



Australian Government  
Australian Bureau of Agricultural and  
Resource Economics and Sciences



# Farming in a changing climate: Australian experience

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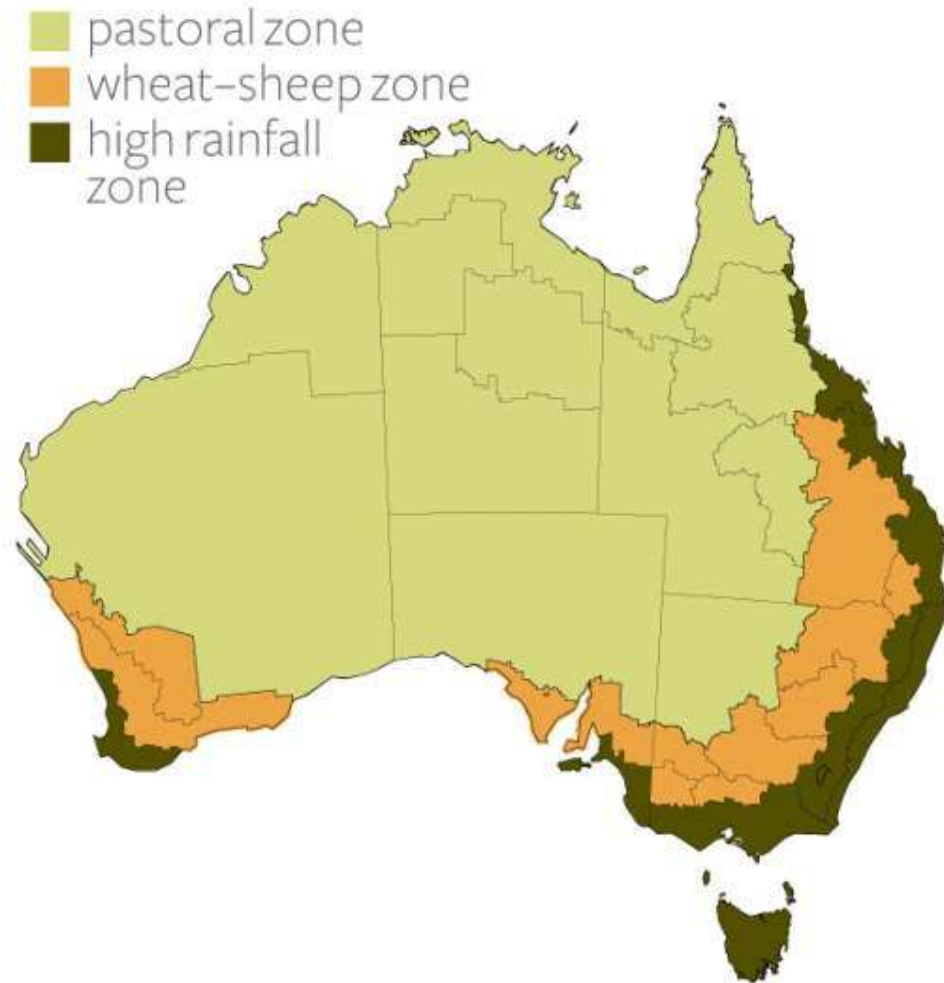
# Outline

