AFRICAN CONSERVATION TILLAGE NETWORK
Partnering for Economic Growth, Improved Food Security and a Better Environment

Updates & News Alert

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Also in this issue

Introducing the August 2016 CA Alert

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To sustain growth that improves the lives of all Africans, the continent needs an economic transformation that taps into Africa's riches among others: its high potential land, its extensive fisheries and forests, and the energy and ingenuity of its people. Agriculture must be at the heart of that transformation. Most Africans, including the vast majority of Africa's poor, continue to live and work in rural areas, principally as smallholder farmers. In the absence of a flourishing agricultural sector, the majority of Africans will be cut adrift from the rising tide of prosperity.

To achieve such a transformation, Africa will need to overcome eminent bottlenecks and transform the way farming is done to a more sustainable and climate change resilient farming systems like Conservation Agriculture. In Africa, agriculture is being practised under different agro-ecosystems using numerous technologies for crop production in order to have higher production. This is done through exploitation of natural resources like soil, water, air and solar radiation. Conservation Agriculture (CA) on the other hand is based on sustained yield level through optimization of these resources and is central to safe and healthy natural resources as well as a means to improved agricultural and rural livelihoods. CA over time has shown higher and more stable yields with lower input costs and better adaptation to dangers of climate change. Clearly, it has a positive impact on farmers' livelihoods through reduced labour requirements for land preparation and weeding. CA also offers real opportunities for crop diversification options. These effects lead to increased farm income which combined with the reduced production costs results to significantly higher net income.

Documented impact and the feedback from practicing CA farmers across Africa confirms that CA is set to become a cornerstone in transforming the way farming is done in Africa and major contributor to achieving CAADP's goal 6% annual growth in the agricultural sector which employs 80% of Africa's rural population.

In this August issue, ACT acknowledges the contributions of various authors, reporters and organizations/practitioners who have their articles captured here. Notably, the contribution of YPARD (Young professionals for agricultural development) in involvement of youths in agriculture, and various assessment of CA adoption status and challenges faced by African farmers by IAPRI and ACT have their results briefly captured in this issue and can be seen as shaping the future programming. The vision and dimension of Eng. Juliana Albertegon on CA certification scheme is of great concern and probably requires more in-depth pursue to it, SACAU newsletter featuring CA issues also add to the network's great effort in dissemination and sharing of CA information. A watch on the Nambia video by Sangeu B. provide a contextualize insights towards promotion and adoption Namibia specific CA. ACT also wish to appreciate the effort of CABI in publishing and distributing the book on CA as indicate here.

In an attempt to exhaustively illustrate what is going in various African countries regarding Conservation Agriculture, ACT (The CA Network for Africa) features country-focused articles in its Monthly News Alerts. The articles capture and discuss the status and extent of adaptation and adoption of CA in a particular country for each allocated month's alert. This August monthly alert continues to focus on what is going on in CA in Zambia.

In this regard, ACT wishes to inform the readers that the September, November and December issues will focus on Zimbabwe, Kenya and Botswana respectively. Thus, we encourage you to share your CA views and articles in time for the planned CA news alerts in those countries. We also encourage bookings for proposed focus country articles for 2017. Please submit articles, links or views to: kim@act-africa.org

ACT would like to hear from the Africa CA practitioners if there are institutions who are already practicing Agricultural Certification based on Sustainability.

Qualitative Assessment of the Key Drivers to Adoption, Dis-adoption and Non-Adoption of Conservation Agriculture among Smallholder Farmers in Zambia

Despite nearly two decades of promotion and evidence of yield benefits associated with CA in Zambia, adoption rates by smallholder farmers at the national level using nation-wide representative survey data remain low, while dis-adoption is widespread. It has been proved beyond doubt that CA has potential to improve crop productivity, improve soil fertility, and mitigate against low and/or variable rainfall. It therefore offers one of the greatest promises for increased smallholder productivity for increased rural incomes and poverty reduction especially in the face of climate change in general and reduced rainfall amounts particularly in the central and southern parts of Zambia.

This assessment has shown that CA adoption in communities where it has been promoted has steadily increased over the years since the 1990s with the rate of increase at least tripping since the period 2006-2010. The benefits of CA adoption have been significantly felt in the farming communities. The most important of these benefits has been the increase in crop productivity especially in seasons characterised by dry spells due to increased soil moisture retention capacity. However, serious issues impede broad-based adoption of CA among smallholder farmers in Zambia.

