution, or consumption), is not incorporated into human nutrition and disappears because of deterioration, rejection, waste, trampling, physical losses, or any other factor that results in the product remaining unused. When talking about forages, it is possible to mention 'feed losses'.

Food supply for insects: The collection of nutritional resources (vegetation, pollen, nectar, sugar secretions, other insects, decomposing organic matter, etc.) that are provided or encouraged within an agroecosystem in order to sustain the survival, reproduction, and effectiveness of beneficial insects (predators, parasitoids, pollinators) and, when applicable, their natural preys, within the framework of conservation biological control and the promotion of agroecological production systems.

Forage: Refers to plants or plant parts other than separated grains fed to or grazed by domestic animals. Forage may be fresh, dry or ensiled (such as pasture, green chop, hay, haylage).

Forage crop: A crop with plants cultivated to feed animal in the form of annual fodder or pasture. Plants cultivated as fodder may belong to the legume or grass family, or to another family.

Forage security: Ensuring, for a livestock operation, a sufficient year-round availability of forages in both quantity and quality (grass, hay, silage, baled hay, etc.) so that the herd nutritional needs are met and the risks linked to fluctuations in plant production, climatic events, or market variations are limited. It results from a combination of management practices (rotational grazing, diversification of vegetative cover, storage of reserves) and the development of producers competencies aimed at providing a stable, sustainable and resilient feed supply.

Forest: Generally, an ecosystem characterized by a more or less dense and extensive tree cover. More particularly, a plant community predominantly of trees and other woody vegetation, growing more or less closely together.

Frequency: The number of occurrences of a periodic phenomenon within a specific amount of time.

G

Genetics: The science that is concerned with the study of biological inheritance.

Geological features: Attributes or properties of the rock substrate and soil of a given area, encompassing its mineral composition, texture, structure, age, origin (formation, tectonics, sedimentation), as well as the physical and chemical processes that shape it. These features influence the pedoclimatic conditions, fertility, water-holding capacity, and, more broadly, the adaptation of organisms (plants, animals, humans) to their local environment.

Goat: A hardy domesticated ruminant mammal that has backward-curving horns and (in the male) a beard. It is kept for its milk and meat, and noted for its lively behaviour.

Grass quality: The set of agronomic, nutritional, and sensory characteristics of a grass or pasture that determine its value for animal production. It includes the available biomass, botanical composition (species diversity), protein content, fiber (cellulose, lignin), mineral and energy content, digestibility, and palatability. These attributes directly influence the productivity, health, and performance of livestock as well as the sustainability of farming systems.

Grasses: A very large and widespread family of Monocotyledoneae, with more than 10.000 species, most of which are herbaceous, but a few are woody. The stems are jointed, the long, narrow leaves originating at the nodes. The flowers are inconspicuous, with a much reduced perianth, and are wind-pollinated or cleistogamous. The fruit in

single-seeded, usually a caryopsis. Grasses are the most important of all species for food and feed.

Grassland: biome found in regions where the average annual precipitation (ca. 25–76 cm) is sufficient to support the growth of grasses and other herbaceous plants but generally insufficient to support continuous tree cover. In wetter regions grassland is maintained as a result of grazing by herbivores.

Grassland connectivity: The degree of spatial interconnection among different parcels or strips of permanent grasslands, which facilitates the movement of organisms (herbivores, pollinators, beneficial species), genetic flow, the circulation of ecosystem services (food provision, soil- and water-regulation, carbon sequestration), and the resilience of the pastoral network within agro-ecological systems.

Grassland cutting schedule: A pre-established temporal program that defines the periods for cutting (mowing) permanent grasslands. It is set according to agronomic indicators (grass height, phenological stage, leaf number, species composition, length of rest period) and production objectives (quantity and quality of the forage), as well as the preservation of ecosystem services (soil protection, carbon sequestration, biodiversity). The schedule aims to optimise the use of the grassland while limiting losses due to trampling and refusals, and it is incorporated into low-input livestock systems and agro-ecological practices.

Grassland diversity: The collective variety of living organisms—mainly plants—that compose a grassland, encompassing genetic, species-level, and agroecosystem diversity, together with their interactions with other taxa (insects, microbes, etc.). This diversity constitutes a resource for the quantity and quality of forage production, the conservation of wild species and the maintenance of habitats for associated wildlife.

Grassland fertilisation: The set of nutrient inputs (organic, mineral, or mixed fertilizers) applied to a permanent grassland in order to maintain or optimise its forage productivity, biodiversity, and ecological balance. It includes:

1. Agronomic objectives: support grass growth, ensure the availability of high-quality forage for grazing and cutting, and preserve plant species richness.
2. Practices: application of fertilisers (nitrogen, phosphorus, potassium, secondary nutrients) according to soil and vegetative-cover needs, taking into account the phenological stage of the plants and the resting period of the grassland.
3. Environmental impacts: moderate fertilisation promotes floristic diversity and soil life; intensive fertilisation, especially mineral, can lead to a reduction in species number and impair the ecological functions of the grassland.

In practice, grassland fertilisation is part of an integrated vegetative-cover management system, combined with grazing, mowing and the monitoring of indicators (grass height,

leaf number, floristic composition). It also constitutes a component of agricultural heritage, influencing the quality of PDO-protected products (milk, cheese, meat).

