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

04
April
2017

Updates & News Alert

ALSO IN THIS ISSUE

Editor's view: Introducing the April, 2017 CA Alert

CA maize intercropped with drought tolerant Dolichos lablab in Machakos County, Kenya. Photo: B Njenga/ACT

In the April 2017 issue, we cover articles and stories on how the Farm Mechanization and Conservation Agriculture for Sustainable Intensification (FACASI http://facasi.act-africa.org/) project, implemented by CIMMYT and partners, is promoting agricultural mechanization to fuel rural employment for youth in sub-Saharan Africa. In the Matopo area of Matabeleland South, Zimbabwe, the adoption of Conservation Agriculture (CA) techniques is helping farmers to increase their yields, conserve natural resources while being less labour intensive than ploughing.
The International Fertilizer Association reminds us, that severe hunger in Africa could become a thing of the past, even in arid regions, if we get serious on soils.

In the other articles, the Western Cape government of South Africa in partnership with the private sector are arming themselves against the adverse effects of climate change through its long-term climate change response strategy known as SmartAgri. SmartAgri sets out detailed scenarios and response proposals to combat the impact of extreme weather events on the province's agriculture sector. To counter the armyworm invasion in Africa, which has affected more than 300,000 hectares in Southern Africa, scientists from the global maize research centre vowed to intensify research to eradicate menace that had invaded hundreds of farms in various regions across Africa.

The publications *Reaping Richer Returns*, and *Climate Change and Agricultural Development* targeting Africa and less developed countries respectively are in focus and extracts of their forewords are shared.

Notable amongst the upcoming events are the International Seminar on Drought and Agriculture at FAO Rome on 19 June 2017; the 7th World Congress on Conservation Agriculture in Rosario Argentina 1-4 August 2017; and the KwaZulu Natal No-Till Conference, 5-7 September 2017.

ACT acknowledges the various sources, authors, reporters, organizations and practitioners whose articles appear in this April 2017 issue.

We encourage you to share your CA views and articles capturing the status and extent of adaptation and adoption of CA in any Country in Africa or beyond for sharing with others. Please submit articles, links or views to kim@act-africa.org

Apologies for any cross posting of some articles.

Agricultural Mechanisation fuels opportunity for Youth in Rural Africa: a Q & A

Farmers test out agricultural mechanization tools in Zimbabwe as part of CIMMYT's FACASI project. Photo: CIMMYT/ Frédéric Baudron

Small-scale agricultural mechanization is showing signs it has the potential to fuel rural employment for youth in sub-Saharan Africa, according to researchers at the International Maize and Wheat Improvement Centre (CIMMYT).

Across Africa, youth are struggling with high unemployment and working poverty, the International Labour Organization records. However, increased adoption of agricultural mechanization – especially machines that are small, affordable and easy to maintain such as two-wheel tractors – is stimulating jobs and entrepreneurial opportunities for African youth, said Frédéric Baudron, senior systems agronomist at CIMMYT. "Small-scale mechanization is more equitable than other forms of mechanization as even the poorest and most vulnerable have access to it," he said.

Youth, along with women, are typically subject to labour-intensive farm activities causing them to shun agriculture. However, with mechanization improving productivity while reducing drudgery, youth are seeing economic opportunity in agribusiness, on rural farms and as service providers, said Rabe Yahaya, a CIM/GIZ integrated expert specialized in mechanization for sustainable agriculture intensification.

As a result, new jobs along the value chain from mechanics to spare parts providers have been created, he added.

Relatively cheap and easy to operate two-wheel tractors can be used for many different applications. On-farm, the tractors are used to speed up crop establishment while conserving soils through reduced tillage and precision fertilizer application. They allow farmers to tap into surface water for irrigation as well as aid shelling grain to reduce the time taken to get to market. Smallholder machinery has also been used to start rural commercial hire and transport services.

Both Yahaya and Baudron shared some insights on the opportunities agricultural mechanization can provide rural communities in the following interview.

