



**Some thoughts on the
Socio-Economic Impacts of
Climate Change**

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Business Thinking on Climate Change

Lehman Bros

“Climate Change is a tectonic force likely to reshape markets in the same way as globalisation and ageing”.

Source: The Business of Climate Change, Lehman Bros, 2006

Business Thinking on Climate Change

UBS

“Investors need to ask several questions to identify companies that will succeed or fail in an environment of increased climate change risk”.

**Source: UBS Wealth Management,
Climate Change: Beyond Whether**

Business Thinking on Climate Change

Harvard Business Review

Identifies six big climate change risks

- regulatory
- supply chain
- product & technology
- litigation
- reputation
- physical

Industries listed as special risks under physical include insurance, agriculture, fisheries, forestry, real estate & tourism given dependence on the physical environment.

Business Thinking on Climate Change

The Other Extreme

Former WMC executive Ray Evans

Evans states climate change is “the most extraordinary example of scientific fraud in the post-war period”.

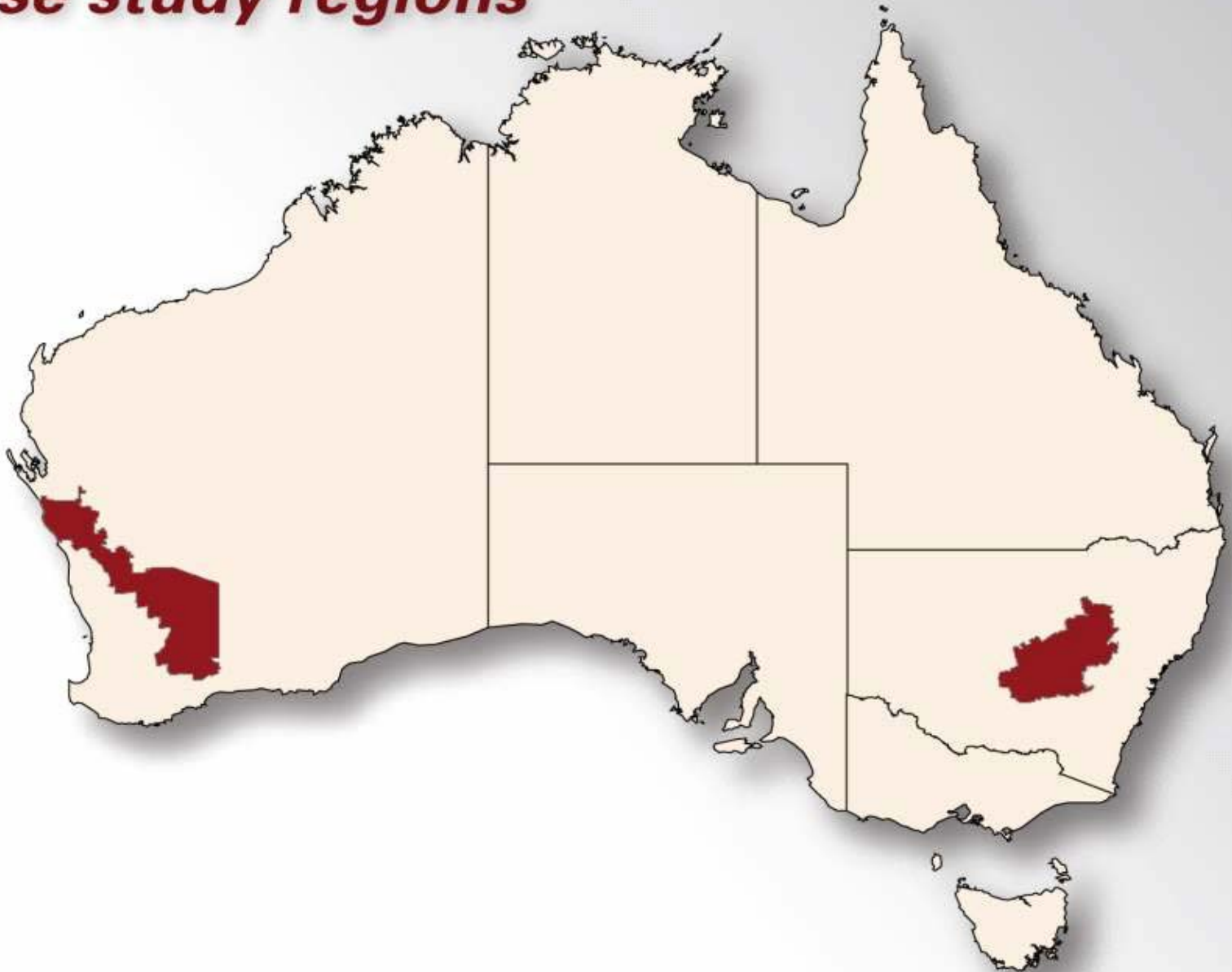
Source: Nine Facts About Climate Change, Ray Evans, 2007

