

Soil and Water Farming is Carbon Farming

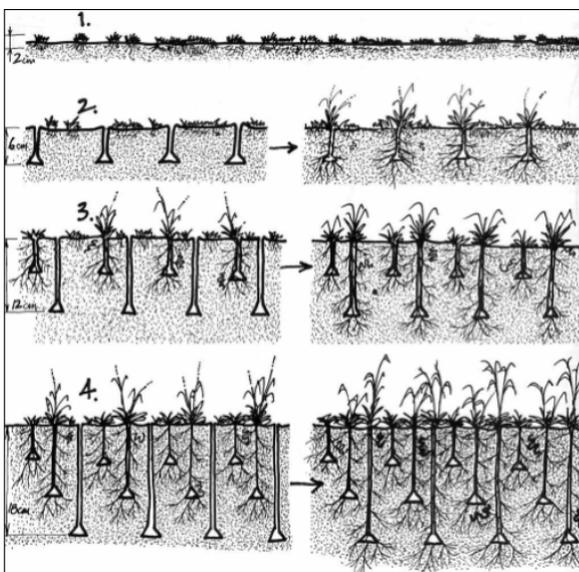
Water Harvesting, Keyline Farming and Regenerative Agriculture

Though the problems of the world are increasingly complex, the solutions remain embarrassingly simple.

— Bill Mollison

A 1.6% increase in organic matter in topsoil on 12% of the earth's surface would reduce atmospheric CO² levels by 100ppm (ie to pre 20th century levels) and solve the global warming crisis.

— P.A. Yeomans



Consider the above, along with the fact that *most of Australia's farm land is currently less than 2% organic matter*, whilst a good organically, cheaply and holistically farmed topsoil is approximately 8% organic matter. The solutions are embarrassingly simple.

As well as capturing all the 'greenhouse gas', more importantly to farmers, all the organic matter (humus, grass roots, soil food web) holds very high amounts of water and nutrients in that top soil zone.

While undertaking this needed and noble regenerative work, the farmer is creating a much healthier, diverse, resilient pasture system, and ultimately a higher yield.

Achieving Deeper Top Soil



The deep and narrow cut of the fixed-tine Yeomans plough aerates the soil and allows water to penetrate *without turning over the soil* and accelerating oxidation. This basic aeration is vastly improved with the use of in line seeding systems and compost tea enrichment in the plough lines.

Progressively deeper parallel rips, several months apart, allow air, nutrients, soil biology and plant roots to go increasingly deeper – increasing the depth of topsoil each time.

A similar method was followed by highly regarded farmer Manasobu Fukuoka without machinery – achieved with deep, wide-rooted plants like Daikon Radish, Comfrey, Lupins, etc. Yeomans is yet another permaculture technique allowing accelerated soil development modelled on nature's systems.

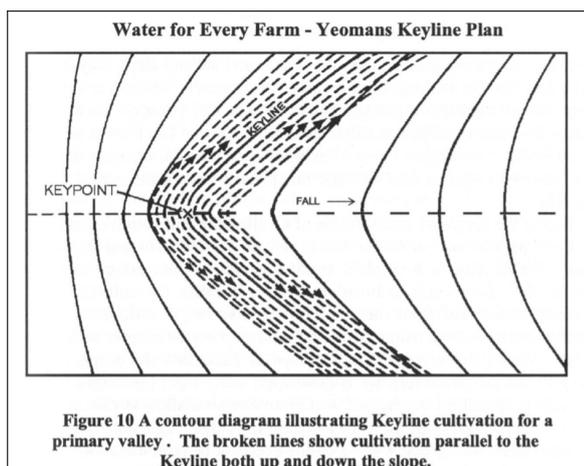


With RegenAg's world-renowned permaculture designer Darren Doherty's use of Keyline ploughing, compost tea and then seeding/planting, farms have gone from no topsoil to 300mm (or from 2% to 8% organic matter) in 1 year.

Our challenge is to apply these techniques in our unique and varied soils, with reducing and irregular rainfall, to achieve similar results.

The keyline design system requires a detailed understanding of your property. When observing and understanding any area, prior to any design and consultation, it is critical to look at the climate, landscape and any other factors that you cannot change on the large scale of the site. These are evaluated and prioritised via a 'scale of permanence'. Soil is critically important but, as we have seen above, not permanent.

Water Harvesting



An additional key concept of Yeomans keyline farming techniques is that passive water harvesting is carried out in many ways on contour. That is swales, tree belts, dams and all aspects of the water harvesting system are designed on contour and, importantly, are caught and stored as high in the land (hills) as possible. A keypoint in the contours is identified and guides all works.

Keyline techniques, regenerative agriculture and natural biological farming are key methods to improve and, in many areas, resurrect WA farming techniques from a continually degrading and drying landscape.

The concepts are quite simple, even logical, but hard to initially grasp. So get a copy of P.A. Yeoman's *Water for Every Farm* and watch out for keyline farming, biological farming and regenerative agriculture courses available in WA.