Grassland management: A set of practices and strategies for the planning, maintenance, and renewal of permanent (or natural) grasslands aimed at optimizing both their agronomic performance (yield, quality, and early availability of forage) and their ecosystem services (species diversity, carbon sequestration, soil protection, water purification, support for beneficial insects and pollinators, and landscape aesthetics). It is particularly applied to low-stocking-density livestock systems, favors natural resources (unseeded or over-seeded pastures with diverse species mixes), and uses species diversity and abundance as indicators of agronomic and environmental potential.

Grazing: Feeding on standing vegetation, as by livestock or wild animals.

Grazing animals: The collection of livestock activities and management systems aimed at obtaining animal-origin products (meat, milk, eggs, fibers, etc.) from domestic animals. This concept encompasses animal health and welfare, soil preservation and biodiversity, the reduction of inputs (pharmaceutical, veterinary, plant-protective), as well as agro-ecological approaches and the "One Health" principle, seeking to reconcile economic performance, environmental sustainability, and the resilience of production systems.

Grazing and mowing practices: In agroecology, a suite of pasture-management techniques that combine the grazing of herbivores (often in rotation – rotational grazing) with the mowing (cutting or harvesting) of vegetation. This dual approach aims to optimise forage production, preserve biodiversity, reduce tractor work, and maintain soil health by exploiting the growth phases of grasses (tillering, mowing) in a complementary manner.

Grazing design: The set of principles, methods, and planning decisions used to organize the use of herbaceous land by livestock. It includes:

1. Dividing the grazing area into parcels of appropriate size.
2. Defining a rotation schedule with specific grazing (presence) and rest (restitution) periods for each parcel (e.g., simplified rotational grazing ≈ 10 days, dynamic rotational grazing ≈ 1–2 days).
3. Choosing the management mode (continuous versus rotational grazing) according to agronomic, ecological, and socio-economic objectives.
4. Integrating agro-ecological concepts (ecosystem services, sustainability, respect for the natural functions of the landscape) and, where relevant, the ethical and philosophical dimensions derived from permaculture.

In short, grazing design aims to optimise animal productivity while preserving pasture health and the resilience of agroecosystems.

Grazing efficiency: The ability of a grazing system to simultaneously achieve the targeted agronomic, economic, and ecological objectives. It is measured by the pasture capacity to:

- Maximize animal performance (growth, milk production) for a given number of livestock,
- Optimize the use of available vegetative surface** (stocking rate, animal density, grazing duration),
- Maintain or improve the health and biodiversity of the vegetation cover** (service plants, agro-ecological infrastructures),
- Preserve soil fertility and ecosystem functions** (nutrient cycling, water retention),
- Reduce external inputs (bought forage, fertilizers, energy) and environmental impacts (erosion, greenhouse-gas emissions).

In practice, grazing efficiency results from implementing principles such as rotational grazing, the "laws of rational grazing," and integrated agroecosystem management. It may be expressed, for example, by tripling the animal stocking rate without pasture degradation, or by increasing milk production while conserving local biodiversity.

Grazing groups: A set of animals (typically livestock) placed simultaneously on a specified pasture parcel for a defined period as part of a rotational or dynamic grazing management system. This group constitutes the operational unit used to monitor pasture condition indicators (grass height, phenological stage, grazing pressure, rest period, etc.) and to optimize the ecosystem services provided by grazing.

Grazing management: Organisation of grazing by the farmer on an annual, seasonal or daily basis, including the allocation of plots to the different groups of animals that make up the herd.

Grazing period: The period of time during which livestock are permitted to graze a specific plot or pasture before it is rested, determined according to the grazing plan and the pasture condition indicators (grass height, phenological stage, leaf count, species present, etc.).

Grazing practices: The collection of livestock-feeding methods that rely on grazing, encompassing particularly continuous grazing (where the herd remains on the same plot) and rotational grazing (the pasture is divided into smaller paddocks and the herd is moved among them). Rotational grazing may be "simplified," with a stay of roughly ten days per paddock, or "dynamic," limiting the stay to one or two days. These practices are embedded in an agroecological approach that seeks a sustainable agriculture that is economically viable, ecologically sound, ensuring social equity.

Grazing time: The period, expressed in days (or hours), during which livestock remain on a given paddock before being moved to another paddock as part of a rotational grazing system. It is one of the key indicators of grazing management, influencing the phenological stage of the grass, pasture rest, and animal stocking rate.

Ground: The top layer of the land surface of the earth that is composed of disintegrated rock particles, humus, water and air.

H

Habitat connectivity: Landscape connectivity is defined as the degree to which the spatial configuration of the landscape facilitates or disturbs movement, dispersal, and gene flow between habitat patches.

Habitat diversity: The variety and richness in the number and types of habitats (natural or agricultural environments) present within a given area, characterized by a diversity of physical, chemical, and biological conditions that enable the coexistence of multiple species. This diversity represents a component of biodiversity, influencing resource availability, trophic interactions, and ecosystem services.

Habitat enhancement: The term "habitat improvement" means restoring, enhancing, or establishing physiographic, hydrological, or disturbance conditions necessary to establish or maintain native plant and animal communities, including periodic manipulations to maintain intended habitat conditions on completed project sites.

