

Ground Cover Issue 76 - September - October 2008

## Peanut venture pioneers northern crop development

Six years ago the Kingaroy-based Peanut Company of Australia (PCA) moved into the Top End, first trialling irrigated peanut growing on a small hay farm, 'Florina Road', just outside Katherine, three hours south of Darwin. Driving the multi-million-dollar investment has been PCA's need to ensure a reliable supply of quality Australian...

Territory Government  
media release

14 August 2007

### Katherine goes nuts!

The Territory could be the saviour for Australia's peanut industry, eventually supplying peanuts to meet domestic demand.

The Peanut Company of Australia (PCA) today announces Minister for Primary Industry, Chris Natt, said the more jobs and provide a boost to the economy.

"This is one of the biggest agricultural and rural development investments the Territory will create love to see Katherine become the peanut capital of the Territory and I would like to see the establishment of a peanut processing plant in Katherine, particularly for farming families and rural youth."

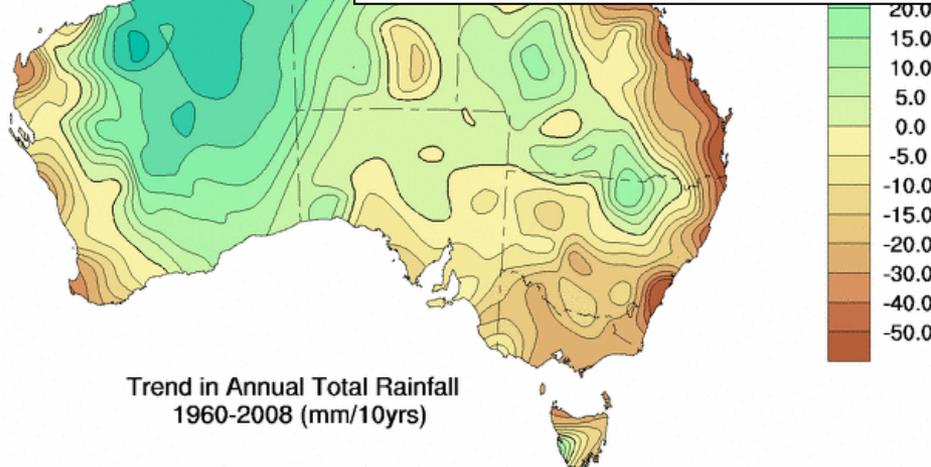
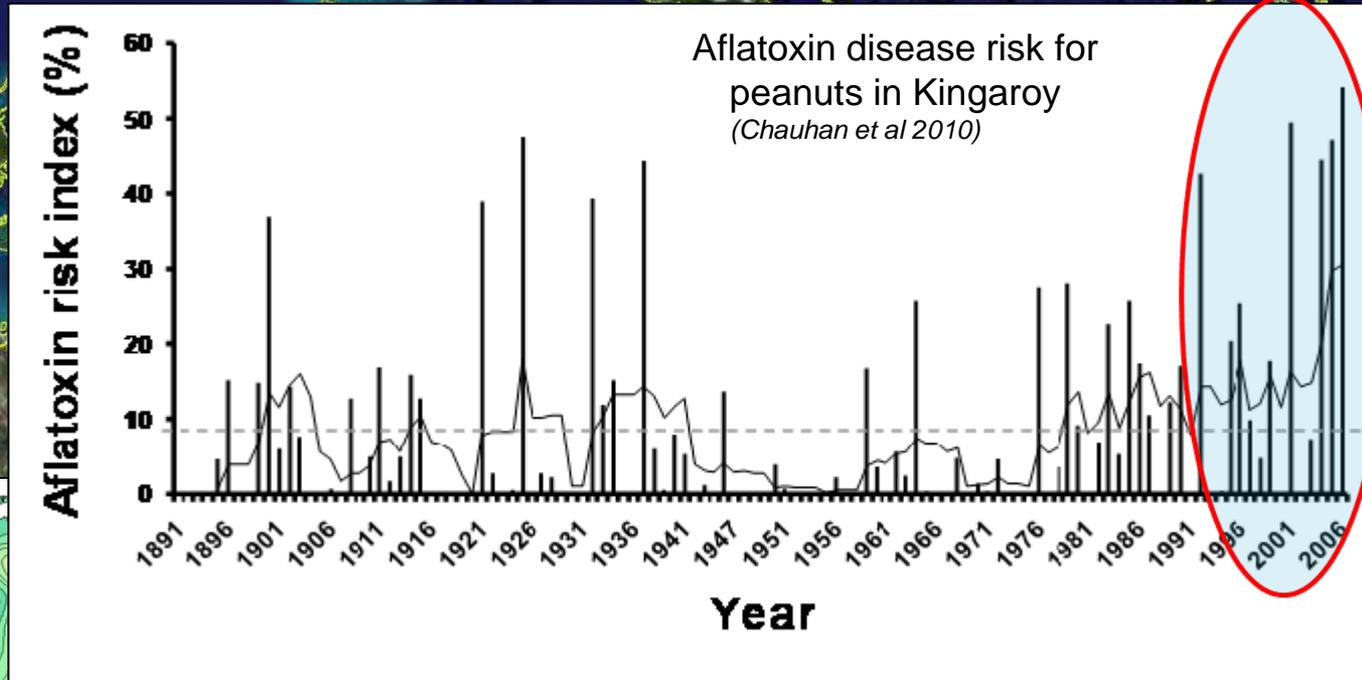
# Australia's peanut industry's transformation to adapt to future climates

