



Glossary for Sustainable Agriculture

Adaptation – the changes in policies, the changes in behavior and the responses and solutions used to deal with the changing climate. It includes building structures more robustly in order to better withstand storms, moving structures out of areas prone to increased flooding, changing when crops are planted to better take advantage of the weather and changing to seed varieties that are more capable of maturing in the climate where they are being planted.

Adaptive multi-paddock grazing - also called rotational grazing

Agroecology – the study of bringing ecology principles into agriculture, including the diversity of species and genetics, recycling nutrients on the farm, and maintaining healthy soils

Aquaponics – a method of producing food that combines raising aquatic animals (such as fish or shrimp) and plants. The waste from the animals is used as fertilizer for the plants.

Biochar – also called charcoal. Produced by heating organic material (manure or plant leaves, stalks, roots, husks, shells, seeds) in a low oxygen environment. The biochar can be put into soil to increase its fertility and to allow it to hold water.

Biotech crops – crops that have been grown from genetically modified seeds (GMO).

Biotic community – a group of organisms that interact with each other, depend on each other and inhabit an area.

Carbon footprint – the quantity of greenhouse gas emissions created by a person, family, business or other entity.

Carbon sequestration – a process where airborne carbon dioxide is removed from the air and stored in plants as leaves, roots, stems, trunks and soils. This is also called terrestrial carbon sequestration or bio-sequestration.

Carbon sink – a long-term storage reservoir for carbon, such as soil, wetlands, prairies, forests.

Climate-smart agriculture – a means of farming that responds to climate change, by adapting and building resilience in the farming practices reducing and removing greenhouse gases from the atmosphere, while providing the farmer income.

Community gardens – when members of the public are allowed to rent small garden plots on a larger lot of ground. The land can be privately owned or owned by a government agency.

Community supported agriculture (CSA) – a means of distributing food grown locally to consumers who purchase a share of the food that is grown. Every week the consumer receives a share of that week's harvest.

Compacted soil – soils where the air pockets between soil particles have been reduced to such an extent that water can no longer infiltrate the soil, air is not held in the soil and plant roots are unable to be established in the soil. Compaction results from driving over the soil and from animal feet walking over the soil.

Compost - organic material, such as leaves, stalks and roots, that has decomposed and is being added to soil as a fertilizer and to rejuvenate soil.



Compost. Photo courtesy USDA NRCS, Jeff Vanuga

Conservation tillage – methods for growing annual crops in the previous year's crop residue (such as stems and roots) which reduce soil erosion and retain water and nutrients on the land; the farmers practicing conservation tillage leave 30 percent of the crop residue on the fields.

Continuous grazing – grazing animals on an entire pasture, rather than rotating the animals through subsections of the pasture

Cover crops – a crop planted with the intent to prevent soil erosion after harvesting the primary crop. Side benefits include improved water quality, reduced need for fertilizers, reduced soil compaction and increased soil fertility. Also known as green manure.

Crop rotation – planting different crops on the land in successive years. Modern industrial agriculture involves rotating between corn and soybeans in successive years. More sustainable farming practices would include several more crops besides corn and soybeans, such as hay, oats and rye.

Degraded soil, Exhausted soil - soil that is no longer able to support crops or other plant life due to loss of nutrients in the soil.

Farmers market – a retail market where farmers sell their produce, meat and eggs directly to the consumers. Some farmers markets sell prepared foods and wines.

Fast food - food that is prepared and served quickly. Typically fast food refers to food packaged for take-out, although some restaurants offer seating for diners. Often the items are precooked or cooked in volume and held until they are sold.

Feed grains – grain crops that are used to feed livestock, such as corn, barley, and wheat

Filter strips – a strip of vegetation in a farm field that slows water movement across the field and also traps nutrients to prevent them from running off the land and into water bodies.

Food desert – communities and urban neighborhoods that do not have a grocery store with fresh, affordable, healthy food. Some of those communities have fast food restaurants and stores selling highly processed foods and sugary and salty snack foods.

Food hub – entities that manage the collection, storage, processing, distribution and marketing of locally produced food. This allows farmers producing locally grown foods to have access to the broader markets, such as institutional purchasers, small processors and restaurants.

Food insecurity – a condition where a person does not have enough food to eat on a regular basis.

Food loss – food is spoiled or discarded during production, processing, storage, and transportation phases

Food security – a condition where a person has enough food to eat.

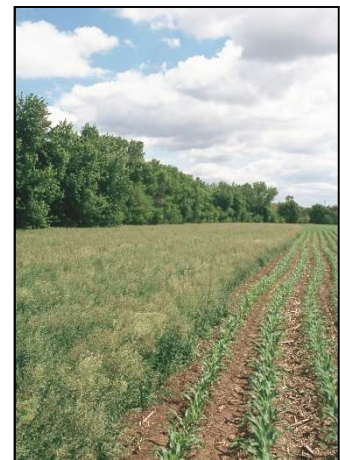
Food waste – food that is discarded once it reaches the retailer or customer, but could have been eaten

Forage crops – vegetative parts of crops that are used to feed livestock, such as grasses, clover, and alfalfa. Forage crops can be dried or turned into silage.