For More information: http://bit.ly/2d7AzwS

2016 An Assessment of Conservation Agriculture in Zambia by ACT

Conservation Agriculture (CA) has been promoted in Zambia since the mid-1980s by government, private sector, cooperating partners, and a number of non-governmental organisations to varying degrees in terms of coverage area, operational approach, time span and technical content. Until recently, targeted areas of implementation were mostly in agro-ecological regions IIa and I. Different project methodologies were employed to implement CA by the different institutions. In 1999 the government of Zambia decided to support the introduction and spread of CA countrywide as a matter of policy, with a target to engage 50% of farmers into the CA uptake process by 2015.

By 2013, global trends record 155 million hectares under CA and 50% of which is in developing countries. A number of studies have been conducted to investigate the economics and adoption of CA practices in Zambia. While some report of between 200,000 to 300,000 farmers practising forms of Conservation Agriculture, many scholars observe that CA adoption still remains low not just in Zambia but in most developing countries as well. Others document high levels of dis-adoption of CA practices particularly when supporting programmes withdraw. Various reasons for low adoption and dis-adoption are challenges that researchers, technologists, extensionists and scholars need to positively tackle in the CA promotion agenda as a desirable practical intervention for responding to climate change. A shift from labour-intensive manual land preparation (planting basins) and weeding (women and children) systems to less labour-demanding ADP and motorised systems suggest increasing CA hectarage and uptake.

While CA practices among smallholder farmers have been promoted mostly in agro-ecological regions IIa and I, these interventions are also being adopted in the agro-ecological region III (a higher rainfall area). Extension support to the households, cattle ownership and asset holding were regarded significant in determining adoption of CA practices. Physical constraints, farming practices and climatic factors influenced participation of farming households in CA activities, and thus significant in the adoption process. It was also observed that smallholder farmers positively implemented CA because of financial incentives, reduced production costs, and access to support services.

Results of the survey in Mumbwa and Mpongwe districts show increasing engagement with CA related practices among households trained by promoting agencies, but also through self-adoption processes, and continued farmer-driven learning and training through farmer-to-farmer interactions. A discussion on decision making about whether to participate on CA interventions or not follows from different perspectives. The weather changes show that crop yields under CA practices perform better because of embedded in-situ rainfall water capture techniques, supported by precision input placement, than under conventional practices particularly in drought seasons or when rains are erratic and unreliable;

Resource-poor smallholder farmers in Zambia, like elsewhere in Africa face shortages of labour, farm power and inadequate financial support which can limit their access to improved technologies. However, CA interventions when correctly implemented offer opportunities to introduce commercialization of farming that can generate surpluses at lower input costs and thereby increase crop income significantly. A mixture of participation by female and male farmers by household lead-persons characterized the CA adoption and uptake agenda.

For more information on the assessment: https://goo.gl/ljgFF4

Scaling up conservation agriculture in Zambia: Conservation Agriculture Scaling Up Project (CASU)

The project aims to scale up conservation agriculture in 31 districts of Zambia in order to increase productivity and production of crops for food security and income generation. It will address low crop production and productivity exacerbated by soil degradation, high inputs prices, poor produce markets and poor farming practices.

67 % of the Zambian population depends on agriculture but agricultural productivity does not keep up with the annual population growth rate of 3%.Moreover, policies have favoured maize at the expense of crop diversification. Conservation agriculture is a way of increasing productivity even under reduced rainfall while maintaining soil fertility. Although conservation agriculture is known in Zambia, it still requires more widespread adoption. The project aims at increasing the number of farmers having adopted conservation agriculture through peer-learning, improved inputs and reliable markets.

Currently the project highlights include:

- By 2015, 19 500 Lead Farmers and 207 000 Follow farmers have registered under the CASU project. 41 % of them are female farmers.
- More than 600 Ministry of Agriculture extension officers, Provincial and District agricultural officers and private sector agro-dealers improved their Conservation Agriculture (CA) skills through intense technical training provided by CASU.
- More than 100 000 small scale farmers improved their skills on sustainable land preparation, 6 300 use pigeon pea for crop rotation and about 1 500 started practicing agroforesty.
- An SMS based CA extension system now reaches 68 000 registered farmers with a two way feedback system currently under development.
- During the 2014/15 agricultural season 6 main input suppliers and 97 agro-dealers in 31 districts delivered quality CA inputs to farmers.
- A CA Insaka in 2015 reunited 67 CA stakeholders who endorsed the establishment of this national CA coordination and harmonization platform.
- The project developed links with World Food Programme (WFP), 10 main aggregation centres and 46 agro-dealers for the marketing of small holder legume produce.