Regional Economic Impacts (04/05 to 2030)

- **Recent ABARE, CSIRO and QDNRW study utilising ABARE's AusRegion Model**
- **WA Wheatbelt and CW NSW**
- **Assumptions:**
 - **Temperature increase of 0.9°C**
 - **Low and high rainfall scenarios, but low rainfall:**

WA wheatbelt	- 2 to -5%
CW NSW	0 to -2%
- **Analysis excludes irrigation industries**

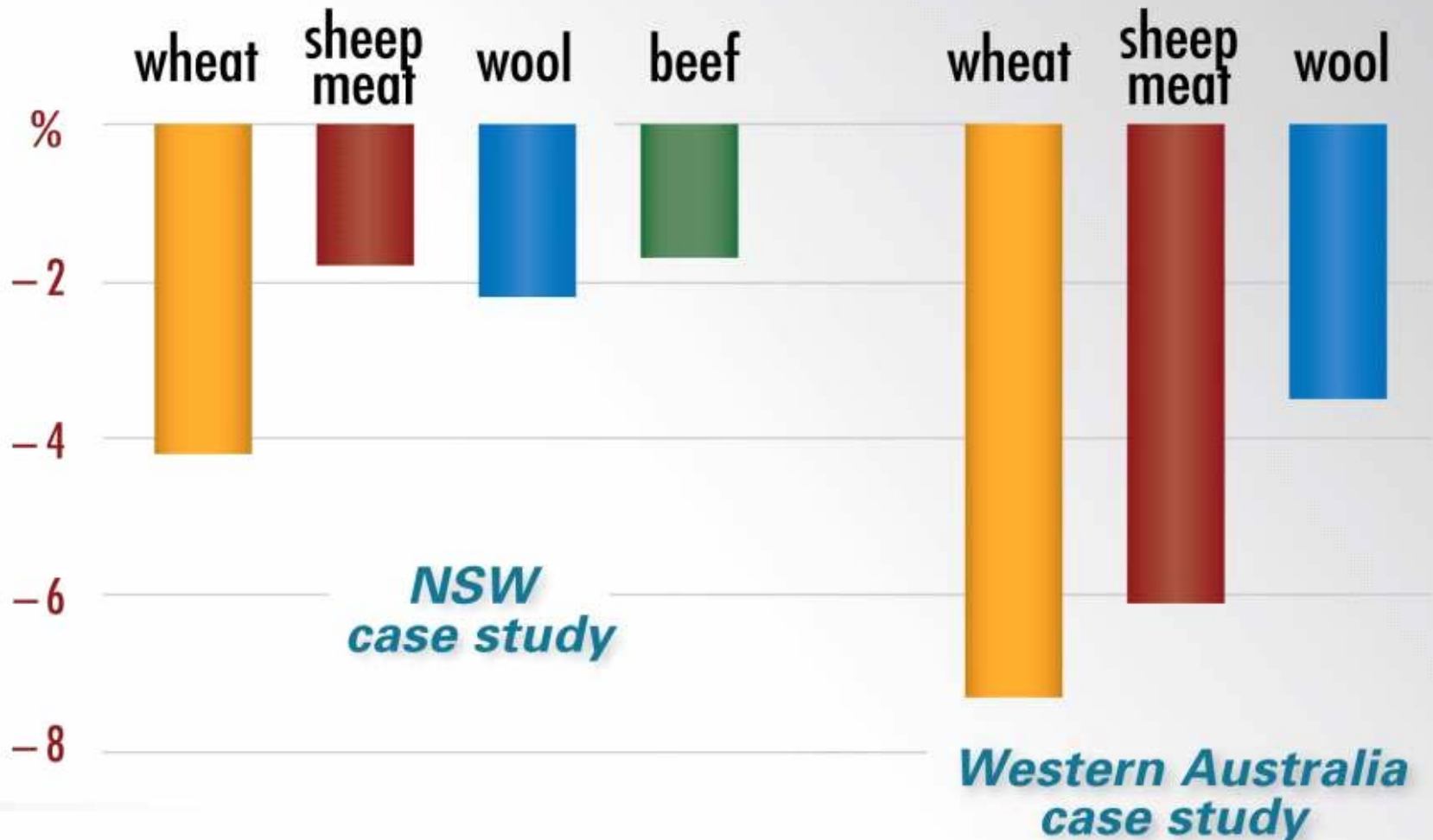
Case study regions



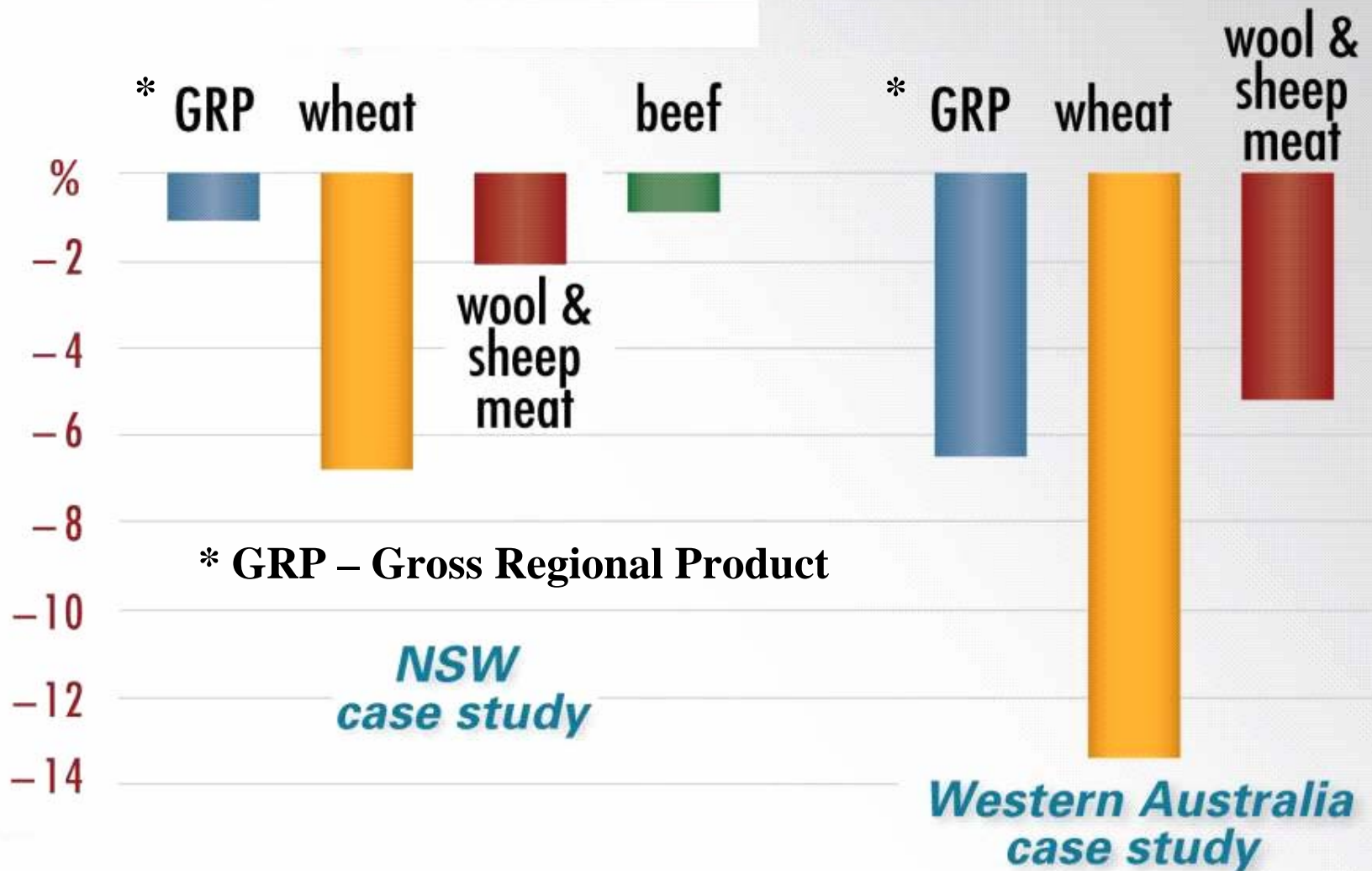
Source: Adapting to Climate Change – ABARE, CSIRO & QDNRW Study (2007)

