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The Fourth Industrial Revolution and Agriculture in Africa

Dr John Lapham

To gain perspective of the fourth industrial revolution, it is necessary to go back about 250 years to the start of what we generally term as "industrialisation". The first industrial revolution (1750 to 1830) enhanced the speed and capacity of transportation by the invention of the steam engine and railroads. The second revolution improved the lives of the average person with the invention of electricity, running water, indoor toilets, combustion engines, communications and entertainment (1870 to 1900). From 1960 to the present computers, the internet and mobile phones, through what we call the third industrial (or digital) revolution, improved productivity and contributed to economic growth.

However, the second industrial revolution was the most important and was responsible for 80 years of unprecedented economic growth in human history; it was only when the spin-off benefits of these inventions had run their course that this ended in about 1972. In contrast, the benefits of the third revolution were relatively short-lived with a growth revival from 1996 to 2004.

The hopes and prospects for future growth are now vested in the fourth industrial revolution. It is a technological revolution that will alter the way people live, work and relate to one another. It presents a new range of technologies that combine the physical, digital and biological worlds.

What does this mean for Africa and its agriculture? In Africa, about 70% of people live in rural areas depend on agriculture for their livelihoods. The previous industrial revolutions passed many of them by, and some are still without electricity, running water and other amenities. Despite this, many have benefited, and continue to benefit, from the advent of information and communication technology in the form of mobile phones. Fifteen years ago, 10% of the population had cell phones whereas today phones are as much used in South Africa and Nigeria as they are in the United States. The use of ICT is no more apparent than in the mushrooming use of mobile money services, where Africa leads the way—150+ million registered users represent more than 50% of all users globally.

This means that Africa is well set in many ways to benefit from participation in the fourth industrial revolution. These new technology platforms, rendered easy to use by the Smartphone, lower barriers for businesses and individuals, to create wealth. This is particularly relevant to small-scale agricultural producers and service providers.

The possibilities are unlimited when millions of people are connected by mobile devices providing processing power, storage capacity and access to knowledge. For example, linking producers, input suppliers, service providers and markets along the value chains, can only enhance efficiencies and productivity. Small-scale producers can easily communicate, pool their supply and dictate trading terms, changing a business model that has for several decades disempowered them.

Africa can not only reap the benefits of the fourth industrial revolution in agriculture, but technologies can be used on a macro-scale to stimulate growth in sectors previously bypassed—placing Africa at an advantage over establish economies where there is little or no room for further growth. All this is possible in the future with the right combination of human motivation and access to the range of new technologies.



Dr John Lapham

ESO

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Tips and tools for advisors

Successful farming starts with knowledge of soil conditions

Portia Phahlane

A soil analysis will provide critical information when deciding on corrective measures to prevent deficiencies, imbalances and excesses in the nutritional status of plants.

Without proper soil analysis, it becomes impossible to determine soil requirements for productive farming. Collecting soil samples and getting the soil tested is the first step in the planning of an economically and environmentally sound fertilisation programme.

Soil tests-results provide information on the soil's available nutrient-supplying capacity - information that determines the correct types and amounts of fertiliser and liming materials required to establish and maintain more productive soil and increased crop production.

The efficient use of fertiliser also helps to reduce costs and supports the environment, at the same time increasing yield and quality.

Provincial ESO Top User

Portia Phahlane

Our interviewee this month is the Free State ESO Provincial Top User for July, Alta Meyer. She is the manager for Specialized Support Services in Thabo Mofutsanyane District and specialises in project management. Alta reports directly to the District Director, Mr. George Madiba, at the Department of Agriculture and Rural Development.

Alta hails from Harrismith in the eastern Free State Province. Her hometown had been earmarked as one of the Special Economic Zone development areas. According to her, Harrismith used to be the biggest wool production area in South Africa but due to many factors, including stock theft, wool production in the area systematically declined. Apples and berries have been introduced over the past ten years in the area.

Our top user has been working for the Department for 16 years. What she enjoys most about her job is seeing the impact of project implementation. For her, there is nothing more rewarding than to hear that a farmer had repaid production loans and mortgages, or had purchased new implements with profits earned from the assistance and support of the Department of Agriculture.

Alta started using ESO from its inception in 2010 and uses the system regularly to find information when doing business planning. According to her, the district has a diverse combination of agriculture activities (cash crops, fruit, vegetables, fodder production, livestock, fresh water fish pigs and poultry), and since she is not an agriculturist, she uses ESO extensively for a whole range of information on the system. She also uses the regional data section to get coordinates of farms in the district.

