

Definitions of Terms and Concepts



TERMS USED

A-frame: A tool used to identify the contour of the land. Often used by smallholder farmers from materials found within their local community.

Berm: A small raised barrier of soil placed downslope of a water harvesting structure, or around a mulch basin, to stop water from flowing downhill. The berm allows water to sink into the ditch so that it can be stored in the soil. Berms are planted and mulched to prevent them from eroding.

Biointensive: Refers to 'Biointensive Agriculture': An organic agriculture system that focuses on sustainably maximizing output with minimal land, while also increasing biodiversity and maintaining soil fertility.

Brown compost material: Brown material used for composting is high in carbon and low in nitrogen. It is generally dry and brittle. It includes maize cobs, straw, dry leaves, crop residues and other organic material that has dried out.

Calibrate: A process to confirm an instrument is measuring accurately. In this case, to ensure the A-frame accurately captures the contour of a landscape.

Contour: The contour of the land refers to the points within the landscape that are all at an equal elevation. An A-frame can be used to mark these points and join them into a line, which can be used to dig a water harvesting structure that is "on contour". By being on contour, the water is encouraged to infiltrate into the soils rather than running downslope.

Design: A permagarden design is a context specific plan for improving garden productivity on a site by creating an environment that meets the needs of the plants in the garden and the goals of the farmer. A permagarden design works with the existing landscape, structures and external influences present on the site and optimizes the use of locally available resources.

Double digging: A form of deep soil preparation where the topsoil is first removed and the subsoil loosened and heavily amended in a step-by-step manner. Double dug beds are usually loosened and prepared to a depth of 40 - 60 cm into the soil.

Dry mulch: Dried organic material, such as leaves or grasses, that can be used to cover bare soil. Mulch can regulate soil temperatures, protect soil from erosion, suppress weed growth, and add organic material to the soil.

Green compost material: Green material is moist, flexible, and high in nitrogen. Green materials can include vegetable scraps, fresh crop residues, manure, leaves and freshly pulled weeds that have not gone to seed.

Green mulch: Cover crops, such as desmodium or mucuna, that are planted to enrich the soil. Cover crops protect bare soil and are incorporated into the soil when green to build soil organic matter.

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Half-moon berm: A half-moon berm is a curved berm that is placed on the downslope side of a tree, or other plant, to trap water and nutrients as they move downslope. Also called a smile berm or demi-lune in French.

Overflow: Excess water exiting a water harvesting structure that has filled to capacity. Overflow water is directed by a spillway to a safe and productive location, such as a banana plantation, additional garden, or another water harvesting structure.

Overstory: The top layer of foliage. In a forest, the overstory is the canopy created by the tallest trees.

Peg: To mark the points of the land that form a contour line with an object, such as a stick or flag.

Slow, spread and sink: A principle used in the Permagarden Approach to prevent erosion and bank water in the soil for future use. Water is slowed down through the use of water harvesting structures and allowed to spread out evenly over an area so it can sink deep into the soil.

Soil amendments: Any materials added to soil to improve its fertility, water holding capacity, or structure. For example, compost, organic material, fertilizer plants, charcoal dust, or green mulch. Most effective when chopped or shredded to speed up decomposition.

Soil compaction: Compaction happens when soil particles are pressed together, reducing pore space that holds air and water within the soil. This happens through tillage or when wet or moist soil is driven on or stepped on, either by animals or humans. Farmers using permagardens should try to avoid compaction as much as possible as compaction reduces the air and water necessary for biological life in soils.

Soil macronutrients: Elements found in relatively large amounts in soil, including nitrogen, phosphorus, potassium, calcium, magnesium and sulfur. Plants need relatively large amounts of macronutrients to grow well. Farmers can increase the amount of macronutrients in soils by adding organic material.

Soil micronutrients: Elements found in relatively small amounts in soil, including iron, manganese, boron, copper and zinc. Plants require small, but essential, amounts of micronutrients to grow well and avoid yield losses due to micronutrient deficiencies. Farmers can increase the amount of micronutrients in soils by adding organic material.

Soil organic matter: Plant and animal residues, soil organisms, and other substances found within the soil that help support healthy and productive plants.

Soil texture: The proportion of sand, silt and clay sized particles within the soil.

Spillway: The channel through which the overflow water in a water harvesting structure travels. Spillways lead overflow water to a safe and productive location, such as a banana plantation, additional garden, or another water harvesting structure.

Subsoil: The layer of soil under the topsoil.

Swale: A ditch dug on contour, with a berm on the downslope side created with the soil from the ditch. Swales are used to capture rainwater and should be placed where they can slow down water that is damaging the landscape as it runs downhill. The water that is collected in a swale can be used for a productive purpose, such as in a permagarden.

Topsoil: The uppermost layer of soil. This layer has the highest concentration of organic matter and biological activity.

Wastewater: Water that is normally thrown out or discarded by a person or household, such as water used for washing clothes, bathing, ablution, or cooking. Also called "greywater."

Waterline: The waterline is the maximum height within the berm that water will reach before it overflows through its designated spillway. The waterline is found by marking the contour that is at the height of the spillway on the inside of the berm. Measuring the waterline ensures that the water will flow through the spillway as intended rather than through a depression in the berm or an uncapped end.