

Innovation to keep up with a  
changing and challenging world.

# Global Food and Agriculture Megatrends

FIGURE 1 – GLOBAL F&A MEGATRENDS



## A LESS PREDICTABLE PLANET

Supply of limited resources is being further constrained by more severe and unpredictable climate events and more potent microbes, pests and diseases – causing food producers to more seriously consider the environmental life cycle impact of food production activities.



## HEALTH ON THE MIND

An ageing population, rising levels of chronic disease and increasing social awareness around health and wellbeing are creating demand for foods that provide specific and holistic health outcomes.



## CHOOZY CUSTOMERS

Rising wealth, increasing choice and greater market access are driving demand for a more diverse range of foods and food service options that are tailored to individual preferences and lifestyles.



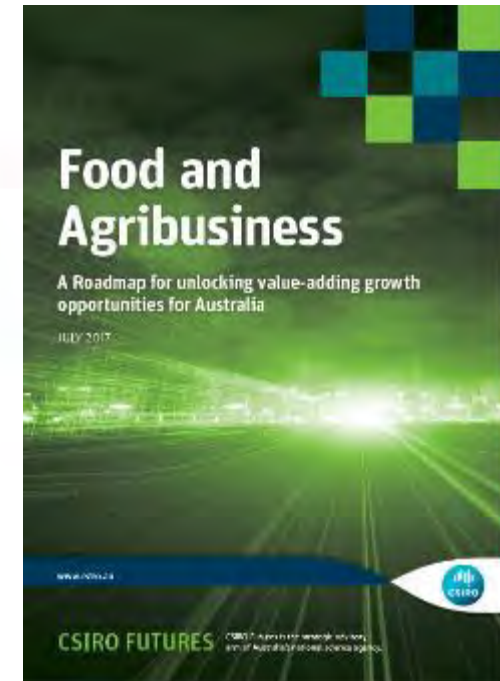
## ONE WORLD

As food and beverage value chains become increasingly global, new market opportunities are created while at the same time introducing competition and supply resilience risks in a volatile world.



## SMARTER FOOD CHAINS

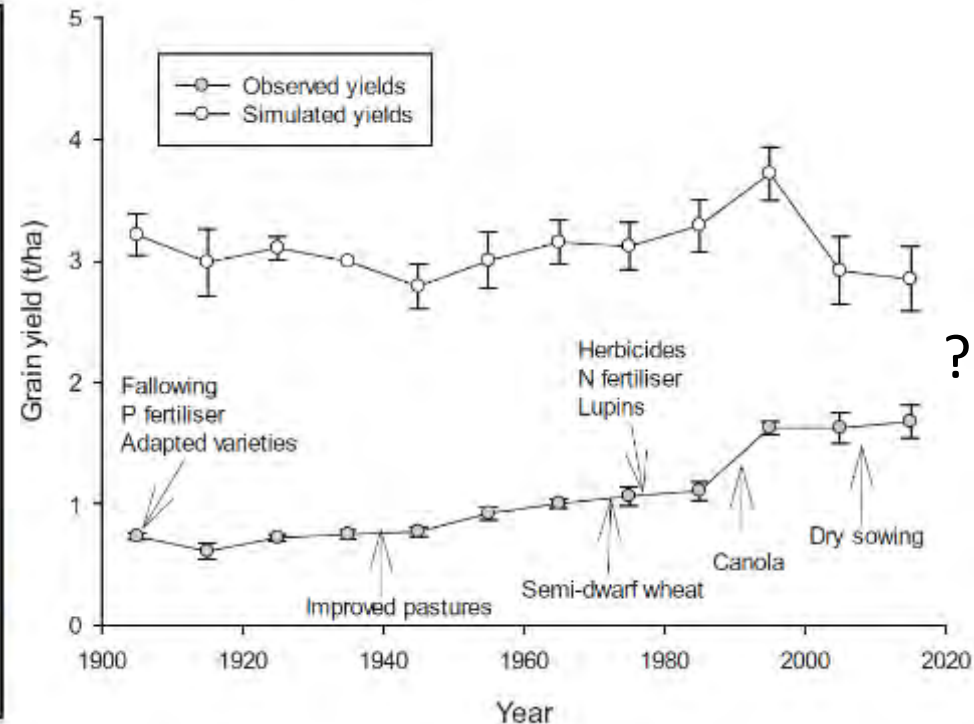
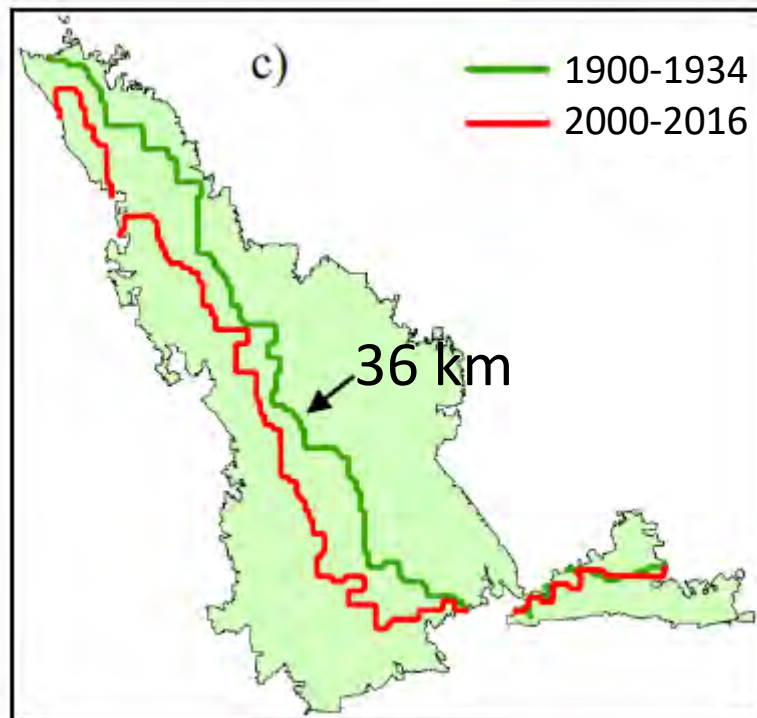
Increasing demand for food, the use of big data and more sophisticated e-commerce platforms are driving the creation of leaner, faster, more agile and low waste value chains.





