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A glimpse of the future

The sequencing of the genome of the *Eucalyptus grandis*, led by Prof Zander Myburg of the University of Pretoria, is a giant step that will take the science of tree breeding to another level.

This can only be good news for forestry because it means we will be able to breed more pest and disease resistant trees with the wood fibre, chemical properties and stem form characteristics that we want. What’s more, the lead time it takes to identify winners and get them out into the plantations in sufficient numbers will be significantly shorter.

Faster, more accurate tree breeding is on the way. This will spur the development of more and more applications for wood-based raw materials as plantations become the bio-factories of the future. Jumbo jets could in future be powered by renewable, Eucalyptus-based fuel.

This is no longer science fiction. Prof Myburg and his team have cracked the code and the tree breeders are already using the info to help them select winners.

The net result is that renewable plantation trees are going to become more and more valuable as their usefulness in a myriad of industrial applications increases.

Access to fibre resources is going to become an even more hotly contested arena than it already is. And I am not just talking about South Africa.

The potential for plantations to meet the world’s voracious appetite for wood resources, taking the pressure off the world’s tropical forests, is taking this much-maligned form of forestry into the mainstream debate on sustainable development. This issue was the centre of debate at the recent New Generation Plantations summit hosted in Cape Town by WWF and Mondi.

According to WWF’s *Living Forests Report*, increasing demand for wood and wood products around the world will increase the pressure on natural forests and other ecosystems, resulting in unsustainable impacts on biodiversity, climate, and ecosystem services – unless alternative sources of wood products can be developed. One solution, says WWF, could be to increase the area under tree plantations by two-fold by 2050 – that’s an additional 250 million hectares of new plantations over the next 35 years or so.

Expansion of plantations on this massive scale, admits Rod Taylor, Director of Forests for WWF International, has huge environmental, social and economic implications and it is essential that we do it right.

A word of caution! This one came from Prof Brian Via, a plenary speaker at the recent Forest Science Symposium held at Hilton College in KZN. It had no specific relevance to his presentation, but it was an insightful observation that is worth repeating in the context of this issue of *SA Forestry* magazine.

“Industry does not like a lot of variation, but nature likes a lot of variation – so somewhere a threshold has been crossed. Perhaps this is the reason for the explosion of pests and diseases in plantation forests.”

Another kind of miracle

The fact that you have this issue of *SA Forestry* magazine in your hands is something of a miracle. We were about to finalise the layout of the magazine and send it to print, when the offices of the design company were cleaned out by thieves. They came in through the roof in the dead of night, calmly ripping off a roof sheet to gain access, and then took several large Apple Macintosh computers out through the roof, including the one with the precious layout of this issue of *SA Forestry* magazine in it.

Somehow the thieves disabled the alarm, and took the computers through the roof and over the electric fencing on top of the boundary wall of the property – without alerting the neighbours.

It took a few days for the layout team to get new computers, access their backups and pick up the pieces, and this issue finally saw the light of day. A little late, but nevertheless intact.

What a crazy world we live in!!

Chris Chapman
Editor

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www.saforestrymag.co.za

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Only new & renewing South African subscribers are eligible to enter this competition. The winner will be announced in the OCTOBER 2014 issue of SA Forestry magazine.

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Subscribe to SA Forestry magazine now and you could be a winner. Two lucky subscribers will win one of these great forestry books.

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“I know there are a lot of people out there doing this – the difference is: I do it properly.”

Mark C. Leitch

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War against alien invasives intensifies

The Department of Environmental Affairs (DEA) published the Alien and Invasive Species Regulations. These regulations come into effect on 1st October 2014. A total of 559 alien species are now listed as invasive, in four different categories. A further 560 species are listed as prohibited, and may not be introduced into the country.

DEA’s Deputy DG responsible for Biosecurity, Guy Preston, revealed that the Department has budgeted R200 million over the next three years to build up its capacity to regulate invasive alien species. This is in addition to R4.2 billion budget to control these species through the internationally renowned Working for Water Programme over the same period. “The costs of controlling invasive alien species are very high. We need to prioritise our efforts to secure the greatest returns on investment. An obvious example would be the pine trees from Europe, Asia and North America that are invading our mountain catchments, and could have unaffordable consequences for water security, as they use far more water than the indigenous plants they displace,” said Dr Preston.

Invasive alien species are species that have been introduced into an area, and are able to out-compete and displace indigenous or useful alien species. They may be plants, animals or microbes, including diseases, and are widely regarded as among the biggest threats to the productive use of land and water, to the ecological functioning of natural systems, to health and to the economy.

One of the 559 invasive species listed in the Regulations is famine weed (Parthenium hystero-phorus), which is an inconspicuous, daisy-like plant from South America that is spreading across northern KwaZulu-Natal. It has the potential to invade all but the driest parts of South Africa, and most of Africa. Fields of famine weed, as the name implies, will wreak economic, ecological and health havoc. Neither South Africa’s stock nor game species can survive in these invaded areas.

South Africa has tens of thousands of alien species, most of which are not necessarily a problem. However, a relatively small percentage of these have become invasive. Nevertheless, the impact of these invasive species on the country’s economy is estimated in the hundreds of billions of Rands, and the impact is rapidly increasing.

The impact on biological diversity

The impact on biological diversity, whilst difficult to quantify in monetary terms, can be devastating. In one research study by Professor Michael Samways of Stellenbosch University, it was shown that the shading of water bodies by just one invasive alien plant, the black wattle (Acacia mearnsii), could cause the extinction of more than half of the dragonfly and damselfly species that are only found in South Africa.

The AIS Regulations are aimed at preventing the introduction of more species that may be potentially invasive into the country, as a first priority. This will entail monitoring of deliberate and accidental introduction of species through the airports, harbours, land borders and through the mail. Those wishing to bring species into the country will be required to have a risk assessment undertaken, to establish the potential harm from introducing the species into the country.

Early detection

The second major focus is on the early detection of and rapid response to emerging invasive species. These are in Category 1a, in terms of the Regulations, requiring immediate control, including by all landowners. An example would be the house crow. Their numbers could have reached in the millions of birds, with severe impacts on other birds and human health, but may be eradicated through the efforts of the Working for Water programme.

The third major focus is to address the established invasive species that are most destructive, which are in Category 1b. The need here is to ensure that coherent control programmes are run, and the gains are maintained. Famine weed, although still an emerging species in many parts of the country, is so invasive that it is already classified as Category 1b.

Biological control – the use of natural enemies of the invasive alien species – is a critical component in this fight against these unwanted weeds and pests, and South Africa has had exceptional success in the use of these agents. It is hoped that suitable biological control agents will be found to combat the threat of famine weed, for example.

Preston said that the most difficult category is the Category 2 species. These are species that have value, such as plantation trees and fish-farming species, and yet can invade with very negative consequences outside of where they are being utilised. The Department has taken an approach that seeks to optimise the economic benefits of these species, whilst minimising the damage that they cause. Permits are granted for their utilization, but they must be controlled outside of what is allowed in terms of the permit.

Category 3 invasive species are those that have the potential to become serious invasives, and whose spread must be contained.

The Department has endeavoured to take a balanced approach for species that have value.

Continued on page 40
Use of old engine oil as chain lube

Good day Chris,

Please do an article on the unacceptable use of old engine oil as a chain lubricant for chainsaws.

I am a chainsaw dealer in Underberg and this practice is becoming more and more widespread among the contractors operating in the district.

Arthur Eggar, A.R.E Enterprises, Underberg

Used engine oil is not good for anything
by Deon van der Merwe, Technical/Training, Stihl....

The importance of Chainsaw chain lubricating oil, or chain oil as we know it, is often forgotten, and in a vain effort to reduce costs there is evidence of a growing trend of operators using discarded engine oil as a substitute.

Firstly, a few facts and figures....

Typically, a saw chain revolves around the guide-bar at speeds of up to 20 metres per second, and as the chain reaches the end of the guide-bar, it does an abrupt 180 degree turn around the guide-bar tip and continues its path along the bottom section of the guide-bar. Normally chain oil is fed into the top guide-bar groove, and the chain drive-links 'scoop' this oil up and carry it forward. When the chain reaches the bar tip, heat generated by friction and centrifugal force will try to throw the oil off the chain, therefore chain oil is specifically formulated with a very high viscosity and special 'sticky' additives which cause it to adhere to the chain in this situation.

Used engine oil has none of these properties and is also contaminated with carbon and very fine metal particles from the motor (ever seen the sludge in the bottom of a sump?) so not only does this "used" oil get flung off the chain as it reaches the tip of the guide and not reach the underside of the guide-bar where it is most needed, but the contaminants in the oil are also going to start eroding the inner workings of the chainsaws oil pump. This now has a snowball effect, less lubrication on the chain = more heat build-up due to friction, the oil now gets thinner due to heat thereby increasing throw-off, the oil pump starts delivering less oil due to wear and this now exaggerates matters even more.

Bar and chain wear is going to increase drastically from this combination, not to mention the potential safety hazards such as snapping chains and guide-bars splitting open.

There is also the fact that these misinformed users are contaminating the forest floor with this cocktail of unsavoury ingredients.

We have not yet mentioned the health risks associated with this practice.

An excerpt from Chevron Lubricants on the effects of used engine oils on people:

**Route of entry:** Eye and skin contact.

**Immediate effects:** May cause slight irritation to eyes or skin on short-term contact. Some wastes may cause an allergic skin reaction, depending on the source of oil. Avoid routine skin contact. If swallowed, gastrointestinal irritation may occur. Misting, although unlikely may cause significant irritation to the nose, throat and lungs.

**Long-term effects:** Used motor oil contains components that are potential skin cancer hazards following prolonged and repeated contact. The concentration of these components increases over the service life of the motor oil.

We have to ask the question...are we really saving money....? 

**Say no to “black oil”!**
by Roger Jackson, Husqvarna Training Manager

Achieve maximum chain life and minimum environmental impact.

Husqvarna Group has, for many years, strongly discouraged the use of 'black oil' as a chain and guide bar lubricant. Chainsaw and leading lubricant manufacturers make bar and chain oils that have been specially blended for their machines to extend the lifespan of the product, to optimise the machine’s power and to minimise the impact on the environment. Why then do contractors and chainsaw operators opt to use an alternate source of lubrication? The primary motivation behind using used motor oil as a lubricant is to reduce operating costs but, unfortunately, the cons of using old oil far outweigh the pros.

Let us examine a few of the negatives associated with this practice:

- When a chainsaw is operating properly, it throws a stream of oil off the bar and onto whatever is in its path. Soot and harmful chemicals in this used engine oil blackens the operators' safety clothing resulting in the accelerated deterioration of the fabric, which poses a risk to the operators' safety;
- The soot in the oil also makes servicing of the unit difficult and extremely unpleasant, which may reduce the quality of the work being carried out by the technician;
- Used motor oil lacks adequate viscosity for lubing the chain. The carbon particles act as grinding paste on the working parts of the drive train, which leads to premature wear and tear on clutch shoes, clutch drums, guide bars, sprockets and chains;
- And, of critical importance, it is very harmful to the environment. When the oil is petroleum-based, it has a negative impact on surrounding flora and fauna. A chainsaw deposits approximately 2 litres of oil directly into the environment every day. This amounts to approximately 440 litres per saw per annum.