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*Funded by DAFF Future Farming Program*

# Why are peanuts on the move?



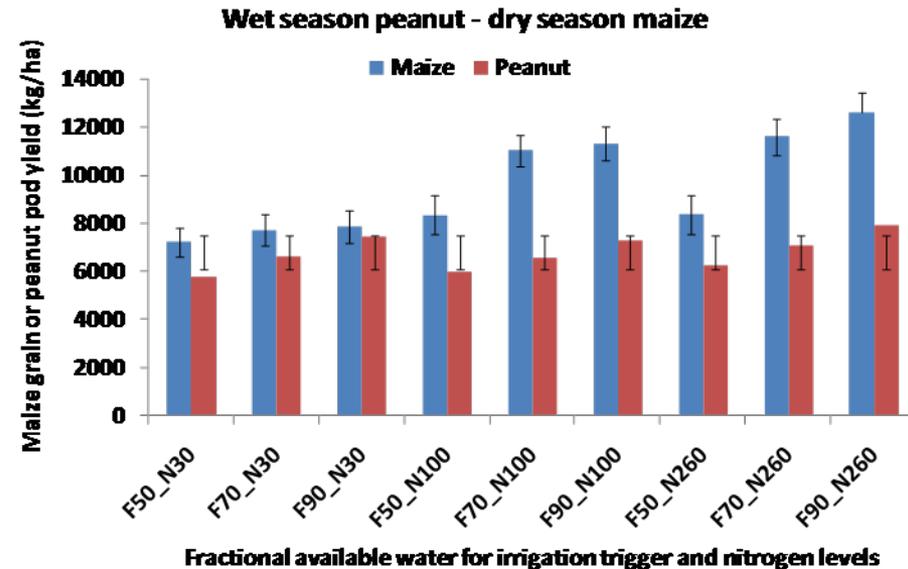
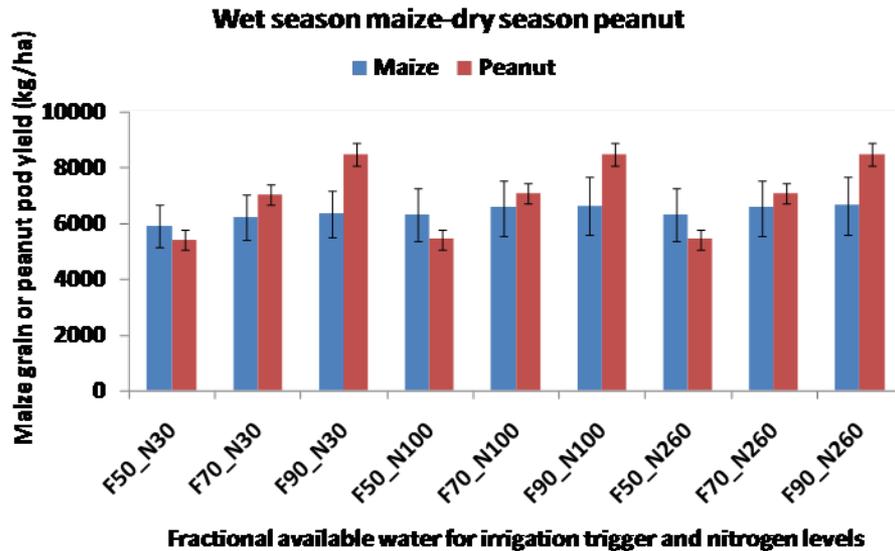
# Challenges of transformative adaption

- What will be the *impact* of this cropping system *on the environment* in the new region?
- What are the *pest, disease and biosecurity risks*?
- How will the cropping system, and its impact, *change with further climate change*?
- Within the social domain, what key characteristics of the planning and reorganisation phases that are the *'preconditions' for a successful transformation*?