For more information on the project: https://ec.europa.eu/europeaid/printpdf/case-studies/conservation-agriculture_en

Involving Youth in Conservation Agriculture for a Sustainable Future- a Farmer's perspective

Globally agriculture is being practised under different agro-ecosystems using numerous technologies for crop production in order to have higher production. This is done through exploitation of natural resources like soil, water, air and solar radiation. Conservation Agriculture (CA) on other hand is based on sustained yield level through resource optimization and is central to safe and healthy natural resources as well as a means to improved agricultural and rural livelihoods.

Modern agriculture is totally about decision based production system, like crop and crop cultivar, crop geometry, nutrient and water management, crop protection measures etc. So for efficient and timely decision making as well as risk management, technological advancement is necessary; under such situation young farmer cum researcher can lead to sustainable production.

To be a progressive farmer, a person has to be fast learner cum adaptive researcher. For economical production,

huge information need to be gathered for efficient decision making and this is possible only through youth empowerment. There are few organizations like YPARD (Young professionals for agricultural development) which are working particularly on youth and its engagement in agriculture. Youth is the one of the best available resource, which can play a significant role in sustainable agricultural development. If we see the capacity development, it seems easy to train about the new technology and innovation to the young generation. It will be easy for young farmers to work on decision support tools like 'Nutrient Expert' and "Green Seeker". Therefore, there is need to motivate and encourage the young and educated youth toward agriculture through latest IT based tools and high tech machines. http://bit.ly/2cj0aQq

Why African rural development strategies must depend on small farms

Improving the productivity of smallholder farms in Sub-Saharan Africa offers the best chance to reduce poverty among this generation of rural poor by building on the few resources farming households already own. It is also the best and shortest path to meet rising food needs. Using examples from farmers' maize and rice fields, comparisons with Asia, and an extensive literature review, a recent study explains why the set of technologies promoted to date have produced localized successes rather than transformational change. It also examine the limitations of alternative policies that are not centered on small farms. It give indicative examples of how resource-management technologies can supplement seed-fertilizer technologies to speed an African Green Revolution. From the study report, the following are some of the highlights:

- Productivity gains in Sub-Saharan Africa have been slow and local in comparison to Asia's transformational Green Revolution.
- However, alternatives based on larger farms and non-agricultural sectors will not materially address rural poverty or growing food needs for this generation of poor.
- Heterogeneous agro-climatic and market conditions explain why Africa's path has differed from Asia's.
- While policies must work with land and labor resources already in place on small farms, a larger set of technologies is needed for system-wide change.
- Examples show how indigenous and alternative technologies based on improved agronomic practices can be effective where fertilizer-intensive technologies are not.

For more information: http://www.sciencedirect.com/science/article/pii/S2211912416300189

Conservation Agriculture (CA) certification schemes, what would it take to establish them in Africa?

With certification schemes, we have the opportunity of translating the power of consumer requirements into Good Agriculture Practices and systems, and how food can be produced sustainably in the world. Certification is also carried out to create safe and sustainable agriculture by connecting farmers and brand owners in the production and marketing of safe food. Certification and good agricultural practices already exist in many countries, whereby voluntary standards are set for the certification of farmed products. Agr. Eng, Juliana Albertengo shares the lessons from Argentina in the context of what is needed to establish CA certification schemes in Africa.

Acoording to Albertengo ddeveloping an Agriculture Certificate scheme for Africa would be very powerful to scale up Conservation Agriculture (CA) and enhance the social point of view of environmental and sustainability issues. It can help farmers not only to understand that good agricultural practices and systems are linked to soil and other environmental functional indicators, but also to clarify that they need to record and take account of what they do every day in managing their commercial farming operations. Thus, certification promotes the evolution of CA systems.

Even if we know that the changing the agricultural paradigm from conventional agriculture to Conservation Agriculture is something that cannot be done overnight, and that certification schemes can mean a significant transformation, we also know that with the correct monitoring and continuous education, it can be achieved.

Certification schemes should be recognized as representing production alternatives that better or optimally combine the interests of reaching and sustaining an economically viable farming sector that is also environmentally sustainable, socially acceptable, and energetically efficient. Such certified production alternatives offer societies anywhere the opportunities to hand over improved agricultural soils and environments to future generations.

