

# CONSERVATION AGRICULTURE NEWSLETTER



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## The Challenges of Adopting Conservation Agriculture

*Lidet Sitotaw, Agriculture & Livelihoods Technical Advisor for Ethiopia*

Much has been written about the benefits of conservation agriculture and other sustainable agricultural practices. These methods significantly contribute to soil health and erosion control, water conservation, biodiversity enhancement, carbon footprint reduction, sustainable intensification, and overall environmental health. The evidence supporting these benefits is widespread and well-documented globally. For example, in Ethiopia, in 2023, CA + practicing farmers enjoyed from 38 % up to 50 % yield increase over the conventional farming practice on four different crops indicated in the following table.

Crop type	Demo plot size in hectares	Average land size per farmer in m2	No of Farmers established demo plot	Total harvest in Kg from		Yield change in %
				conventional plot	CA+ plot	
Taro	14.45	269.59	536	150,392	284,671	47%
Maize	12.237	360.97	339	56,897	92,305	38%
Ginger	6.479	544.45	119	58,305	115,930	50%
Haricot Bean	12.02	910.61	132	15,478	25,855	40%

*Scaling Conservation Agriculture Based Sustainable Intensification (SCASI) Project in Boloso Bombe and Boloso Sore Woredas, annual report (January 20, 2023)*



### Canadian Foodgrains Bank Agriculture and Livelihoods Technical Advisors

John Mbae  
Nester Mashingaidze  
Lidet Sitotaw  
Jean Twilingiyumukiza  
Lilian Zheke

john.mbae@tearfund.org | jkirima@foodgrainsbank.ca  
nester.mashingaidze@tearfund.org | nmashingaidze@foodgrainsbank.ca  
lidet.sitotaw@tearfund.org | lsitotaw@foodgrainbank.ca  
jean.twiringiyumukiza@tearfund.org | jtwilingiye@foodgrainsbank.ca  
lilian.zheke@tearfund.org | lzheke@foodgrainsbank.ca



A taro field on the left of the yellow line non-CA and CA on the right.

However, the adoption and expansion of conservation agriculture and sustainable farming practices remain slow in much of sub-Saharan Africa. Some scholars argue that even current adoptions are largely project-induced. The lack of necessary inputs are frequently cited as a major challenge. Notably, the shortage of cover material restricts expansion once farmers test and evaluate the technology (Fig 2A-E). Beyond these external factors, there are internal challenges, such as mindset and cultural barriers, which often prevent farmers from even attempting conservation agriculture or other sustainable practices. These challenges are context-specific, reflecting the diverse conditions in which agriculture is practiced.

Agriculture is more than an economic sector; it is a cultural cornerstone, especially in developing countries. It plays crucial socio-cultural, economic, and political roles as the primary source of livelihood and employment for the majority. Deep-rooted cultural practices can hinder the adoption of conservation agriculture. For example, in Ethiopia's highland areas, repeated plowing and creating finely tilled soil before rainfall is seen as a sign of commitment and industriousness. Farmers who do not follow this tradition may be viewed as neglectful or as facing economic or health issues. Challenging such entrenched practices requires strategies that go beyond formal agricultural extension systems.

