

# INCREASING CARBON CAPTURE THROUGH CROPPING



## Introduction

The Centre for High Carbon Capture (CHCx3) is a four-year 22 partner project which commenced in 2023. It is investigating how arable and forage cropping systems can be diversified to target Net Zero, build farm resilience and enhance the value chain.

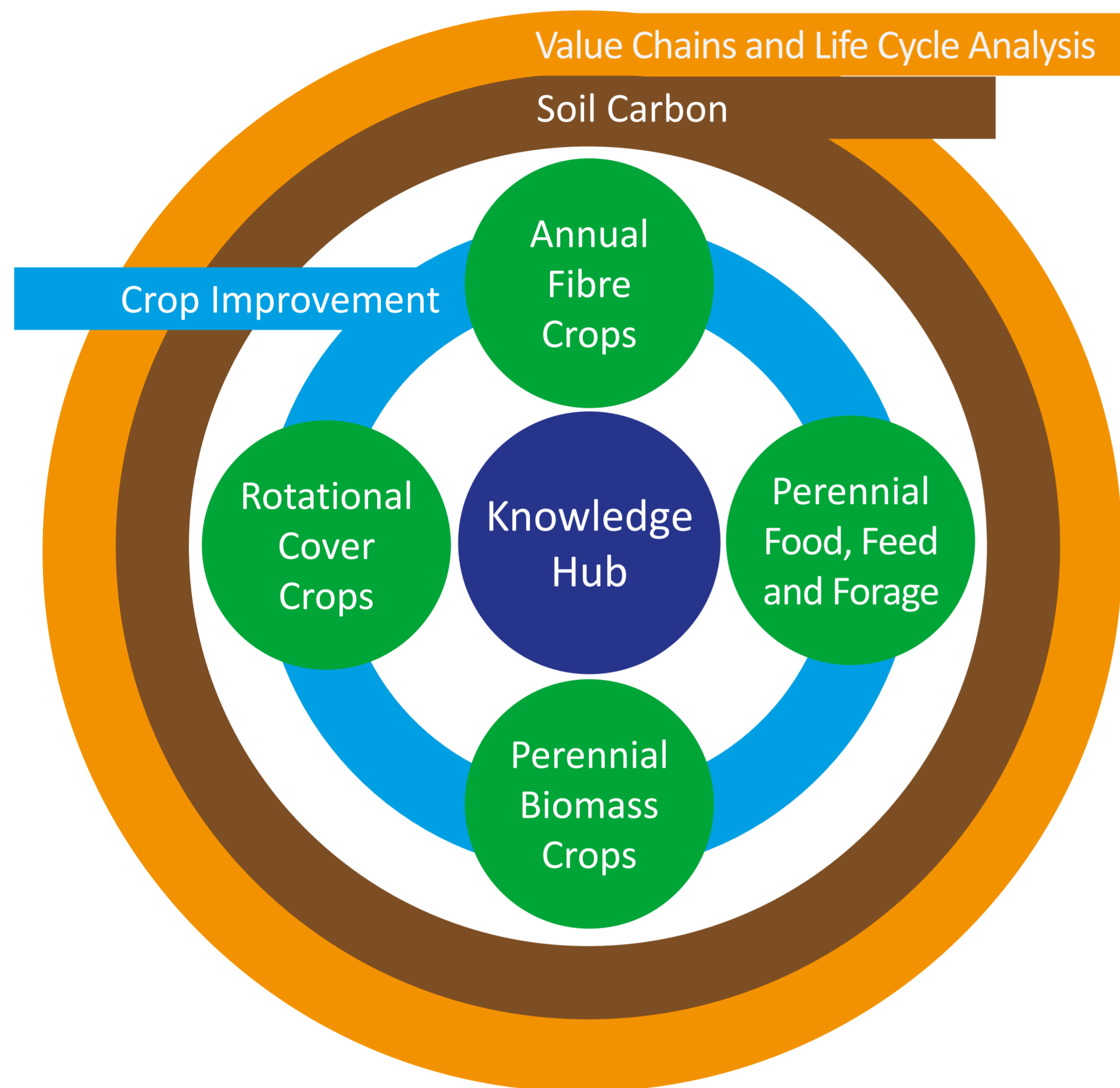


Figure 1. Project structure and outputs.

## Cropping Options

The project will focus on four cropping options:

- Cover crops
- Annual fibre crops (industrial hemp, flax)
- Perennial food, forage and feed cropping (including herbal leys)
- Perennial biomass crops (miscanthus, willow/poplar)

## Next Steps

The steps in the project are to...

- Understand the needs of growers and farmers
- Exchange and knowledge at events using primary data
- Help build the value chains surrounding the four cropping options

## Get Involved

- To find out more about the project and upcoming events Sign-up to our e-newsletter at: [carboncapturecropping.com](http://carboncapturecropping.com)
- To participate in the research, email us at: [chcx3@niab.com](mailto:chcx3@niab.com)
- For other questions contact Lydia Smith at [Lydia.smith@niab.com](mailto:Lydia.smith@niab.com) or Jasmine Toole at [Jasmine.toole@niab.com](mailto:Jasmine.toole@niab.com)

## Soil Sampling Methodology

Soil sampling is being carried out to assess the physical properties, available nutrients, soil carbon, and soil microbiology in the CHCx3 project.

In-field assessments for 0-30cm include:

- VESS score
- Worm count
- Bulk density



Figure 2. VESS score assessment.

A gouge auger will be used to collect samples at 0-30cm, 30-60cm and 60-90cm. These samples will be analysed for:

- Particle size analysis for soil texture
- Soil organic carbon
- Soil carbon through calculation from above (LOI)
- pH
- N, P, K Mg, Ca, S assessments
- Total mineralisable N
- CO<sub>2</sub> respiration burst for MO assessment
- C:N ration

## Root Biomass

As a part of the CHCx3 project, to investigate the carbon capture potential of fibre crops flax and hemp are being grown so the above and below ground biomass can be assessed. There are 6 trial sites range from York to Kent.

Hemp trial varieties:

- Fedora 17 (dual purpose; 5 sites)
- Fibror 79 (fibre; 1 site)
- Felina 32 (dual purpose; 4 sites)
- Futura 75 (dual purpose; 6 sites)
- Futura 83 (dual purpose; 1 site)
- Finola (grain; 6 sites)



Flax trial varieties:

- Avian (3 sites)
- Delta (3 sites)
- Tango (3 sites)
- WPB Celeste (3 sites)
- WPB Eloise (3 sites)
- WPB Felice (3 sites)



The roots are being washed, measured for length and width and then oven dried before weighing.

Figure 3. Top image Hemp roots in field. Bottom picture, roots being measured. Variety: Finola.

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