Habitat maintenance: A suite of management, conservation, and restoration practices applied to natural, semi-natural, or service habitats located within or around an agroecosystem, intended to maintain or enhance biodiversity and ecological functions (such as support for beneficial organisms, pollinators, pest regulation, and ecosystem services). These practices contribute to more sustainable, environment-friendly agriculture.

Habitat preservation: The preservation, maintenance, protection, restoration and enhancement of habitats for wild species.

Harvest: The amount or measure of the crop gathered in a season, and collecting thanks to the harvesting.

Harvest system: A coherent set of operations, agronomic practices, techniques, and equipment organized to ensure the harvest of plant biomass at an optimal stage of maturity. It encompasses:

- Planning – determining the harvest timing based on maturity criteria;
- Implementation – selecting appropriate cutting, threshing, sorting, and storage tools or machines;

- Logistical coordination – handling transport, packaging, and residue management.

All of these elements are integrated within a systemic perspective that aims to optimize yield, quality, and the sustainability of the agroecological system.

Health management: A coordinated set of knowledge, practices, and strategies implemented by the actors of a system (farmers, work collectives, institutions) to ensure and optimise the health of an organism or a group of organisms. It is based on a holistic and systemic approach (ecopathology, "One Health") that integrates:

1. Disease prevention;
2. Strengthening resistance or tolerance to pathogenic agents;
3. Curative care when necessary;
4. Reduction of the use of medicinal inputs (antimicrobials, antiparasitics, etc.);
5. Improvement of animal or human well-being in connection with soil health, ecosystem health, and consumer health.

This management aims to reconcile sanitary performance, environmental sustainability, and socio-economic viability of production systems.

Heat stress: condition in which crop performance or survival is compromised by periods of exposure to high temperatures.

Hedge pruning: Maintenance operation involving the selective cutting or trimming of the branches of a hedge (especially a composite hedge) in order to:

- maintain or improve its structure and density,
- promote regeneration and the complementary coexistence of plant species,
- optimise the ecosystem services it provides (run-off control, wind protection, reduction of evapotranspiration, soil enrichment, production of timber or firewood, fruits, forage),
- preserve or enhance its value as a refuge and ecological corridor for wildlife,
- prevent excessive ageing or imbalance of the hedge while ensuring its durability within the context of the agro-ecological transition.

Hedge size: A pruning or cutting operation (often applied to composite hedges) intended to control their height, density, and shape. This practice helps maintain or optimise ecosystem services (erosion control, wind-break, habitat provision, ecological corridor), agronomic functions (soil fertility, production of wood, fruit, and forage), and the aesthetic appearance of the landscape.

Hedge width: Transverse dimension of a hedge, measured between its two outer edges (from the first twig or shrub on one side to the first twig or shrub on the other side). This

measurement, expressed in meters or centimeters, characterises the thickness of the linear vegetative structure and consequently influences, in particular:

- the capacity to provide shade and wind protection;
- the density of vegetative strata and the diversity of habitats offered to auxiliary organisms;
- the amount of resources produced (wood, fruit, forage);
- the aesthetic impact and landscape integration.

In the context of an agroecological composite hedge, hedge width contributes to the delivery of multiple ecosystem services (biodiversity, animal welfare, support to crops) and constitutes a key design criterion for the agroecological transition.

Hedgerow: A line of closely planted bushes or shrubs, marking the boundaries of a field. The type of hedge varies between parts of the country, and its age can be dated from the number of species of tree and shrub present. Over the last thirty years hedge-row removal has had a marked visual effect on lowland agricultural landscapes. From the farmer's point of view, in areas of predominant arable or intensively managed grazing, there is little or no economic justification for retaining hedges.

Herbicide: A substance that kills or inhibits the germination, growth and development of plants. Herbicides may be synthetic chemicals, natural chemicals or biological agents.

Heterogeneity: Diversity or variability of traits within a biological or agroecological set. In agronomy, it denotes a plant population whose individuals possess different genetic/specific backgrounds while maintaining similar characteristics, thereby conferring the collective with evolutionary potential. When heterogeneity refers to the genetic diversity within a given variety/accession, it may the population from meeting the stability and homogeneity criteria required for officially recognized commercial varieties. This is especially an issue for forage grasses and legumes where most species present a open-pollination.

High-quality feed stock: A raw agricultural or food product that meets stringent agronomic, environmental, and health quality standards; it originates from a production system that controls costs (by maximizing grazing and limiting inputs), enhances ecosystem services (such as biodiversity and carbon sequestration), and is often certified by an official label guaranteeing its traceability, nutritional properties, and a positive impact on human health.

High-quality forage: Forage that meets high agronomic and nutritional criteria, characterized by a sufficient protein and energy density, good digestibility, a low content of undesirable substances (molds, toxins, contaminants), and palatability suited to the herd. It originates from well-managed vegetative covers (pastures, forage crops, grazing areas) and/or agro-ecological infrastructures, and contributes to the farm's forage

self-sufficiency while supporting ecosystem services (biodiversity, carbon sequestration). Its recognition is often based on quality indicators (compositional analysis, production yields, compliance with official quality labels).

