

# AGTECH

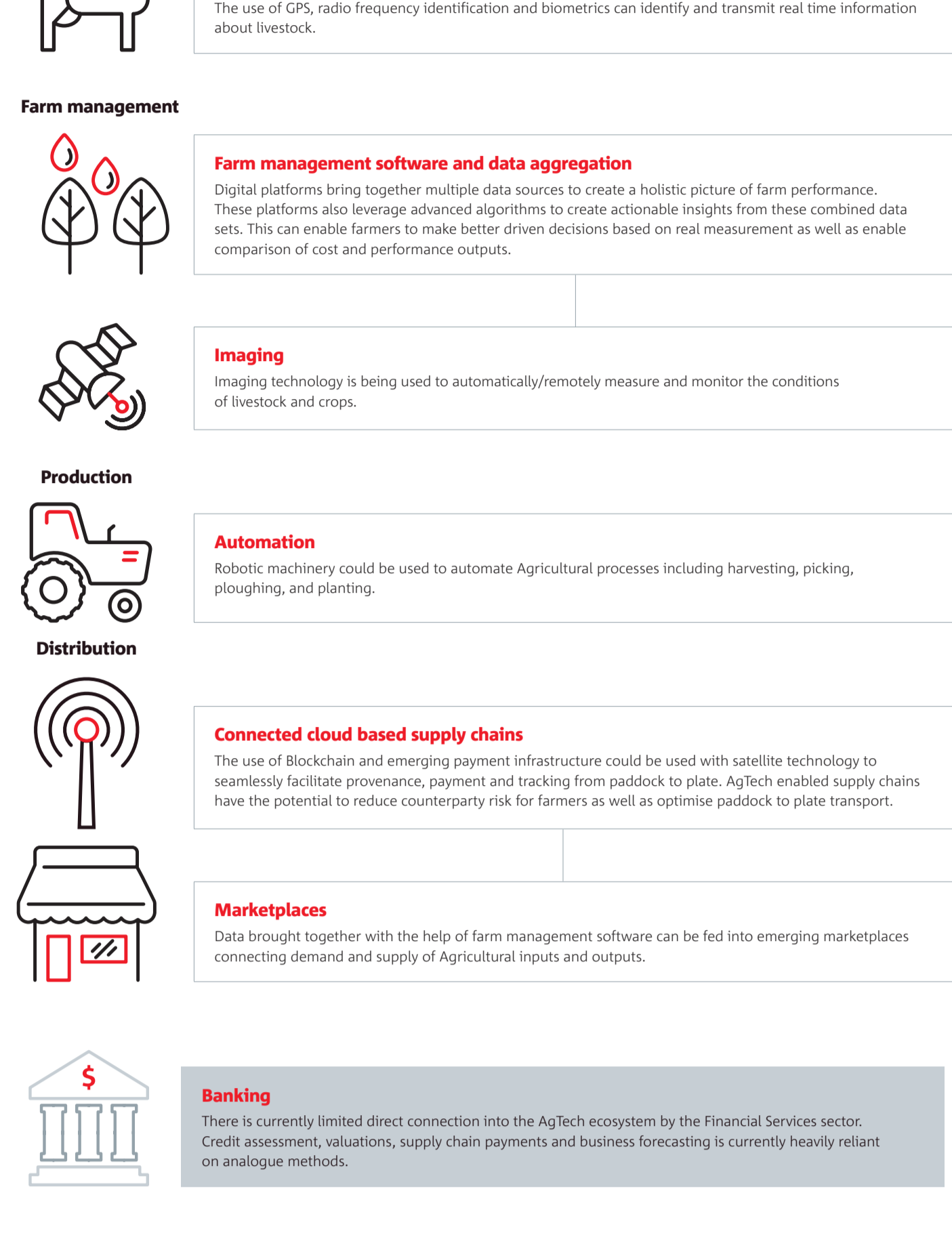
The emerging opportunity for Financial Services

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## What is AgTech?

