

Innovation trends in the forestry subsector, 2019-2021



The South African forestry subsector is characterised by relatively low levels of technological adoption. Despite this, it remains a significant economic contributor, generating R38.4 billion, with forest products accounting for 0.6% of the country's GDP. To grow its potential, there is a need for the subsector to boost innovation and embrace sustainable management practices. This is vital for growth, employment opportunities, and maximising the subsector's economic and environmental contributions.¹

Businesses in the forestry subsector did not engage widely in innovation during 2019-2021, with less than half (36.2%) of the businesses carrying out activities intended for innovation. This can be attributed to the subsector being characterised as a mature 'low-tech' subsector.²

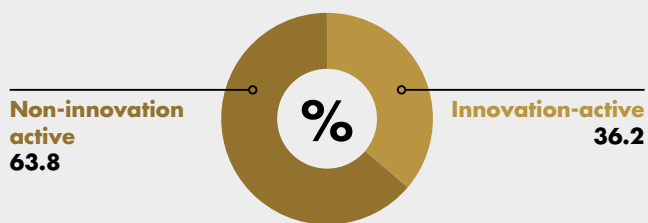


Figure 1: Innovation activity by businesses in the forestry subsector

Businesses that were innovation-active in the forestry subsector were more likely to implement product innovation than process innovation.

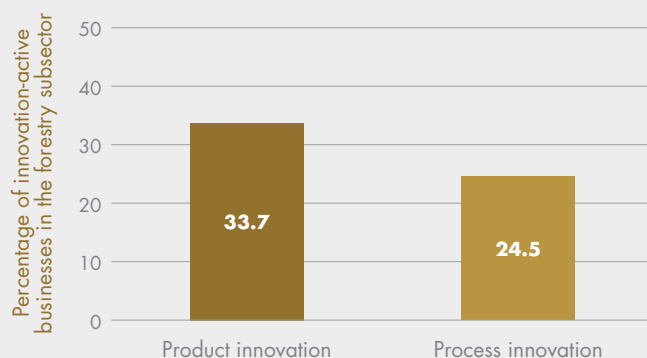


Figure 2: Innovation type by innovation-active businesses in the forestry subsector

Innovation-active forestry businesses were more likely to be in the Mpumalanga province, while Gauteng had the lowest proportion of these businesses.

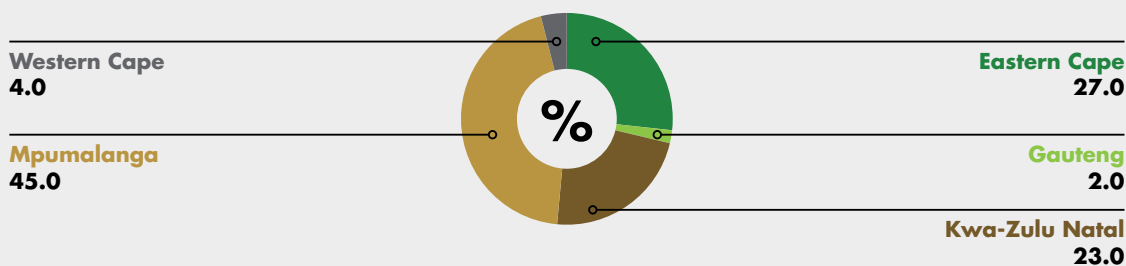


Figure 3: Distribution of innovation-active forestry businesses by province

¹ Forestry South Africa. 2020. *Our economic contribution*. <https://www.forestrysouthafrica.co.za/economic/>

² Centre for Science, Technology and Innovation Indicators (CeSTII). 2021. *Innovation performance in South African commercial agricultural, forestry and fisheries businesses, 2016-2018: Results of a baseline survey with key national and sectoral trends*. Human Sciences Research Council: Cape Town.

What types of innovation activities were businesses in the forestry subsector engaged in during 2019-2021?

Almost all innovation-active businesses in the subsector reported carrying out **training** (96.5%) and **acquisition of machinery and equipment** (96.5%) innovation activities. The businesses were also more likely to invest in **in-house R&D** (76.8%).

A lower proportion of businesses were likely to **acquire land** (19.6%).