Working with CIMMYT's Farm Mechanization and Conservation Agriculture for Sustainable Intensification (FACASI) project, researchers have sought to promote the delivery and adoption of small-scale machines to make farming practices – including planting, harvesting, water pumping, shelling and transporting – more productive and sustainable in eastern and southern Africa. Funded by the Australian Centre for International Agricultural Research, FACASI offers support throughout the supply chain, from importers to manufacturers, service providers and extension workers to ensure mechanization reaches farmers.

For the full interview article by Matthew O'Leary, visit: http://www.cimmyt.org/qa-agricultural-mechanization-fuels-opportunity-for-youth-in-rural-africa/

Conservation Agriculture in Matabeleland Zimbabwe

In the Matopo area of Matabeleland South, Zimbabwe, the adoption of Conservation Agriculture techniques is helping farmers to increase their yields and conserve natural resources. This approach focuses on building farmers' knowledge and skills, using resources they have available and inputs that can be obtained locally.

Many farmers are single mothers or from families affected by HIV/AIDS with small farms of 0.5 to 1 hectare. They have been trained in Conservation Agriculture, a system of farming based on principles of minimum soil disturbance; maximum soil cover; mixing and rotating crops; precise planting operations; and efficient use of labour, time, seeds and fertiliser. Farmers use open-pollinated varieties of seeds, with liquid manure, mulch or legumes. By intercropping and rotating maize with drought-resistant indigenous crops, nutrients build up over time. Crop residues are used as mulch to trap moisture in the soil, control weeds, and maintain cooler soil temperatures.

Many farmers lack draught power and so they find this technique less labour intensive than ploughing. Although digging planting holes is hard work when first preparing the land, holes can be dug over several months before the rainy season, and members of the community often help families. Once the holes are dug, they only need to be retouched for the next planting season.

Since adopting this approach, farmers are reporting increases in yields of sorghum, millet and maize, from an average of about 0.5 metric tonnes to between three and four metric tonnes per hectare. Yield increases have been observed over three years, despite adverse climatic conditions.

Project run by Danbane Trust and Zimbabwe Project Trust. For more information, please contact Christian Aid (www.christianaid.org.uk).

Cross-posted from http://www.asfg.org.uk/success-stories/conservation-agriculture-in-zimbabwe

Severe hunger in Africa could become a thing of the past even in arid regions if we get serious on soils

"We need to get serious on saving Africa's soils, so food security and prosperity on the continent prevail"

Severe hunger in Africa could become a thing of the past even in arid regions. Long-term strategies to build resilience to the harsh climates that decimate crops and cattle do exist and need implementing with urgency. In Africa, the strategies that can lead to major productivity gains in the face of climate change start with soil. The U.N. Food and Agriculture Organization (FAO) released a statement recently declaring that soil management could make or break climate change efforts. This is because our soils hold the most potential for capturing and storing the excessive amounts of carbon dioxide in the atmosphere that exacerbate global warming. In its fourth Assessment Report, the Intergovernmental Panel on Climate Change estimated that 90 percent of agriculture's climate change mitigation potential lies in soil carbon sequestration.

But degraded soils are less able to capture and store carbon than healthy, fertile soils. In addition, in nowhere in the world are soils as degraded as they are in Africa. It is estimated that around 65 percent of Africa's soils are degraded, and despite being home to 10 percent of the world's population, Africa accounts for just 3 percent of global fertiliser use. Without a good balance of organic and mineral fertilisers, soils are unable to nourish healthy food crops. When soils starve, so do people.

A concerted effort is needed to get fertiliser into the hands of Africa's millions of smallholder farmers, and provide them with information on their proper use. A new handbook, compiled by the World Farmers' Organisation, the International Fertilizer Association and the Global Alliance for Climate Smart Agriculture, outlines how to help farmers to implement fertiliser best management practices and adapt to a changing climate. It aims to equip farmers and extension agents with the knowledge on how to best manage nutrients, both mineral and organic, to achieve the triple win of productivity, resilience and sustainability.