Genetically Modified Organisms (GMO) – seeds, plants or animals whose DNA was modified by insertion of genetic materials from another species. The goal is to create organisms with traits that are unnatural to the species.

Greenhouse gases – a group of gases that hover in the atmosphere and that trap heat near the earth's surface, among them are carbon dioxide, methane, nitrous oxide, hydrofluorcarbons, perfluorcarbons and sulfur hexafluoride.

Heirloom seeds – seeds or cultivars of plants that are no longer grown for large-scale commercial purposes.



A grass filter strip, center, in Jasper County, Iowa. Photo courtesy USDA NRCS, Lynn Betts

Integrated crop-livestock systems - Farms that include livestock on the landscape as well as crops; they are more beneficial in returning carbon to the soil and maintaining healthy soils.

Intercropping – growing two or more different crops on the same piece of land in close proximity, such as planting shade-tolerant plants next to taller leafier plants.

Local foods – foods that are grown, processed and sold within a close distance of the consumer such as the same county or state.

Methane - a component of natural gas. It is also a greenhouse gas. Methane is 20 times more effective in trapping heat in the atmosphere than carbon dioxide. It remains in the atmosphere for nine to fifteen years.

Mitigation – mitigation involves strategies, processes and technologies that reduce greenhouse gases.

Mixed crop livestock systems – Agriculture systems where both crops and livestock are raised on the same farm, they are also called integrated crop livestock systems.

Monoculture – growing the same crop over a large area.

No-till agriculture – keeping crop residues on the land and leaving the earth largely undisturbed during planting.

Organic – farming that does not use pesticides and artificial fertilizers but instead uses organic fertilizers and natural pesticide control. Also avoids using antibiotics and hormones for weight gain in animals.

Organic matter or organic material – manure and particles of once-living plants and animals. When organic matter is found in streams or rivers, it is often seen as what appears to be foam or soap bubbles on the surface of the water.

Permaculture – a method of farming that involves caring for the earth and the earth's natural systems, providing for people to use the resources they need and returning waste to the earth's natural systems.

Pollinator – a bee, moth, butterfly or other insect; bird; bat; or other animal that moves pollen from the male anthers to the female stigma of flowering plants. The wind can also serve as a pollinator. Once pollinated, the plant can produce fruits, vegetables and seeds.

Prairie conservation strips – small strips of native prairie planted in farm fields to control erosion, increase organic material in the soil and remove nutrients – nitrogen and phosphorus – from agricultural storm water.

Precision agriculture – involves applying pesticides and fertilizers to specific areas within a field based on the particular needs of the soils and plants of that area. It is based on sophisticated tools involving satellites and computer programs and the concept that a farm field varies in things like soil type, elevation and water retention.

Regenerative agriculture – using farming techniques that enhance the land, including regenerating topsoil and increasing biodiversity; are resilient to climate change; that provide a livelihood for the farm families and the local community.

Resilience – the ability of nature and mankind to adapt and survive in the face of change.

Rotational grazing, also called adaptive multi-paddock grazing – a practice where grazing land is divided into segments called paddocks, with the grazing animals (cattle, sheep, goats, chickens, turkeys) moved from paddock to paddock every few days. The forage grasses, both introduced and native grasses and forbs, are allowed to rejuvenate while the paddock is resting between grazing periods resulting in less soil erosion. It also results in a higher quality and a greater output of grasses. The resulting grasslands are much healthier.



Tomatoes. Photo courtesy USDA NRCS, Scott Bauer

Saving seeds – how seeds traditionally were handled by farmers and gardeners whereby some of the seeds from the current year were saved for planting in the next year. This cannot be done successfully with hybrid seeds and seeds from GMO crops.

Slow food – the alternative to fast food. Typically slow food involves eating a meal that is prepared traditionally, often using fresh or local foods.

Soil amendment – materials added to the soil to make it more fertile such as compost, biochar, manure and artificial fertilizer.

Soil rejuvenation – returning carbon to the soil, especially when it has been significantly reduced.

Stover or crop residue - the residue left on the fields after the grain is harvested, including stalks, leaves and roots.

Sustainable agriculture – using farming techniques that are economically viable, protect the water resources from pollution, treat livestock animals humanely and maintain soil fertility for future generation to productively farm the land.

Topsoil – the layer of soil where plant roots are found. Consists of organic material, silt, sand and clay. Also called humus.

Transgenic seeds – seeds that have been modified using genetic modification techniques.



Soil profile; the dark top layer is topsoil. Photo courtesy USDA NRCS, Lynn Betts