# Simulating different irrigation triggers and rates of N fertilizer on the performance of maize and peanut crops in wet and dry seasons at Katherine



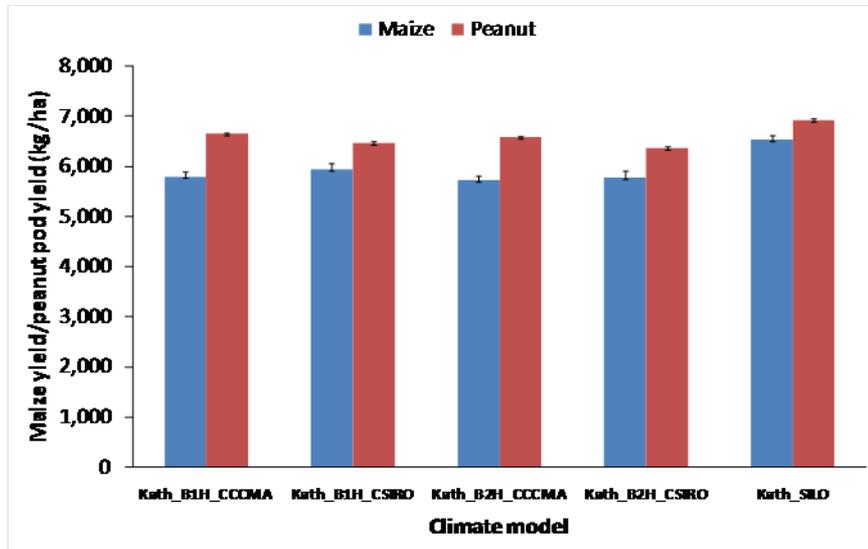
## **Important aim:**

*To understand the **loss of N to the environment** in the most efficient management system*

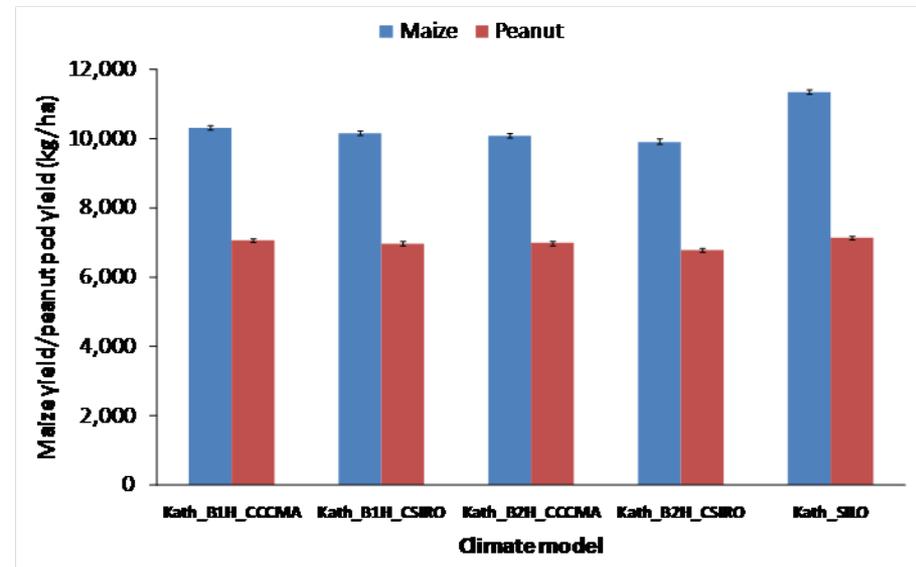


# Early impacts of climate change on peanut rotations: *Conclusion is for mixed effects on yield and nitrogen and water losses*