Article by: Dmitry Konyaev, CEO of Uralchem, Chairman of the International Fertilizer Association's Communications & Public Affairs Committee

Link to article: http://news.trust.org/item/20170412081919-d1o9t/

South Africa: Western Cape agriculture under threat

"Agriculture and food security in the Western Cape are under threat due to increased heat, water stress on crops and livestock and droughts resulting from climate change"

Delivering his Budget Speech in the Western Cape legislature on Wednesday, Agriculture MEC Alan Winde said the Western Cape government in partnership with the private sector are arming themselves against the adverse effects of climate change through its long-term climate change response strategy known as SmartAgri. SmartAgri sets out detailed scenarios and response proposals to combat the impact of extreme weather events on the province's agriculture sector.

"Part of the SmartAgri approach to mitigate the danger posed by climate change is Conservation Agriculture. This method of farming includes minimum tillage, year-round soil cover and crop rotation to maintain the soil's natural structure and increase the level of nutrients able to be absorbed. We have taken this message to farmers across the province in the past two years. And what we're seeing is an unprecedented shift to this more sustainable form of farming," he told the house.

With the world's population expected to grow rapidly, the MEC stressed that securing food supply and protecting the environment is high on the international agenda with the United Nations (UN) predicting that agricultural production must increase by 60% to meet the demand of the nine billion people who are expected to live on earth by 2050. MEC Winde said the Western Cape is poised to play a vital role in meeting this challenge.

According to the MEC in the past two years, drought and high temperatures, as well as floods and hail, have led to significant losses in agriculture. These losses included:

- The loss of 200,000 tonnes of wheat due to insufficient rain during the 2015 winter;
- A 15% decrease in fruit production in 2015/16 worth an estimated loss of R750 million;
- The loss of 230 hectares of potatoes, which could not be planted due to the lack of water;
- In livestock, in excess of 30,000 animals have been sold as farmers battle to feed their core herds;
- A decline of 5% in the wine grapes harvested during 2016 due to high temperatures and lack of irrigation water. In rand terms, this loss amounted to an estimated R500 million.

As a further result of the water restrictions, our agricultural economists are projecting a R112 million decrease in GVA, and a possible drop of 1,728 in the number of available seasonal work opportunities. "I have witnessed first-hand the very real effects of this crisis. Our emerging farmers especially, are struggling to survive through this time of higher input costs," the MEC said.

He added that they have allocated R48 million for drought relief support with the funds being used for a monthly livelihood support package to emerging grain farmers and their staff, and for animal fodder. In the year ahead, R47 million will be set aside for drought relief.

"Projections show that in the years to come, the climate change crisis will likely deepen. Winter rainfall across most of the Western Cape will decline, but in other areas, heavier rainfall and floods will rise. Heat waves will become more common. Droughts will increase in frequency. Strong winds and unseasonal cold snaps are among the risks we face in the not-too-distant future," he added.

