



Sustainable Land Management & Climate Change Resilience: Conservation Agriculture Experiences from Africa

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Predict, Plan, Prepare: Stop Drought Becoming Famine
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African Conservation Agriculture Network (ACT) – **The Organisation**



- 'Not for profit', voluntary membership NGO
- Built with support from GTZ, FAO, IFAD, EU, NORAD, Gvts, others
- Common vision developed in Harare in 1998
- A secretariat at the Nairobi hqts, sub-regional offices (Tanzania, Zimbabwe, Burkina Faso). CoEs.
- Board of 11 Directors, Country Focal Persons/Institutions



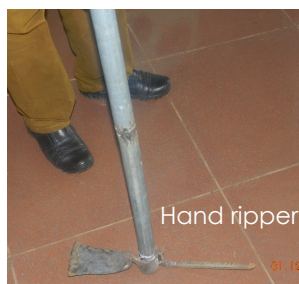
Smallholder (Hand Tools, Animal Traction) Conservation Agriculture (CA) Works

- Implemented several CA projects across Africa over the past 15 years (www.act-Africa.org)
- Based on the 3 CA principles
 1. Avoiding or minimising mechanical soil disturbance,
 2. Enhancing and maintaining a permanent mulch cover with organic matter on the soil surface, and
 3. Diversification of species
- Targeting smallholders using hand tools and animal traction equipment
 - Hand rippers
 - Hand weed scrapers
 - Job planters

Animal drawn rippers
Animal drawn mulch seeders



Smallholder CA Hand Tools and Animal Traction Implements



CA demonstrations and training of Farmers in groups, and on-farm validation trials

- ABACO was in 6 countries, directly reached 8,000 farmers
- 250 farmers in Laikipia County Kenya, under 10 FFS
- Each FFS with 4 no-till/CA treatments compared to farmers' practice.
 - Hand hoe or ox ploughed Farmers' plot
 - No-till with no soil cover
 - No till + dolichos lablab cover crop
 - No till + pigeon pea cover crop
 - No till + lablab and pigeon pea cover crop
- Same seeds, fertilizer and time of planting
- Hand weed scrapping or herbicide application



The Soil Cover Crops



CA maize intercropped with pigeon peas



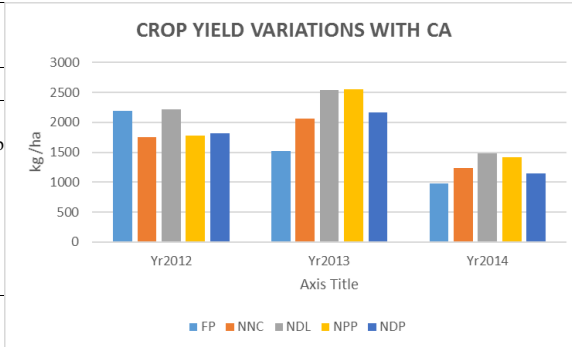
CA maize intercropped with lablab



GRAIN YIELDS

Grain yield kg ha⁻¹

Treatment	Yr2012	Yr2013	Yr2014
FP	2189.4 ^a	1516.8 ^b	979.4 ^c
NNC	1758.3 ^a	2059.5 ^{ab}	1239.0 ^{ab}
NDL	2220.5 ^a	2538.8 ^a	1475.3 ^a
NPP	1781.9 ^a	2549.5 ^a	1413.7 ^a
NDP	1814.0 ^a	2164.7 ^{ab}	1152.1 ^b
<i>p</i>	0.409	0.02	0.0017