Almost all innovation-active businesses in the forestry subsector engaged in training and machinery acquisition as part of their innovation activities

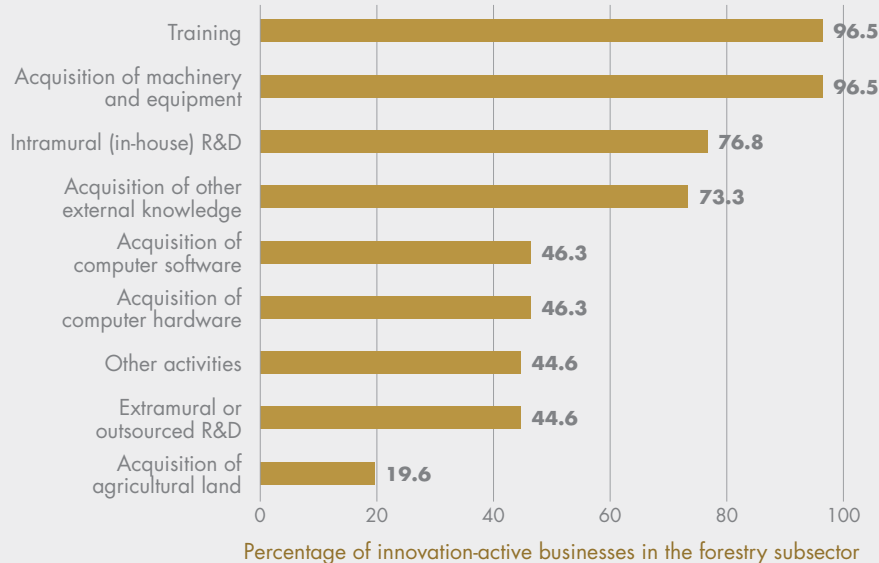


Figure 4: Innovation activities by innovation-active forestry businesses

What types of advanced ICTs did innovation-active businesses in the forestry subsector adopt during 2019-2021?

Despite generally low adoption rates, the most-used advanced technology among forestry subsector businesses was **drones/robotics** at 28.5%. Following closely were **sensor technologies** and **precision agriculture**, with just over a quarter (26.7%) of businesses in the subsector adopting these technologies.

Forestry subsector businesses demonstrated low adoption rates of advanced technologies.

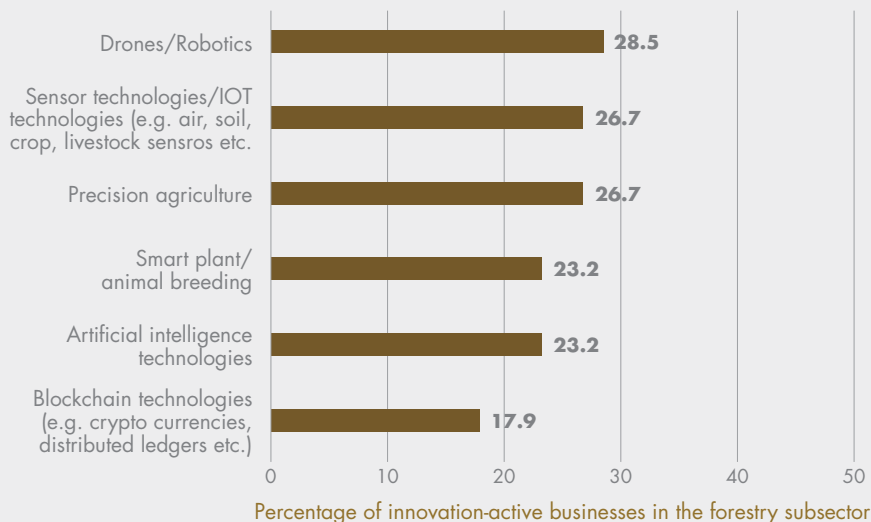


Figure 5: Adoption of advanced ICTs by innovation-active forestry businesses

What did innovation-active businesses in the forestry subsector perceive to be the most important outcomes of their innovation(s) during 2019-2021?

Increased water preservation (41%) was the most frequently reported highly important outcome for businesses in the forestry subsector. Other important outcomes were strategic and productive, with businesses reporting **reaching new markets** and **increased yield** as some of their highly important innovation outcomes.

Increased revenue was one of the least reported highly important outcomes of engaging in innovation during 2019-2021.

Engaging in innovation activities in the forestry subsector supported increased water preservation for most businesses.