To read more of this article: http://allafrica.com/stories/201703300494.html

Maize scientists vow to intensify research on armyworm invasion in Africa

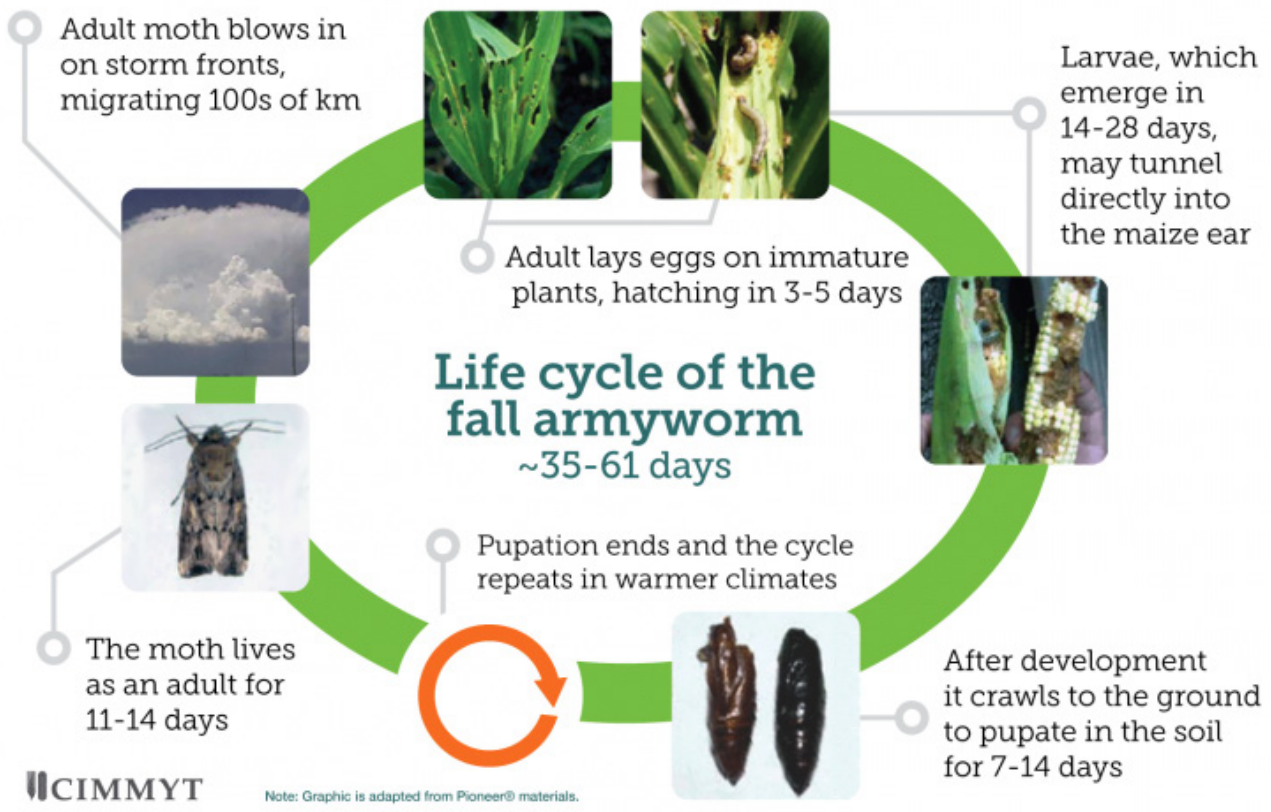
Scientists from the global maize research centre vowed to intensify research to eradicate fall army worms that had invaded hundreds of farms in various regions across Africa. This two-day meeting that was held from 27-28th April, 2017 in Nairobi and was attended by 130 experts and stakeholders from African governments, international and national agricultural research organizations, non-governmental organizations, national plant protection organizations, development partners and donor agencies.

International Maize and Wheat Improvement Centre (CIMMYT) researchers said they are currently screening elite maize germplasm to help identify possible sources of resistance. The presence of the fall armyworm has added another threat to fighting maize diseases in continent since the citing of Maize Lethal Necrosis (MLN) disease in 2011 hence the need for the meeting to come up with the possible solutions.

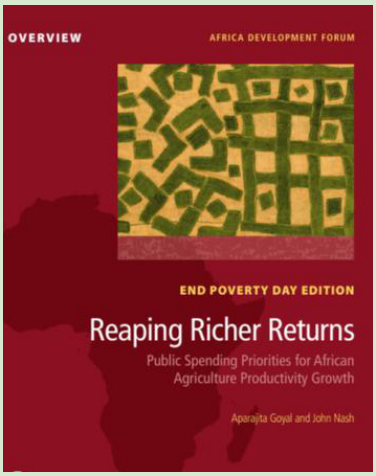
The fall armyworm, a pest that was introduced to Africa from the Americas, was first reported in Nigeria last year and has since spread to southern and eastern African countries, causing severe damage in crop losses in the continent. Its larvae feed on leaves and can destroy up to 70 percent of the crop they invade. The damage appears as ragged-edged holes on leaves.

Zambia has confirmed reports that almost 90,000 hectares of their maize have been affected. It has also affected 17,000 hectares in **Malawi**, 130,000 hectares in **Zimbabwe** and 50,000 hectares in **Namibia** respectively.