Change in productivity, 2004-05 to 2030

– low rainfall scenario



Regional economic impacts at 2030 – low rainfall scenario



* GRP – Gross Regional Product

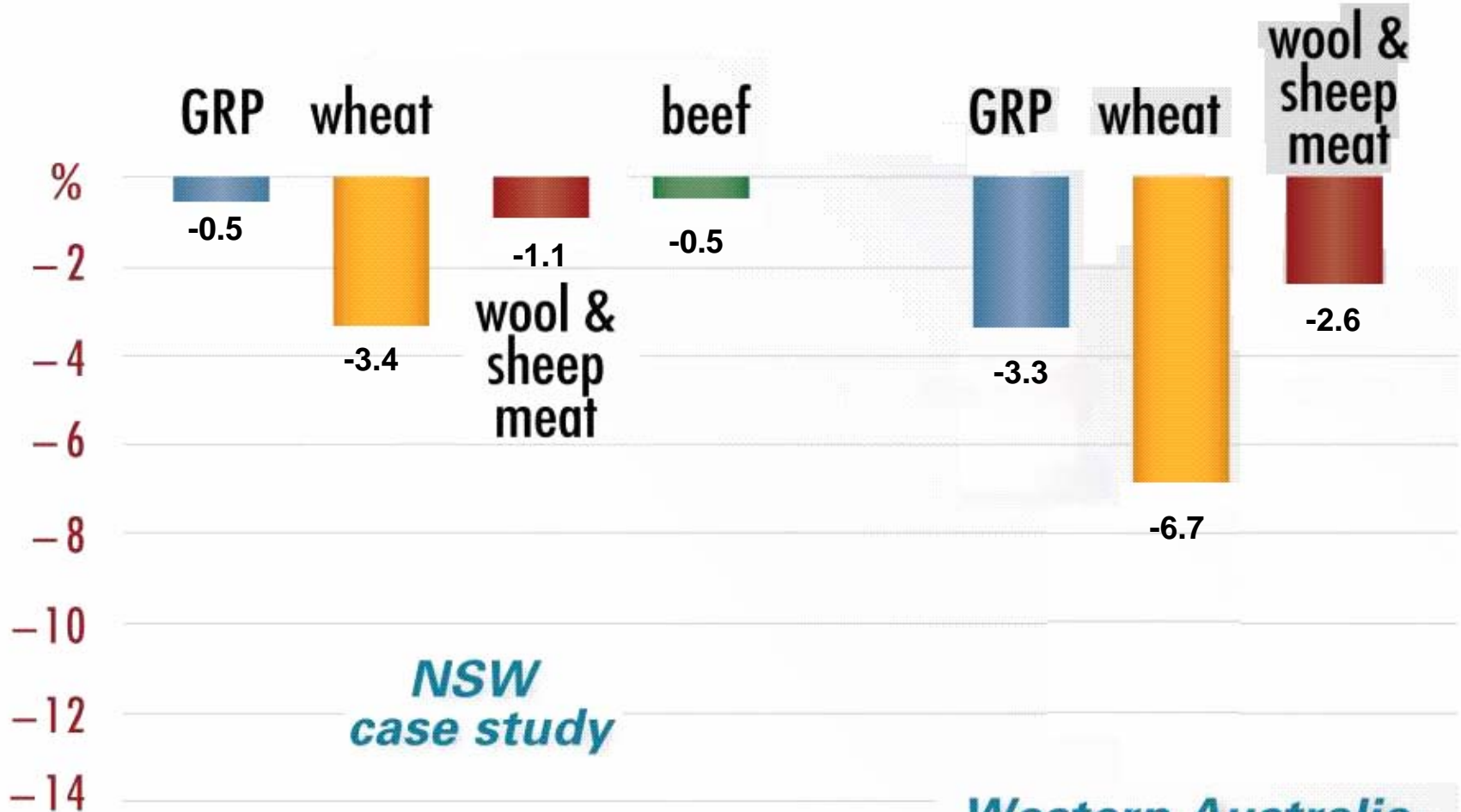
*NSW
case study*

*Western Australia
case study*

Regional economic impacts at 2030

-Low rainfall scenario

-Assumes adaptive response to climate change



Note: Adaptive response assumes productivity growth in excess of 2.3% p.a achieved by Aust agriculture over 30 yrs to 2004/05.

Western Australia case study

Why the Regional Differences ?

- **Adaptive capacity is influenced by a range of factors including:**
 - farmer education
 - income levels
 - diversity of on and off-farm income sources
- **A critical factor in the differential performance of both regions is the lack of diversity of income sources in WA wheat belt.**

Difficulties for the Agricultural Sector (& Regional Economies)

- **Productivity growth is not spread evenly across all agricultural industries and farming businesses.**
 - **Cropping (3.6%), sheep (0.6%)**
 - **Productivity growth confined to top 50% of farm businesses.**
- **Need productivity growth in excess of 2% p.a to offset decline in farm terms of trade.**
- **Greater adjustment pressures on bottom 50% of farm businesses.**

Factors that may slow Namoi Catchment's adaptive response to climate change

- **Age Profile – older than NSW average**
- **Education Profile – lower than NSW average**
- **Unemployment Profile – Significantly higher than NSW & Aust average**

Factors that may slow Namoi Catchment's Adaptive response to climate change (con'd)