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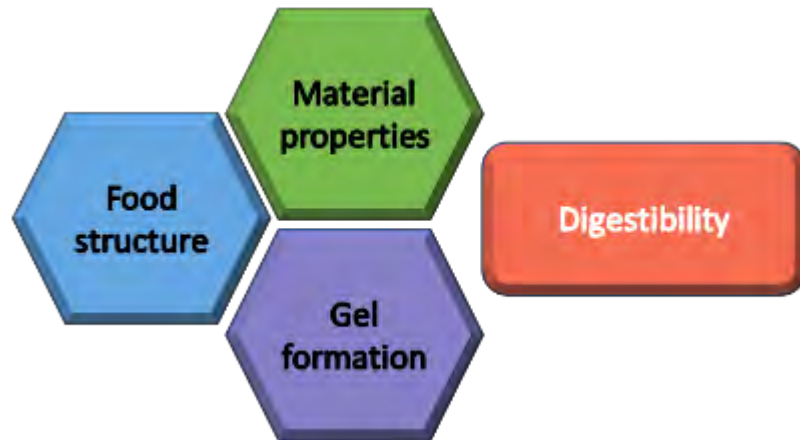
A Fletcher et al., (2020) Has Historic climate change affected the spatial distribution of water-limited wheat yield across Western Australia? Climatic Change.



## HEALTH ON THE MIND

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## Role of Food Structure in health



## Food for Dysphagia/Elderly



Improving the visual appeal, texture, flavour and nutrition of texture modified foods



