2016 G20 Meeting of Agricultural Chief Scientists

Innovation and biosecurity contributions to global food security

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Australian Agriculture Facts

- Australian population ~ 24 million people
- Australian farmers feed around 60 million people each day.
Australian Agriculture Facts

- Export earnings from farm exports was ~$45 billion in 2014-15
  (Australian Bureau of Agricultural Resource Economics and Sciences)

Top export commodities:

1. Beef
2. Wheat
3. Wool
4. Wine
5. Barley
6. Sugar
7. Lamb
8. Canola
9. Cotton
10. Cheese
11. Rock lobster
12. Skim milk powder
13. High-value horticulture

Proportion of merchandise exports 2014-15

- Mineral resources: 66%
- Rural: 18%
- Other: 16%
Australian Innovation in Agriculture

- Australian producers have opportunities for growth with expanding world markets, but also face increased competition and lower productivity growth.

- For Australia, key steps towards continued agricultural innovation are:
  - adopting new technologies
  - identifying and reducing barriers to adoption of new technologies
  - exploring the role of government in overcoming barriers.
Australian Innovation in Agriculture

• New technologies include:
  • digital services
  • data collection and analysis
  • automation and robotics
  • new gene technologies for plant and animal breeding
  • climate change adaptation and mitigation tools
  • biosecurity technologies
Australian Innovation in Agriculture

• The role of government in overcoming barriers:
  • investment in telecommunications and other infrastructure
  • policy supporting agricultural training and extension
  • balanced and consistent regulation
  • publishing and sharing public data
  • investment in biosecurity science and technology
Australia’s research standing - Collaboration

Data Source: Australia NCR Database (June 2015); Articles, Review & Proceedings Papers, 2010-2014
Global connections: agricultural impact partnerships

30+ countries
CSIRO Agriculture

Science Standing
ISI Top 10 in Agricultural Science Citations;
12th in Plant & Animal Sciences

People (FTEs) ~ 900

Budget $220m
External $105m

Transforming yield
Closing yield gaps
Transforming value
Harnessing digital agriculture
Sustaining the base
Informing policy and practice

FY15 REVENUE SOURCE

Australian Government - Domestic
International
Research and Development Corporations
Australian Government - Official Development Assistance
Income from intellectual property

Australian industry
Australia’s research standing - Publications


Publications - 6% growth year on year but proportional decline

Cf 0.35% of global population

Strong citations performance – a measure of quality

% of global output

%
Biosecurity for food security

- The International Plant Protection Convention (IPPC) is an international plant health agreement, established in 1952, that aims to protect cultivated and wild plants by preventing the introduction and spread of pests.
- There are 182 countries that are signatories to the convention.
Biosecurity for food security

• The IPPC helps to:
  • Protect farmers from economically devastating pest outbreaks by preventing the entry and spread of new plants pest into a country (food availability).
  • Protect industries and consumers from the costs of pest control or eradication (food access).
  • Facilitate trade through standards that regulate the safe movements of plants and plant products (food access).
  • Protect food security and the environment (food availability and access).
IPPC contributing to food security

• Themes driving the implementation of the IPPC for the coming four years:
  
  • 2016: Plant Health Contributes to Food Security
    • Recognising that uncontrolled pests have a direct effect on food security and are directly responsible for hunger and poverty
  
  • 2017: Plant Health Contributes to Trade and Economic Development
  
  • 2018: Improving Plant Health Requires National Capacity Building
  
  • 2019: Improving Plant Health Contributes to Environmental Protection
  
  • Leading to the International Year of Plant Health 2020
Questions

• How can MACS recognise and support biosecurity through the IPPC and the OIE?