In this era of heightened ecological sensitivity, we should be aiming to incorporate the greenest practices possible. This means that if we are considering alternatives to standard, petroleum-based chain lubricants such as the Vegoil developed by Husqvarna Group. Vegetable-based chain lubricants are designed to work in warm and cold temperatures, consume about 40 percent less product than conventional oils, don’t pollute the water table and don’t cause harm to the operator.

As responsible stakeholders in the forestry industry, we simply cannot afford to ignore the negative side effects of harmful shortcuts such as that of using recycled motor oil as a chain lubricant.

The picture shows paper saturated with a sample of the black oil from a chainsaw belonging to a local contractor alongside a sample of the correct cutter bar lube.
The sequencing of the genome of *Eucalyptus grandis* by an international research team led by Prof Zander Myburgh of the University of Pretoria, has opened up a whole new world of opportunities for tree breeders and growers of the iconic *E. grandis* and its popular hybrids.

“Now that we understand which genes determine specific characteristics in these trees, we can breed trees that grow faster, have higher quality wood, use water more efficiently and will cope better with climate change,” said Prof Myburg, explaining the significance of this major scientific milestone. “Even more, we can turn well-managed *Eucalyptus* plantations into bio-factories to produce specific kinds of sought-after materials and chemicals.”

“And with this new knowledge about the molecular basis for superior growth and specific adaptations in plants, we can apply the same techniques to other woody plants that can be used as feedstock in the bio-economy of the future,” he said.

The project to sequence the *E. grandis* genome involved 80 researchers from 30 institutions across 18 countries. It took them five years to sequence and analyse the 640 million base pair genome. Combing through the more than 36 000 genes found in Eucalyptus, the researchers homed in on those that may be able to boost the economic value of the trees by influencing the production of cellulosic raw material that can be processed for pulp, paper, biomaterials and bioenergy applications.

Prominent co-leaders of the project include Prof Dario Grattapaglia of the Brazilian Agricultural Research Corporation and Catholic University of Brasilia; Dr Gerald Tuskan of the Oak Ridge National Laboratory and the BioEnergy Science Centre and US Department of Energy Joint Genome Institute (DOE JGI); Prof Dan Rokhsar of the DOE JGI and Dr Jeremy Schmutz of the DOE JGI and the HudsonAlpha Institute for Biotechnology.

The US Department of Energy was a major funder via its Joint Genome Institute in Walnut Creek, California, where most of the DNA sequencing was done.

South Africa’s Department of Science and Technology, together with Sappi and Mondi, supported Prof Myburgh and his team by funding the construction of the genome map used as a scaffold for genome assembly, as well as the...
sequencing of expressed genes used for annotation of the genome.

“The development of new knowledge and skills in tree genomics, and the application of the knowledge to enhance industrial competitiveness, is directly aligned with the Department of Science and Technology’s vision of a bio-economy,” commented Dr Phil Mjwara, DG of the DST.

Prof Myburgh’s research team identified genes encoding 18 final enzymatic steps for the production of cellulose and the hemicellulose xylan, both carbohydrates that are enriched in wood fibre cells and can be used for biofuel production. “By tracing their evolutionary lineages and expression in woody tissues we defined a core set of genes for biopolymer production that are highly expressed in the development of xylem – the woody tissue that helps channel water throughout the plant and strengthens the tree,” explained Prof Myburgh.

Team members found that among plants that have been sequenced to date, Eucalyptus showed the highest diversity of genes for specialized metabolites such as terpenes. These hydrocarbons serve as chemical self-defence against pests, as well as providing the familiar aromatic essential oils used in medicinal cough drops and in industrial processes.

Among the family of terpene compounds in particularly high abundance in Eucalyptus trees may be promising alternatives for petroleum-based fuels. “This means that in future we could use specially selected Eucalyptus genes in bacteria and yeasts, turning them into bio-factories to manufacture advanced biofuels on a large scale. Jumbo jets may take off powered by renewable Eucalyptus-based fuel.” – Prof Zander Myburgh

Gains in tree breeding

According to Ben Pienaar, Technical Manager of Mondi’s Forest Operations, improvements in tree breeding techniques at Mondi are already being realised as a result of the genome research team’s pioneering work. He said that this is expected to continue apace as the expertise of Mondi’s tree breeders and research partners to use the new genetic tools increases.

“It provides a massive amount of information,” said Ben. “We are trying to zone into specific regions in the genome to establish markers which enable us to screen the trees we are breeding for the characteristics that we want. We can shorten the time it takes to select new genetic material, and we have a better chance of breeding winners because we can link the desirable attributes of a tree to genetics.”

Although we don’t understand it all yet, we can build on what we know to make significant improvements in our breeding programme,” said Ben.

Sappi’s contribution

According to Nicky Jones, Leader of Sappi’s Tree Biotechnology Programme, Sappi made the decision to join the Forest Molecular Genetics (FMG) Programme, headed up by Prof Myburg, in order to begin developing modern genetic and genomic approaches that could be easily integrated into the company’s conventional breeding programme, to speed up this process.

“Sappi’s contribution to this achievement has been that of providing access to high quality, expressed gene sequences (from RNA) of one of our commercial E. grandis x E. urophylla hybrid clones, which at the time represented the most complete catalogue of eucalypt genes worldwide,” said Nicky. “Since different tissues of the tree were sampled, gene expression (level to which genes are switched on) associated specifically with wood-forming genes could be identified, with a focus on those involved in wood biosynthesis. Assembly of the Eucalyptus genome sequence data used Sappi’s E. grandis x E. urophylla hybrid genetic maps (with > 2200 markers) to anchor scaffolds to the Eucalyptus chromosome models. The significance of this, to Sappi, is that one of our most important clones is directly linked to the recently sequenced genome.”

Nicky said that the knowledge gained from the sequencing of the genome would enable trees with desirable properties to be selected at a much younger age (than current methods allow) and to be carried forward for clonal selection or for further breeding. This would result not only in a reduction of the length of the breeding cycle but also in increased selection efficiency and allow the development of tree varieties that can be processed for novel biopolymers and other biomaterials.
The role of New Generation Plantations in sustainable development

The role that plantation forestry can play in sustainable development in the face of mounting pressure on the world’s natural forests and other ecosystems was under the spotlight at the New Generation Plantations Summit held in Cape Town recently. The Summit was hosted by Mondi and WWF.

According to WWF’s Living Forests Report, population growth will result in increasing demand for wood and wood products around the world. This will increase the pressure on natural forests and other ecosystems, resulting in unsustainable impacts on biodiversity, climate, and ecosystem services, unless alternative sources of wood products can be developed. One solution could be to increase the area under tree plantations by two-fold by 2050 – that’s an additional 250 million hectares of new plantations over the next 35 years or so.

Expansion of plantations on this massive scale, says Rod Taylor, Director of Forests for WWF International, has huge environmental, social and economic implications, and it is essential that we do it right.

WWF, an international conservation organisation, launched the New Generation Plantations Platform in 2007; an initiative to explore how tree plantations can be part of the conservation solution. Through this platform, WWF has engaged with companies and governments from around the world to explore solutions, share ideas and promote better ways of planning and managing plantations for enhanced business, ecosystem and social value.

Mondi, which has forestry operations in Russia and South Africa, is a founder participant of the NGP Platform and has played a key role in the initiative. Last year Mondi and WWF co-hosted the NGP South Africa Study Tour in which participants visited various plantation operations around South Africa including Bracken Timbers near Greytown, and Ozwathini, where small-scale farmers grow wattle on communal land. One of the highlights of the tour was a visit to SiyaQhubeka Forests (SQF), a partnership between Mondi, government and communities, which provided useful insights into the role that plantations can play in delivering social and environmental benefits, whilst ensuring financial value for shareholders.

The NGP Summit in Cape Town provided the opportunity for key plantation forestry stakeholders from around the world to come together to discuss ways in which plantations can help meet the massive social, economic and environmental challenges.

Keynote speakers addressed different aspects of the Summit theme:

Maurice Makhathini, Head of Land at Mondi, explained that corporate social investment alone does not meet the challenges that communities living on and around Mondi’s landholdings face. Consequently Mondi has had to learn how to become an “agent for rural development”.

Thus Mondi is working with government to provide tenure, municipal services and economic opportunities for tenant communities in the Mondi Mkhondo Development Programme; addressing land reform by partnering with land claims communities through a lease-back model; and providing low interest loans and support services to develop entrepreneurs and emerging businesses through Mondi Zimele.

Maurice listed a string of challenges that Mondi faces in its role as ‘development agent’ in rural areas where it operates:

- Internal capacity to manage company-community partnerships;
- Lack of government capacity in relevant departments;
- Weak local municipalities;
- Communities lack the capacity to manage their own affairs and to function effectively, as well as weak governance issues;
- Challenges from communities excluded from participation in projects;
- Plus there is an increase in general lawlessness, uncertainty created by land claims etc which tends to de-stabilise communities.

SQF Community Trust member Muzi Gumede provided community insights into the SQF partnership and on the difficulty of balancing business needs with community expectations.

Morne’ du Plessis, CEO of WWF-SA, spoke of the need to “build resilient landscapes through shared value creation”. This is about being competitive in business while at the same time creating social and environmental benefits in regions where you operate.

Carlos Roxo of Fibria, Brazil, explained how his company turned around an adversarial relationship with communities by engaging constructively, building trust and creating income earning opportunities.

Douglas McGuire explained how the Food and Agriculture Organisation is launching an initiative to restore 150 million ha of degraded land by 2020 in an effort to increase food production to feed the world’s growing population.

Peter Gardiner, Group Natural Resources Manager, Mondi, wrapped up the Summit by emphasising the importance of ‘shared value’ and said ecosystem, social and economic solutions need to be worked out at the landscape level.

An example of this approach is Mondi and WWF’s restructuring of their ongoing partnership around the Mondi Wetlands Programme to work together with other land users and stakeholders in the Umgeni catchment to help find solutions for the water crisis that is looming in this region.
COMMITTED to a sustainable FUTURE

Mondi aims to be a sustainable, socially responsible business that makes a real and lasting contribution to the communities in which it operates.

We ensure that we invest in those programmes that are most relevant to the needs of our employees and the communities in which they live and work. Our community investments focus on the following priorities:

- Health and welfare;
- Education;
- Environment;
- Local economic development;
- Sports and recreation.

Mondi has launched a number of initiatives designed to improve the quality of life of neighbouring communities and those living in and around forestry operations. Some of these initiatives are benchmarks within the forestry industry, and are aligned with government objectives of creating jobs and alleviating poverty.

Partnerships bring health services to rural communities

Mondi has partnered with the KwaZulu-Natal and Mpumalanga Departments of Health to roll-out five mobile clinics that provide comprehensive primary health care services to rural communities. The mobile clinics are improving the lives of Mondi’s workers, as well as their families and the communities in and around the forestry operations. Healthy communities mean a healthy society and workforce; investing in them is an investment in sustainability.

Creating sustainable jobs through small business support

Mondi Zimele was established in 2007 as the enterprise development arm of Mondi SA. While it initially focused on facilitating sustainable black economic empowerment in businesses operating in the value chains of Mondi, Mondi Zimele has since expanded its focus to incorporate support for employment creating small businesses in communities around Mondi’s areas of operation including emerging forestry land owners and small growers. In 2012, Mondi Zimele further intensified its focus on job creation and small business development through a partnership with the Development Bank of South Africa which has resulted in the establishment of a R140 million Mondi Zimele Jobs Fund. Since inception Mondi Zimele has extended support to over 80 small businesses with a collective turnover in excess of R650 million per annum and an employment footprint of over 4 200 people.

