Intro to Environment & Agriculture

FS

- Primarily rural
- Abundant NR
- Important agricultural sector

Issues:

- Poverty
- Development
- Food security (local/national)
- Sustainability of NRM & agricultural land-use

Social dynamics in conservation agriculture in the eastern Free State and Lesotho

There are two main questions that require answering:

1. What exactly is CA in a mixed farming enterprise?
2. In the light of our understanding of CA it is important to determine the causal factors promoting the adoption of these agricultural methods by farmers.

Social dynamics in conservation agriculture in the eastern Free State and Lesotho

This thesis has the following goals

- Provide a clear description of what CA is how CA compares with conventional farming (Is CA more sustainable than CV)?
- Indicate how many farmers in the research area have adopted CA
- Obtain a set of drivers explaining adoption/non-adoption of CA to analyze the causal mechanisms.
- Provide an analysis of converted farmers' struggles, challenges and successes

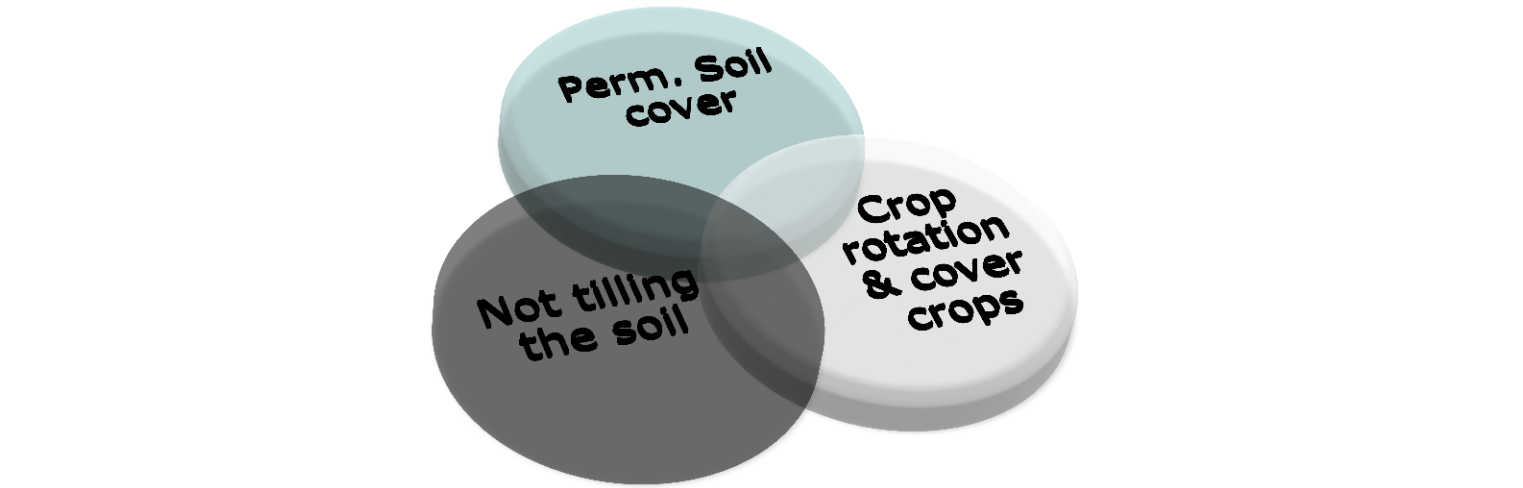
Conservation Agriculture

Def:

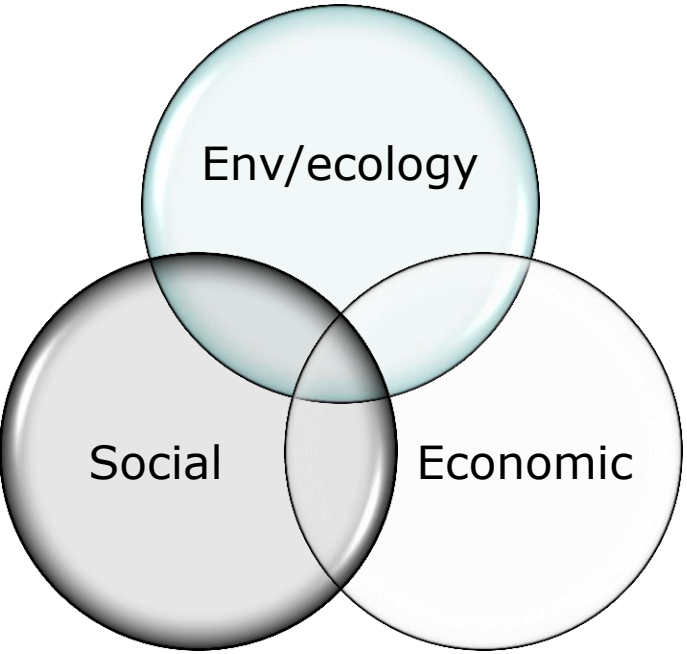
CA is an approach to farming, classified under 'sustainable agriculture', which conserves water and soil and are environmentally non-degrading, technically appropriate, economically viable and socially acceptable (Du Toit, 2007).

CA is based on three principles, namely: minimum soil disturbance, permanent soil cover and practicing sound crop rotations.

CV MT/RT NT CA



Sustainable development



Sector	Indicator	Specific
Ecological	Climate change	Carbon sequestration rates
	Eutrophication	Excess nutrient loss
	Acidification	Least leaching, N-balance
	Soil Quality	Best WI, >SOC
Economic	Fixed cost (LT profitability)	Total farm GM
	Environmental costs	Fuel, fertilizer and chemicals
Social	Acceptance	Adoption rate
		Knowledge, perceptions, fears & aspirations; chal-lenges/ strategies

	Paper 1	Paper 2	Paper 3	Paper 4	Paper 5
Title	CV & land degradation	Farmer perceptions re mixed farming in CA	The role of cover crops – comparison between CA & CV – a soil quality review	A comparison between CA & CV partial budgeting and optimization model approach	Drivers of adoption of CA
Objectives/ goals	1. Description CA and = CA > sustainable than CV 2. land degr. levels 3. Reflect policy regarding CA	4. clear description of CA by farmers/ land-users 5. Indicate adoption CA rate	6. Determine impact of CA on SQ?	7. Assess the economic benefits of CA	8. set of drivers of CA & analyze the causal mechanisms. 9. analysis of conversion challenges and successes.
Main Q	*current state of land degr. in agriculture? *How sustainable is CV?	*What is CA? *How can the three CA principle be applied simultaneously	*Impact of CA on SQ? *Is CA more sustainable than CV?	*Is CA is profitable and financially more sustainable than conventional farming.	*Why farmers adopt CA? *How did they learn about it? *farmer exp.? *dissem.info?
Methodology	*Literature review	*CA quality assessment *focus groups	*trials *SOC, WI, and soil cover Ass	Interviews & total gross margins	*semi.Str .Int. *case study Focus groups