Hoof disease: In agroecology and ecopathology, a generic term for ailments affecting the hooves (nails) of livestock animals (cattle, sheep, goats, etc.). These pathologies, resulting from multifactorial interactions among the animal, its diet, its rearing environment, and management practices, are considered as "products" of the agroecosystem. They serve as an indicator of overall herd health and the sustainability of the production system.

Horse: A large plant-eating domesticated mammal with solid hoofs and a flowing mane and tail, used for riding, racing, and to carry and pull loads.

Housing: a) Dwelling-houses collectively and the provision of these. b) Shelter, lodging.

I

Income: The gain derived from capital, from labour or effort, or both combined, including profit or gain through sale or conversion of capital.

Infrastructure: The basic network or foundation of capital facilities or community investments which are necessary to support economic and community activities.

Injury: A stress upon an organism that disrupts the structure or function and results in a pathological process.

Insect: A class of the Arthropoda typically having a segmented body with an external, chitinous covering, a pair of compound eyes, a pair of antennae, three pairs of mouthparts, and two pairs of wings.

Intervention: An intervention is a coherent set of planned activities, intended to bring about change in a given population, sector or system.

Invasive: Species that are non-native to a particular ecosystem and whose introduction and spread cause, or are likely to cause, socio-cultural, economic or environmental harm or harm to human health.

Investment: Any item of value purchased for profitable return, as income, interest or capital appreciation.

L

Lameness: Lameness occurs when an animal has leg or foot pain that affects how they move.

Land use change: Changing the purpose and modalities of land use, such as turning a forest into a grassland. Land use change is a main driver of biodiversity erosion, especially in agricultural landscapes. Land use is one of the 9 planetary boundaries. Incentive-based agri-environmental policies aim at inuencing land-use pattern.

Landscape elements: In visual assessment work, landscapes can be divided into four major elements: a) Form is the perceived mass or shape of an object that appears unified, and which provides a consciousness of its distinction and relation of a whole to the component parts. b) Line is the real or imagined path, border, boundary, or intersection of two planes, such as a silhouette, that the eye follows when perceiving abrupt differences in form, colour or texture. c) Colour is a visual perception that enables the eye to differentiate otherwise identical objects based on the wavelengths of reflected light. d) Texture is the visual feel of a landscape.

Lay: A natural or semi-natural grassland often associated with the conservation of hay or silage.

Lease: Any agreement which gives rise to relationship of landlord and tenant (real property) or lessor and lessee (real or personal property). Contract for exclusive possession of lands or tenements for determinate period. Contract for possession and profits of lands and tenements either for life, or for certain period of time, or during the pleasure of the parties.

Leather: The dressed or tanned hide of an animal, usually with the hair removed.

Legume: Annual or perennial, herbaceous or shrubby species whose fruit is a pod. Many legumes have the ability to fix atmospheric nitrogen, which means that nitrogen fertilisers are not needed for their cultivation. Their seeds are particularly rich in protein (20 to 40% in dry seeds, depending on the species), fibre and micronutrients. They are used for seed production, fodder or ecosystem services.

Licence: Instrument in which power is conferred on someone for some act or activity.

Liming: Application of lime or calcareous materials (marl, limestone, chalk, tangue, defecation scum) to an agricultural plot as a basic calcium amendment to correct the soil pH and thus improve its physical and chemical characteristics.

Livestock: Domestic or farmed animals raised for food and fibre such as hogs, sheep, cattle, and horses for production of food and fibre.

Lucerne: Perennial forage legume, cultivated all over the world and producing protein rich forage, harvested as hay, haylage or for production of dehydrated pellets.

M

Machinery: A group of parts or machines arranged to perform a useful function.

Maintenance: It is a set of services that include the necessary repairs and adjustments to ensure that any system continues to function or that a production process continues with the highest efficiency and reliability.

Management: Government, control, superintendence, physical or manual handling or guidance; act of managing by direction or regulation, or administration, as management of family, or of household, etc.

Manure: Animal excreta collected from stables and barnyards with or without litter; used to enrich the soil.

Marketing: A related group of business activities whose purpose is to satisfy the demands for goods and services of consumers, businesses and government. The marketing process includes estimating the demand, producing the product, pricing the product to satisfy profit criteria, and promoting and distributing the product.

Meadows: Agricultural land with permanent vegetation used for the production of fodder for harvesting and/or for grazing livestock.

Meat: The edible flesh of animals, especially that of mammals as opposed to that of fish or a nut.

Micro-climate: A microclimate is a small area with a different climate to its surroundings. This could be due to nearby landmarks, such as lakes or hills, affecting wind patterns or sheltering the area from the sun. They can also be produced by artificial structures such as buildings.

Milk: The whitish fluid secreted by the mammary gland for the nourishment of the young; composed of carbohydrates, proteins, fats. mineral salts, vitamins, and antibodies.

Minimising risk: Attempting to reduce the potential for damage resulting from perils.

Monitoring: To check regularly in order to perceive change in some quality or quantity.

Mortality: The number of deaths occurring in a given population for a given period of time.

Mowing: The cutting down of grass, crops or grain with a scythe or a mechanical device.

N

Nematode: A group of unsegmented worms which have been variously recognized as an order, class, and phylum. They may cause damages on crops through damages on roots or tubers. But some nematodes are beneficial and used as biocontrol.