For more information on the synopsis: https://goo.gl/Fz97rV

Farmers' organisations work to drive uptake of Conservation Agriculture

União Províncal de Camponeses de Manica (UCAMA) and Zimbabwe Farmers Union (ZFU) have been supporting farmers to scale up Conservation Agriculture (CA) in Mozambique and Zimbabwe, respectively. As the key implementing partners of a project titled "Facilitating Farmer-led Scaling-up of Conservation Agriculture in Southern Africa" which is funded by the Norwegian Agency for Development Cooperation (NORAD) through Southern African Confederation Of Agricultural Unions (SACAU), small scale farmers across both countries have been exposed to various technical, socio-economic and environmental benefits of CA since the beginning of 2013 at the start of the project.

According to SACAU August Newsletter, the approach followed by the project has been through a "Lead Farmer" approach, with the aim being to directly train and mentor lead farmers who will become "trainers" and advocates of CA in their neighbourhoods. This has led to the project achieving a number of achievements, which have been celebrated, including increasing yields for CA farmers. This has been particularly notable in Mozambique, where the national average for maize production is 0.7 tons per hectare under conventional tillage, with the project achieving anything from 2 to 3 tons per hectare. This has been seen on the demonstration plots which have been established by the lead farmers, as well the farmers who they have come to mentor.

For more information: http://www.sacau.org/wp-content/uploads/SACAU_Newsletter_-August_WEB.pdf

Seeing is believing: the impact of soil management- Western Kenya

For over a decade, CIAT has tested agronomic and soil management practices in Western Kenya. From minimum tillage to integrated soil fertility management, two trials, established in 2003, are the most comprehensive picture of tropical soil health in Kenya. What these trials allow us to do is show-case changes in soil fertility and health for example the impact of conservation measures like minimum tillage, manure application or green manure cover cropping on soil fertility and crop yields, and what happens if these are absent.

They also enable us to show the impact of cropping systems and rotations, providing farmers with advice about which mix of organic and mineral fertilizers can restore productivity to degraded soils, for example. These are not quick-fixes: they take time to develop, hence the importance of these long-term trials.

Over the years, the trials have been visited by hundreds of farmers, regional stakeholders, and students studying agronomy and soil health practices. They also provide a platform for students to pursue their BSc, MSc or PhD studies, and to dig into some of the fascinating aspects of soil biology and biodiversity.

For more information: http://act-africa.org/news.php?com=68&com2=6&item=363"http://act-africa.org/news.php?com=68&com2=6&item=363#.V9ftUjXcfiA or http://blog.ciat.cgiar.org/seeing-is-believing-the-impact-of-soil-management/

Bridging the gap: Tailoring Conservation Agriculture to the Namibian context

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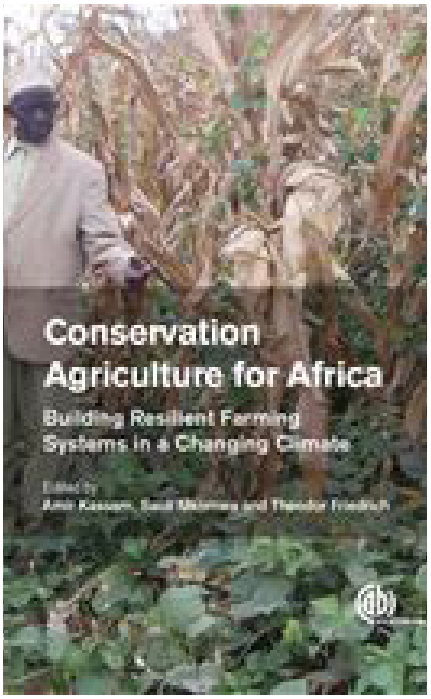
To understand the progress and status of the promotion and adoption of CA in Namibia, watch a video created by Sangeun Bae and Nicole Lee in partnership with the GIZ, detailing the benefits and challenges associated with conservation agriculture implementation in northern Namibia.

The video is available on: http://bit.ly/2ctEns6

Conservation Agriculture for Africa: Building Resilient Farming Systems in a Changing Climate



CABI has announced the following book: **Conservation Agriculture for Africa: Building Resilient Farming Systems in a Changing Climate** edited by A Kassam, Food and Agriculture Organization of the United Nations, Italy and University of Reading, UK, S Mkomwa, African Conservation Tillage (ACT), Nairobi, T Friedrich, FAO Representative in Cuba, with a Foreword by Howard Buffett. This book is expected to be launched in **November 2016.**

This book:

- Focuses on research and development initiatives in Africa aimed at building resilient farming systems based on Conservation Agriculture principles and practices.
- Summarizes the status of Conservation Agriculture in Africa today and prospects for its future development in Africa as a basis for sustainable agriculture intensification.
- Describes case studies involving the performance of Conservation Agriculture in Africa.