Impact of recent climate events on Australian agriculture

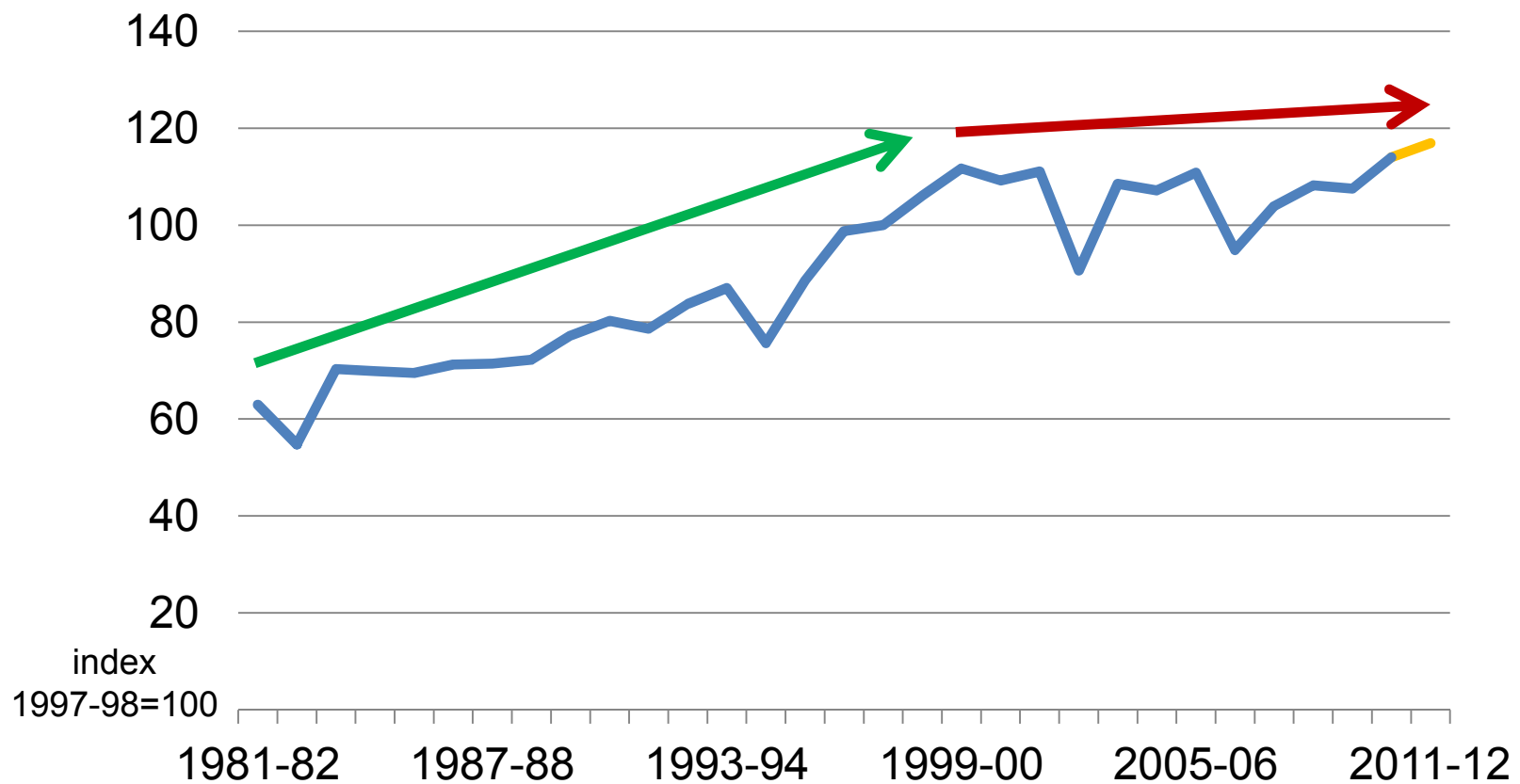
Importance of agricultural productivity

Framework for productivity growth

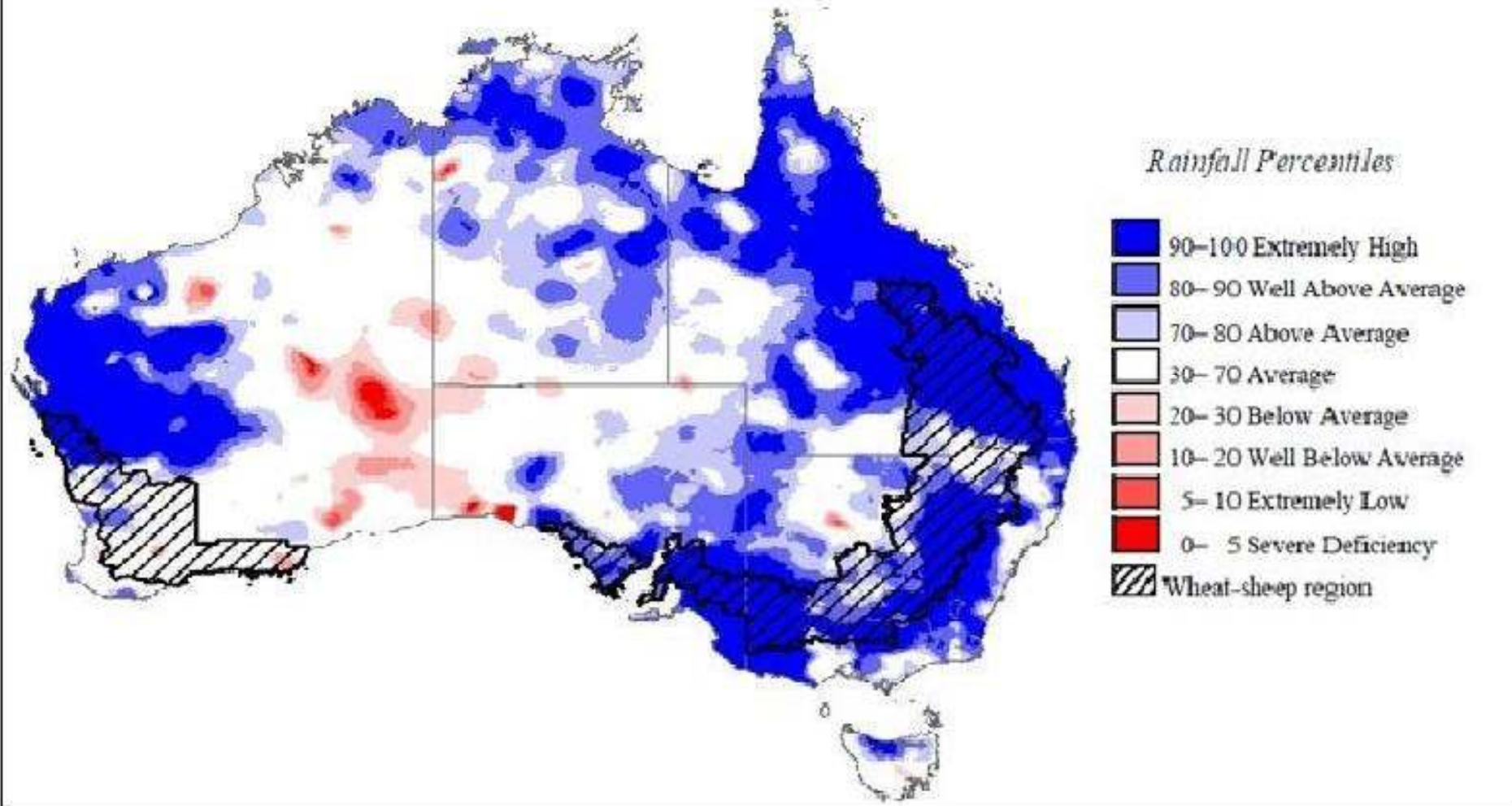
# Australian broadacre zones



# Index of Australian agricultural production



## Rainfall percentiles (December 2010 and January 2011)



# Impact of recent excessive rainfall and floods: an example

Excessive rainfall in November and December 2010 caused significant crop downgrades;