Read more at: http://paepard.blogspot.ug/2017/05/maize-scientists-vow-to-intensify.html



New Publications



Reaping richer returns

A vibrant, sustainable and resilient agriculture sector is vital for sub-Saharan Africa's economic future. While productivity of African agriculture has grown, it still lags behind Asia and Latin America, and has not delivered the development dividends needed to significantly reduce poverty in rural areas across Sub-Saharan Africa. Consider this: nearly two-thirds of Africa's population still rely on agriculture to make a living, and for Africa's poorest households, food makes up almost three-quarters of consumption expenditures. As a result of poor agricultural productivity, Africa's growing urban populations are also confronted with higher food prices. In order to make a significant dent on poverty, enhancing the productivity and competitiveness of African agriculture must become a priority.

Clearly, the status quo must change. One key element that can accelerate change and unleash growth is to catalyse a shift toward more effective, efficient and climate resilient public spending in agriculture. This book comes at an opportune time and the research effort was motivated by the confluence of several factors related to public spending on agriculture in Africa.

The evidence show that the efficient use of public funds has been instrumental in laying the foundations for agricultural productivity growth around the world, providing important lessons for African policymakers and development partners. Investments in rural public goods, combined with better policies and institutions drive agricultural productivity growth. The dividends from investments to strengthen markets, develop and disseminate improved technologies and expand irrigation can be enormous. Similarly, improvement of the policy environment through trade and regulatory policy complements spending by enhancing incentives for producers and innovators to take advantage of public goods, thereby crowding in private investment. Reforming the design and implementation of these subsidy programs while prioritizing government spending in favour of high-return core public goods and policies could produce significant gains. For this reason, this book argues for a rebalancing of the composition of public agricultural spending in order to reap robust development dividends.

The authors hope that the findings presented here will resonate with policymakers concerned with agricultural policies, and more specifically with public spending programs that aim to improve the productivity of African agriculture.

Citation

Goyal, Aparajita; Nash, John. 2016. Reaping Richer Returns, Preliminary Overview: Public Spending Priorities for African Agriculture Productivity Growth. Washington, DC: World Bank. © World Bank. https://openknowledge.worldbank.org/handle/10986/25782 License: CC BY 3.0 IGO.

For the full book:
http://hdl.handle.net/10986/25782
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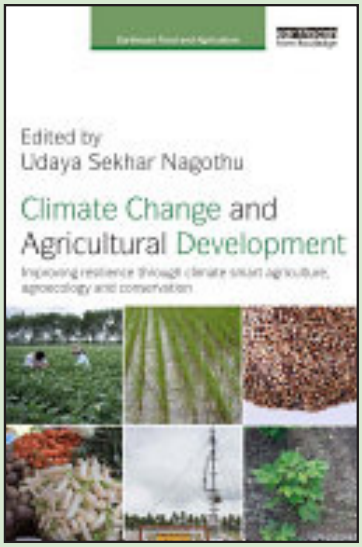


Climate Change and Agricultural Development

Two of the greatest current challenges are climate change (and variability) and food security. Feeding nine billion people by 2050 will require major efforts aimed at climate change adaptation and mitigation. One approach to agriculture has recently been captured by the widely adopted term of "Climate Smart Agriculture" (CSA). This book not only explains what this entails, but also presents practical on-the-ground studies of practices and innovations in agriculture across a broader spectrum, including agroecology and Conservation Agriculture (CA), in less developed countries.

It is shown that CSA is not a completely new science and a number of its recommended technologies have been used for some time by local farmers all over the world. What is relevant and new is 'the approach' to exploit their adaptation and mitigation potential. However, a major limitation is the lack of evidence-based knowledge that is necessary for policy makers to prepare strategies for adaptation and mitigation. This book assembles knowledge of CSA, agroecology and CA, and perspectives from different regions of the world, to build resilient food systems.