The book will be available for order on the following:

December 2016 / Hardback / 450 Pages / 9781780645681 ~~£95.00 / €125.00 / $133.33~~

With 10% online discount: £85.50 / €112.50 / $120.00

Not yet published. Enter your email address and click 'Notify me' to find out as soon as it becomes available.

More details are available on: http://www.cabi.org/bookshop/book/9781780645681 or http://act-africa.org/news.php?com=68&com2=6&item=359#.V5r3DaLcfiA

Upcoming Events

Advanced Course - Asia: Conservation Agriculture: Gateway for Sustainable Intensification of Smallholders

Conservation Agriculture (CA) practices are increasingly accepted across the globe and are considered as harbingers for sustainable intensification of smallholder production systems. Its positive impact on natural resources, and adaptation to and mitigation of climate change effects are widely acknowledged. In Asia, CA is a relatively new introduction and hence capacity development is vital for adaptation and scaling-up CA-based technologies to achieve impact on smallholder farmers.

This course on CA shall offer unique capacity development opportunity to the scientific community associated with natural resource management research for development. It was initiated during 2010 and is seventh in a series being organized by CIMMYT and BISA under the aegis of CGIAR Research Programmes on WHEAT, CCAFS, and in close collaboration Indian NARS. The course links the advances and multidisciplinary approach for sustainable intensification of maize and wheat based system, restoration of natural resource degradation and climate resilient production systems with expertise across Asia, Africa and Americas. The course has become a regular flagship activity wherein selected young men and women CA researchers from NARS as well as international organizations and NGOs can be benefit. It is offered at CIMMYT-BISA Ludhiana, Punjab, India, beginning November 7th 2016.

For more information http://www.cimmyt.org/wp-content/uploads/2016/06/Seventh-Advanced-Course-on-CA-in-Asia_Announcement_-2016-1.pdf

The 22nd Session of the Conference of Parties to the United Nations Framework Convention on Climate Change (COP22): Marrakech COP22/ CMP12 UN Climate Change Conference 2016

The 22nd Session of the Conference of Parties to the United Nations Framework Convention on Climate Change (COP22) will be held in **Marrakech, November 7 to 18, 2016.**

COP22 will take over the reins from COP21 during which important progress was made. It will focus on action items in order to achieve the priorities of The Paris Agreement, especially related to adaptation, transparency, technology transfer, mitigation, capacity building and loss and damages.

For Salaheddine Mezouar, President of COP22, this conference is an "*opportunity to make the voices of the most vulnerable countries to climate change heard, in particular African countries and island states. It is urgent to act on these issues linked to stability and security,*" he declared. COP22 will be one of action.

Get more Information: http://www.cop22.ma/

25th National No-Tillage Conference 2017 Dates Announced

More than 100 cutting-edge, money-making sessions over 4 days, delivering insightful learning and unlimited networking with the best of the no-till community.

Early Bird registration is open for the 25th annual conference to be held January 10-13, 2017, at the **Hilton St. Louis at the Ballpark.** It's just $284 to **register**, which is a savings of $85.00 off the onsite rate of $369. Additional farm or family members can also be registered for just $259. This rate will expire August 31, 2016!

2nd Agriculture and Climate Change Conference: Climate ready resource use-efficient crops to sustain food and nutritional security

Maintaining crop production to feed a growing population during a period of climate change is the greatest challenge we face as a species. The increased crop yields during the last century and especially the Green Revolution, were brought about through breeding for increased harvest index and disease resistance, as well as by using more irrigation water and agrochemicals. Improved cultivars were adopted readily during this period of relative climate stability. While genetic gains continue, albeit at reduced rates, productivity is in decline in many regions. Given the multiple challenges of climate change, reduced water supplies, and declining soil fertility in many regions, new approaches to produce climate resilient crops are desperately needed. The **2nd Agriculture and Climate Change Conference: Climate ready resource use-efficient crops to sustain food and nutritional security** will focus on the likely impact of climate change on crop production and explore approaches to maintain and increase crop productivity into the future.

This Conference will be held on **26 – 28 March 2017 at the Meliá Sitges, Sitges (near Barcelona), Spain**

For more information and important dates, link: http://www.agricultureandclimatechange.com/

For more information, please contact: Executive Secretary | African Conservation Tillage Network
KARLO - Kabete, Waiyaki Way | P.O. Box 10375-00100, Nairobi, Kenya | Tel: +254 20 8076064; +254 774 895 077
Email: info@act-africa.org | Web: www.act-africa.org

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