Floods in December 2010 and January 2011 damaged agricultural production

Tropical Cyclone Yasi devastated the banana industry in North Queensland

# Impact of recent weather events

November to mid-December rainfall:

↓ agricultural exports \$950 million

Late December to January flooding:

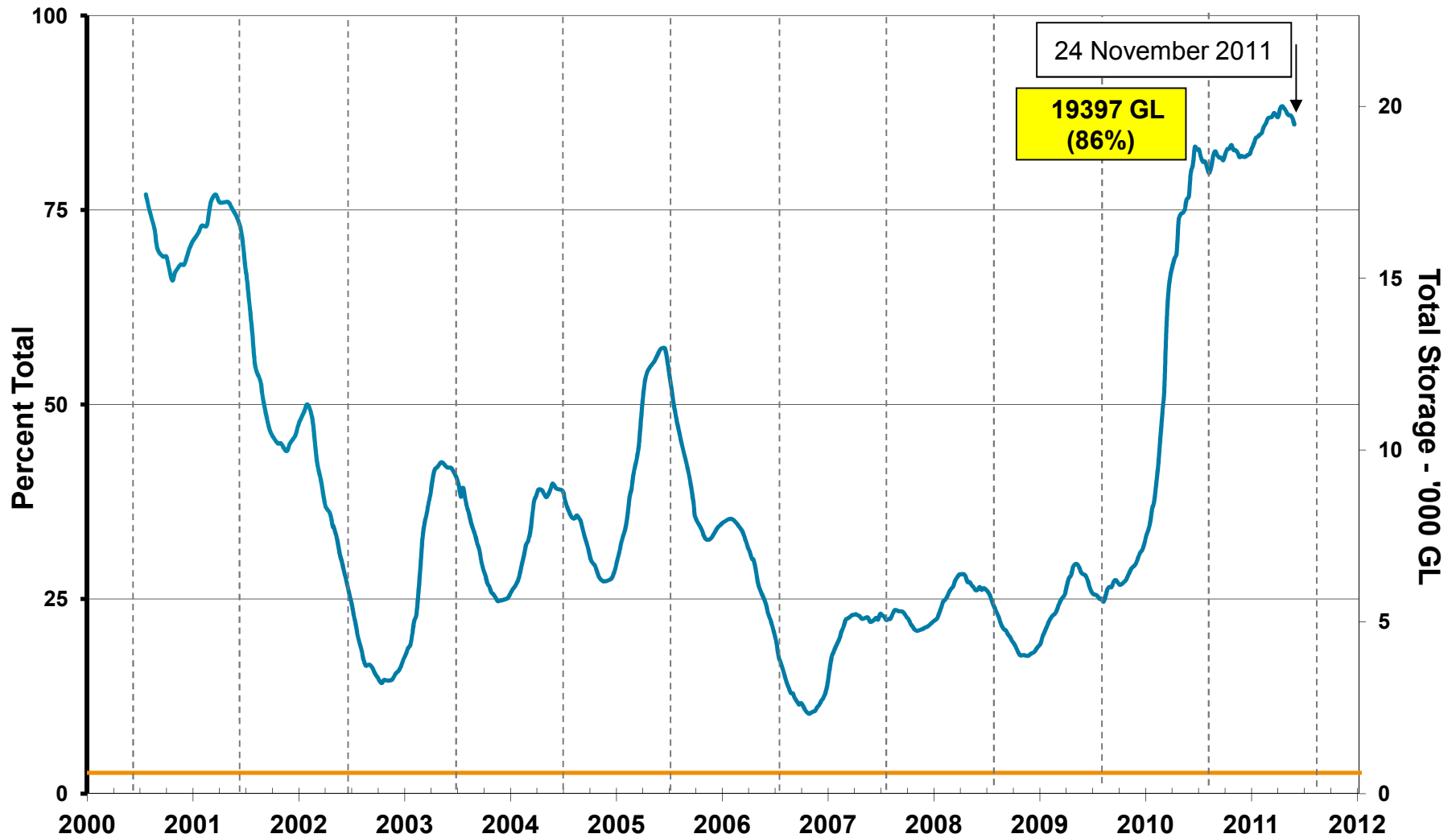
↓ agricultural production by \$1 billion

↓ coal exports by \$2 to 2.5 billion

Tropical Cyclone Yasi:

