

# Stakeholder Perceptions & Needs



## Stresses and Shocks for the Australian Food System

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# What's the purpose of the Australian Food System?

“To feed the Australian people”

“To provide safe and nutritious food for all”

“To ensure a profitable export market”

“To generate potential business opportunities”

“To give high quality food whenever at reasonable price”

“To reduce diet-related NCDs”

“To maintain vibrant rural communities”

“To reduce food-borne disease”

“To support livelihoods in the value chain”

“To give +ve outcomes for the population: health, equity and env”

# “The Lucky Country”: Why worry?

> 86,500 farm businesses in Australia

- On average, each produces enough food to feed 600 people, 150 at home

“The Australian food system feeds 80 million people”

- Collectively produce almost 95% of daily domestic food supply.

- Gross value of production in 2016-17

“We have probably the best biosecurity in the world”

- “Blessed with ‘*Brand Australia*’” 44.8 billion in 2016-17

*“The value of our farm exports, and indeed the future of Australian agriculture, depends largely on confidence in our high level of exports.”*

“This is the land of plenty. We don’t worry about vulnerability; we don’t think about resilience”

“She’ll be right, mate”

# Extreme weather: temperature and drought

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1 March

## Drought-hit Australia to import wheat for first time in 12 years

2019-05-19 09:03

 **ALJAZEERA**

A rare bulk shipment of wheat from Canada, due later this year, has added to concerns about the Australian grain industry, which is being hit by a perfect storm of severe drought and difficult trade conditions.

The import is the first of its kind since 2007, and was approved by the **Australian government** on Tuesday after months of lobbying from grain users desperate for product.



# But what about other concerns?



**Seven in 10** Australian men are overweight or obese



**One in two**



Women are overweight or obese

**One in four**



Children are overweight or obese



# Defining Resilience

## 4 Questions

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1. Of what?
2. To what?
3. For whom?
4. Over what time period?

