

Sustainable agriculture for the future

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Artificial

Intelligence

AI helps sustainability initiatives

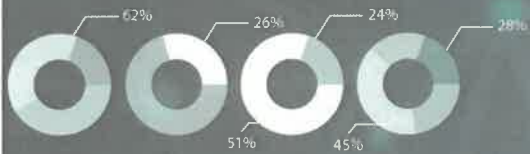
AI early warning system

AI Aerial Application of Pesticides

AI

Easy Water Harvesting

Efficient irrigation



Capitalize on Agritourism Opportunities

#SustainabilitySynergised

PEOPLE | PLANET | PROFIT

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BKB

The Trusted Home of Agriculture

Easy Water Harvesting - with additional benefits

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We know from experience that normally Southern Africa is a region where water is scarce for most part of the year. Most of the rainfall occurs during 4-5 months of the year with frequent dry spells in between, while the remainder of the year is hot and dry. By following a few simple tips, any person with access to farming or gardening land can apply this water harvesting technique.

Similar principals are to some extent applied in Conservation Agriculture and No-till farming. It could be effortless and cheap and has added benefits, but our mindset needs some adjustment.

The different methods of rainwater harvesting each have its respective area of application and are mostly complementary to one another. That said, swales, basins or terraces are sound water harvesting solutions, but excavations are expensive and involves good planning, surveying, and hard work, as is sourcing material for, and the construction of rock walls on contour. Tanks, subsurface reservoirs, and gutters are also expensive. Therefore, if you want to make an impact by conserving water, but the solutions mentioned above are not attainable, do not despair because there is another method of water harvesting. It is easy to implement, no or low cost, enhances soil fertility and even has benefits if the rain stays away!

The finest examples of it can be seen in indig-



A typical forest floor in a South African indigenous forest

enous forests – the layer of leaves and other dead plant material on the forest floor. The key is to observe what happens in nature and then apply the principals to your land.

Perineal trees and shrubs shed old leaves and stems annually, while annual plants die at the end of the season. This plant, leaf and stem litter gather on the soil over time and forms a protective layer on the soil surface. It protects the soil from erosion, excessive loss of moisture through evaporation and extreme temperatures, while it improves the water holding ability of the soil - and makes it easier to dig.

This protective layer traps water from rain or irrigation, thereby delaying run-off of the water, thus facilitating infiltration of more water into the soil – compared to infiltration on bare soil surfaces. This layer will do this every time it rains enough for the water to penetrate the layer – allowing water to infiltrate into the soil but limiting evaporation from the soil during dry periods.

By not removing the leaf and other shed plant litter, you can imitate the natural process on your land and reap the benefits. If you need to clear an area of the leaves and plant litter,

consider moving it to areas where it can be beneficial as a sheet mulch.

An additional benefit of a layer of leaf and plant litter on the soil surface, is that it provides favourable conditions for soil life, which enhances and sustains soil fertility. These organisms need moisture and a moderate temperature around 28°C to thrive. These conditions are provided by the layer of mulch.

Various larger soil organisms as well as micro-organisms break the litter down into smaller particles, earthworms tunnel into the soil - thereby aerating the soil, and simultaneously moving the broken-down organic material into the soil. Thereby carbon is being added to the soil, thus improving soil fertility, and boosting the ability of the soil to retain water.

The interaction between the microorganisms in the soil and plant roots is also very important for sustainable and healthy plant growth.

The result is a healthier and more fertile and drought resistant landscape.

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A young Celery plant surrounded by a layer of leaf mulch.