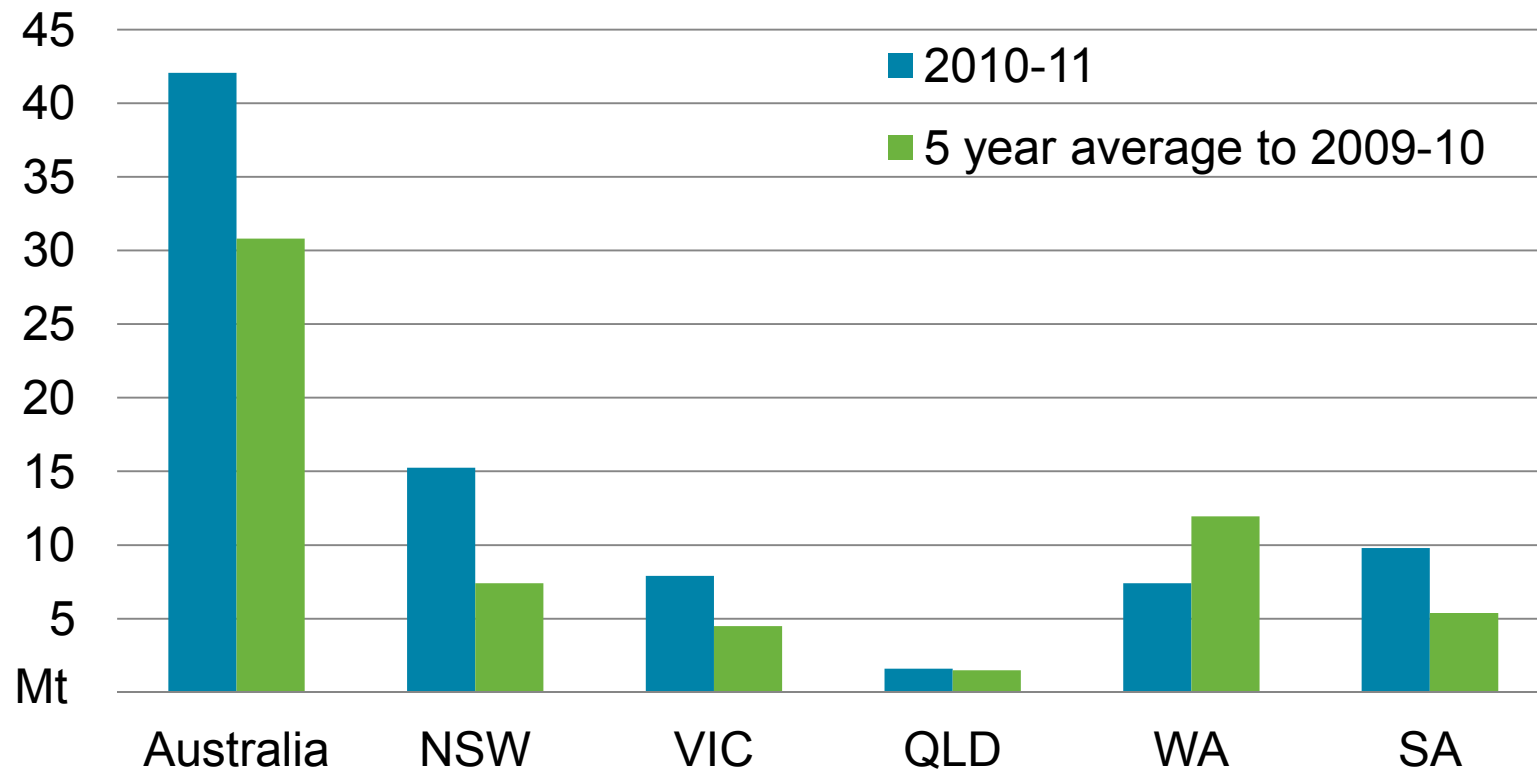
↓ agricultural production in Far North Queensland by \$300 million