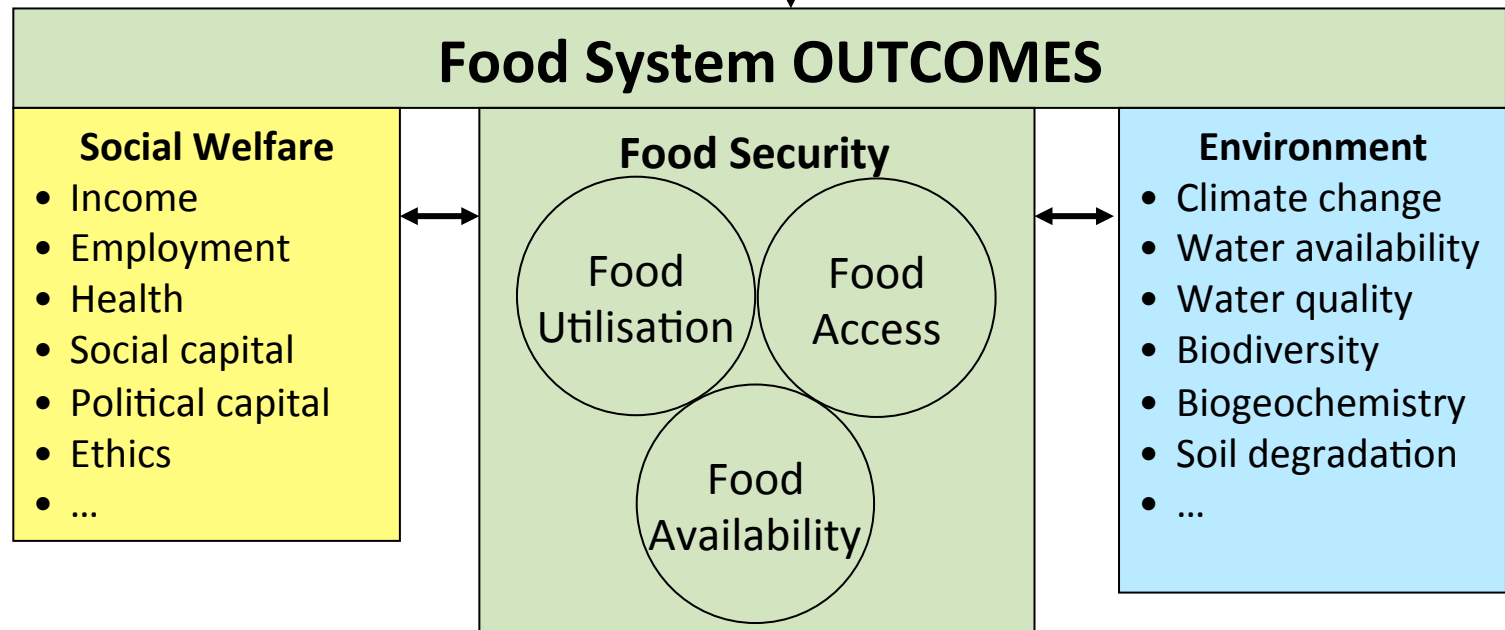
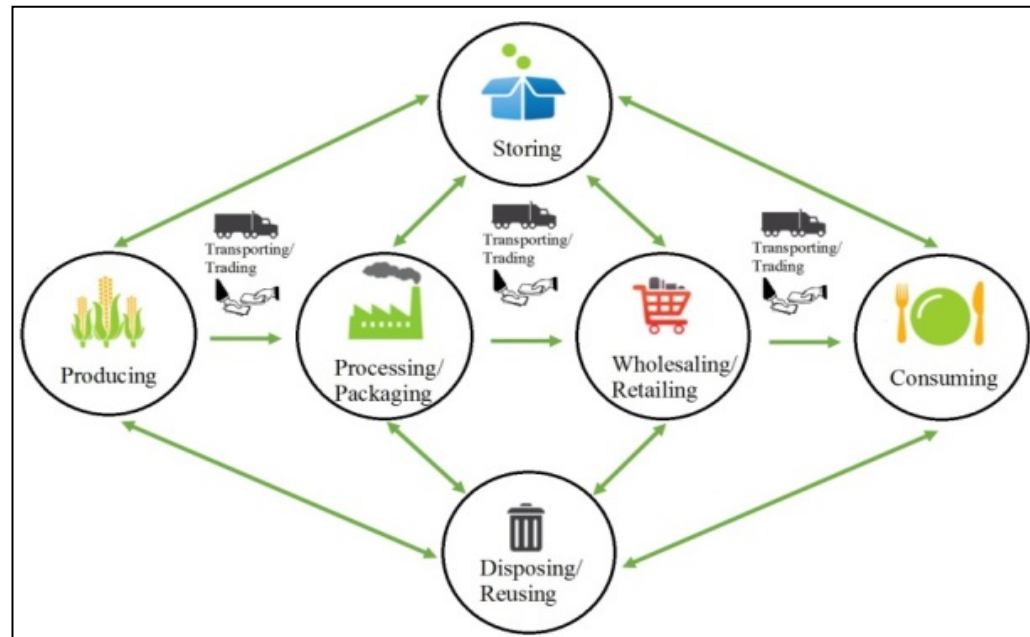


# 1. Of what?

Food System  
*Functioning*  
(Activities)

OR

Food  
System  
*Function*  
(Outcomes)



# Australian Food System *Stresses*

“Labour shortage: it’s increasingly scarce, increasingly expensive”

“Agriculture dominated by family farms”

“Tariffs on importing soy”

“Water stress”

“Processing dominated by international players”

“Aging farmer population; hard to maintain skills”

“Australian ‘land grab’ by China”

“Insect pollinators in decline”

“Chilean produce cheaper threatening international markets”

“New landscape caused by changing Trade and Direct Foreign Investment”



# Australian Food System *Shocks*

“Drought”

“Frost damage in wheat”

“Hail storms”

“Russian wheat aphid”

“Blue tongue limiting exports to  
China”

“Food scares (e.g. strawberry  
industry lost \$500m)”

“Weather extreme affecting food  
distribution”

“SARS epidemic hitting 30% of the  
workforce”

“Electrical cut to the banking  
system”

“Geopolitical incident affecting  
export market”

### 3. For whom?

## *Food system 'actors'*

“A beef farmer, a processor, a retailer, a consumer, an exporter?”