Nesting: The building of nests for egg laying and rearing of offspring.

Nitrogen: The atmosphere is composed at 79% by nitrogen, with a triple link between the two N atoms. It is a very stable gas, used for inerting. There are many forms of reactive nitrogen when a single atom is linked to other atoms (C, H, O,...). Some of these reactive forms are essential in agriculture (ammonia, nitrate) and food (proteins, amino acids). As a consequence, N is essential nutrient in the food supply of plants and the diets of animals. Animals obtain it in nitrogen-containing compounds, particularly amino acids. Although the atmosphere is nearly 80% gaseous nitrogen, very few organisms have the ability to use it in this form, through the symbiosis with some bacteria. Most higher plants normally obtain it from ammonia or nitrates available in the soil, which they can absorb.

No-till: A system of sowing crops without tilling the soil with a plow, disk, chisel, or other tillage implement.

Nutrient: Chemical elements which are involved in the construction of living tissue and which are needed by both plant and animal. The most important in terms of bulk are carbon, hydrogen and oxygen, with other essential ones including nitrogen, potassium, calcium, sulphur and phosphorus.

Nutrient management: Managing the amount, source, placement, form, and timing of the application of nutrients and soil amendments to ensure adequate soil fertility for plant production and to minimize the potential for environmental degradation, particularly water quality impairment.

Nutrition: A process in animals and plants involving the intake of nutrient materials and their subsequent assimilation into the tissues.

O

Organic matter nutrient: Nutritive matter derived from the remains of plants and animals and their waste products in the environment.

Other economic activites: Economic activity carried out by a farmer or a farm that is not primary agricultural production (crop growing, livestock breeding, etc.) but that generates supplemental income. It includes, for example, processing of farm products, direct marketing, services (agritourism, training, environmental services), renewable energy production, or any other activity aimed at diversifying revenue sources, strengthening the farm's autonomy, and creating links with the local territory, all within a framework of economic, social, and environmental sustainability.

Over-grazing: Intensive grazing by animals on an area of land, particularly rangelands and grasslands, such that vegetation is damaged and the soil becomes liable to erosion by wind and rain, sometimes resulting in desertification. Overgrazing implies that the

stocking rate on a given pasture is too high, i.e., economic resources are used inefficiently and the value of society's output is less than it could be.

P

Paddock: A usually enclosed area or field used especially for pasturing or exercising animals.

Parasite: Organism which lives and obtains food at the expense of another organism, the host.

Pasture: Land covered with grass or herbage and grazed by or suitable for grazing by livestock.

Pasture management: The application of practices to keep pasture plants growing actively over as long a period as possible so that they will provide palatable feed of high nutritive value; to encourage the growth of desirable grasses and legumes while crowding out weeds, brush, and inferior grasses.

Patch: A parcel (or plot) of land is an area of land with a particular ownership, land use, or other characteristic. A parcel is frequently used as the basis for a cadastre or land registration system.

Path: A route or track between one place to another.

Permanent grassland: Land used for five years or more to grow grasses or herbaceous forage species, usually characterised by a high species richness in ecological equilibrium under the effect of the environment and agricultural practices, including animal perturbations.

Pest control: A set of practices and strategies implemented within an agroecosystem to manage, limit, or eliminate harmful organisms (pests, pathogens, weeds). According to agroecological approaches, it relies on the conservation or restoration of natural habitats for beneficial allies (predators, parasitoids, pollinators) in order to promote environmentally-friendly and sustainable agriculture. The term therefore denotes an action mode—often integrated, biological, or agroecological—aimed at ensuring crop health and productivity without relying exclusively on chemical inputs.

Pesticide: A pesticide is an active substance or mixture of active substances, either synthetic or natural, intended for killing pests in order to protect crops.

pH: A measure of the hydrogen-ion activity in solution, expressed on a scale 0 (highly acid) to 14 (highly basic); 7.0 pH is a neutral solution, that is the most suitable for agronomic performances.

Plant: The plant kingdom, which contains multicellular eukaryotic photosynthetic organisms and, in some classifications, the algae (unicellular and multicellular). It includes the bryophytes (mosses and liverworts), seedless vascular plants (ferns, club mosses, horsetails) and the seed plants (gymnosperms and angiosperms). The algae are sometimes placed in the Protoctista.

Planting: The establishment of trees by planting seedlings, transplants, or cuttings.

Ploughing: Agricultural technique for working the soil, or more precisely the topsoil of a cultivated field, which consists of opening the soil to a certain depth, turning it over, before sowing or planting.

Pond: Inland bodies of standing freshwater usually smaller than lakes. They can be man-made or natural but there is no universal agreement as to their exact size. Some consider a pond to be a small body of water that is shallow enough for sunlight to reach the bottom.

Precision farming: A set of techniques and practices that take into account intra-plot heterogeneity in order to adjust the amount, timing and location of inputs to improve the economic, agronomic and environmental performance of farms.

Prophylaxis: Administration or application of management or hygienic methods or antimicrobial agents to an individual or a group of plants/crops or animals at risk of acquiring a specific infection or in a specific situation where infectious disease is likely to occur if the antimicrobial agent is not administered or applied.

Protection of natural area: Active management of nature areas in order to ensure that wildlife is protected and the quality of its environment is maintained.