Reference: https://books.google.co.ug/books?id=YKKuDAAAQBAJ

Upcoming Events

International Seminar on Drought and Agriculture

Date: 19 June 2017

Venue: Sheikh Zayed Centre, FAO HQ, Rome, Italy

The organization of a joint seminar on drought follows the letter by the two Permanent Representatives from the Islamic Republic of Iran and the Kingdom of the Netherlands, dated

02 December 2016, to the FAO Director-General that underlined the importance of integrated approaches to drought management and drought preparedness, suggesting a seminar to discuss these approaches along with scalable good examples and innovations for associated implementations and investments. The positive response by the FAO Director-General was followed by exploratory and preparatory meetings involving FAO and the offices of the two Permanent Representations.

The outcomes of the seminar are:

- Co-Chairs' Communiqué
- Publication containing a collection of experiences (to be launched on the occasion of COP23 of the UNFCCC, to be held in Bonn, Germany, in November 2017).

ACT, represented by the Executive Secretary and CEO, Engineer Saidi Mkomwa, will share Sustainable Land Management & Climate Change Resilience experiences in the seminar.

For more details, see the programme at: http://www.act-africa.org/image/a-bs902e_b(1).pdf

7th World Congress on Conservation Agriculture

Date: August 1-4, 2017

Venue: Rosario - Argentina

The 7th WCCA provides the opportunity to learn from No-Till farmers' associations and network with an international gathering of agricultural experts. Argentina, Brazil, Paraguay and Uruguay want to show the modern agricultural, based on the principles of Conservation Agriculture (CA), our known No-Till System, and with FARMERS, the crucial actors of this revolution. Agricultural production systems are not sustainable unless they are profitable, and CA holds the key to building and maintaining healthy soils and profitable farming systems. Food security, climate change, smallholder and family agriculture, gender equality, biotech, machinery innovations, bioenergy, water, soils, crops, agribusiness, legislation and more are going to be part of the 7WCCA proposal

For more details:

http://congresoaapresid.org.ar/

Pan African Society for Agricultural Engineering: Nairobi 2017 Conference Announcement

Venue: Southern Sun Mayfair Hotel, Nairobi, Kenya

Dates: 19 - 21 November 2017

The Pan African Society for Agricultural Engineering and its partners will host its Annual Conference in **Nairobi, Kenya, on 19-21 November 2017** under the theme ***Engineering and Technology for Agriculture Transformation in Africa.***

The objective of the conference is to provide a forum for the private, public and academic sector stakeholders to meet and explore business opportunities through networking and exchange of experience and knowledge.

For more information: http://www.pasae.org.za/images/docs/conference-announcement.pdf

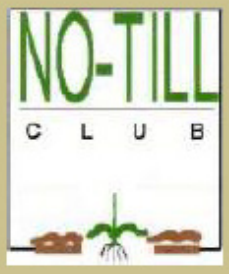
Second Africa Congress on Conservation Agriculture (2ACCA)

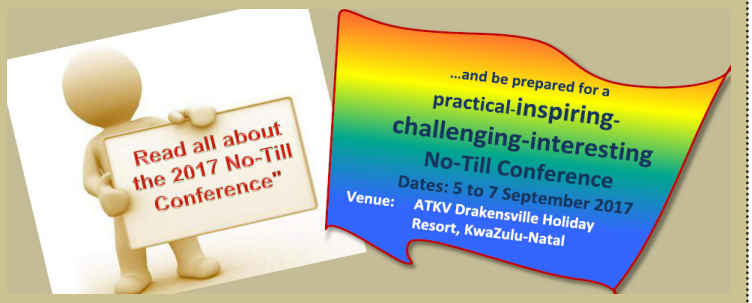
Date: March 2018
Venue: Johannesburg South Africa

Be on the look on http://act-africa.org/events.php?com=68&com2=67&com3

KwaZulu Natal 2017 No-Till Conference

Date: 5-7 September 2017
Venue: ATKV Drakensville Holiday Resort, KwaZulu-Natal, South Africa
For more details: Please download newsletter here





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Norad

ACT acknowledges the partnership and financial support provided by the Norwegian Agency for Development Cooperation (NORAD) towards Promotion of Conservation Agriculture in Africa