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AgriTech - a promising response to climate change

The agricultural sector finds itself in a unique position - it is both affected by, and is a significant contributor to, climate change. Traditional farming practices are becoming difficult to maintain in the face of significant changes to the environment contributed to by those self-same practices.

Yet technological innovations in the agricultural sector are helping to break this cycle, finding unique ways to address the balance between global food security for an ever-increasing population and the need to reduce our environmental footprint.

In this overview, we throw a spotlight on some of the many promising technological advances in the agriculture industry and highlight the intellectual property rights that may be available both to incentivise and protect these technological advances.

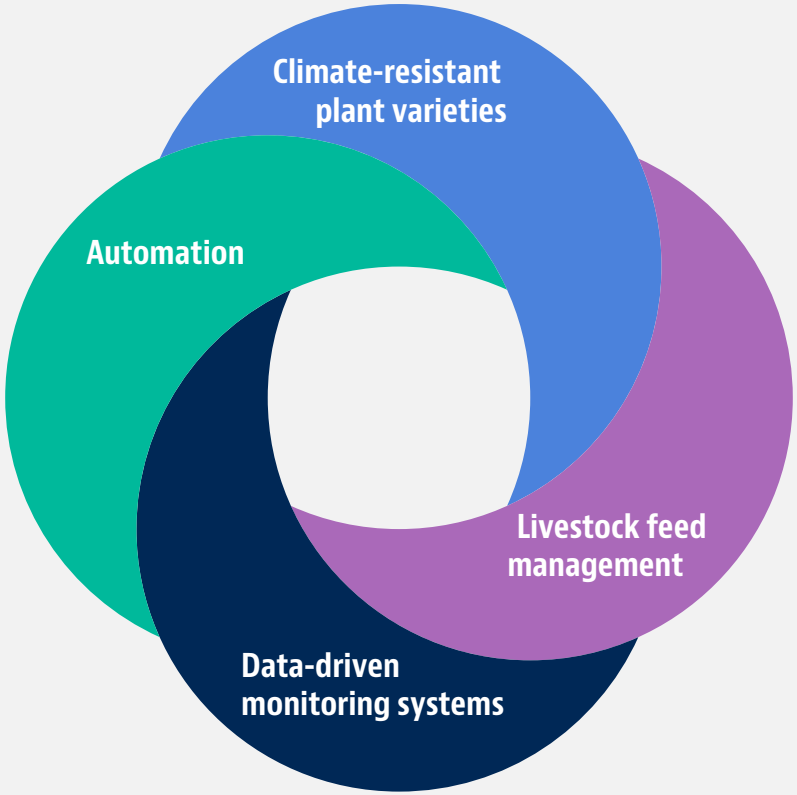
Automation (incl agricultural drones)

Strategy

- Development of automated farm equipment such as tractors, harvesters and seeding, watering and weeding robots, have the ability to make farm activities more efficient, less labour-intensive and more precise.
- Typical field monitoring relies on satellite imagery. Agricultural drones fitted with sensors, infrared cameras and navigation systems can be used to gather crop and field data such as crop maturity and crop stress, weed prevalence, yield estimation, leaf colour variation, and pest infestation. Identifying and addressing these issues in a more comprehensive and holistic manner enables improved production and yield.

IP rights

- Copyright - in photographs, videos, databases and reports produced by such equipment (subject to there being an identifiable human author).
- Patents - in the equipment or constituent parts of the equipment or systems utilising the equipment.
- Confidential information / trade secrets - know-how and information gained through the use of equipment such as drones can be valuable assets to a business to improve the efficiency of its business practices.



Climate-resistant plant varieties

Strategy

- Development of crops that are capable of surviving climates with more extreme weather patterns, including droughts, floods and increased heat.
- Stakeholders are investing in breeding programs and the use of gene-editing technologies with the aim of producing climate-resistant plant varieties that can thrive/survive more extreme climatic conditions.

IP rights

- Plant Breeder's Rights - the PBR regime in Australia is governed by the Plant Breeder's Rights Act 1994. PBRs give the breeder exclusive control over the propagating material of a particular variety (such as the seeds, cuttings, and tissue culture) for 25 years (in the case of trees and vines) or 20 years (for other varieties).
- Patents - plant varieties, and methods of producing them, are patentable in Australia (unlike many other countries).

Data-driven monitoring systems

Strategy

- New monitoring and analytics solutions using the IoT enable farmers to gather valuable on-the-ground data, which provide a more accurate way to monitor livestock and crop growth, irrigation schedules, equipment health, and other field activities.
- Soil moisture monitoring systems use sensors (for example, tensiometers and gypsum blocks) as part of an IoT network that provide feedback on moisture content necessary for plant growth.
- Smart apps use AI technologies to enable farmers to plan field activities, check inventory, estimate costs, and target key areas of concern to improve efficiencies.

IP rights

- Copyright - in the database/reports developed by these systems and the underlying code of an app or network. Check the T&Cs of the app provider to check if you retain copyright in your data.
- Patents - an AI system and IoT network may be patentable if more than an abstract idea or scheme / business method.
- Confidential information / trade secrets - in the data and know-how gained through the use of such technologies.

Livestock feed management

Strategy

- Livestock is a key contributor of greenhouse gas emissions such as methane.
- Increased R&D in the metabolic conversion of methane has led to innovative solutions such as additives to livestock feed that prevent the formation of methane (e.g., seaweed) which balance reduction in greenhouse gases with the global need for food security.

IP rights

- Plant Breeder's Rights and Patents - where a new plant variety is developed for use in such feeds.
- Confidential information / trade secrets - most likely applicable for those in the R&D stage of livestock feed development or as an alternative to seeking PBR or patent protection.