Mondi and REAP send rural students to university

The Rural Education Access Programme (REAP) is an NGO established to assist academically able learners from poor rural backgrounds in South Africa to access a tertiary education. Mondi’s partnership with REAP currently enables more than sixty students from rural communities to start a tertiary education. The students are studying towards degrees in, amongst others, Medicine, Engineering, Education, Commerce and Social Sciences at recognised institutions.

Community development through the SEAT reporting process

We make every effort to be a reliable and responsible neighbour at all our operations. Our socio-economic impact assessment (SEAT) process is fully transparent, involves a wide range of internal and external stakeholders and is used as a basis for the identification, monitoring and management of each operation’s socio-economic and environmental impacts. Feedback received from our stakeholders is used to improve our social performance.

For more information, visit www.mondigroup.com
Two family-owned and run farms have taken top honours in the 2014 NCT Tree Farmer of the Year Awards.

In the commercial category, Alford Farms, located near Vryheid in northern KwaZulu-Natal and owned by the Schefermann family, took top honours, while Alfred Khoza (Senzakahle Trading Enterprise) outside Mtubatuba in northern Zululand was awarded the winner in the category of a farm managed on communal land.

The winners were recognised for their excellence in sustainable plantation management which earned them a place on the exclusive list of achievers in tree farming.

Keeping it in the family

The NCT Tree Farmer of the Year in the commercial farm category is Alford Farm, owned by the Schefermann family. Management of the farm, which is situated near Vryheid in northern KwaZulu-Natal, has recently been handed over from Trevor to Neville Schefermann, the 4th generation of the Schefermann's to be involved in the business.

The original farm of 555 ha was purchased in 1931 by Trevor's grandfather. Trevor subsequently expanded the operation by buying two adjoining farms. The current land area is 1 294, which includes 214ha of leased land.

Approximately one third of the land that they manage is under plantations consisting of 219ha wattle, 96ha pine and about 35ha of eucalyptus. 145ha is cultivated for maize production and 150ha as planted pastures. The remainder of the area is managed as extensive grasslands and used for grazing their cattle.

Alford farm is renowned for their breeding stud herd which produces a three-way cross between Simmentaler, Afrikaners and Sussex breeds. They also run a beef herd which produces wiener for annual sales.

Timber compartments are planted to species best suited to the site conditions, with the pine being planted largely in frosty areas. Wattle is planted on sites where less severe frost occurs, or as strategic fire breaks. These plantations are managed to produce a variety of products including sawlogs, pulpwood, bark and firewood. Exceptional silviculture practices ensure that the mature plantations are of a high quality producing good yields for the area.

The business is managed entirely by the family with 26 permanent staff employed to assist with running the farm. The only operations that are outsourced are the harvesting and stripping of bark.

The NCT citation notes that the farm complies with all the broad principles of good land stewardship including legal compliance and implementation of best operational practice.

Notable features of the operation include the following:

One of the farms that was bought comprised 306 ha of wattle jungle, which was rehabilitated and transformed into a productive plantation area in the space of six years. This was achieved through lining out a grid of compartments with a rectangular road system, thinning existing salvageable jungle into straight lines and clearing and replanting the worst areas. Today this farm is a productive, weed free plantation operation.

Father and son team of Trevor and Neville Schefermann, top commercial tree farmers.

Beautifully kept Alford farm in Vryheid, with maize, grassland and timber.
All valleys have been delineated, exotic timber has been removed and the areas rehabilitated with riparian vegetation.

The system of veld management is highly effective and productive. Trevor talks about being a ‘grass’ farmer rather than a cattle farmer. The grasslands are divided into camps and grazing is carefully managed to maintain species diversity. Veld is carefully monitored and burnt every three to four years when it starts to become moribund.

Neville has developed a productive harvesting system with his neighbours which involves sharing resources. The three partners in the consortium pool their wattle bark quota to achieve a combined bark tonnage of 70 tons/week. A contractor is paid on the tonnage of bark stacked in field (this involves harvesting and stripping). The consortium then share their equipment to get product to depot and market. The system has resulted in improved efficiencies and big cost savings.

Due to the high frost risk in the area, wattle has traditionally been established using the natural regeneration system. However, Neville is experimenting with different methods to try and improve the genetics of the wattle on the farm, and reduce costs. This involves shallow ripping, planting seedlings early and allowing natural regeneration to develop as a ‘frost shield’ around the young seedlings. Surviving seedlings are then selected after the first winter and the excess natural regeneration is removed.

The Schefermann farming operation is a shining example of a successful, family-run enterprise. Foresight, implementation of best operating practices and excellent communication have been the basis for their success.

Building a business around forestry on communal land

Alfred Khoza hails from KwaMnqobokazi reserve under the chieftaincy of Ngwane. He joined NCT in 1994, later establishing Senzakahle Trading Enterprise CC in 2008.

Alfred developed an interest in forestry while working for corporate growers as a supervisor for 15 years. Eventually he decided to venture out on his own and established his own small plantation. He says he chose forestry ahead of other land uses because he believed the input costs were lower and that the rate of return would be relatively high. He also believed that – despite the long rotation – forestry carried a lower risk than sugar cane.

Alfred’s choice in pursuing forestry plus the years of hard work has paid off, and he is now the proud owner of some 26ha of eucalyptus timber plantation and he is planning to expand even further. Forestry has provided the platform for him to broaden his business – he currently owns 48 rooms (for renting) at Kwa Msane. He owns a tractor and trailer and...
SA Forestry magazine | August 2014

INTERNATIONAL INCIDENT COMMAND SYSTEM TRAINING

FFA Training in collaboration with: SA ICS & USA Instructors (experts in their field) is presenting:

Incident Command System – Position Specific training in the Western Cape during October 2014.

See course details below:

* Prerequisite work to be submitted before or on 30 September 2014 for course attendance confirmation.

<table>
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<th>COURSE TITLE</th>
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| *Task Force Leader & Strike Team Leader* | Describe the responsibility for managing and supervising Task Force/Strike Team resources, reporting, record keeping and after action requirements  
**Objectives:** Ability to apply risk management processes and appropriate tactics in various incidents with resources organised in teams or task forces. | 13-15 October 2014  
(2½ days)  
Cape Town Lodge  
R3 541.00 (excl Vat) |
| *Division Supervisor & Group Supervisor* | Describe the duties and responsibilities required for a Division/Group Supervisor  
**Objectives:** Division/group management, organisational interaction, division/group operations. | 15-17 October 2014  
(2½ days)  
Cape Town Lodge  
R3 541.00 (excl Vat) |
| *Resources Unit Leader* | Describe the related responsibilities to resource status systems, planning process and implementing a demobilisation plan.  
**Objectives:** Effective management of personnel, equipment and supplies for the resources unit and demobilisation unit, role as unit leader in the operational planning process, produce and disseminate products and information. | 13-15 October 2014  
(2½ Days)  
Cape Town Lodge  
R4 261.00 (excl Vat) |
| *Situation Unit Leader* | Describe the duties and responsibilities of a Situation Unit Leader with an overview of how to activate, set-up, organise and manage the unit  
**Objectives:** Skills to produce and disseminate timely and accurate products on incident status using technology to produce maps, ICS forms, situation processes. | 15-17 October 2014  
(2½ Days)  
Cape Town Lodge  
R4 261.00 (excl Vat) |
| *Operations Section Chief* | Describe the elements of planning critical to the Operations Section Chief as a member of an Incident Management Team  
**Objectives:** Information gathering, meetings & briefings, risk assessment, safety and adjusting tactics, managing the operations section and the role in demobilisation. | 20-24 October 2014  
Cape Town Lodge  
R5 140.00 (excl Vat) |
| *Planning Section Chief* | Describe the role and responsibilities of a Planning Section Chief as a member of an Incident Management Team  
**Objectives:** Information gathering, strategies, meeting & briefings, Incident Action Plans, interactions, managing the planning section. | 20-24 October 2014  
Cape Town Lodge  
R6 800.00 (excl Vat) |

Course Information Contacts: Michelle Kleinhans  
michelle.kleinhans@wofire.co.za • 013 741 1119 or 078 272 9089 (a/h)

Course Registration Contacts: Pradhantha Devnarain  
pradhantha.devnarain@wofire.co.za • 013 741 1119 or 079 495 5023 (a/h)

He says that this operation breaks down the soil and allows for better root penetration.

He used this method when he recently planted *C. henryi* seedlings at 3m x 2m espacement. The plants are showing signs of good, early growth because they were planted on a well prepared site.

Alfred generally does a manual ring weed in his young compartments, and also applies a chemical spray. To protect his trees from wildfires he disceds a 3.5m strip around his compartments as part of fire protection and prevention strategy. He also fenced around all his recently planted seedlings to protect them from cattle damage.

Alfred Khoza has built up a business around 26ha of eucalyptus grown on communal land in Zululand.

has been able to build a decent house for his family. He says he has benefitted immensely from his membership of NCT through acquiring technical knowledge about forestry through workshops and field days as well as logistical assistance in getting his timber to the mill, and market access.

Alfred employs 28 people to help him run his forestry business. His wife, Lindiwe, serves as manager of operations and his daughter is a clerk.

### Silviculture

Alfred discs the land before planting to improve the effective rooting depth of the seedlings which ensures better survival and growth of the seedlings.

Part of Alfred Khoza’s plantation.
Power + comfort + safety

STIHL’s lightweight, one man BT 121 auger offers the best of both worlds: robust and powerful performance combined with the comfort of a hip pad as well as a low vibration handle design. As with all STIHL tools and equipment, safety is a built in essential. The engine controls are integrated into the handle for easy access, while the STIHL QuickStop® drill brake interrupts the power flow if the bit connects with a stone, root or other blockage. Built to cope with a wide variety of pitting, construction and landscaping tasks, especially in rough or remote terrain, the BT 121 offers a confidence-building 3-in-1 package.

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A Mpumalanga-based timber harvesting contractor, with a healthy appreciation for the numbers involved, has gone full circle from manual system to mechanized system.

Cassie Greyling studied towards a BCom degree in accountancy and although he is lost to that profession, it is due to his understanding of the numbers that he is able to clearly see the bigger picture in terms of the long-term benefits of mechanising his harvesting operation.

“I was first exposed to forestry and timber harvesting on the farm of a friend of mine,” he says from his office near Graskop. “I then started a timber harvesting operation as a contractor under my own name in 1990 and ran that until 2004, when we established Can Do Timbers.”

In those early days, Greyling worked with 20 labourers and a small pick-up truck, harvesting 500 tons of timber a month. In 2004, his client Sappi suggested he expand his business and so Can Do Timbers was born with a contract to harvest 60 000 tons a year. This soon grew to a contract for 140 000 tons of Eucalyptus annually.

“Our manual harvesting teams would traditionally consist of one chainsaw operator who would fell and crosscut a tree before a team of six others would debark it and stack the timber in two-ton stacks in-field,” he says. “This timber would stay in-field for up to six weeks to dry and then be bundle-loaded out with a John Deere 540G cable-skidder to the roadside for short-haul to a nearby depot.”