Agricultural Technology (AgTech) is a term used to describe emerging technology that can be applied to revolutionise Agricultural processes from paddock to plate. AgTech has the potential to shift the connection of data and people across the Agricultural ecosystem resulting in improved yield, quality and profitability.

## AgTech is transforming the Agricultural supply chain from paddock to plate



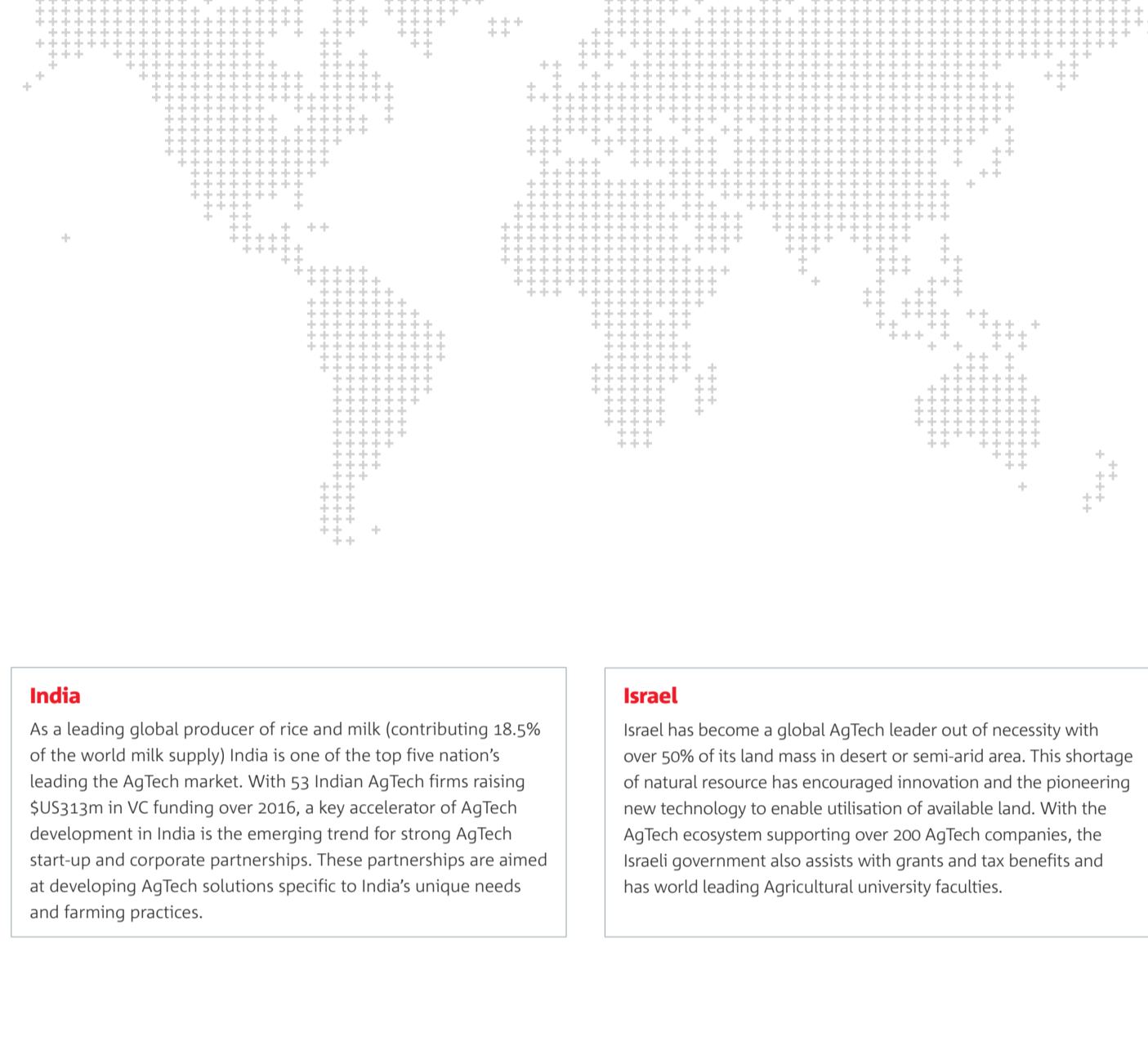
## Some countries leading the pack in creating the global AgTech market are:

**USA**

Contributing over 5% to GDP, the leader of AgTech innovation globally is the US, accounting for just under 50% of global AgTech investment in 2016. Its success as a sector leader can be credited to scale of farm holdings (2000% more than global averages) and funding, the established investor and start-up community, as well as strong international investment and government funding.