Alta encourages extension practitioners to use ESO when preparing for farm visits or project meetings. They can discuss the farming systems as explained on ESO, of any commodity during these meetings, and then compare it with the practices used by the farmers. It will also be of help to them if extension officers update their client's information on ESO by using the Farm Information System Module.

Alta concluded by dubbing ESO as "an encyclopaedia for agriculture" because the information is available at the click of a button, while the Discussion Forum is an interactive platform, where officials can share their knowledge and

National ESO Top User



Sindile Magoda

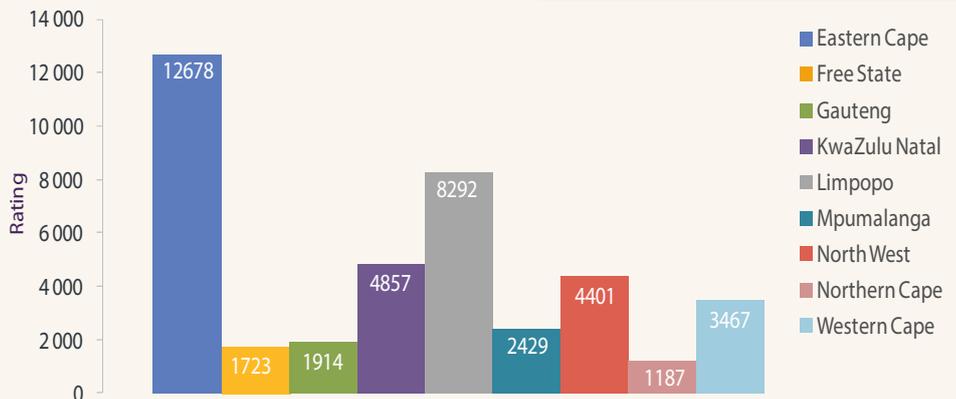
Congratulations to **SINDILE MAGODA** the ESO National Top User for **July 2017**.

EXTENSION SUITE ONLINE® UTILISATION:

July 2017

Extension Suite Online® (ESO) utilisation is determined through monitoring user utilisation in the nine provinces and by attaching values to Visits, Pages Visited and Duration of Visits. A rating is then calculated to establish the ESO National Top User of the Month.

ESO PROVINCIAL TOP USER GRAPH



ESO PROVINCIAL TOP USERS

Province	Name
Eastern Cape	Sindile Magoda
Free State	Alta Meyer
Gauteng	Vhuthu Gavhi
KwaZulu Natal	Dumisani Nzama
Limpopo	Morongwe Salome Mahasha
Mpumalanga	Sithembiso Mbuyane
North West	Tsholanang Molosiwa
Northern Cape	Nozimanga Dondolo
Western Cape	Riaan Nowers

CLIMATE WATCH

Issue #19

The month of July was a quiet month weather wise for South Africa. The month was categorised by dry weather over the interior of the country, with cold fronts bringing rain to the Western and Eastern Cape on a weekly basis. However, the rainfall received during July over these areas remained well below normal which is of major concern for the drought stricken Western Cape. Read more...



Read the full article on the Manstrat AIS website.

www.manstrat.co.za - Climate Watch

ESO TIPS:

How to prolong/extend battery life for your smart devices

Thulani Zengele

Tired of having to charge your smart device twice, maybe even three times a day due to "over usage"? Contrary to popular belief, the battery life of all your smart devices is not only depleted by overuse, but also the number of apps you have installed and running on your smart devices.

Some of the most battery consuming applications are social media apps (i.e. Facebook, Twitter, Instagram), location apps (Google maps), Wi-Fi (turning your device into a mobile hotspot to connect other devices), and Bluetooth. If you are not using any of those applications or features on your smart device, it is best that you turn them off, especially notifications from social media apps. It is often best to access social media from a web

browser (i.e. Google, Chrome) from your smart device.

It is important to close an app once you are done using it. Leaving it open not only depletes the battery life of your device, but also wastes your data.

Quick recap:

- Turn location off (unless needed)
- Keep Bluetooth off
- Keep Wi-Fi off when not in use
- Close all apps not in use
- Access social media via web browser
- Turn notifications off

Do you have any technology related questions? Send them to newsletter@suite.co.za, with your name, province and the

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