Bell loggers
Greyling bought his first Bell 125 Logger in 1994 and has since graduated to running a fleet of nine Bell 225 crankboom loggers. “Since those early days, our Bell loggers have been the mechanical backbone of our operation,” he smiles. “They are such never-say-die machines and really reward the care we lavish on them, while working them hard as well. After 500 hours of using a new machine, we switch to a R-4 type oil, which is somewhere between conventional and synthetic oil, which we believe adds to their longevity.”

“They are also not expensive machines and are simple to maintain and repair with component replacement like hydraulic pumps easily done,” he adds.

Cable skidder
Can Do Timbers bought their first John Deere 540G cable skidder in 2004 to extract timber from in-field to roadside.

“Our John Deere cable skidders have proved themselves over and over again to be real workhorses and our oldest machine has given us 24 000 hours of service,” Greyling says. “And yes, on that particular machine we have rebuilt its engine and transmission, but given the high mechanical availability we’ve consistently enjoyed from it and the other similar skidders in our fleet of four, we are well pleased with such a great return on our initial investment.”

In 2013 Can Do Timbers took another major leap...
forward in their quest to mechanise their harvesting and extraction operations. Greyling and his team took delivery of a John Deere 759JH harvester fitted with a Waratah HTH616 debarking harvesting head, after seeing a demonstration of the system in the KwaZulu-Natal midlands.

“We realised that this is a very specialised machine, but what convinced us that this was the way to go to more comprehensive mechanisation was the fact that the machine is sold, serviced and backed by Bell Equipment with its large national footprint, which gave us the confidence that there would always be spare parts and advice available,” he says. “Another factor was that the John Deere 759JH harvester is tracked and with its levelling cab, would be ideally suited for the steep terrain where so many of our Eucalyptus compartments are situated.”

**Integrated system**
The John Deere 759JH harvester has rapidly become an integral part of the harvesting system at the 6 000 hectare plantations that fall in the Can Do Timbers’ mandate, in the Graskop area. The machine is used in three eight-hour shifts, and worked its way out of a 2 000 hour warranty in just three months. Within its first year of full operation it has clocked up more than 6 500 hours of service.

“We do daily checks at each shift handover and really take care of this machine and it shows in the 11 tons per hour production it gives us at a fuel-burn rate of 20 litres an hour,” Greyling says. “Servicing is strictly done every 500 hours and this in turn translates into mechanical availabilities in the high 90%.”

To further speed up the timber extraction part of the cycle, Greyling recently purchased a John Deere 1710D 8-wheeled forwarder to work in tandem with the John Deere 759JH harvester.

“Our harvesting has now changed with this equipment as the harvester fells, debarks and cross-cuts the timber into 4,8 metre lengths and lays it down in the compartment,” Greyling explains. “The forwarder, which is fitted with metal bogey tracks for superior traction and reduced impact on the soil, then follows the same line and loads the timber using its Waratah 885 crane for the extraction to roadside where Bell loggers are used to load the timber onto short-haul trucks.”

**Improved production**
The John Deere forwarder has in this case replaced the use of the skidder and improved production rates with its heavier payload and quick cycles. Average fuel burn of around 16 litres to the hour is also not breaking the bank.

“With less manual labour available, mechanisation is the way forward for us,” Greyling says. “But with any such exercise, having the correct purpose-made tools is imperative and this we have definitely found with our John Deere and Bell forestry equipment.”
Driving around the rural towns of KwaZulu-Natal, Mpumalanga and even into the Eastern Cape, you are likely see the TWK logo almost everywhere, and may wonder what it is exactly that they do. Well, the answer is that they do a lot of things, but all of them are geared to providing goods and services primarily to farmers. TWK Agri, as it is known today, is a highly diversified group of companies with its roots in timber, owned and managed by farmers for farmers.

TWK has its origins in the Piet Retief Wattle Growers & Timber Association, established by a group of 12 farmers in 1938 to help them market their wood and wattle bark.

Two years later, the members of this association and other timber farmers in the district established the Transvaal Wattle Growers Co-operative Agricultural Company Limited, under the chairmanship of farmer and lawyer Paul Olmsdahl. Their objective was to market timber and bark on behalf of members, but more specifically to control the production of wattle bark so as not to flood the market.

Over the next 70 years TWK developed organically to meet the needs of its members, transforming itself into a private company in 1998. The 500 members of the co-op became shareholders in the company.

Today the growing, processing and marketing of timber is still central to TWK’s business, contributing some 30% of total turnover.

Besides timber, TWK-Agri comprises a number of divisions:

- **Grain:** storing, processing and marketing grain;
- **Trade:** fertilizer, animal feeds, fencing, hardware, irrigation equipment and more;
- **Mechanisation:** equipment, services, repair and manufacturing of innovative new agricultural equipment. TWK are suppliers of New Holland and Landini tractors, Miller Hoogloop Spuit and Camara feed mixers, among others;
- **Finance:** seasonal credit facilities, month accounts, forestry loans and asset finance;
- **Insurance:** crop, short-term, commercial and specialised insurance; and
- **Motors:** the company owns a number of Toyota, Hino, Mahindra and Midas dealerships and a 67% shareholding in Protea Tyres Ermelo, which specialises in the retread of truck tyres.

The TWK group has its head office in Piet Retief, which is geographically located at the centre of South Africa’s timber belt, with 1 700 permanent employees. TWK retail outlets and offices are scattered far and wide across Mpumalanga, KZN, Zululand and Eastern Cape. Shareholders are primarily farmers, although shares are traded on an on-line over-the-counter platform at www.twkshares.com.

“Around 10% of shareholders are not farming anymore,” commented TWK Managing Director Andre Myburgh. “But the idea is to keep it as a farmers’ business.”

He says the company is currently engaged in a re-structuring process that will see a broad based black economic empowerment group, Vumbuka Trust, acquiring 25% of the shares in TWK Agri (Pty) Ltd.

Besides the goods and services they supply to shareholders and customers, TWK provides a wide range of services and products, including timber, grain, trade, mechanisation, finance, insurance and motors.
range of development services to emerging farmers and agri-businesses. Emerging farmers can get access to finance and technical skills, plus business development support for emerging entrepreneurs such as broiler production and charcoal businesses. They buy and market charcoal and timber from small growers, and supply small ‘makapas’ timber businesses. On the grain side, they help set up maize meal ‘container’ spaza shops.

**Timber business**

TWK started out marketing timber on behalf of members, and later established their own sawmills. The co-op began purchasing grassland farms in the Piet Retief area and converting them to timber on a small scale. Then in 2001 TWK took a decisive step with the purchase of the Shiselweni estate in Swaziland, just across the border from Piet Retief. Shiselweni was planted in the 1960s by the Commonwealth Development Corporation.

Shiselweni comprises a total of 17 000 ha with 12 000 ha planted to pine, gum and wattle and two sawmills, one producing industrial and mining timber and the other structural timber. TWK has added a charcoal manufacturing plant and recently a transmission pole facility.

TWK also owns plantations in South Africa, and manages around 1 500 ha of plantations on behalf of shareholders and customers, bringing the total planted areas under TWK management to 18 000 ha, and moving a total of around 1.2 million tons timber a year from own, managed and customer plantations.

Timber from the South African plantations is processed at the SAWCO sawmills at Shiselweni. Pulp timber is traded with Sappi or Mondi, or chipped at the TWK-owned chip export facility at Richards Bay.

Residue from the sawmills is sold to board plants in South Africa (PG Bison) and Swaziland (Montigny Investments), and also to the sugar industry.

TWK has recently established a transmission pole treatment facility alongside the sawmills to take advantage of the higher prices that they fetch in the marketplace. The E. grandis grown in the plantation is ideal for this purpose.

In keeping with their philosophy of innovating and diversifying, TWK introduced livestock into the Shiselweni Estate last year. The aim, according to the man in charge of the project, Pierre Henning, is to use livestock to reduce the fuel loads, clean under canopy vegetation and to manage open areas and reduce bush encroachment, while at the same time creating another source of revenue. There is a lot of synergy between livestock and forestry that TWK wants to exploit.

There are currently 459 head of cattle of mixed breed, mainly Bonsmara’s, and 192 Boer goats. One third of the estate has been fenced off for the TWK herd, while the other two thirds is used by cattle belonging to neighbouring communities under a permit system.

Another innovation is the creation of ‘green fire belts’ inside the pine compartments. Every seventh row has been removed in a thinning operation, and then disced with a view to planting a suitable short term crop like ground nuts. Trial crops will be planted in these belts come spring.

The Shiselweni plantation manager is Bob Tumber, a Swazi who started working here as a forester in 2005. He said silviculture operations are performed by a mix of own employees and contractors, while all the harvesting is outsourced. All of the contractors are Swazi-based businesses. Harvesting is motor-manual. TWK has been proactive in helping emerging contractors to develop their businesses.

The estate is surrounded by poor rural communities who rely heavily on the Shiselweni team for...
assistance. Bob says they have partnered with several schools to provide support, and have helped with water supply projects and honey bee projects.

Community cattle are allowed to graze in certain areas in terms of agreements with local chiefs, and the people have access to clearfelled compartments on designated days to collect firewood.

“I would say we have good relationships with our neighbouring communities, we depend on each other in a lot of ways,” said Bob. Shiselweni and SAWCO workers are recruited primarily from surrounding communities.

Shiselweni has achieved FSC certification under TWK’s ownership, and there are still a lot of old stumps visible in riparian zones where trees were removed to comply with the FSC requirements.

TWK’s business philosophy is based on adding value to timber wherever possible and supplying diversified markets in South Africa, Swaziland and Mozambique. The chipping facility at Richards Bay exports hardwood chips mainly to the East. They purchase standing timber from shareholders and customers and help with the transport logistics, whether it be road or rail.

TWK also runs a nursery in Piet Retief which supplies commercial tree seedlings to their own plantations as well as forestry customers.
TWK involved in community forestry project

TWK manages a 1 000 ha farm outside Piet Retief on behalf of the Amangcamane Community Property Association. The land, with around 500 ha planted to gum (mainly E. dunnii and E. macarthurii), was bought by government in terms of its land reform programme and transferred to the CPA.

Much of the work to date has involved establishing a rotation system and cleaning up open areas. The plantation is FSC certified.

Technology transfer & mentorship

According to TWK’s R&D manager, Johan Nel, the contract is for an eight-year period (one rotation) in terms of which TWK provides management, technical guidance and mentoring. Silviculture operations on the farm are performed by the CPA under the guidance of a TWK forester, while the harvesting is outsourced to a contractor. Labour is sourced from the local communities.

The CPA has used revenue from timber sales to build a store-room, workshop, office and accommodation for a fire team, and to purchase a fire-fighting unit. Johan says plans are to introduce livestock on the open areas to diversify the business.

Each of the 50 households that are members of the CPA has received R10 000 from timber sales to date. More importantly, the forestry business is operated on a sustainable basis with the balance of the profit being ploughed back into the business with a resultant growth in asset value.

“We are learning new skills and we will transfer them to our children,” commented a member of the CPA management committee, Elizabeth Bhembe. “Thanks to TWK and thanks to government for giving us an opportunity to improve our lives through this project.”

Members of the Amangcamane CPA Themba Maseko and Elizabeth Bhembe with the TWK forester who works closely with them, Dollos Uys.