# Murray–Darling Basin water storage

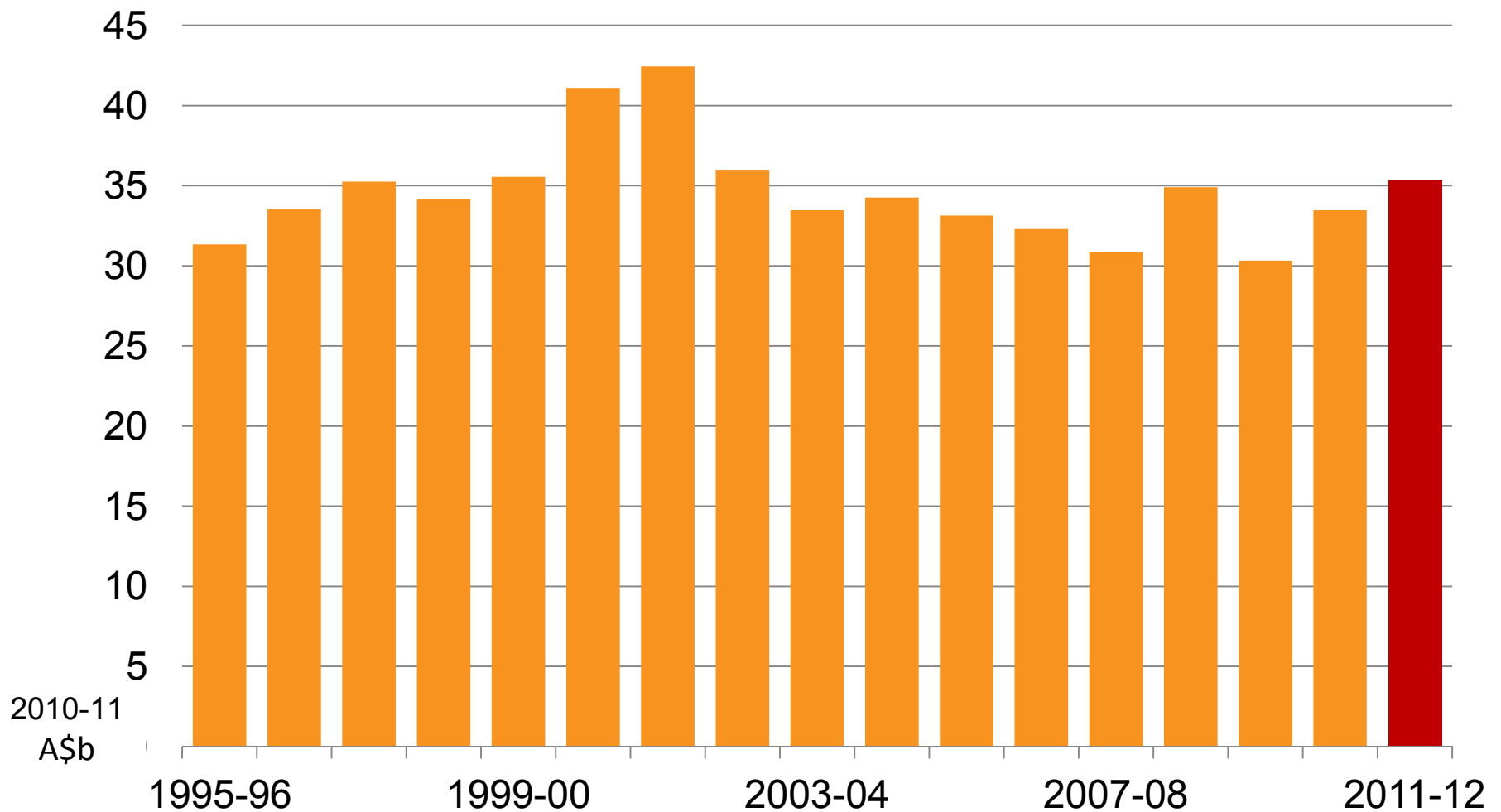




# Total winter crop production



# Value of Australia's farm exports



# Agriculture