Protein: Organic macromolecule composed of amino acids.

Pruning: The cutting off or removal of dead or living parts or branches of a plant to improve shape or growth.

Q

Quality: Degree to which a set of inherent characteristics fulfils requirements.

R

Rain: Precipitation in the form of liquid water drops with diameters greater than 0.5 millimetres.

Redclover: Perennial fodder legume used as fodder for creating artificial and temporary grasslands. Red clover is also used as a service plant because it improves soil structure (cover crop) and enriches the soil with organic matter (green manure).

Region: A designated area or an administrative division of a city, county or larger geographical territory that is formulated according to some biological, political, economic or demographic criteria.

Regrowth: Vegetative bud and shoot elongation, either after shoot is cut or after shoot has attained sufficient maturity.

Resilience: The ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.

Resource: Any component of the environment that can be utilized by an organism.

Riparian: Frequenting, growing on, or living on the banks of streams or rivers.

Risk: The expected number of lives lost, persons injured, damage to property and disruption of economic activity due to a particular natural phenomenon, and consequently the product of the probability of occurrence and the expected magnitude of damage.

Risk management: The process of evaluating and selecting alternative regulatory and non-regulatory responses to prepare for the probability of an accidental occurrence and its expected magnitude of damage, including the consideration of legal, economic and behavioral factors.

Rodent: A gnawing mammal of an order that includes rats, mice, squirrels, hamsters, porcupines, and their relatives, distinguished by strong constantly growing incisors and no canine teeth.

S

Scheme: A set of coordinated and planned actions, often organized as a timetable or a computerized tool, intended to achieve a specific objective. In an agricultural context, this could be, for example, a harvest schedule programmed according to vegetable tenderness, or an action plan structuring the implementation of an environmental initiative such as the High Environmental Value (HEV) certification.

Seasonal grazing: Seasonal grazing means that grazing occurs only during part of the year on a given site.

Security: State of being protected from harm or other danger. Safety can also refer to the control of recognized hazards in order to achieve an acceptable level of risk.

Seed: Originating from the development of an ovule, what is referred to as "seed" is the simplest type of seed, consisting of three essential parts: the embryo, the reserve tissues, and the integuments.

Self-sufficiency: State in which a person, being, or system needs little or no help from, or interaction with others.

Selling channel: A network of actors, infrastructures, and logistical flows that ensure the transport, marketing, and provision of agricultural or food products to consumers, typically within a defined territory. It brings together production, processing, and distribution organizations and their interrelationships.

Sheep: Domesticated animals of the species *Ovis* aries kept in flocks mainly for their milk, wool or meat.

Short selling: A distribution system in which the distance between producer and consumer is minimized, largely eliminating or strongly limiting intermediaries. It relies on direct sales (farmers' markets, community-supported agriculture boxes, producer shops, on-farm sales, agritourism) or on local networks (buying groups, nearby-area platforms). The short-supply-chain promotes the relocalisation of agriculture, enhances transparency of production methods, strengthens the economic viability of farms, creates added value within the territory, and often incorporates an agro-ecological dimension and social-justice considerations.

Shrubs: Woody perennial plant, generally more than 0.5 meters and less than 5 meters in height at maturity and without a definite crown.

Silage: Feed preserved by an anaerobic fermentation process in which lactic acid and volatile fatty acids (produced by fermentation) lower the pH of the silage.

Size: The magnitude of a quantity, such as length or mass, relative to a unit of measurement.

Slurry: A liquid mixture of animal faeces and urine and straw collected from stables and spread on agricultural land.

Soil compaction: An increase in bulk density (mass per unit volume) and a decrease in soil porosity resulting from applied loads, vibration, or pressure. More compacted soils (or other materials) can support greater loads (load-bearing capacity). Bulk density can be increased by controlling the moisture content, compaction forces and treatment procedures, as well as by manipulating the type of material being compacted.

Soil cover: The observed physical and biological cover of the Earth's land surface including natural features such as vegetation, soils and waterbodies, as well as human-

made features such as buildings and roads. Land cover is distinct from land use, which refers to the activities people undertake on a particular land cover type.

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Soil fertility: The status of a soil with respect to the amount and availability to plants of elements necessary for plant growth.

Soil health: The capacity of a specific kind of soil to function, within natural or managed ecosystem boundaries, to sustain plant and animal productivity, maintain or enhance water and air quality, and support human health and habitation. In short, the capacity of the soil to function.

Soil management: Good management of soils assures that mineral elements do not become deficient or toxic to plants, and that appropriate mineral elements enter the food chain.

Soil organic matter: Any measurable characteristic related to the organic matter compounds of the soil.

Soil test: A set of analyses carried out on a soil sample with the aim of better understanding the physical, chemical and biological characteristics and properties of soils.

Sorghum: The word "sorghum" typically refers to cultivated sorghum (Sorghum bicolor [L.] Moench subsp. bicolor), a member of the grass family Poaceae, tribe Andropogoneae, and subtribe Sorghinae that is grown for its grain (grain sorghum), its sugary sap (sweet sorghum) or as a forage (forage sorghum). A variety of common names are used in different regions to refer to cultivated sorghum, including great millet, guinea corn, broomcorn, kaffir corn, durra, mtama, milo, jowar or kaoliang.