Workshop, storeroom and accommodation used by the fire team on duty.

Amangcamane CPA workers doing maintenance in a young eucalyptus compartment on the community farm.

Thaumastocoris infestation on the community’s Eucalyptus trees.
Backbone of the southern Cape rural economy

by Theo Stehle

In the forest industry the smaller players are often overlooked, while the larger enterprises tend to get most of the attention. Yet the small entrepreneurs can make a significant contribution to the local economy.

One of these small businesses that has a big impact is Elandskraal Timbers near Sedgefield in the Garden Route, where Hanno and Nikki Smit manage a small commercial pine plantation estate complete with wet mill and dry mill.

Many years ago Hanno’s father had the foresight to buy land and plant it to radiata pine. After graduating with a building degree from the UPE in the early 1990s, Hanno’s passion for woodwork and the outdoors made him join his brother in making furniture from indigenous timber purchased at the southern Cape auctions. Soon a used WoodMizer was acquired and set up in the family’s Elandskraal plantation with young Hanno periodically camping out on the estate while sawing up the timber for their furniture business.

Managing the plantation

In 1994 this became a permanent occupation, when Hanno started managing the plantation and harvesting the first trees from thinnings. He never looked back. His passion for working hands-on with trees, being personally involved in all the stages of plantation management to the harvesting and processing of the timber, made him expand his tiny operation. After their marriage, his wife Nikki shared this passion with Hanno. The Elandskraal family farm of 150ha was gradually extended by further purchases and managing another plantation estate by agreement, bringing the total plantation area to 250ha, comprising mainly Pinus radiata in the sandy areas with some P. elliottii in the clayey soils.

Proud owners

Today Hanno and Nikki are the proud owners of a very well managed plantation. Neither of them have studied forestry, but they acquired the know-how by self-education and building on their own experience by trial and error. Both husband and wife are involved hands-on in all the plantation operations on a daily basis. Of course, they have a work team of 10 hand-picked local people with a supervisor-driver-cum-handyman to assist them. But it is not unusual to find Hanno and his wife with pruning saws in the plantation working alongside their team.

The plantation is managed for saw-timber on a 30-year rotation, with the first stands now reaching maturity. The plantation is divided into compartments of which the areas are known, and record is kept of date of planting/natural regeneration.

Where possible, mostly on the old dunes, radiata pine stands are regenerated naturally and spaced, otherwise they are planted, to an espacement of 2,7m x 3,0m, giving a count of 1 234 stems per hectare. Planting pits are prepared with an augur. Seedlings are purchased from the former MTO Forestry nursery at Karatara which is now privately owned.

Thinings

Three thinning operations are carried out during the rotation, with the first thinning at four years. The trees are also pruned four times during the rotation, with the first being an access pruning. Hanno does the marking for thinning and pruning himself. He roughly follows the old State thinning prescriptions, but prefers to do his thinnings and prunings visually. His silviculture regime is quite intensive, with fire protection an important consideration. Invader vegetation control is carried out regularly, applying a combination of Mamba and Garlon with a knapsack spray can.

Fire protection consists of keeping the stands well thinned and pruned and clean of invader vegetation, and having firebreaks around high risk areas only. Elandskraal Timbers is a member of the local Fire Protection Association.

Conservation

Some 66ha of indigenous forest and 10ha of wetland on the estate is managed for conservation, the main activity being invader vegetation control.

Timber has up to now been harvested only from thinnings, but clearfelling of the first mature stands will soon commence. Annual roundwood timber production is about 2 500m³, of which about 2 000m³ is sawn into planks on the estate, while the balance of about 300m³ of large roundwood saw-timber and about 200m³ of poles, is sold to other customers. Roundwood bought in from other private landowners will be phased out as the estate’s mature stands come into production. Pole production is not currently a management objective.

Elandskraal Timbers’ bushmill is operated
by Hanno himself, using the same 30-year-old WoodMizer he started with on the estate about 20 years ago. His work team is periodically pulled in to assist with the handling of the timber.

A daily production of about 20m³ of roundwood is achieved. This means that in order to saw the annual roundwood volume of 2 000m³, Hanno personally has to saw for about 100 days a year, which is no mean feat considering that attending to plantation operations is virtually a full-time job. The WoodMizer is used for breaking down the logs, while another vertical saw used for breaking down small logs also doubles as a re-saw. These saws are complemented by an edging saw.

Wet-off-saw
Most of the sawn timber is sold wet off the saw to sawmills and the industrial timber market as far away as the Boland, mainly for pallets, packaging and crates for the fruit industry. But believe it or not, Hanno even operates a dry-mill operation on the side. The timber is air-dried on site and milled into flooring, ceiling and decking boards whenever there is an opportunity.

The dry mill occupies part of a spacious mechanical workshop, in which Nikki’s retired father, Tony, attends to the daily maintenance and repairs of all mechanical equipment on the estate, including vehicles, logging machines and sawmilling equipment. He also takes care of the sharpening of saw blades. This makes the operation a truly self-sufficient family enterprise.

Balanced lifestyle
Although annual production is steadily increasing as the plantation reaches maturity, Hanno and Nikki are adamant that they will maintain the current scale of sawmilling operations to maintain a balanced lifestyle.

“Our quality of life is at stake, and we will refrain from expanding our operations even if it results in stands becoming over mature. Accumulated roundwood surpluses will simply be sold off,” said Hanno.

Apart from raising a family, the couple are extremely fit adventure sport enthusiasts, having taken part in contests locally and on other continents. They live in a modest, self-built timber home on the estate, far away from the pressures of modern, urban society, surrounded by the most beautiful landscape in the world.

Small enterprises like that of Hanno and Nikki Smit are the real backbone of rural economic development in the Western Cape, if not the country as a whole.
Vehicles that think for themselves! For many this might sound like a futuristic, space-age fantasy, but for those in the know – this concept is already a reality in the products on the market from dominant commercial vehicle manufacturers such as Mercedes-Benz Trucks.

Thanks to the ingenuity of this truck supplier, it is now possible for your truck to tell you when it needs a service. Effective 1 May 2014, all Mercedes-Benz Actros models sold with a CharterWay® contract will include a new maintenance package utilising the Telligent® Maintenance System. Being the first truck manufacturer to introduce this product in South Africa, Mercedes-Benz Trucks is changing the maintenance and servicing mentality in the country.

The technology allows the truck manufacturer to move away from outdated pre-set service intervals, making individualised service intervals possible by taking its cue from the actual wear and tear on each vehicle.

The Telligent® Maintenance System is designed to monitor the condition of the engine oil, transmission and axle oil and general service components such as air and fuel filters and brake pads, based on the operating conditions of the vehicle. This ensures optimum utilisation of operating fluids and service parts without risk to the service life or reliability of the engine and driveline. The Telligent® Maintenance system stores information about faults, but only alerts drivers if they need to take action.

Telligent® Maintenance lowers total cost of ownership

Product Management manager at Mercedes-Benz Trucks, Christo Kleynhans, confirms that the company’s consistent focus on lower total cost of ownership for its customers has led to innovations such as Telligent® Maintenance.

“No two Mercedes-Benz Actros customers have exactly the same wear and tear on their trucks, due to the wide variety of applications in which these versatile trucks can be used,” says Kleynhans.

“Fuel and maintenance are the two most prominent cost-drivers for a customer. We already have many innovations in our trucks that address the first concern, and now the Telligent® Maintenance system also adds to the value-add products that address maintenance costs,” he adds.

Telligent® Maintenance tells the driver or truck owner exactly what needs to be serviced, and when. This leads to less time spent in the workshop, and more time where the truck and driver are productive. Effective usage of the system can realise a saving of up to 14% in service costs per kilometre.

Optimal results will be realised if used in conjunction with FleetBoard, the benchmark vehicle management and tracking system provided by Mercedes-Benz South Africa.

FleetBoard provides impartial, comparable data from all vehicles of a customer’s fleet. The system provides an overview of the mileage, operational status, consumption, and deployment profiles of the drivers at one glance, including an evaluation of the overall driving styles. This enables the fleet manager to determine the causes for high consumption and promptly address them to ensure correct deployment of truck, thus increasing the economic efficiency of the fleet.

From an environmental point of view, the Telligent® Maintenance system also scores brownie points for the manufacturer and the truck owner. Less frequent oil and filter changes equate to less of these items contributing to pollution.

For an Actros to qualify for this unique value offering it simply needs to be activated on either the CharterWay® BestBasic or CharterWay® Service Complete contracts available at the nearest dealership. However, cancellation of the CharterWay® contract will result in the vehicle returning to fixed service intervals. Although this offer applies to vehicles sold with effect from 1 May 2014, trucks sold prior to May 2014 on a CharterWay® Contract are eligible to be converted to a Telligent® Maintenance Contract backdated to 1 January 2014.
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Save up to 14% on service costs with your Proven Actros.

First Mercedes-Benz showed you how you can save 5% on fuel just by running me – your Proven Actros. Now I’ll tell you how you can save up to 14% on maintenance costs per kilometre and put an end to fixed service intervals.

For the first time in South Africa – with CharterWay’s new Telligent® Maintenance system – I’ll tell you exactly what needs to be serviced and when the service is required, so you won’t spend any money unnecessarily on maintenance.

Trust the expert, and only visit the workshop when absolutely necessary.

Call 0800 133 355, visit www.mercedes-benz.co.za/telligent or contact your nearest Mercedes-Benz Commercial Vehicles dealer for more information.

Applicable to all Actros models with CharterWay BestBasic or CharterWay Complete. For best results, use Telligent® Maintenance in conjunction with FleetBoard.

CharterWay® FleetBoard Mercedes-Benz Trucks you can trust.
KISS planting regime for pine sawlogs production

Michael Olivier is a former forester based at Lebanon Plantation, Grabouw. Michael said during his forestry days he regularly received complaints from members of the public who objected to the ‘eyesore’ that occurred after clearfelling – especially in areas close to town. This, he was told, was not good for tourism. After giving it a lot of thought, Michael came up with this unique planting regime he called ‘KISS’ in 2001, which eliminated clearfelling and – he claims – maximises productivity of the land. Michael says three plots have subsequently been planted to the KISS regime – one at Cape Pine’s Blueliliesbush plantation and two at Saasveld.

by Michael Olivier

With the traditional spacing for pine sawlog production, trees situated next to the roads are usually thicker (have more volume) than the trees inside the compartment, because there is less competition between the trees for sunlight, moisture and nutrients at the roadside.

With the KISS regime, this principal is used to give each tree an opening of eight meters on the one side throughout its rotation.

In a nutshell the KISS method optimises the use of the land and will give three yields of mature trees of 300 s.p.ha (stems per hectare) per rotation versus one yield with the traditional rotation method. It also has the following benefits:

- Higher yield
- No more thinning
- Easier way to extinguish forest fires
- Ploughed fire breaks in compartments
- Mechanical weed control

Advantages of the KISS regime

The Yield

With the traditional spacing trees next to the roads are usually thicker and bigger than the trees inside the compartment, because there is less competition for resources at the roadside. With the KISS regime this principal is used to give each tree an opening of eight metres on the one side throughout its rotation, thus enabling those trees to benefit from extra resources throughout the growing cycle.

The yield should also be higher due to the fact that over a rotation the land lies unused for months between clearfelling and planting. Furthermore it takes the newly planted trees three years or more (depending on MAI) to fully utilise all of the open land.