adapting to climate variability and change

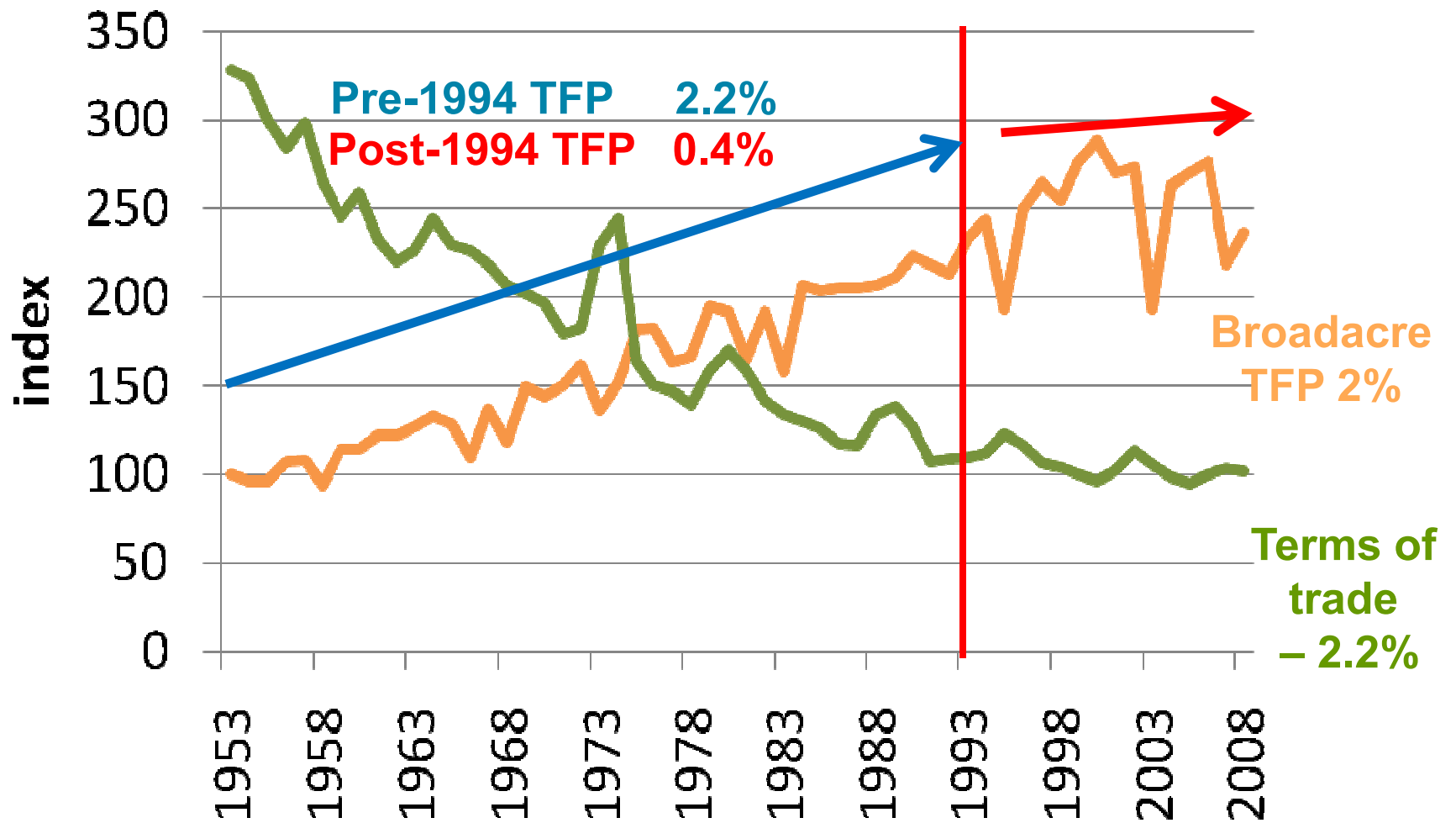
Will occur on-farm and will be ongoing

Larger productivity improvements will be required