- **Gross Regional Product (& Employment) Percentages for Namoi Catchment & NSW illustrate agricultural industry reliance.**

	Namoi %	NSW %
Agriculture	16 (18)	2 (4)
Manufacturing	6 (8)	3 (12)

Source: Socio Economic Assessment of Namoi Catchment, CARE (2006)

- **48% of Namoi's gross value of agricultural production comes from irrigation industries.**

Other Climate Change Impacts

- Increased pressure to treat water as a commodity regardless of end use.
 - * Significant equity and pricing issues need to be resolved.
- Irrigation industries more at risk from government policy changes than from their capacity to increase efficiency and productivity.
- Increased climatic volatility (floods, storms, wind etc) will impose increased costs across the community:
 - * Strengthened building codes
 - * Higher insurance costs
- Financial institutions may impose lower loan/security ratios and higher interest cover ratios.
- Agricultural sector input suppliers will have to re-think production, inventory and product delivery mechanisms given increased demand volatility.

Concluding Comments

- Top third of farm businesses have demonstrated a long term dynamic capacity to achieve productivity growth – strong adaptive capacity.
- Government policy settings need to enhance adaptive capacity and not impede it. This may not be easy to achieve given increased adjustment pressures at lower end of agriculture.
- Increased funding for R&D (both by governments and industry) and further improving risk management skills will improve adaptive capacity.
- Climate change may provide the catalyst for communities to come together and take “collective action”.