Wet season maize and dry season peanut

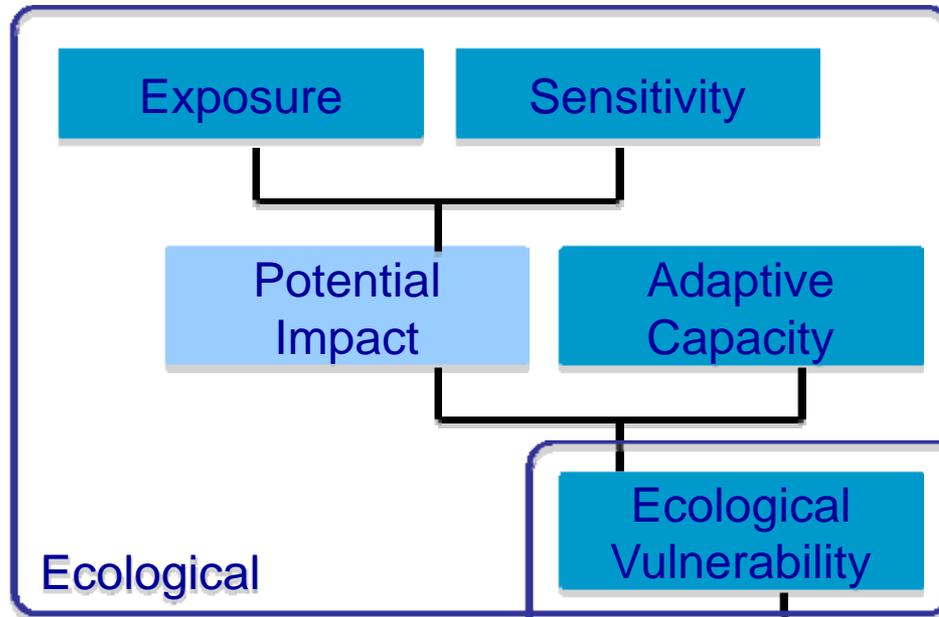


Dry season maize and wet season peanut

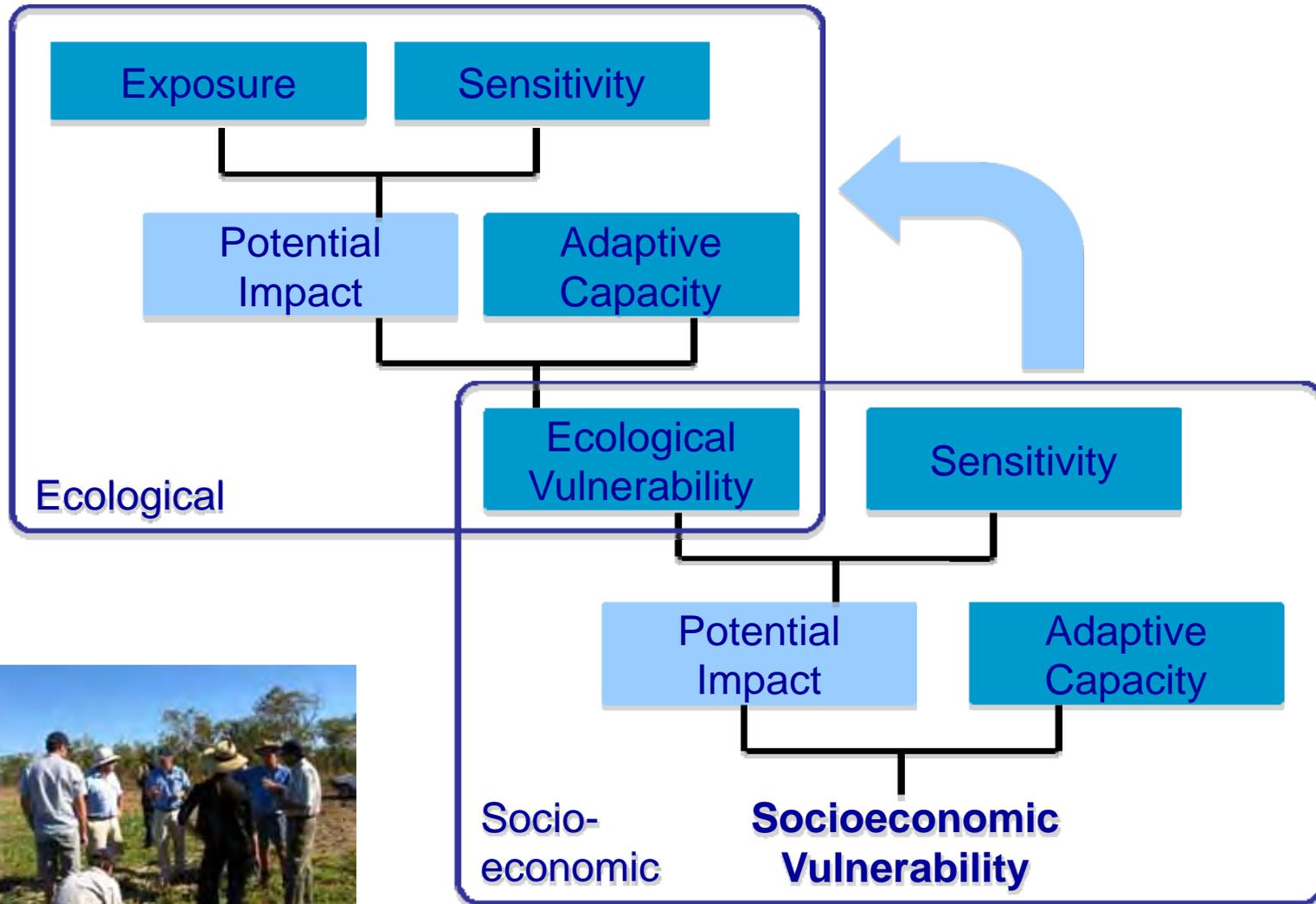


- **Kingaroy and Atherton - boost yields of winter maize (as temperatures get closer to optimum range for this tropical crop)**
- **Katherine - cropping in the wet summer season adversely affected.**
- **Kingaroy should face least disadvantage provided water and nitrogen are not limiting**

# Key social features of the transition process: *Framework for resilience to climate change*



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# Social attributes of sensitivity and adaptive capacity

## Resource Dependency

- Attachment to occupation
- Employability
- Place attachment
- Family characteristics
- Networks: internal and external
- Business approach and skills
- Business characteristics
- Local knowledge
- Environmental practices

## Adaptive Capacity

- Risk and uncertainty
- Planning, learning and reorganising
- Flexibility
- Interest in change



# Pests, disease and biosecurity impacts

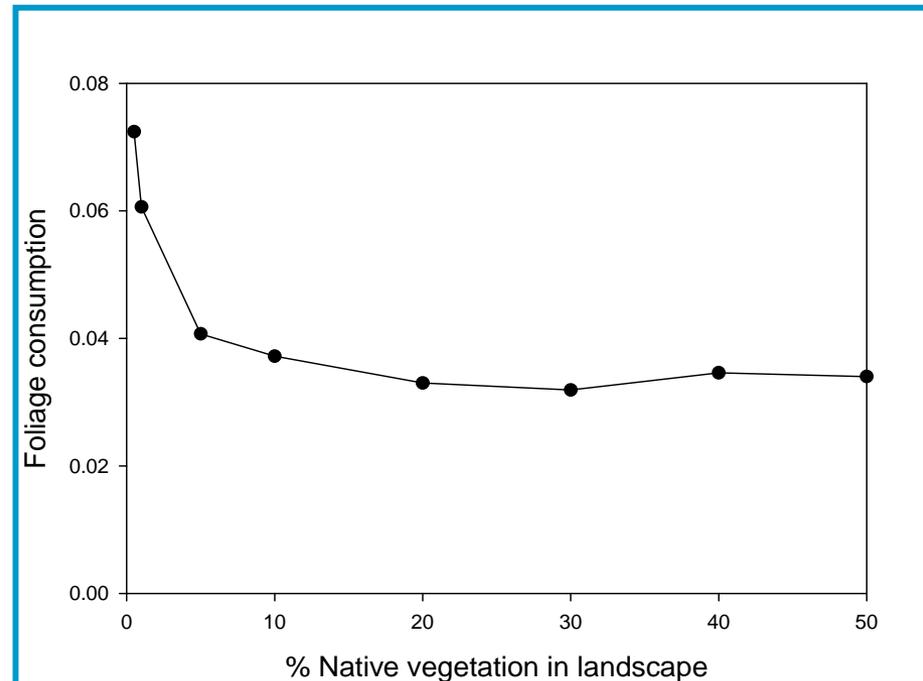


## • Review

- **74% of Australian peanut pests have been reported in the NT.**
  - Major pests such as peanut scarabs and the white-fringed weevil have not yet been reported.
- **91% of the Aust peanut pathogens have been reported in NT.**
  - *Cylindrocladium* black rot and net blotch not reported
- **Mosaic landscapes may reduce** crop to crop transmission of diseases and limit pest colonization

## • Modelling of parasitoid-host interactions in landscape context

- Early modelling - native vegetation cover of 20% reduces crop injury from cotton boll worm



# Can Australia's peanut value chains transform to adapt to future climates?

- **It is not yet clear...**

- Pests, diseases, biosecurity ✓
- Agronomy, enterprise profitability ✓?
- Climate change resilience ?
- Environmental impacts ??
- Social adaptive capacity ???

- **Continuing work to better resolve the issues**

- **Develop a blueprint for successful transformation**

## **Our thanks to our organisations and people**

CSIRO Ecosystem Sciences and Climate Adaptation Flagship

Qld DEEDI

NT Department of Resources

NT Agricultural Association

Peanut Company of Australia

DAFF Future Farming Program