Sowing: A major operation in crop establishment that involves creating a soil profile conducive to crop establishment, planting seeds, and various other operations aimed at promoting the establishment of the crop by modifying the various components of its physical or biological environment.

Species: In sexually reproducing organ-isms, a group of interbreeding individuals not normally able to interbreed with other such groups. A species is given two names in binomial nomenclature (e.g. Homo sapiens), the generic name and specific epithet (italicized in the scientific liter-ature), similar and related species being grouped into genera. Species can be sub-divided into subspecies, geographic races, and varieties.

Spreading: Fertilizer application refers to the application of nutrients for the benefit of plant growth in general. It includes applications for agricultural and other purposes, including recreational and sporting facilities, public and private gardens and lawns.

Squirrel: Member of the family Sciuridae, a family that includes small or medium-sized rodents. The squirrel family includes tree squirrels, ground squirrels (including chipmunks and prairie dogs, among others), and flying squirrels.

Storage: A series of actions undertaken to deposit or hold goods, materials or waste in some physical location, as in a facility, container, tank or dumping site.

Streamside vegetation: Plants growing in areas adjacent to rivers and streams.

Supplementation: Refers to the addition of micronutrients to a food irrespective of whether the nutrients were originally in the food before processing or not.

Supply chain: The network created amongst different companies producing, handling and distributing a specific product. It encompasses the steps it takes to get a good or service from the supplier to the customer.

Sustainable farming: A type of agriculture that applies the principles of sustainable development to the agricultural world: its goal is to enable farms to be autonomous, economically viable, ecologically sound, transferable, socially acceptable and active players in their local area. By adopting these principles, sustainable agriculture aims to enable farmers to make a decent living from their work while reducing their environmental impact and playing an active role in their local area.

T

Temporary grassland: Fallow that is planted with species such as grass or legumes to regenerate the soil more rapidly.

Temporary pasture: Grassland sown and composed of forage grasses, either alone or mixed with forage legumes. Grassland used for grazing or mowing to produce hay and silage. Grassland with a lifespan of 0 to 5 years. Artificial grasslands, sown exclusively with perennial forage legumes, are sometimes counted as temporary grasslands.

Transhumance: The seasonal migration of livestock to suitable grazing grounds.

Treatment: A process in which the act is intended to modify or alter some other material entity.

Tree: Any large woody perennial plant with a distinct trunk giving rise to branches or leaves at some distance from the ground.

U

Urine: Wastes removed from the blood stream via the kidneys and voided as a liquid.

V

Variety: A grouping of plants defined by the reproducible expression of its distinctive characteristics such as growth habit, color, size, disease resistance, or other traits. Essentially, a plant variety is characterized by its uniformity, stability, and distinctiveness from other groupings within the same species.

Vegetation: The plant cover of an area, considered generally, and not taxonomically.

Vegetation coverage: Number of plants growing on a certain area of land.

Veterinary: A person registered or licensed by the relevant veterinary statutory body of a country to practise veterinary medicine/science in that country.

Veterinary services: The combination of governmental and non-governmental individuals and organizations that perform activities to medically treat and care for animals.

W

Water resource: Water in any of its forms, wherever located - atmosphere, surface or ground - which is or can be of value to man.

Waterway: A river, canal, or other navigable channel used as a means of travel or transport.

Weather conditions: Atmospheric conditions at a particular time in a particular location, including temperature, humidity, precipitation, cloudiness, wind, and visibility. Weather conditions do not happen in isolation, they have a ripple effect. The weather in one region will eventually affect the weather hundreds or thousands of kilometers away.

Weed control: Freeing an area of land from weeds in order to limit or avoid their competition with crops. This is achieved by several means, such as herbicides, tillage, burning, mowing, and crop competition.

Wetland: Area habitually saturated with water. It may be partly or wholly covered permanently, occasionally or periodically, by fresh or salt water up to a depth of 6 metres. Wetlands include bogs, fens, wood meadows, marshland and salt marshes, shallow ponds, river estuaries, and intertidal mudflats, but exclude rivers, streams, lakes and oceans.

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Last update
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Wetland conservation: Strategy and processes to preserve an area that is saturated by surface or ground water with vegetation adapted for life under those soil conditions.

Wildlife conservation: A series of measures required to maintain or restore the natural habitats and the populations of species of wild fauna and flora at a favourable status.

Wildlife management: The application of science-based and local knowledge in the stewardship of wild animal populations (including game) and their habitats in a manner that is beneficial to the environment and to society.

Work time: Actual time spent working per day, week, month or year.

Working conditions: Use for the social, physical and psychological environment of human laborers.

Y

Yarn: Long continuous length of interlocked fibres, suitable for use in the production of textiles, sewing, crocheting, knitting, weaving, embroidery, or ropemaking.

Yoghurt: Yogurt, yoghurt, or yoghourt is a food produced by bacterial fermentation of milk.