**The Netherlands**

Following the US, the Netherlands is the biggest global exporter of Agriculture and plays a strong role in delivering AgTech innovation. With one of the most active AgTech venture funds in the world, a world class food research institutes, developed start-up community and collaboration between science, industry and government can be attributed to the booming sector.



**India**

As a leading global producer of rice and milk (contributing 18.5% of the world milk supply) India is one of the top five nation's leading the AgTech market. With 53 Indian AgTech firms raising \$US313m in VC funding over 2016, a key accelerator of AgTech development in India is the emerging trend for strong AgTech start-up and corporate partnerships. These partnerships are aimed at developing AgTech solutions specific to India's unique needs and farming practices.

**Israel**

Israel has become a global AgTech leader out of necessity with over 50% of its land mass in desert or semi-arid area. This shortage of natural resource has encouraged innovation and the pioneering new technology to enable utilisation of available land. With the AgTech ecosystem supporting over 200 AgTech companies, the Israeli government also assists with grants and tax benefits and has world leading Agricultural university faculties.

## Revolutionising Australia's Agriculture sector with the application of AgTech, presents strong opportunities to bolster outcomes and meet demand from Asia's rising middle class



## Australia's Financial Services sector has a key role to play

Business objectives of farmers	The AgTech value opportunity	The Financial Services value opportunity	Impact to farmers
<p><b>Efficient farm management and benchmarking</b></p>	<p>Real time data and improved forecasting means more responsive planning and management from paddock to plate. This improved transparency between the relationships of farm practices and profitability also allows easier benchmarking and data sharing between peers.</p> <p><b>Example:</b> By using sensor data feeding into farm management software, farmers can move away from uniform decision making across all land plots and identify which farm practices and outputs are delivering the greatest yield with the lowest input cost.</p>	<p>With greater transparency and understanding of the underlying risk and return dynamics of a farmer's business, Financial Services could leverage this data to more dynamically assess risk, return and appetite of farmers for credit products.</p>	<ul style="list-style-type: none"> <li>Ability to continually redirect resources and effort towards assets which will deliver the greatest yield and maximum profitability</li> <li>Ability to make data driven decisions on how to maximise output and quality of Agricultural assets</li> <li>Opportunity to collaboratively manage collective systemic risks (salinity, weeds, pests etc.)</li> </ul>
<p><b>Valuations</b></p>	<p>Valuations will include more data about what assets and farming practices drive sustainable profitability outcomes.</p> <p><b>Example:</b> AgTech enabled sensors could be used to place a monetary value on the comparative economic value of land pastures for the purposes of measurement of future output sustainability.</p>	<p>Financial Services could play a role in leveraging AgTech innovations to create new investable asset classes such as soil health, pasture quality.</p>	<ul style="list-style-type: none"> <li>Reward for investment in farming practices creating long term sustainability and profitability</li> <li>Expansion of investable asset classes may mean newfound access to investment and lending</li> </ul>
<p><b>Transparency</b></p>	<p>Increased connectivity and cooperation within the Agricultural ecosystem has the potential to create transparency of efficiency gains from paddock to plate.</p> <p><b>Example:</b> Digitally connected Agricultural supply chains could enable automated restocking, provide data about product arrival times and delays as well as pre-signal produce spoilage.</p>	<p>Financial Services could play a role in leveraging emerging technology protocols (i.e. Blockchain) or data rich payment infrastructure to create immutable transparency and feedback loops of quality and value credentials of an Agricultural output.</p>	<ul style="list-style-type: none"> <li>Improved transparency of distribution cycle from paddock to plate</li> <li>Optimisation of produce sales cycle to reduce waste</li> <li>Improved transparency of outcomes to investors and credit providers</li> </ul>