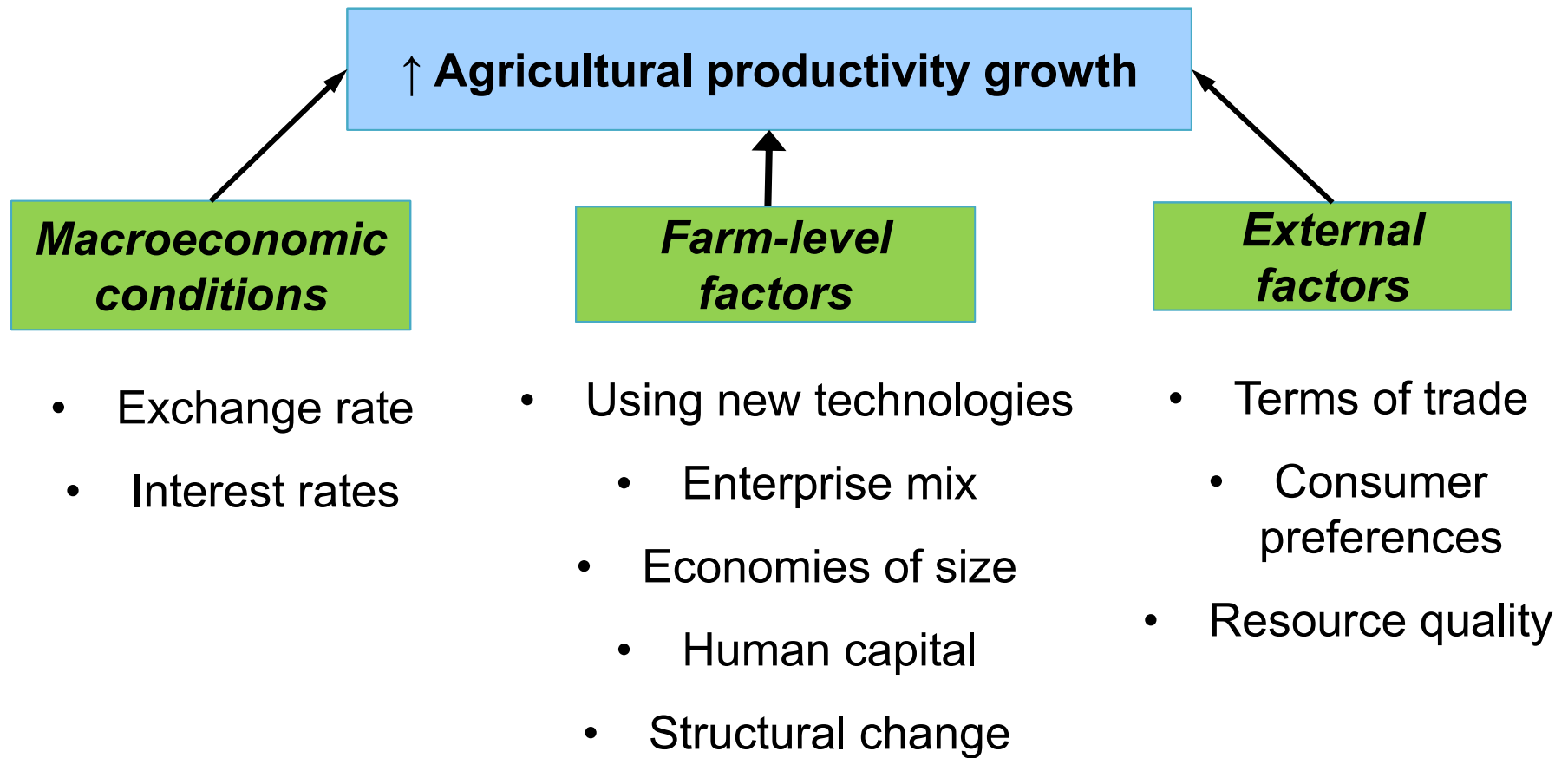
Roles for both industry and government



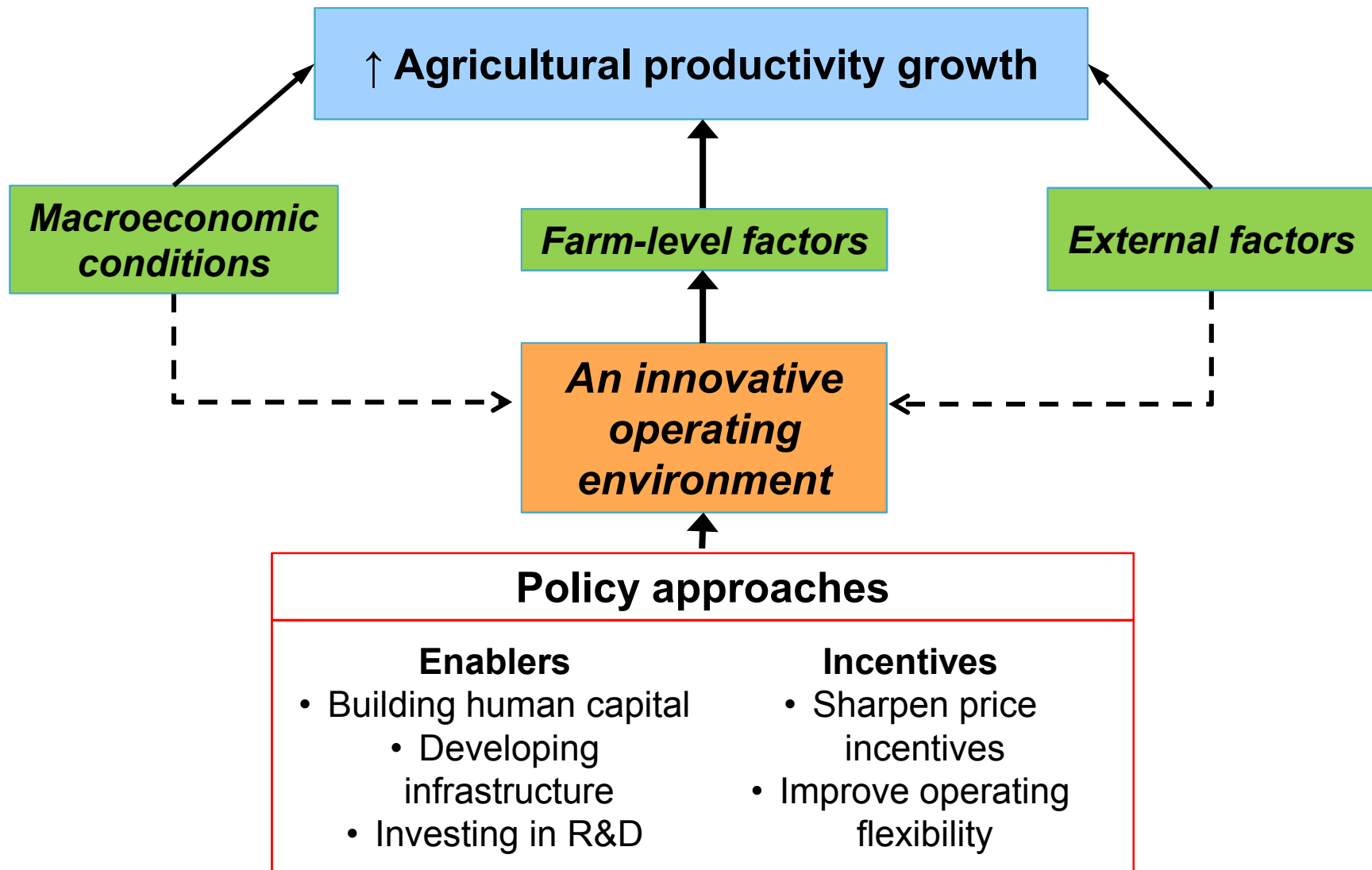
# Productivity trends and terms of trade



