
Can 'CA and Regenerative Agriculture'
benefit river catchments in Devon &
Cornwall'?

Anthony Pope

PRESENT SITUATION

CLIMATE CHANGE EFFECTS

- THE SOIL (The farmer's most important and vulnerable asset)
 - i. Variety of soil types
 - ii. Soils degraded – over 40% of SW soils are degraded
 - iii. Soil condition – generally poor and deteriorating
 - iv. Run-off and soil loss – 17% of soils nationally show signs of erosion, moving **2.2 million tonnes** of topsoil annually
 - v. SOM levels very low – about 3%. Scope to 5-6%

- MANAGEMENT
 - i. Land use - fields need careful selection for suitability
 - ii. Management of slopes – plough on the contour and certainly not up and down the hill
 - iii. Soil bearing strength / soil structure – lighter and smaller HP tractors and machinery

PRESENT SITUATION

■ MACHINERY

- i. Timeliness
- ii. Compaction
- iii. Size of tractors and machinery

■ ECONOMICS

Low world market producer prices
Increasing costs of production

- i. Yields – to improve and make sustainable
- ii. Costs of production – to significantly reduce
- iii. Profit margins – should not rely on subsidies

Overview of Conservation Agriculture (CA) - Crops

3 Key Principles of CA

1. No or minimal soil disturbance or movement
2. Enhance and maintain organic matter cover on soil surface (crop residues) - mulch
3. Diversified cropping system (rotations, legumes, cover crops, and relay cropping)

What's happening in the UK?

- Very slow adoption of CA by UK farmers
- Some positive examples of CA implementation, mainly in the East
- Continued provision of outdated subsidies. Inept Govt policy decisions. BREXIT uncertainties
- Lack of coordination to develop the CA system in UK

How to take CA forward

- Dispel farmer perception of risk
- Develop an integrated approach
- Arrangement of farm visits and field days
- Reduced carbon footprint, increased environmental benefits leading to a truly sustainable system



SOIL – The Farmers' Platform



No Till / CA

Timeliness

More soil biota and earthworms

Break down crop residue aerobically

Improved soil structure, water retention, infiltration and drainage by increasing SOM

Less pans and crusts

Stable soil moisture and temp

Reduced wind and water erosion

Improved and stable soil fertility

Weed and pest control with fewer targeted chemicals

Improved availability of plant nutrients and less fertiliser use.

Benefits of CA / No Till

The main reasons to adopt CA are:

- ✓ Improved farm economic performance
- ✓ Improved soil condition
- ✓ A possible 40% reduction in variable costs
- ✓ To reduce energy consumption – fuel cost
- ✓ reduction of fuel usage - by > 50%
- ✓ To reduce labour costs – by 30-40%
- ✓ Reduced machinery investment, fixed & running costs
- ✓ Increasing fertility and SOM levels. Minimise loss of organic matter
- ✓ Small reduction in fertiliser costs – particularly P and K over time
- ✓ To conserve moisture
- ✓ To retain plant cover to minimize erosion



Problems of CA/No Till

- Early compaction issues
- Slugs and snails.
- Residue management in wet conditions.
- Grass weeds and weeds not controlled by glyphosate.
- Emergence issues and variation in drilling depth.
- Nitrogen “lock-up”.
- Need for improved equipment.
- Adapting “dry land” machines to wetter conditions.
- “Hair pinning” of straw residues when drilling.
- Adapting agronomic practices and the retraining of agronomists/staff.
- Concerns about “untidy looking fields”.

Regenerative Agriculture in Devon and Cornwall

Regenerative agriculture is a system of farming principles and practices that increases biodiversity, enriches soils, improves watersheds and enhances ecosystem services. It includes CA.

There are very specific conditions to farming in our catchments :

- ✓ Climatic conditions – witness the incredibly wet winter this year
- ✓ Mixed farming enterprises – with livestock an important part
- ✓ Hilly and undulating landscape

Changes are vital to ensure farming's sustainability:

- ✓ Farming needs healthy ecosystems
- ✓ Alter mindset from stock to land managers
- ✓ Improve landscape and increase biodiversity
- ✓ Increase SOM levels

Livestock Enterprises

CONSIDER Holistic/Mob/Rotational/Ecological grazing systems

❖ Totally different approach

- a. Mature pastures when grazed
- b. Graze for short periods
- c. Move herd frequently – fresh diet
- d. Substantial fencing and divided fields
- e. Long return and recovery period
- f. Extended grazing season
- g. Livestock tread down pasture and dung evenly
- h. Increased plant size and bigger root system to raise SOM levels
- i. Useful digestible plants regenerate
- j. Pulling down excess carbon in atmosphere to sequester in soil
- k. Decisions towards improving the environment

FINAL THOUGHTS

❖ Key People

Allan Savory – the guru who started it all

Jake Freestone, Tony Reynolds – UK farmers + many others

Clive Bright, Organic beef farmer in South Sligo, Ireland (Farming for Nature Ambassador 2019)

Gabe Brown (US) – “Dirt to soil” book and farmer

Charles Massey (Aus) – “The Reed Warbler” book and farmer

David Montgomery (US) – “Dirt – The erosion of civilizations” and “Growing a revolution” books

I thoroughly recommend a visit to GROUNDSWELL to find out the latest about CA & Regenerative Farming.





Thank you for listening

anthonymspope@gmail.com