## Alignment between AgTech and Financial Services has the potential to create new customer value in the following ways:

- 1. Data aggregation and customer insights**

Whilst farmers are continually working with consultants and agronomists to collect and analyse data relating to farm management and performance, the analogue and disparate nature of this data impedes the ability for use. An AgTech solution that aggregates this data could create the ability to deliver actionable customer insights. These insights could ultimately help farmers make better decisions via benchmarking and better understanding of risk exposure etc.
- 2. Tailored credit, valuation and insurance products**

Today, bank and investment valuation experts have limited access to vital real time information including seasonal conditions, farm performance data, commodity price fluctuations and locational factors. As a result, customers cannot adequately represent the value of their Agricultural assets and investors (i.e. banks) cannot adequately price for risk and potential return. As AgTech enables unprecedented capture and aggregation of multiple data sources (satellite information, soil and livestock sensors, weather data etc.), there is the potential to transform the way valuations and risk assessment are completed for the purposes of pricing financial products. This could be expanded to enable real time and proactive lending to customers as well as personalised tailoring of insurance products.
- 3. Supply chain optimisation**

For cropping and livestock farmers, the distribution of goods from the paddock to plate involves the physical movement of goods and data alongside multiple payments. Within this process comes manual reconciliation of payments and goods received, payment risk, and analogue capture of asset quality and provenance. With demand coming from both local and export markets for clean green products with transparency of carbon foot print and animal welfare, the use of digital sensors alongside emerging payment platforms such as Australia's NPP or Blockchain could enable transparent transfer of Agricultural goods across supply chains.
- 4. Intergenerational wealth transfer**

The Australian Agricultural industry is faced with a significant intergenerational wealth shift, resulting in a massive shift of ownership and funds within and outside the sector. Whilst this is positive for older farmers looking to release capital (when farms sell); this poses a major barrier to entry for young people wishing to buy these farms, resulting in a large capital gap. Despite young people often having worked in the management and running of a farm for a number of years, there is an inability for these young people to quantify these outcomes (due to lack of measurement) and ultimately leverage this experience to gain lending and or investment. An AgTech enabled sector provides the ability for investors/lenders to truly quantify the demonstrated value of these farmers, which creates opportunities for the creation of new investment vehicles to help fill this capital gap.

## NAB has a vision to continue to explore the value AgTech can create for our Agribusiness Customers

**Support Australian farmers**

NAB's Agribusiness team are ardently focused on improving NAB's ability to be a trusted partner for farmers in the Agricultural sector. With leading knowledge of the sector alongside strong community relationships, NAB's Agribusiness bankers will continue to work with farmers to achieve better outcomes. As AgTech continues to transform the Agricultural sector, NAB's Agribusiness team will also continue to evolve and transform its offering to support its customers and keep pace with new innovation.

**Help customers protect their natural capital**

NAB's Social Innovation team, in collaboration with NAB's Agribusiness team have an active Natural Value Strategy with the vision to create a more productive, resilient and profitable Agricultural industry in Australia via the meaningful measure of our customers' natural capital. NAB's Agribusiness team and Natural Value Team are actively exploring how the use of AgTech enabled farm data could transform credit decisioning and pricing models.

**Bring together partners to create customer value**

NAB's Agribusiness team are passionate about collaborating across the Agriculture sector to solve customer problems in new and innovative ways. We believe the development of AgTech partnerships are critical to this. These relationships are focused on leveraging NAB's role as the biggest Agricultural bank in Australia to bring together players in the ecosystem to create customer value. Key examples of this include NAB's partnership with Figure, The Yield and CSIRO to aggregate previously untapped data to more deeply understand relationships between farming practices and financial performance.

**NAB LaBs**

**Take a customer led approach to experiment with new solutions**

NAB Labs are taking a customer led approach to actively experiment with new solutions that capture value for Financial Services within the AgTech space.