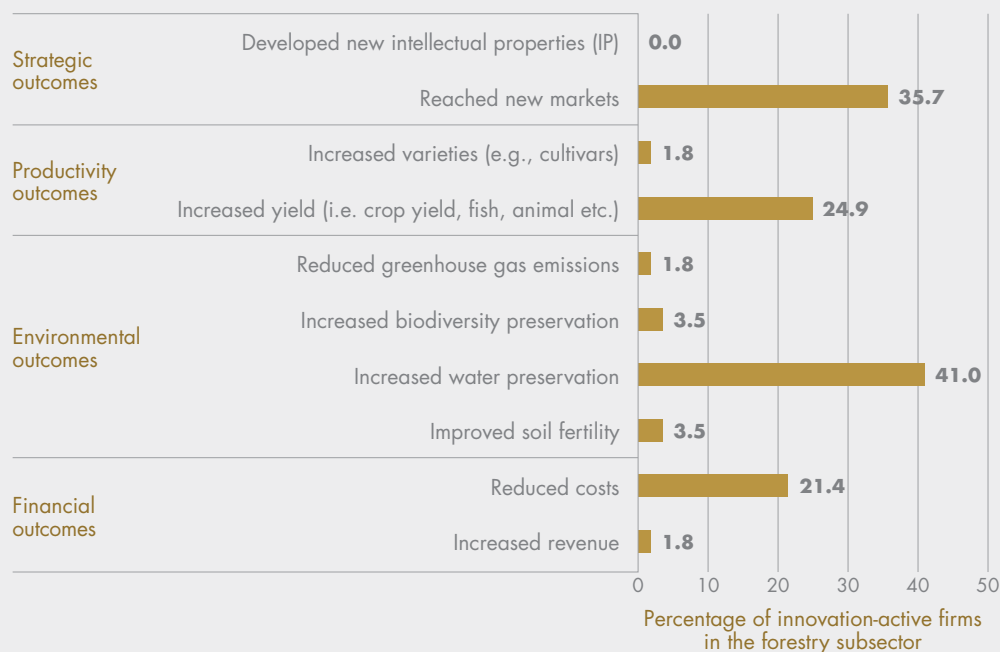


Figure 6: Outcomes of innovation by innovation-active firms in the forestry subsector

What were the most important barriers to innovation that forestry businesses faced during 2019-2021?

The most important barrier that forestry businesses reported was **lack of labour**. Almost 90% of businesses reported this as a hindrance to their innovation activities. **Climate change** was the second highly important barrier for businesses in the forestry subsector. Other common important barriers included **government support** and **access to finance**.

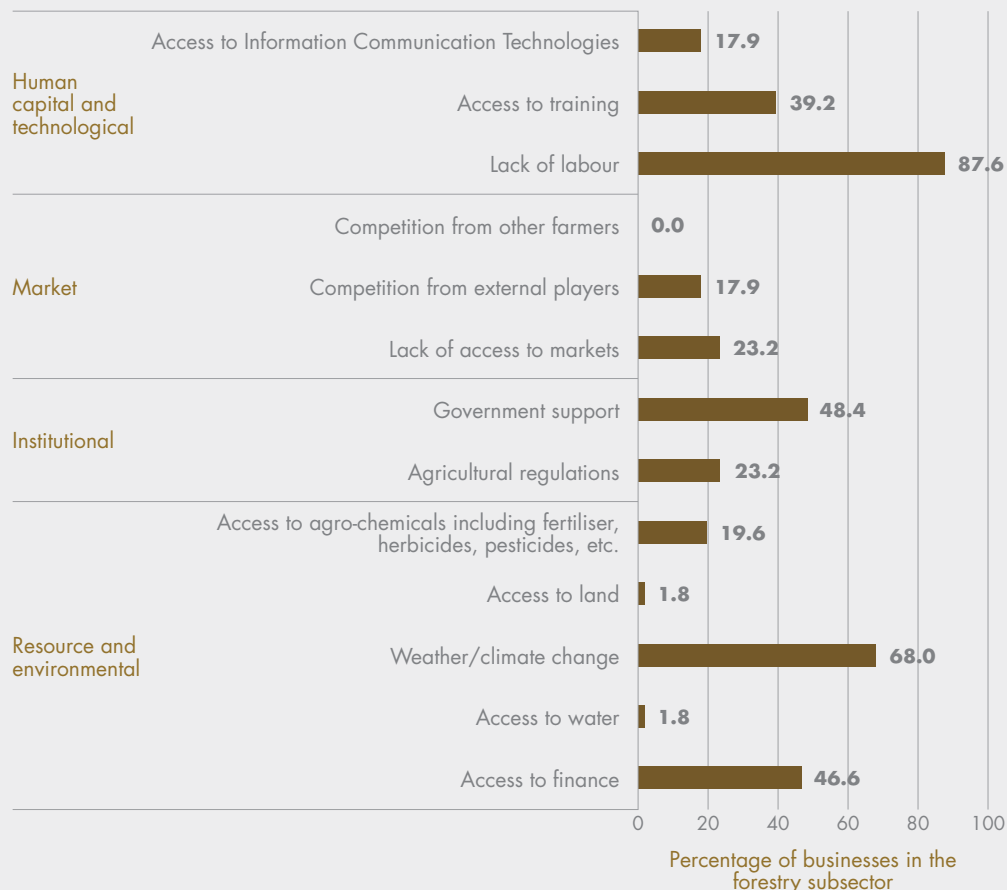


Figure 7: Barriers to innovation rated highly important by forestry businesses

About this brief

This brief is one of three sector-specific analyses drawn from the Agricultural Business Innovation Survey 2019-2021. It provides insight into innovation trends in the **forestry subsector** so that businesses can compare and benchmark their innovation activities. Industry associations and policymakers can use the data to support innovation activities across the forestry subsector.

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