That gives a 16% loss on potential volume (income) growth on a 25-year rotation due to the fact that about four years of potential growth is lost with every rotation (4/25 x 100).

With the KISS regime the land will be forever fully utilised once it reaches normality – after 16, 18 or 20 years, depending on whether you use a 24, 27 or 30-year rotation.

Thinning

No more thinning. The clearfelling of the mature tree strips (every 8, 9 or 10 years) actually serves as a thinning.

Fire prevention

As wildfire is a plantation’s biggest hazard, why would you plant your trees at such a spacing that makes it difficult (or impossible) to get to any place within the compartment with a fire tanker?

With the KISS regime access to any place in the compartment (as long as it’s not too steep or rocky) with a fire tanker is very easy, and fires will be extinguished much quicker, saving uncalculated losses.

Ploughed fire brakes

Ploughing fire breaks within the compartment where needed are some of the many advantages that the KISS planting regime allows.

Mechanical weed control

Mechanical weed control is just another advantage that the KISS planting regime allows because of the eight meter open strips between the trees.

The outcome

The whole compartment consists of strips with two lines of trees planted at 2m x 2m spacing. The strips run parallel to each other with an eight meter opening on both sides of each 2m x 2m strip.

That will give you a 1 000 s.p.ha. Every 3rd strip is the same age.

If your normal rotation age is 30 years, you will clearfell and replant every 3rd strip every 10 years. That clear-felling of 30-year-old mature trees will give you ± 300 trees (or 333 trees of full stems) per hectare.

The open strip on the left was harvested and will be replanted soon. This open strip is now 18 meters wide, but after the 2m x 2m strip in the middle is replanted the opening between all the 2m...
In a nutshell the KISS method optimises the use of the land and will give three yields of mature trees of 300 s.p.ha (stems per hectare) per rotation versus one yield with the traditional rotation method.

x 2 strips will again be eight meters. Pinus elliotti (Tsitsikamma) 10-year-old, had a 5 m pruning.

The KISS planting method – step by step

- The trees are planted in strips of 2m x 2m spacing. An eight-metre opening is left open between the 2 x 2m strips. That will give you a 1 000 stem per hectare.
- On 10 year (30 year rotation), or nine-year (27 year rotation), or 8 year (24 year rotation) every 3rd strip of 2 x 2m trees (strip 3, 6, 9, 12 etc.) is harvested. A few bad trees in the adjacent lines can also be taken out at this stage.
- The harvested strips are replanted immediately at the first planting season with the same spacing. (see sketch A)
- On year 20 (30 year rotation), or year 18 (27 year rotation), or year 16 (24 year rotation) every 3rd strip of 2 x 2m trees (strip 1, 4, 7,10 etc.) are again harvested and replanted with the same spacing.
- On year 30 (30 year rotation), or year 27 (27 year rotation), or year 24 (24 year rotation) the compartment has reached normality. From now on the compartment will give a harvest of ± 300 stems per hectare mature trees every 10, 9, or 8 years (depending on chosen rotation) on an ongoing basis.
- Every 3rd strip of 2 x 2m trees mature trees will be on rotation age and harvested. Replanting is done again with the same spacing.

**SKETCH A**
Trees in strips 11 years after first planting. The trees are either one or 11-years old.

**SKETCH B**
Trees in strips 21 year after first planting. The trees are either one, 11 or 21-year old.

**SKETCH C**
Trees in strips 30 year after first planting. The trees are either 10, 20 or 30-year old.

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- Every 3rd strip of 2 x 2m trees mature trees will be on rotation age and harvested. Replanting is done again with the same spacing.
An innovative Tzaneen entrepreneur has developed a method of using moist Eucalyptus timber to produce structural timber at competitive prices.

The process, believed to be a world first, has been developed by Spencer Drake of Biligom International (Pty) Ltd, who has registered a patent on the process and product which, he says, competes favourably in the local market with SA pine in terms of both price and quality.

Biligom timber is treated with Tanalith ‘E’ to H3 SANS 1288 specs, and has been graded to S7 by South African Technical Auditing Service (SATAS), which meets international strength and safety requirement for structural timber.

According to Spencer, the product, which sells at approximately the same price as grade S5 pine, has a number of advantages:

- The timber is sourced from *E. grandis* and G x C hybrids grown on a 6-8 year rotation. Compare this with the 25-30 year rotation for pine saw timber. This opens new horizons for Eucalyptus growers who are supplying traditional markets at low prices.

- It takes just one day from sawlogs collected in the plantation to produce the finished, treated grade S7 planks with full SATAS accreditation at the production facility. There is currently no one in SA that can do this.

- Biligom is graded S7 which means it requires 28% less timber vs grade S5 pine to cover the same roof area. Spencer says that roof truss fabricators will also use around 48% fewer gang nail plates. He says the nails go into the wood easily (similar to pine), but it is very hard to get them out again – which makes the trusses even stronger.

- The product is currently being produced at the Biligom International sawmill and processing plant on the Diggersrest Farm in the Tzaneen district. Spencer says 40 000 cubic metres of the product has already gone into the informal market without any come-back. The SATAS certification was secured recently, and Biligom is now entering into the formal market.

- He says there has been keen interest in the system which will be licensed to other producers. Already another production plant is being set up in Paulpietersburg, with further interest from timber processors around the country. Spencer plans to market the system internationally in countries like Brazil, Uruguay, Australia, India, America, Europe and China.

- A key aspect of the process is the slow drying that takes place in-field. The timber is felled de-barked and then left in-field for 4-6 weeks before it is cross-cut and hauled to the mill. There it is sawn to spec, graded and finger-jointed and finally treated with Tanalith ‘E’ to produce the finished product.

- The main species used is *E. grandis* and G x C, grown at standard 2x3 metre espacement. The trees are pruned twice, starting at one year old. Spencer said coppice material is also very good raw material for the product.

- “Everyone said we couldn’t do it,” said Spencer. “But we did our homework and I believe we have come up with a great new innovation.

- “This makes it possible for farmers growing Eucalyptus to compete in the construction timber market. It could also be a solution for the massive shortage of pine saw timber that is looming in South Africa, especially in the Western Cape where plantations are being closed down in terms of government’s exit strategy.”

A lot of R and D has gone into the product to get it to the point where it’s ready for the market. Spencer says he has been working on it for about 12 years, starting with field trials.

Biligom was also the focus of an MSc research project by a postgraduate student, Phillipus Crafford, at Stellenbosch University, supervised by Brand Wessels.

The final step in the development of the product was the S7 grading by the South African Technical Auditing Service (SATAS) that was achieved recently.

Spencer’s son Fred heads up the whole operation as CEO and has played a pivotal role in getting this new product to where it currently is.

Biligom International and Diggersrest Farm is a family-owned business that has been producing treated timber poles and sawn lumber products since 1970s. They have 600ha under forestry and another 2 000ha on lease, and employ 680 people. Spencer said they are currently doing trials with saligna and other Eucalyptus species to see if it would be suitable timber for the Biligom product.
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Long service life and 100% maintenance-free due to intelligent design. These features are provided by the corrosion-free material, which substantially extends service life.
Northern Natal Seedlings is a family-owned business supplying forestry and vegetable seedlings to farmers and market gardeners across the country.

Based in Paulpietersburg, with satellite nurseries in Moolman and Piet Retief, the company has a strong presence in the northern KZN and southern Mpumalanga regions, supplying farmers as well as corporate growers like Mondi, Sappi and KLF. Growth of the nursery over the past few years has enabled the team to supply farmers much further afield, including the KZN Midlands, Zululand and up north to Sabie and White River.

The business was started by Jip Meier in 1984, and is now managed by his sons, Lothar and Roland. They are the fourth generation of Meiers involved with farming in this region, so they know the environment and the people extremely well. Jip is still involved in the business, and is busy developing a clonal seedling division that will enable Northern Natal Seedlings to keep pace with the changing needs of timber growers.

The nursery supplies all the major commercial forestry pine, wattle and eucalyptus species, as well as a wide variety of vegetable seedlings. Current production is 18 million forestry seedlings and eight million vegetable seedlings annually, with a workforce of 60 people.

The main nursery is based on a farm just outside Paulpietersburg. It includes a Hamilton seedsower imported from England, state of the art germination room to assist with uniformity in seedling growth and a nursery section which can accommodate 18 million seedlings at any given time.

Improved seed is sourced from the likes of Mondi, Sappi and Merensky to ensure the best results. They work closely with Fabi who test seedlings and the growing medium regularly to ensure they are free of pests and diseases. Water used in the nurseries is also tested regularly at Cedara, an important part of the nursery’s hygiene regime.

Most of the forestry seedlings are supplied in 128 deep trays, but they are supplying more and more...

Confidence in the future of forestry

Lothar Meier runs the nursery with his brother Roland and father, Jip.

“We are not afraid to spend the money to ensure we get the best possible seedlings out there. We are in this business for the long term and we have a lot of confidence in the future of the industry.” – Lothar Meier
A healthy crop of young pine seedlings. Eucalyptus seedlings.

98 deeps which have slightly bigger root plugs and better survival rates.

Lothar says that the region is not really optimal for vegetables, but more and more tree farmers are trying to diversify their operations, and so the vegetable seedling business is growing. Forestry is well established in the region with thriving wattle, pine and eucalyptus plantations.

“It’s getting colder around here, there are more dry periods and more pest and disease problems are affecting commercial forestry, so it is crucial that we supply only the best material,” said Lothar. “Seedlings must be disease-free, uniform and of a consistently high quality so our customers can get off to a good start.”

“We are not afraid to spend the money to ensure we get the best possible seedlings out there. We are in this business for the long term and we have a lot of confidence in the future of the industry,” he said.

Northern Natal Seedlings main nursery outside Paulpietersburg.
Focus on Forest Engineering Conference comes to Piet Retief

The South African forestry industry is all set for the annual Focus on Forest Engineering Conference 2014, which is coming to Piet Retief for the first time in its history. The conference, organised by CMO, Forestry Engineering South Africa and Nelson Mandela Metropolitan University, kicks off with a jam-packed programme of presentations from leading industry experts on 5 November, in the Wittenberg Church Hall in Piet Retief, Mpumalanga.

The theme of the conference is ‘Mechanisation and Modernisation in Harvesting and Silviculture’ which is one of the hottest topics in the industry right now. The conference will be followed by a field day on 6 November with live demonstrations of a wide range of harvesting and silviculture equipment. Field day attendance is free of charge and open to anyone who is interested.

Keynote speakers at the conference are the husband and wife team of Wiremu Lee Edmunds and Marsella Edmunds. Wiremu is a powerful and dynamic motivational speaker who has a passion for changing unsafe work practices in the forestry industry – and a passion for life itself. He describes himself as a ‘hunter gatherer’, but he is a lot more besides. He is a renowned wood sculptor, has a Martial Arts black belt second dan, is an exponent of the Maori Haka, is a Level 1 boxing coach, founder of a boxing leadership school, has worked in silviculture and harvesting and now runs health and safety programmes for leading New Zealand forestry companies.

Industry stalwart Derek Howe, who has heard Wiremu speak at a forestry event in New Zealand, described it as “the most moving and most captivating talk I have ever heard” – and he’s probably heard quite a few talks in his time.