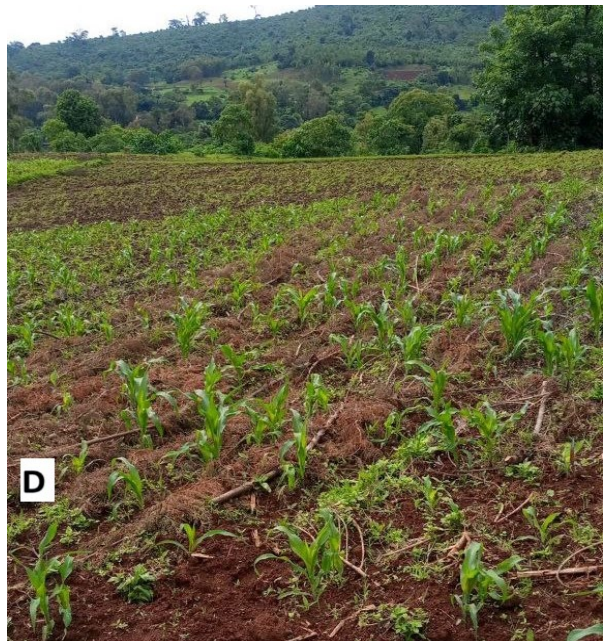
Smallholder farmers often resist compromising initial yields for long-term sustainability. Conventional agriculture, despite its resource depletion and environmental degradation, increases per-area food production in the short term. This immediate benefit is a critical factor for smallholder farmers when evaluating new technologies or practices. Traditional knowledge and practices, passed down through generations, offer a sense of reliability. The yield from their small plots is vital for household survival, making them reluctant to risk trying new technologies. The transition to conservation agriculture involves initial costs and may result in lower yields in the early stages, which can be economically challenging for small farmers. Thus, the shift from conventional to conservation agriculture should be gradual to minimize immediate economic impacts. Research should also focus on strategies for the gradual replacement of synthetic fertilizers with organic alternatives.





**Figure 2A-E.** Once farmers decide to practice CA, they use every available material as a mulch.

Small grasses that quickly decomposed (A), materials that was collected for firewood (B), any plant part that can cover the soil (C), large tree branches (D) materials collected from the surrounding and animals feed leftover (E).





Conservation agriculture is knowledge-intensive and demands continuous engagement. Conventional agriculture's simplicity, often relying on monocropping, requires limited knowledge and predetermined actions. It depends on external inputs like fertilizers, pesticides, and herbicides to increase yields and reduce pest risks. This reliance can oversimplify farming practices, making them less knowledge intensive. In contrast, conservation agriculture uses natural processes like crop rotation, cover crops, and companion planting to control pests and improve soil fertility. This approach requires a deeper understanding of ecological principles and the ability to differentiate between harmful and beneficial insects.

The lack of practical knowledge and experience in sustainable agriculture among extension agents further complicates the situation. In Ethiopia, for instance, most agricultural extension agents are trained in "industrial farming" and focus on advising farmers about fertilizers, pesticides, and improved varieties. They lack practical knowledge in sustainable farming, which is crucial given the diverse farming contexts that require specific approaches. Therefore, capacity-building initiatives should also target the agricultural extension system and be well-planned, continuous, and goal-oriented.

Despite many countries in sub-Saharan Africa having enacted policies supporting CA promotion, many lack the ability to implement these policies and there is no significant investment from the government side to show practical progress. On the contrary, some existing policies directly counteract sustainable agriculture principles. In Ethiopia, for example, while conservation agriculture-based sustainable intensification is part of the extension package, strategies like cluster farming are expanding to reinforce intensive farming practices. This approach reduces crop diversity and promotes mechanized farming, which conflicts with traditional practices that could support conservation agriculture. Without the concept of mechanization, this cluster farming, has its own contribution towards reducing insect pests and disease-causing organisms' pressure by avoiding staggered planting of the same type of crop which avoids continuous availability of food and breeding site for the pest. This is one way of nature-based management of pests. The government's focus on mechanization shifts research centers away from improving traditional methods like the "Maresha" plow, undermining potential environmental benefits and the country's climate-resilient green economy strategy.

To overcome these challenges, a multi-faceted approach is required—one that respects cultural practices, gradually integrates sustainable methods, enhances knowledge and skills, and aligns policies with long-term environmental goals. Only then can the full potential of conservation agriculture and sustainable farming be realized.

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# Brief Organization Profile: Support for Sustainable Development (SSD)

*Lidet Sitotaw, Agriculture & Livelihoods Technical Advisor for Ethiopia*

Support for Sustainable Development (SSD) is a national, non-profit making charity established in May 2003 G.C by volunteer Ethiopians to benefit poor, neglected and marginalized communities in Ethiopia. SSD's Main thematic areas are: food security and livelihood support, climate change adaptation/disaster risk reduction, youth and women empowerment, WASH, Education, and humanitarian/relief programs.