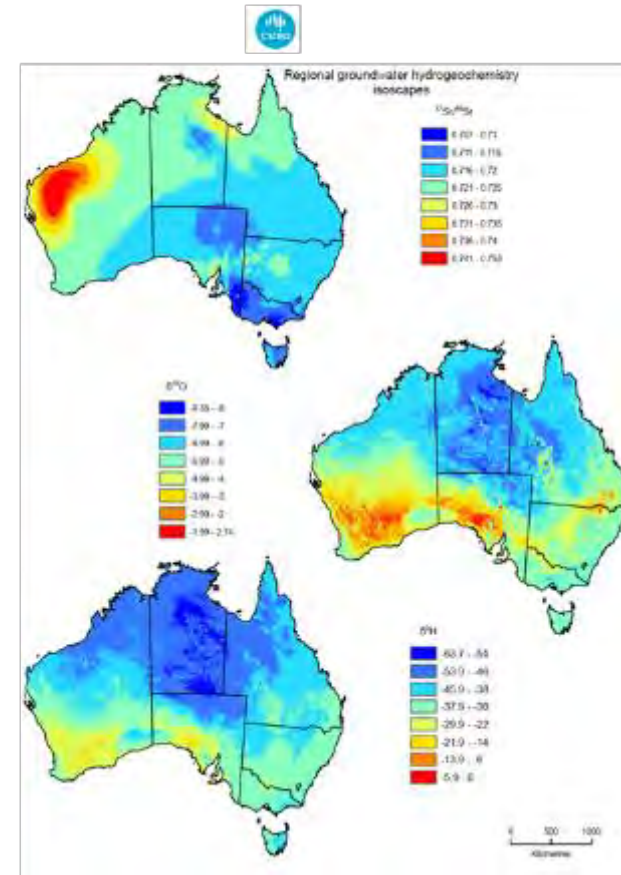
## CHOOSY CUSTOMERS

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- Provenance testing through Isotope and element profiling



Groundwater isoscapes ( $\delta^2\text{H}$ ,  $\delta^{18}\text{O}$ ,  $^{87}\text{Sr}$ )





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CSIRO Agriculture and Food  
www.csiro.au



## Greenhouse gas emissions from the cultivation of canola oilseed in Australia

Prepared to meet the requirements of the European Commission Directive 2009/28/EC on the promotion of the use of energy from renewable sources (Renewable Energy Directive – RED) and its amending Directive (EU) 2015/1513 of the European Parliament and of the Council

Prepared by the Commonwealth Scientific and Industrial Research Organisation, Australia

November 2017

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## CSIRO and Jack Cowin venture into plant based meat with v2 Food

October 2, 2019 Ruth Hogan

Australia's latest plant-based meat start-up, v2 Food, is primed to take on the retail and food service scenes, with the backing of Government and food industry leaders.

National science agency CSIRO's Main Sequence Ventures and Jack Cowin's Competitive Foods, have come together to take a slice of the \$6 billion dollar alternative meat pie, with former Masterfoods and PepsiCo research director, Nick Hazell, leading the business.

Cowin's Competitive Foods Australia, the company behind Hungry Jack's, also contributed



Phil Morle, Nick Hazell, Martin Cole, Mary Ann Augustin and Jack Cowin.

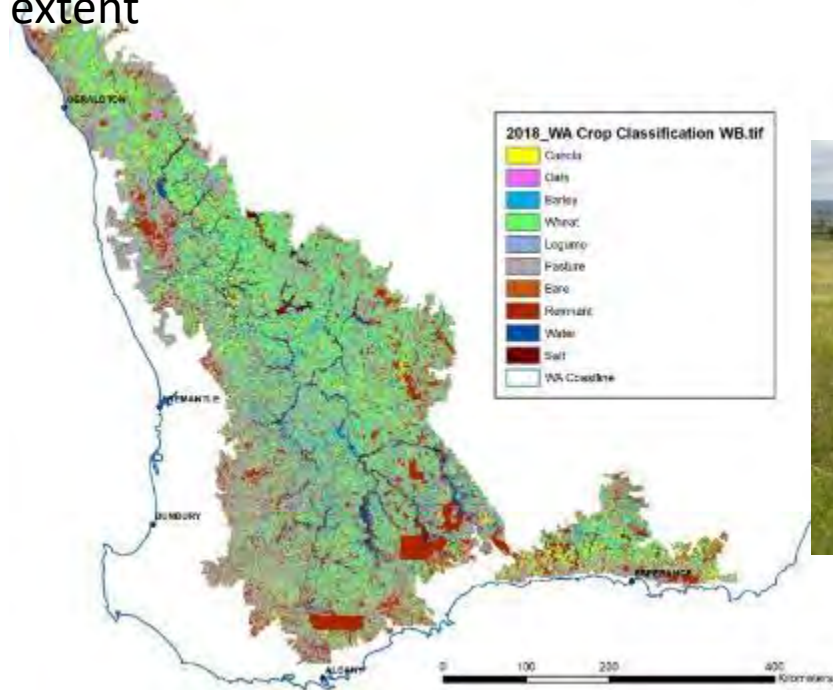


## SMARTER FOOD CHAINS

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### Crop ID

Next gen satellites and ML to map paddock boundaries, crop species and extent



### Virtual Fencing

Autonomous (wireless) control of animal location using GPS and combination of cues and controls



# What does it add up to?

## NFF targets \$100b farm gate output by 2030 despite headwinds

*Australian farm gate output and extrapolation of historical linear trend out to 2030. Data from ABARES.*



We will need more innovation to close the gap from business as usual





Thank you

**Agriculture and Food**

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