Presentations following throughout the day cover a wide range of key topics that have relevance to mechanization and modernization, from planning to shift scheduling, ergonomics, pitting and planting, harvesting and everything else in between.

Presenters include: Duane Roothman (Sappi), Gunther Bohmer (timber farmer), Marnie Light (ICFR), Mark Wagner (Mulching Technology SA), Michal Brink (CMO), Glen Murphy (Waiairiki Inst of Technology, NZ), Muedanyi Ramantswana (Sappi), Kuda Phaira (UP), Sikhumbuzo Nxumalo (NMMU/ Sappi) and John Rabie (SU).

The conference programme is followed by pre-dinner drinks and a dinner, which includes entertainment by Mathys Roets.

Registration & Info

For more info about the conference contact Zelda Immelman at zelda@cmo.co.za or phone her on +27 83 778 5746.

Register online on CMO’s website: www.cmo.co.za

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FOCUS ON FOREST ENGINEERING CONFERENCE

5-6 November 2014
Wittenberg Church Hall, Piet Retief, Mpumalanga, South Africa

Theme: Mechanisation and Modernisation in Harvesting and Silviculture

Become a highly-visible sponsor/demonstrator to a ground-breaking conference where the world-renowned speaker, Wiremu Edmunds, a native Maori from New Zealand, will be the keynote speaker.

Sponsorship opportunities on 5 November

GOLD: R25 000 (1 OPPORTUNITY LEFT)
- 10 min presentation during conference
- Logo in all print and electronic publications related to the conference
- Logo and hyperlink on conference web page
- One complimentary exhibit site (8m x 8m) outside conference centre
- 50% of the cost of an exhibit booth in conference centre
- Two complimentary registrations
- Display banners along the side walls of the conference hall
- Free demo at field day, if demo is required

SILVER: R15 000 (2 OPPORTUNITIES LEFT)
- In all print and electronic publications related to the conference
- Logo and hyperlink on conference web page
- Logo on all visual display elements of the conference
- Logo on back cover of the conference brochure
- One complimentary exhibit site (8mx8m) outside conference centre
- 25% of the cost of an exhibit booth in conference centre

OTHER SPONSORSHIP/EXHIBITION OPPORTUNITIES
- Pre-dinner drinks sponsor: R10 000: logo and recognition in the conference brochure, Display banners at the drinks event
- Dinner sponsor, R25 000: logo and recognition in the conference brochure, signage and web page (ZA entertainer). Banners in dinner venue (no other sponsors during the dinner), free demo at field day and 50% discount on exhibit booth and exhibit site
- Lunch break sponsor, R15 000: logo and recognition in the conference brochure, banners in dining room
- Exhibit booth in conference centre: R5 000. Expose booth content to 100% of conference attendees
- Exhibit site outside the conference centre (size 8m x 8m): R5 000. (Expose site content to 100% of conference attendees). Only site provided – no tent

Field day demonstration opportunities on 6 November

Take the opportunity to demonstrate your machinery, equipment and work methods during the FOCUS field day. Focus will make an area available for you to demonstrate any of the following to managers, foresters, contractors and other interested parties in forestry.

Both harvesting and silviculture operations can be demonstrated in terms of:
- New equipment
- New machinery
- Anything that you would like to expose the industry to

COST: R5 000 per site

Remember: Platinum, Gold, Silver and Dinner sponsors have the right to a free demo!

To take up this opportunity to sponsor/exhibit/demo, please contact Michal Brink at michal@cmo.co.za

CLOSING DATE FOR ALL SPONSORSHIPS: 30 SEPTEMBER 2014

For more information on the conference, contact Zelda Immelman at zelda@cmo.co.za, Tel: +27 83 778 5746

Register online on the CMO website: www.cmo.co.za
The 6th Forest Science Symposium held at Hilton College in the KZN midlands went off like clockwork and showcased a broad range of research taking place around the South African forestry industry. There were some 30 presentations over the two days from prominent local and international scientists and researchers, as well as a lively poster exhibition.

Aft er the welcoming address by Prof Colin Dyer of the ICFR, Phumeze Nkwashu of the Department of Agriculture, Forestry and Fisheries said that the department needed to align itself with government’s development goals and to support “radical socio-economic transformation” which is at the top of the government’s agenda.

“We need to undertake research to support land claimants and small-scale growers,” said Phumeza. She said that the land claims process has been opened again and community forestry projects would play an increasingly important role in forestry going forward. At the same time there was a need to support small-scale growers so that they can “tap into the world”.

She also spoke of the need for research to help the industry deal with climate change.

Prof Bill Dvorak of Camcore spoke of the gradual shift taking place from traditional tree breeding to genomic breeding, and reminded delegates of the importance for research of doing the basics properly.

“In the future tree breeding will be very exciting, but we still have to do the basic things correctly to be successful,” he said. This means that researchers need to get out of their offices into the field, to observe and to ask the ‘why’ questions.

Water use
A fascinating session on water use in forestry followed with presentations from Prof Roland Schulze on the effects of climate change, and Mark Gush of the CSIR, who was responsible for developing the infamous ‘Gush tables’ which formed the basis for stream flow reduction calculations of commercial plantations. Andrew Morris noted that forestry is the only land user already paying for water, and that we need to ensure that we make better use of it.

Prof Brian Via of Auburn University made an interesting comment about the surge of pests and diseases affecting forestry around the world. He said that “industry does not like a lot of variation, but nature likes a lot of variation – so somewhere a threshold has been crossed. Perhaps this is the reason for the explosion of pests and diseases in plantation forests”.

Demand for composite material
He also noted that in the US the demand for composite materials is rising ahead of the demand for traditional lumber, as a result large diameter logs are not the target for growers of saw timber, and so the properties of the wood is becoming more important.

Fascinating presentations from Prof Zander Myburg, leader of the international team that successfully sequenced the genome of the Eucalyptus grandis, and others provided an insight into the new world of tree breeding that is opening up through genetics (see article on page 6).

A session on land claims models and community reliance on natural forests provided interesting counterpoints to the science of tree improvement, soil mapping and the like.

The Symposium was attended by more than 260 delegates including undergraduate and postgraduate students, academic staff, research scientists, forestry practitioners and those who develop and implement national and regional policy to support sector growth and development.

The SA Institute of Forestry is planning to publish a dedicated issue of the journal, Southern Forests, in early 2015 comprising a selection of papers from the Symposium.
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NMMU staff, students honour Madiba

Staff and student leaders at Nelson Mandela Metropolitan University’s George Campus were joined by guests from the Rosemore Retirement Centre, along with representatives of the George Municipality and the George Business Chamber to honour the legacy of the university’s namesake and international icon – Dr. Nelson Mandela – by planting indigenous trees.

XIV World Forestry Congress coming to Durban

The XIV World Forestry Congress to be held in Durban, South Africa, in September 2015 is gearing up to be the most dynamic and stimulating Congress yet.

The first time that the largest and most significant gathering of the world’s forest sector is hosted in Africa will also be the first time that the Congress moves away from its traditional format.

With a new interactive programme of interviews and debates on cutting-edge topics, hands-on demonstrations and innovative uses of digital and social media, sessions are being designed to engage a broad range of participants and ensure all voices are heard as the Congress shapes the sustainable future of forests and forestry.

Registration to open soon

Registration will open soon with details available on the main XIV World Forestry Congress website which is launching in the near future.

Past Congresses have attracted between 3 000 and 7 000 participants and participation of people from all countries, regions and sectors is welcomed.

Be part of the World Forestry Congress Programme

You can help define a vision for forests by sharing inspiring ideas and solutions through presenting your technical work. In the spirit of diversifying from traditional panel presentations and making sessions more dynamic, organisers will be calling not just for papers and posters but also for short videos that showcase forest initiatives. Full guidelines and precise deadlines will be available on the FAO Congress website when the call for papers is launched.


Myrtle rust on the move

In May 2013 the Myrtle rust pathogen, Puccinia psidii, was detected for the first time in South Africa on a non-native, ornamental tree, Myrtus communis. This was on the KZN south Coast. Recently the TPCP team has detected the pathogen at a second site in South Africa, this time on a native South African host in the genus Eugenia.

Surprisingly the second confirmed report of P. psidii comes from the Wolkberg Wilderness area near Haenertsburg and Tzaneen in the Limpopo Province. The fungus was found on two native Eugenia sp. trees in the native forest near Serala Peak. Finding it in a relatively remote area since as this means that it most likely also occurs in other areas in the region.

Prof Jolanda Roux of the TPCP at University of Pretoria has urged all foresters, conservation workers and farmers – especially in the Wolkberg/Tzaneen areas, to keep their eyes open for the Myrtle rust pathogen. To date, it has only been found on plants in the Myrtaceae, including species of Eucalyptus, Eugenia, Psidium (guava) and Syzygium (waterberry/umdoni genus). The Myrtaceae includes a number of popular garden ornamentals and fruit trees (eg. guava, rose apple etc.). Myrtle rust may thus be found not only in Eucalypt plantations, but also in your garden and town. The pathogen mostly infects young, green tissue, and results in masses of yellow spores in single or multiple spots on young leaves, stems.

If you think that you have seen the disease, or need more information on it, please contact the TPCP immediately.

Ensuring the supply of quality seedlings

The Seedling Growers Association has adopted a Certification Scheme to ensure that seedlings sourced from accredited nurseries match up to the highest quality standards. So don’t take a chance, buy only from accredited nurseries and you’ll grow healthy trees.

For more information visit www.seedlinggrowers.co.za
Sky Riders go deep

Hard-to-reach inspection and repair work has been successfully completed on time and within budget on the ducting between the boilers and the smoke stacks at the SAPPI Ngodwana pulp and paper mill in Mpumalanga by leading rope access specialists Skyriders.

The SAPPI Ngodwana Mill is a fully-integrated kraft mill that is responsible for producing pulp for newsprint and containerboard, as well as for in-house use.

In order to maintain its internationally recognised ISO 14001 environmental management and ISO 9002 quality management status, SAPPI has been relying on rope access aided repair and inspection services at Ngodwana from Skyriders since 2006.

Skyriders marketing manager Mike Zinn notes that the company’s latest scope of work, carried out over a five days included internal inspections and minor repairs of the ducting from the chemical recovery boiler through the precipitators to the smoke stack.

“In order to complete this challenging task, the team of five rope access technicians made use of ultrasonic wall thickness measuring instrumentation, in order to complete a comprehensive inspection from the boiler to precipitator, and from the precipitator to the smoke stack. Some minor welding was completed to repair damaged areas,” he explains.

According to Zinn, the tight deadlines of the project posed a challenge as the plant was undergoing routine maintenance shut down. “Several specialist skills were required for this demanding project, as the ability to measure ultrasonic wall thickness and welding while suspended at height requires great skill and expertise.”
Loging ain't what it used to be

Before chainsaws were invented, the logging industry in the United States and Canada was a seriously challenging occupation and we are only talking about 125 years ago. In the Pacific Northwest, there were forests full of monster trees and cutting them down was done by hand, using very basic hand tools.

Look at the length of the two-man hand saw and heavy duty axes that they used to drop these tremendous trees. It is almost inconceivable to think of cutting down a tree this size with hand tools.

Forestry work required very strong men (and horses) working long days for minimal pay. Could you imagine doing this to earn a living?