## 4. Over what time period?

- **Short-term *interruptions* (usually due to shocks)** to e.g.:
  - Fishing or agricultural activities (due to e.g. extreme weather)
  - Critical ingredient shortfall (due to e.g. supply chain breakdown)
  - Just in time groceries delivery (due to e.g. IT malfunction)
  - Consumer shopping patterns (due to e.g. food scares)
- **Longer-term *disruptions* (usually due to stresses)** to e.g.:
  - Natural resource degradation
  - Energy price
  - Low-carbon emission regulations
  - Change in dietary preferences

# What can amplify these Stresses and Shocks?

“Good harvests outside Aus leading to drop in world prices”

“Horticulture at highest risk as essentially self-regulating”

“Frequency of cyclones”

“Volatility in markets, esp. beef price fluctuations”

“Politics around migrant labour”

“China politics and losing market”

“Fuel price hikes and transport costs”

“Public opinion, e.g. shocking news about live animal exports”

“A few big producers can organise political power”

“No sense of vulnerability”

# Notions of Resilience of Food System Outcomes

## 1. Robustness

Aim to resist disruption to ***existing*** FS outcomes

## 2. Recovery

Aim to return to ***existing*** FS outcomes after disruption [bounce back]

## 3. Reorientation

Accept ***alternative*** FS outcomes before ***or*** after disruption [bounce forward] (transformation)

*All involve*

## Reorganisation

Making changes to the system *activities* (adaptation) either directly or via 'environments'

# ‘Reorganise’ to enhance *Robustness*

“Trade deals aiming to diversify market”

“Planting N-S instead of E-W”

“Protect reputation”

“Focus on food safety”

“Future Proofing”

“Maintain good relationships with China”

“Improve transport infrastructure”

“Even stronger biosecurity”

“Phase out bad farmers”

“Guardsmanship”

# **‘Reorganise’ to enhance *Recovery* [bounce back]**

“Better coordination post-farmgate”

“Adaptability of social and institutional structure”

“Joining together into associations”

“Improve logistics infrastructure”

“Enhance State Emergency Service”

“Enhance biohazard response”

“Import food temporarily (e.g. Sunrice)”

“Path dependency vs. deviant dependency”

“Use scenarios and foresight”

“Automation”



# ‘Reorganise’ to encourage *Reorientation* [bounce forward]

“Introducing sector-led minimum standards of operation/efficiency”

“Aim for high-value commodities for sale on world market”

“Reduce food waste”

“Reduce red meat consumption”

“Recommission National Agriculture White Paper”

“Using renewables in production”

“Healthier diets; eating seasonally”

“Reduce processed foods and aim for NOVA classification ”

“Food/diet classes need to be part of national policy”

“Aim for systemic innovation (i.e. avoid component innovation)”

# Challenges for enhancing resilience to shocks and stresses

“3-5 yrs max planning timeframe for ag enterprises”

“Need both public and policy ‘will’ to work on interventions”

“Need to take consumer sentiments seriously”

“People value eating out; changing hospitality culture difficult”

“Need better understanding of the dynamics and sensitivity of the system”

“There is no real use of scenarios or foresight”

“No comprehensive strategy in place; more planning is needed”

“Reliance on mixing of supply in food processing”

“No sign of legislation because of fear of “nanny state””

“Need Food Systems thinking”

# Food System Stresses and Shocks and Food Security

Insufficient cals  
Insufficient nutrs  
~ 1 billion

Sufficient cals  
Insufficient nutrs  
? 3 billion

Excess cals (incl. many  
with insufficient nutrs)  
> 2.5 billion

Sufficient cals  
Sufficient nutrs

CONSUMERS

Constraints on dietary choice and diversity  
*affordability, preference, allocation, cooking skill, convenience, cultural norms, ...*  
**=> Consumption by Sub-populations**

FOOD CHAIN ACTORS

'Post-farm gate' Food System Activities  
*processing, packaging, trading, shipping, storing, advertising, retailing, ...*  
**=> Final Cals/Nutrient Quantity and Price at shop**

PRODUCERS

Local, Regional & Global Production Activities  
*farming, horticulture, livestock raising, aquaculture, fishing, ...*  
**=> Basic Cals/Nutrient Quantity and Price at farm**

Productivity

Diversity & Quality

Stresses and Shocks

Social, Political, Business, S&T, and Biophysical  
Environments