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This glossary has been developed as part as of the Grazing4AgroEcology (G4AE) project

Last update
April 2026

Index

A.....1
Access to shade: 1
Acidosis: 1
Adaptation: 1
Adapted breeds.....1
Additional feeding 1
Agricultural field area...1
Agricultural field layout 2
Agricultural field use....2
Agroforestry 2
Alfalfa 2
Analysis 2
Animal breed.....2
Animal behaviour and welfare.....2
Animal control.....2
Animal diversity.....3
Animal health.....3
Animal products.....3
Animal release 3
Animal species.....3
Antibiotic 3
Aquatic habitats 3
Arable area.....4
Arable crops.....4
Arable farming.....4
Arable field.....4
Arable field configuration.....4
Arable land size 5
Area 5
Area width 5
Average field size 5
Avian habitat features . 5
B 6
Balenced diet 6
Barn: 6
Biodiversity..... 6
Biodiversity area 6
Biodiversity conservation 6
Biological control..... 6
Bird 6
Bird conservation..... 6
Bird shelters 7
Bloat 7
Blooming vegetation ... 7
Buffer zone 7
Building..... 7
C 7
Calf rearing..... 7
Calf welfare and health 7
Catch crop 8
Cattle 8
Chemical 8
Chemical fertiliser 8
Climate 8
Climate condition 8
Climate stress 9
Clover 9
Competition 9
Complementarity..... 9
Complementary activities..... 9
Concentrate..... 9
Connectivity 9
Consumer..... 9
Cost 9
Control of invasive species..... 10
Creek..... 10
Crop rotation 10
Cultivated field shape 10
D 10
Decision support system..... 10
Diagnosis..... 10
Dicots..... 10
Diet composition..... 11
Digestion 11
Diploid..... 11
Direct seeding..... 11
Dung 11
Dung and urine removal 11
E..... 11
Ecosystem 11
Ecosystem service 11
Effluents 11
Environment 12

This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101059626.

This glossary has been developed as part as of the Grazing4AgroEcology (G4AE) project

Last update
April 2026

Environment protection 12
Equipment 12
Extensive farming 12
F 12
Facilitation 12
Farm 12
Farm management 12
Farm product 13
Fertilisation 13
Fertiliser..... 13
Field 13
Field area 13
Flora 14
Flowering 14
Flowers 14
Forage..... 14
Forage crop 15
Forest 15
Frequency 15
G 15
Genetics 15
Goat 15
Grasses..... 15
Grassland 16
Grassland management 17
Grazing 17
Grazing management. 18
Ground 19
H 19
Habitat connectivity .. 19
Habitat enhancement 19
Habitat preservation . 19
Harvest 19
Heat stress 20
Hedgerow..... 20
Herbicide 21
Horse 22
Housing..... 22
I 22
Income..... 22
Infrastructure 22
Injury..... 22
Insect..... 22
Intervention 22
Invasive 22
Investment 22
L 22
Lameness:..... 22
Land use change..... 23
Landscape elements 23
Lay 23
Lease 23
Leather..... 23
Legume 23
Licence 23
Liming 23
Livestock..... 23
Lucerne..... 23
M 24
Machinery 24
Maintenance 24
Management..... 24
Manure 24
Marketing..... 24
Meadows 24
Meat 24
Micro-climate 24
Milk 24
Minimising risk 24
Monitoring 24
Mortality 24
Mowing..... 24
N 24
Nematode 24
Nesting 25
Nitrogen..... 25
No-till 25
Nutrient 25
Nutrient management 25
Nutrition 25
O 25
Organic matter nutrient 25
Other economic activites..... 25
Over-grazing..... 25
P..... 26
Paddock 26
Parasite 26
Pasture 26
Pasture management 26
Patch 26
Path..... 26

This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101059626.

Permanent grassland . 26
Pest control 26
Pesticide 26
pH 26
Plant 27
Planting..... 27
Ploughing 27
Pond 27
Precision farming..... 27
Prophylaxis 27
Protection of natural area 27
Protein 27
Pruning 27
Q 27
Quality 27
R..... 27
Rain 27
Redclover..... 27
Region 28
Regrowth 28
Resilience 28
Resource 28
Riparian 28
Risk 28
Risk management..... 28
Rodent 28
S..... 28
Scheme 28
Seasonal grazing:..... 28
Security..... 28
Seed 29
Self-sufficiency..... 29
Selling channel 29
Sheep..... 29
Short selling 29
Shrubs 29
Silage 29
Size 29
Slurry 29
Soil compaction 29
Soil cover 29
Soil cover 30
Soil fertility 30
Soil health 30
Soil management..... 30
Soil organic matter.... 30
Soil test 30
Sorghum 30
Sowing 30
Species 30
Spreading..... 31
Squirrel 31
Storage..... 31
Streamside vegetation 31
Supplementation 31
Supply chain..... 31
Sustainable farming .. 31
T..... 31
Temporary grassland: 31
Temporary pasture 31
Transhumance 31
Treatment 31
Tree 31
U 32
Urine 32
V 32
Variety: 32
Vegetation 32
Vegetation coverage .. 32
Veterinary 32
Veterinary services 32
W 32
Water resource 32
Waterway..... 32
Weather conditions ... 32
Weed control 32
Wetland..... 32
Wetland conservation 33
Wildlife conservation. 33
Wildlife management 33
Work time 33
Working conditions ... 33
Y..... 33
Yarn:..... 33
Yoghurt 33

This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101059626.

This glossary has been developed as part as of the Grazing4AgroEcology (G4AE) project

Last update
April 2026