The tree was finally felled, it took a week or more to cut it up into sections that could be managed (somehow) and transported by train to a lumber yard.

Manoeuvering the logs down the mountain to the train was a complex job. Many men would have lost their lives doing this dangerous work. One slip and a hunk of wood as big as a hotel is rolling your way! The other question that begs an answer is how did they get those logs up onto the flatbeds of that train?

Hollowed out logs became the company’s mobile office. Can you imagine stacking such logs to build a log home? Two courses would produce a 30’ ceiling. Maybe that’s why it was easier to hollow out a tree.

A long time before anyone ever thought of a mobile home or RV, hollowed out logs were also used to house and feed the logging crews. 🌳

Stihl chainsaw handover

Alex Skene (L), Chairman of the Umtentweni Conservancy, receives a Stihl Chainsaw donated by Doug Sayce (R), General Manager of Lonza Wood Protection. Doug was the lucky SA Forestry magazine reader who won the Stihl MS 362 C-Q chainsaw in the December 2013 Subscription Competition. However, Doug felt that the members of the Umtentweni Conservancy needed this wonderful chainsaw more than he did, so he donated it to them to be used for cutting back alien plants, clearing and establishing nature trails, and such like projects. The conservancy stretches from the Umzimkulu River estuary to the Umtentweni River on the KZN South Coast. 🌳

Cycle bridge

Locally grown Radiata pine poles were used to build this awesome cycle bridge, as part of a national cycle route in New Zealand.

Forest Finance short course

A short course titled ‘Forest Finance: what every forester should know’ is being presented by Cori Ham of the Department of Forest and Wood Science, University of Stellenbosch on 12-13 November 2014. The course will be presented at Ascot Conference Centre in Pietermaritzburg.

The course is designed for professionals involved in the financial aspects of forestry and land management operations.

Enquiries:
Cori Ham – Tel: 021 808 3297
Email: cori@sun.ac.za
Storanet keeps timber safe

Storanet® is a high performance net coated with an insecticide, specifically designed for covering or wrapping timber piles.

The fibres in the net are treated with an exclusive coating technology developed by BASF that controls the amount of insecticide available on the surface of the net. Due to this process, Storanet® uses eight times less active ingredient than conventional treatments, still achieving the same level of control.

Furthermore, BASF’s solution can be used in some conservation areas, where spraying is highly restricted.

Guide to understanding and measuring your carbon footprint

There is no doubt that carbon and environmental taxes will be rolled out in South Africa sooner or later. Once this is a reality, every public company will be required to calculate their carbon footprint, and at some point every private company and civil society organisation will be required to do the same.

Already more and more investors, as well as consumers, are demanding that companies disclose their carbon footprint and impact on the environment.

Nedbank, the first financial services group in Africa to achieve carbon neutrality, has published a practical carbon footprinting guide focusing on measuring, monitoring, reporting and verification. Titled ‘Carbon Footprinting Guide’, it is written by Marco Lotz and Alan Brent, and is published by Nedbank Ltd in collaboration with Stellenbosch University and the Sustainability Institute.

The aim of the book is to demystify carbon footprint approaches and help readers grasp the main concepts, as well as to expose them to how to do the calculations. Throughout the book the theory is explained and illustrated with real-life case studies and practical examples, using easy to understand language.

By publishing the book, Nedbank hopes to influence its partners and other companies to start managing their carbon footprints, thus maximising the impact of all of our sustainability efforts.

New Tigercat forwarder crane and grapples

Tigercat has released exciting new crane and grapple options to enhance the Tigercat 1075B forwarder. The new heavy duty F195T85 crane is capable of lifting 20 to 30% heavier loads and the manufacturer claims it has 22 to 66% more slew torque than competing cranes on the market. The crane geometry is optimised for quick loading and unloading cycles with excellent grapple clearance above the load. It can handle a 0.53 m² grapple, a great advantage in smaller diameter log applications.

Bell Equipment has delivered four new skidders to Komatiland Forests (KLF), which will be used in the company’s pine saw log operations. The parcel of skidders includes three John Deere 648H Grapple Skidders, which will be used in the Brooklands, Bergviet and Blyde plantations in the Nelspruit/Sabie area as well as a John Deere 640H Cable Skidder, which will be used in the Woodbush plantation in Tzaneen.

Bell Equipment Sales Representative, Charles Inggs, believes the company’s bid in the public tender process was successful for several reasons, the main one being the quality of the product. “Our range of Bell and John Deere forestry solutions has established a strong reputation for being robust, reliable high production machines. Our skidders, in particular, are incredibly stable, deliver the lowest operating cost and are unmatched in fuel economy. In addition they are easy to maintain and operator friendly,” he said.

“We also take our customer support seriously and have forestry specialists deployed in key forestry areas to provide technical field support. Our new Nelspruit Customer Service Centre is larger and much improved, featuring a bigger parts department and more workshop space to better cater for the needs of our customers.”

Fire fighting equipment handover

Peter Odell, NCT’s forester at Baynesfield Estate was recently approached by members of the Willowfountain community to get assistance with fire fighting equipment. According to members of the community, Mncwabe, Mkhize and Mnyawuza, builders in the community clear areas for construction and unilaterally burn the open grasslands. This results in fires spreading to homesteads and trees on the plantation.

Peter provided five 161 Tyga knapsacks, five fire beaters and leather gloves to the community to help them in their efforts to keep wildfires at bay.

The Richmond Fire Protection Association has presented a number of fire awareness and educational programmes in the area, targeting local schools and rural communities.

Sappi Usutu sale completed

Sappi has concluded the sale of Usutu Forest Products Company Limited to local Swaziland business Montigny Investments.

The purchase price of R1 billion to be paid by Montigny to Sappi will be used for general corporate purposes and to reduce Sappi’s net debt.

Commenting on the sale, Sappi Limited Chief Executive Officer Steve Binnie said: “We are extremely happy to have been able to sell our Usutu business to Montigny. The transaction reflects the change in Sappi’s strategic focus towards high growth segments such as specialised cellulose and packaging.”

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KLF takes delivery of new skidders

At the handover of the new John Deere skidders were (from left) Leon van der Linde (Branch Manager, Bell Nelspruit), Derek Howe (General Manager: Forestry, Sugar and Agriculture, Bell Equipment), Benno Krieg (Forest Engineer, KLF), Trevor Liverstace (Bell Equipment After sales Manager), Ricky Sivalingam (Procurement Manager, KLF), Charles Inggs (Bell Equipment Sales Representative), Goodman Graba (General Manager Forestry, KLF) and Bruce Paterson (General Manager: Coastal Region, Bell Equipment).

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Business has been brisk at Zululand-based Matriarch Equipment which manufactures a range of timber grapples and loaders that are taking the market by storm.

Matriarch’s Ashley Bell says the company has introduced an innovative new slew loader, the UltECO5, into the sugar industry, and will shortly start building a unique new timber extraction machine, the design of which has been two years in the making.

Last year Matriarch increased the market reach of its timber grapples which are now manufactured by Bell Equipment, and are offered as an option on Bell’s iconic loggers.

“Our UltECO5 loaders have taken us by surprise this year, with 17 units sold into the sugar industry already,” said Ashley. “It really is exciting times. Approximately six of these units are for the SA market, but the balance are export units; we have sent a machine to Zambia, another to Mauritius and we have two going to Tanzania, one to Kenya as well as a couple to South and Central America! All our export units are through independent dealers. We are hoping to grow our numbers of these units next year.

“In November last year we announced the ‘strategic partnership’ with Bell Equipment with respect to the manufacture and distribution of our MT360 and MT420 grapples. We have taken this partnership further now to include the distribution and support of our sugarcane loaders. That said, Matriarch remains the manufacturer of the product, but we are working very closely with the Bell team on this venture.

“The UltECO5 loader is new territory, in the sense that nobody has ever offered a pure sugarcane slew loader of this size (5.9 tons) which shares similar simplicity to a three wheeler. Everything has been kept extremely basic; driving on the same principal as the three wheeler i.e. foot pedal steer, so operator hands are completely free to operate the joystick crane controls. The centre of gravity has been kept low to handle sloping terrain, which has never been an option when running a slew loader; traditionally they have been flat land machines only. With 11 units out now, we are seeing load rates of between 35 and 50 tons per hour whilst burning just 3.5-4.0 litres of diesel per hour.”

Matriarch is very much a family business with Ashley, his two brothers Justin and Kelvin and cousin Quentin involved in running the business.
War against alien invasives intensifies – Continued from page 4

For example, many invasive gum (Eucalyptus) species from Australia have a very negative impact on water, biological diversity and in terms of wild fires. But they are also an excellent source of wood, shade, beauty and food for bees. The Regulations make provision for optimising their benefits, whilst curtailing their most negative impacts.

Another example would be the much-loved jacaranda tree (Jacaranda mimosifolia), from South America. Whilst invasive in parts of the country, the Department has accommodated public sentiment by not listing the species in urban areas, and allowing large specimens within 50 metres of farm homesteads. “In these urban areas, there will be no control required for the species. It will be as if we are treating urban areas as plantations, and the trees can continue to be grown as street trees and ornamental garden trees,” said Preston.

Public consultation

The AIS Regulations have been through extensive public consultation, and have secured agreement from various key industries, including the nursery industry, landscape industry, plantation industry, game ranchers industry, agricultural industry, pet-traders industry, bass and carp angling representatives and other key groups.

Other key national Departments and Provincial Authorities have been part of the development of the Regulations, and have supported their promulgation, including the Department of Agriculture, Forestry and Fisheries, the Department of Water Affairs and Sanitation, and the Department of Health.

Preston warned that invasive species rival climate change in terms of the potential consequences of their destructive tendencies. Significant penalties are provided for, where there is non-compliance in the introduction of invasive species, or the required control of invasives (including fines of up to R10 million, or directives to redress invasions).

However, the Department emphasised that this is not a battle that Government can win on its own. “We need to work together with all stakeholders to combat the scourge of invasive species. These Regulations, coupled with the investments in the Working for Water programme, have the potential to reverse the cancer of invasions in our country,” he said.

China Yiwu International Forest Products Fair

The 7th China Yiwu International Forest Products Fair will be held in Yiwu City of Zhejiang Province in China from 1-4 November 2014.

China Yiwu International Forest Products Fair, hosted by the State Forestry Administration and the People’s Government of Zhejiang Province, has been held every year since 2008 in the Yiwu International Exhibition Expo Centre.

China Forest Fair covers seven categories of products including bamboo and wood household supplies, bamboo and wood handicrafts, bamboo and wood articles for daily use, forest leisure products, forest food, flower and gardening products, and forestry machinery.

Last year the Fair had 3 300 exhibition booths with over 1 313 domestic and foreign enterprises displaying their products and services. Buyers from over 80 countries and regions attended the Fair in 2013.

The 7th Forest Fair to be held this November, will be a grand meeting to showcase China’s famous forestry enterprises, the essence of China’s forest products and latest forestry development. It will also be a good place for professionals of the forestry industry worldwide to tap into the huge Chinese forestry and forestry product market.
The 7th China Yiwu International Forest Products Fair

- Furniture & Accessories
- Timberwork & Wooden Building Materials
- Forest Food
- Flower & Gardening
- Wood & Bamboo Handicrafts
- Wood & Bamboo Daily Necessities
- Tea Products
- Forestry Technology & Forestry Equipment

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