Figure 1. from pastoral to agro-pastoral way of life



Figure 2. One of the schools constructed by SSD

In the past 20 years the organization has been known for its achievements on improving food security and diversifying livelihoods mainly through small scale irrigation scheme development projects. So far it executed more than 20 irrigation projects which can irrigate more than 2,6000 hectares of land owned by 7, 810 households. These projects have also helped to transfer the pastoral community, which are highly vulnerable for drought related problems, to agropastoral way of life (Fig. 1). SSD has engaged in activities that address gender inequality through which it is able to empower more than 3000 pastoralist women. Through Community Managed Disaster Risk Reduction (CMDRR) interventions it has built disaster resilience capacity of over 5000 households. In the education sector, SSD was involved in construction and furnishing of schools which benefited 20,000 students (Fig 2). It was also involved in WASH programs which benefited more than 65,000 people in three regions of the country.



**Figure 3. part of the irrigation field developed by the support obtained from CLWR**

Currently, SSD is operating in nine woreda of Afar Regional State by implementing projects that mainly engage in establishing small-scale irrigation schemes and supporting the beneficiaries to cultivate it. One of these projects, which is funded by Canadian Lutheran World Relief (CLWR) is Chifra Agriculture and Livelihood Project. This project is a continuation of a project called “Chifra Irrigation Based Integrated Development Project” that was supported by the same donor and implemented between Jan 2018- June 2021 and has established an irrigation scheme which has a command area of more than 200 (Fig 3).

The current project is to consolidate the results obtained by the previous project and rehabilitate those results nullified due to several factors including civil conflict, drought, locust infestations, torrential rains, and flash floods. In addition to repairing and strengthening the irrigation infrastructure, the project uses an Agro-Pastoralist Field School (APFS) approach, improving institutional capacity, empowering women and youths, improving natural resource management and climate change adaptation to improve households’ production/ income and food security. Through these activities the project will address 1,000 agro-pastoralist and pastoralist households (i.e. 6,300 individuals). Because of its success history and the reputation acquired from the regional government, SSD might be the only NGO organization that can repeatedly obtain matching funds from the Afar National Regional State government.

# ALTA TRAVEL SCHEDULES

## Nester Mashingaidze

**12- 16 August 2024**

***Blantyre- Malawi***

BICC-CODES Joint support visit

**19-24 August 2024**

***Mponela- Malawi***

Joint ECHO and CFGB Symposium

**24 – 30 August 2024**

***Harare – Zimbabwe***

Meet CFGB partner and collaborators

**September 2024**

***Tanzania***

Visit CFGB partners

## John Mbae:

**19-23 August 2024**

***Lodwar Turkana, Kenya***

ADRAke Visit with Sila

**12- 16 August 2024**

***Kibwezi makueni, Kenya***

UDO Training, Nature Plus Project

**9<sup>th</sup> –13<sup>th</sup> September 2024**

***Soroti & Karamoja, Uganda***

PAG Karamoja & COU TEDDO Visit

**16<sup>th</sup> to 20<sup>th</sup> September 2024**

***Kibwezi, Makueni Kenya***

ADRAke & Fadhili Trust -Nature Plus Projects support

## Lidet Sitotaw:

**16-21, September 2024**

***Chifra, Afar, Ethiopia***

Visit Chifra Ag & Livelihood Project

**30 September – 6, October 2024**

***Benishangul- Ethiopia***

Visit FH SCASI project

**October 10- 19, 2024**

***Wolaita , Ethiopia***

Visit TDA's Nature+ and SCASI projects

**October 23-29, 2024**

***Robe, Ethiopia***

Visit LWF's Nature + project

## Jean Twilingiyumukiza:

**09-15 September 2024**

***Ouagadougou, Burkina Faso***

Sub-regional Partner Workshop

**23-27 September 2024**

***Burera, Rwanda***

Country-level Training workshop for DR Congo

## Lilian Zheke:

**5-7 August 2024**

***Chimanimani- Zimbabwe***

University of Manitoba training visit

**12- 16 August 2024**

***Blantyre- Malawi***

BICC-CODES Joint support visit

**19-24 August 2024**

***Mponela- Malawi***

Joint ECHO and CFGB Symposium

**23-27 September 2024**

***Chimanimani- Zimbabwe***

Chimanimani Region Mechanized CA training