# Framework for agricultural productivity

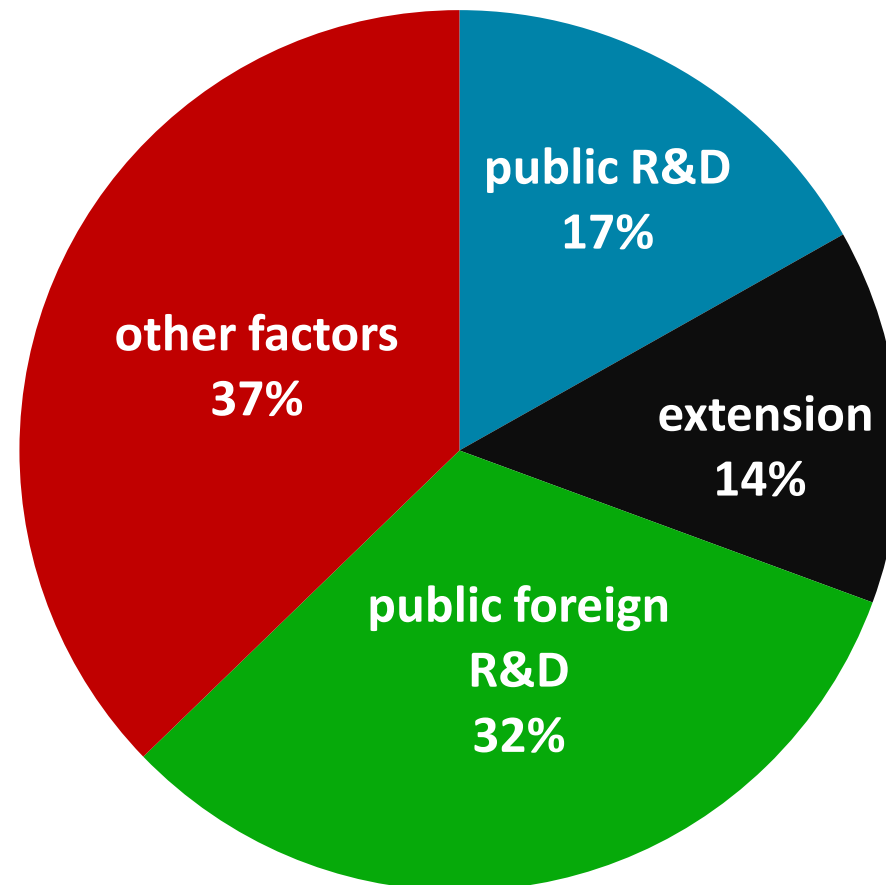


# Framework for agricultural productivity

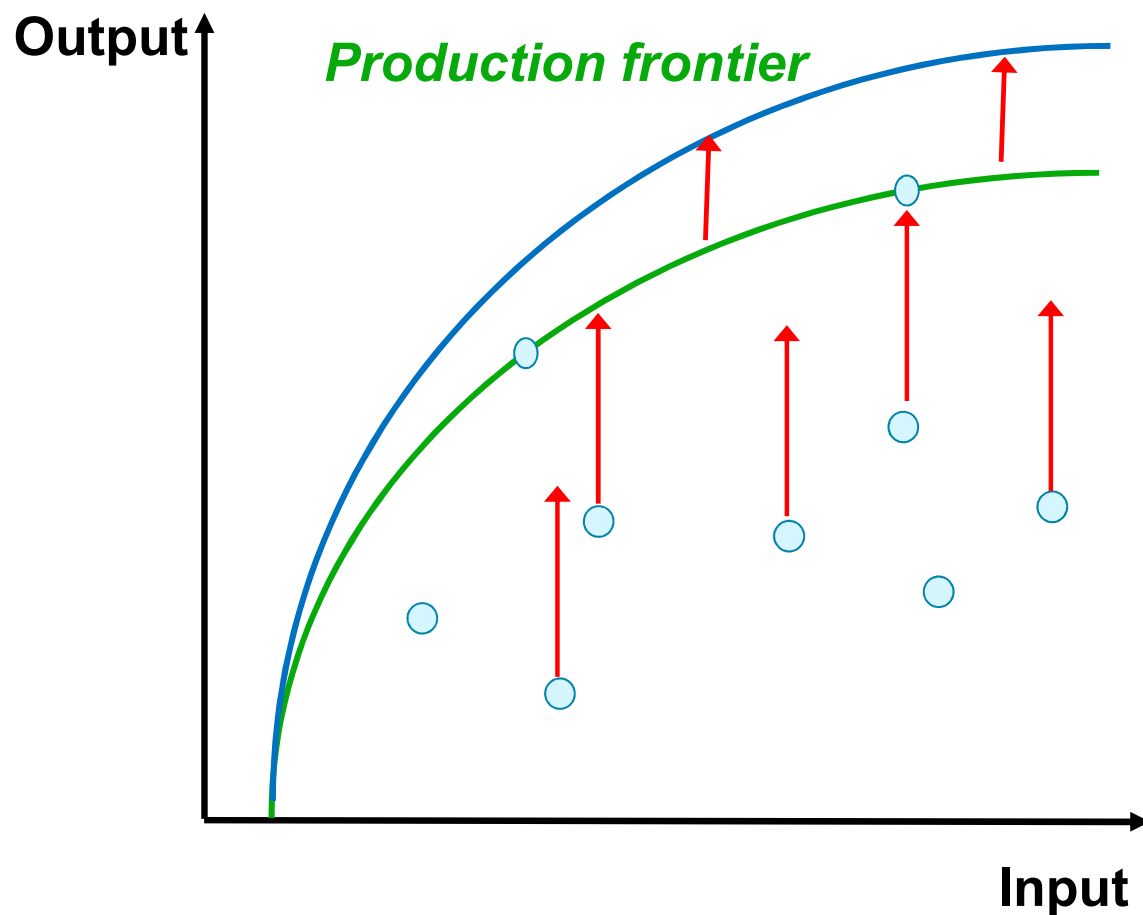


# Enablers of productivity growth: R,D&E

Broadacre productivity growth of 2% a year (1953–2008)



# Incentives for productivity growth



Most farms can increase productivity by **'catching up'** to the best farms

<b>Technical efficiency change:</b>
<b>grain growers</b>
1978 to 2008 <b>-0.3%</b>



# Incentives for productivity growth

- water market reform
- drought reform
- reform of agricultural and veterinary chemical regulation
- liberalised world agriculture markets
- climate change policies

# Lifting productivity

Remains the key to handling pressure on the farm sector

Whether it be:

- seasonal variability, floods and drought
- climate change
- global food crisis
- global economic crisis
- protectionist responses



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