



FIGHTING FIRE WITH FIRE ...OR TECH?

BY MIKHAILA CROWIE

If you stack the timber that South Africa produces each year from end to end, it would be enough to circumnavigate the globe at least 10 times. This is according to wood company, Cape Pine. The forestry industry in our country plants 360 000 trees every working day – more than 90 million trees annually – and contributes 8.7 per cent of the gross value of South Africa’s agricultural output. Activities and products such as paper manufacturing, charcoal and woodchip production rely on the raw materials from commercial forestry. But in 2008, 84 000 hectares of land were destroyed and instead of being the net exporter of timber, South Africa became the net importer. RISKSA takes a look at the South African forestry industry and the risk management being implemented to reduce the risk of this happening again.



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SA IN THE DANGER ZONE

Forestry South Africa claims that over the past 25 years our country has lost an average of 14 000 hectares of forest each year. Unfortunately most regions are situated near ecosystems, vulnerable to wildfires. Ruth Bezuidenhout, plantation manager at Safire Insurance Company Limited (Safire), says because South Africa is prone to drought, we are considered a high fire risk area, naming Mpumalanga, Limpopo, Tzaneen and Knysna as areas most at risk. The challenges of climate change pose a threat of increased incidence in fires as the decreased amount of rainfall has been prevalent in many regions of South Africa.

Mpumalanga and KwaZulu-Natal host the largest forestry plantations in the country. However, in 2008, 22 000 hectares of land in Mpumalanga were destroyed by an estimated 49 runaway fires. The raging fires threatened the country’s plantation and forestry industry. So devastating, it was dubbed the forestry industry’s own 9/11. Fires ruined plantations in parts of the Cape, KwaZulu-Natal and most notably, the areas surrounding Sabie and Graskop, the main timber growing areas of Mpumalanga. Propelled by high-speed winds, the flames jumped over fire breaks with ease. While there is debate surrounding whether these fire were caused by nature or arson attacks, Bezuidenhout, says most fires are accidental. “The arson numbers are inflated. In my experience,

most fires are accidents caused by kids, who are not educated properly about fire risks, playing at the edge of the forest.” Bezuidenhout advises that charges of arson should always be followed up with an investigation.

A closer look at the areas around Graskop and Sabie in 2008 revealed besmirched earth and burnt timber. But as the co-owner of Daybreak Timber Marketing, Lance Cooper, says, “This is a long-term industry; we’re already getting on with it.” A tour around Sabie now reveals a smoke-filled air before every winter, as foresters prepare and burn fire-belts. On the high peaks overlooking the plantations, one notices the lookouts, which are patrolled daily.

NATURE VS. TECHNOLOGY

While some are patrolling the lookout areas in Sabie, others are equipped with sophisticated remote-controlled camera equipment. This equipment monitors plantations and relays images to a command centre, from where threats can be detected. A software system, developed to monitor environmental changes in Antarctica for the Space Physics Research Institute, has been used internationally to monitor potential fire threats. Managing director at Envirovison Solutions (EVS), Dr Gavin Hough used this system to develop ForestWatch, which is being utilised by KwaZulu-Natal and Mpumalanga fire associations.

A fire detection service, ForestWatch uses multiple cameras mounted on a 100 metre tower, feeding live video streams to a control centre using satellite communications. The system’s wide performance monitoring application measures the response times to smoke alarms, the delays associated with manual inspection when an operator takes control of the camera and tilt-zooms into potential or actual fire events. Using geographical information systems (GIS) software, the camera can pin point the exact position of a fire and transmit a single frame to the control centre via satellite. The system uses high-resolution camera equipment to scan the surrounding environment and the cameras are linked to a software programme, integrating real time and space data. The programme enables the operator to detect any changes in the landscape, such as appearance or even the movement of smoke, enabling the fire protection officer to evaluate the threat based on the fire’s location. While the system is used to detect fire threats, it is also resourceful in the post-mortem investigation of fires, as well as unrelated threats. “We want our system to be useful outside the fire season, and so we have picked up on instances of timber theft, cycad theft and poaching,” Hough explains.

Although technology has worked effectively for some, others prefer to use Mother Nature’s resources. The process of mulching, brushwood clearing and firebreaks has its advantages. “I’ve seen that when a fire spreads to an area that has been mulched, the fire immediately distinguishes. While I am not sure of the long-term impact on the soils, the process is not too costly and is not labour intensive,” notes Bezuidenhout. Mulching is a process of inbred fertilisation composed of certain decomposed organic materials to blanket an area in which vegetation is desired. The procedure enriches the soil for stimulated plant development while at the same time preventing erosion and decreasing the evaporation of moisture from the ground. Fire breaks involve a strip of land where vegetation has been removed or modified to contain or reduce the spread of fires before they enter a property



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FIRE MANAGEMENT SUCCESS

Safire offers a wide spectrum of insurance products to the national market and services the agricultural sector. The company’s Crop Protection Co-operation comprehensive and tailored plantation programme to help clients protect against the financial losses of fire damage, harvesting costs when a crop is damaged and debris removal cover. While insurance cover is essential and mitigates devastating losses as a result of fires, Bezuidenhout stresses that landowners have the obligation to use the resources available to prevent fires on their property and notify fire prevention authorities and neighbours if a fire spreads. “Make sure staff members are well trained if ever you need to leave the area unattended, and ensure all fire equipment is in working order. When you plant your species, always consider the prevailing wind conditions and the layout.”

South African forest fire expert and Forestry Solutions consultant, Ben Potgieter, presented a talk earlier this year titled, ‘What can we expect from the 2012 fire season’ to local industry representatives, as well as students at the Nelson Mandela Metropolitan University in George. Potgieter emphasised that foresters need to accept that changing weather patterns are a reality. To counter the risks, land owners need to monitor weather patterns and carry out detailed risk assessments. He concluded that ultimately fire management success is a result of planning, readiness, early detection and a quick response.

