



# DIGITAL TECHNOLOGIES IN SOUTH AFRICAN AGRIBUSINESSES

Information and communication technologies (ICTs) have an increasingly vital role to play in agribusinesses globally (OECD 2020). From data analytics tools and artificial intelligence, to digitally delivered agricultural services, satellite data and remote sensing, these digital technologies can:

- enhance different parts of agro-food system value chains
- allow governments to monitor and improve the efficiency and effectiveness of existing agricultural policies and programmes, and
- increase efficiency and contribute to regulatory compliance in the agriculture and food trades.

This fact sheet highlights evidence of moderate uptake of ICTs by South African innovation-active agribusinesses in the 2016-2018 period. In different sub-sectors, such as farming, fisheries or forestry, different patterns of use are evident. Innovation using ICTs can drive growth in different sectors of the economy. Equally, evidence of its adoption and diffusion can help government promote technological innovation in more targeted ways.



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# INNOVATION TRENDS BY AGRICULTURAL SUB-SECTOR



## Frequency of innovation activity

Most agricultural enterprises took technological, organisational or commercial steps to implement an innovation.

### AGRICULTURE

Nearly two-thirds (64%) of enterprises in the agriculture sub-sector were **innovation-active**.



64%  Innovation-active enterprises  
36%  Non-innovation-active enterprises

### FISHERIES

Fisheries reported the **highest levels of innovation**.



86%  Innovation-active enterprises  
14%  Non-innovation-active enterprises

### FORESTRY

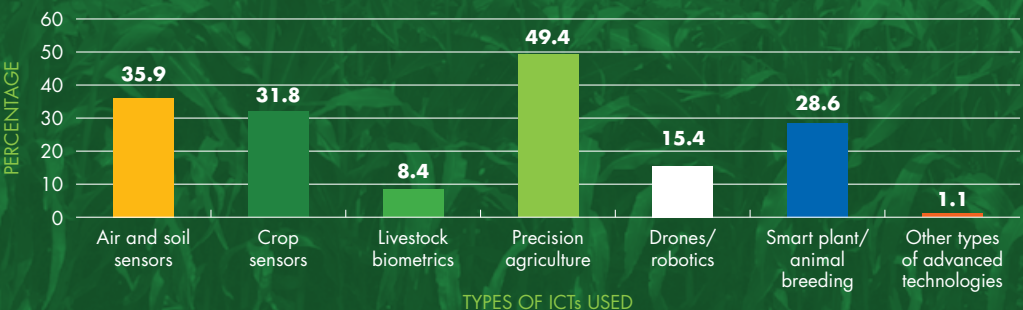
Forestry, a mature 'low-tech' industry, had the **least innovation activity**.



18%  Innovation-active enterprises  
82%  Non-innovation-active enterprises

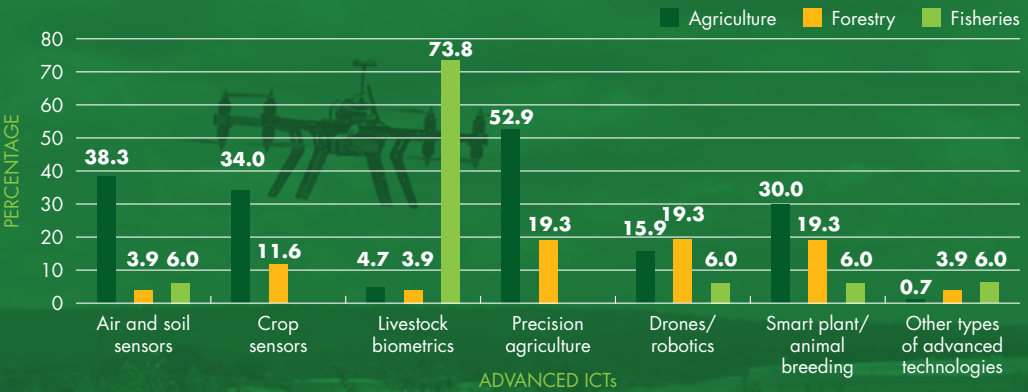
## Use of ICTs by agribusinesses

While there were varying levels, trends indicated moderate uptake levels of ICTs. The three most frequently used ICTs included precision agriculture technologies, air and soil sensors and crop sensors.



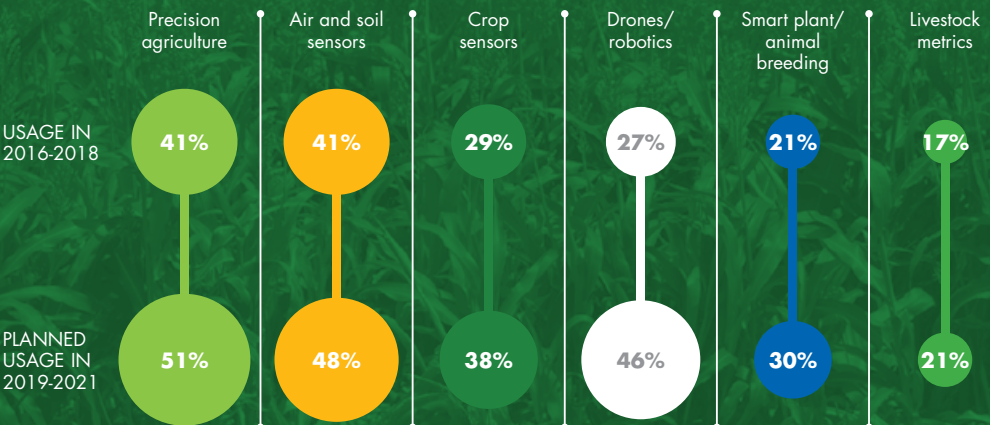
## ICT adoption across different sub-sectors

- **Precision agriculture** was the **most frequently used digital technology** in the agriculture sub-sector.
- **Nearly three quarters** of businesses in the fisheries sub-sector **used livestock biometric technologies**.
- Forestry businesses **were least likely to adopt advanced ICTs**, but **almost one fifth use robotics, smart breeding and precision-agriculture technology**.



## Advanced ICT use is growing in agriculture

Noticeably higher proportions of agribusinesses **planned to use** advanced ICTs in future.



# BEHIND THE NUMBERS

The data for this fact sheet is drawn from the South African Agricultural Business Innovation Survey (Agri-BIS), 2016-2018, conducted by the Centre for Science, Technology and Innovation Indicators (CeSTII) at the Human Sciences Research Council (HSRC). A sample of 1 690 agribusinesses were surveyed. For international comparability of the data, the OECD's Oslo Manual (2005) was used for the survey.

Data collected through the surveys, and their historic data series, inform decision-makers on investment planning, policy-making, advocacy, and research in South Africa. Data streams also add to benchmarking and performance comparisons with our international counterparts.

Access previous survey reports: <http://www.hsrc.ac.za/en/departments/CeSTii/reports-cestii>

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