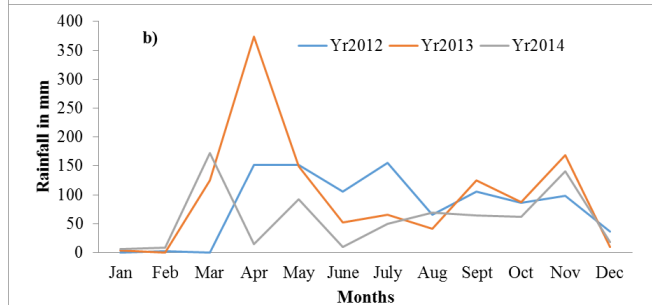
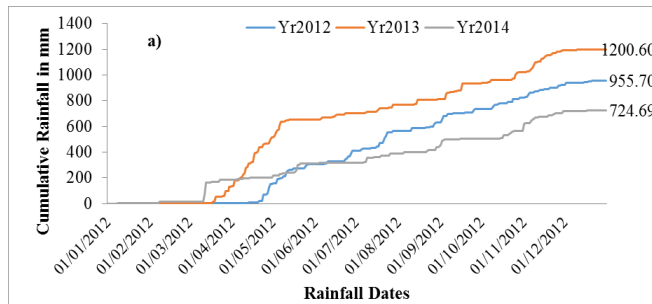


Net Benefit (ha⁻¹) in KSh

Treatment	Yr2012	Yr2013	Yr2014
FP	43,165 ^a	26,569 ^b	-4,215 ^b
NNC	8,305 ^b	27,236 ^b	-21,751 ^c
NDL	46,583 ^a	67,301 ^a	13,145 ^a
NPP	32,245 ^a	67,431 ^a	11,304 ^a
NDP	41,185 ^a	61,165 ^a	9,734 ^a
<i>p</i>	0.009	0.0007	<0.0001



RAINFALL



Facing Climate Change: promoting Conservation Agriculture to enhance Food Security

1. Maize yield not significantly influenced by CA treatments in Year 1.
 2. More than 68% yield increases (1.5 to 2.5 tons per ha), in marginal areas, without irrigation from second season onwards
 3. Yields in Farmers' tillage plots decreasing with time. This is NOT "natural"
 4. Yields in Farmers' tilled plots endured more severe yield reductions with drought (-55% vs -21% to -36%) than the CA plot.
 5. Net benefits always higher for the CA plots.
 6. Legumes liked by women and provided additional food, nutrition, soil fertility improvement and income.
 7. CA is being used to enhance Land Aggradation and Restores Landscapes.
- See Thomas Loronyo (<https://www.youtube.com/watch?v=l0orM79a6oo>)



CA Enhances Land Aggradation and Restores Landscapes

FROM THIS

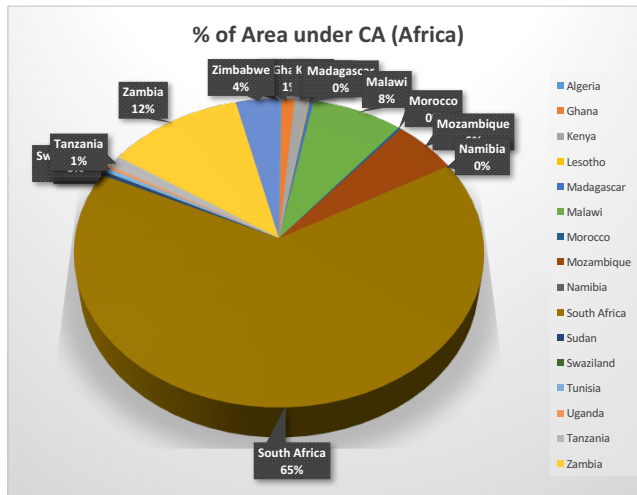


TO THIS



See Thomas Loronyo, Arusha Tanzania.

Africa - Regional CA Trends



- ✓ CA now adopted in more than 20 countries in Africa as a core production component of climate-smart agriculture.
- ✓ Cropland under CA systems in Africa is about 2.68 Mha,
- ✓ Area under CA has increased by 447% since 2008/09.



Challenges and Emerging Solutions

- Higher level Leadership on CA/CSA
- In spite of the Africa Unions' Malabo Declaration with the vision of having 25M rural households practicing CSA by 2015, CA/CSA remains largely on project mode and not mainstreamed in Government programmes. A funded implementation plan for the Malabo Declaration is overdue.
- Support is needed now to unlock private sector investments into smallholder agriculture. Mechanised Entrepreneurial CA Service Provision business models hold the promise to pave the way to create employment for the youths while sending the hoe to the museum by 2025.





THANK YOU FOR LISTENING

www.act-africa.org

