



NORTHERN AUSTRALIA  
FOOD FUTURES



# Climate Change and Farming



Greg Owens  
Industry Development Manager  
NT Farmers Association





# Farming in NT

## Regionally

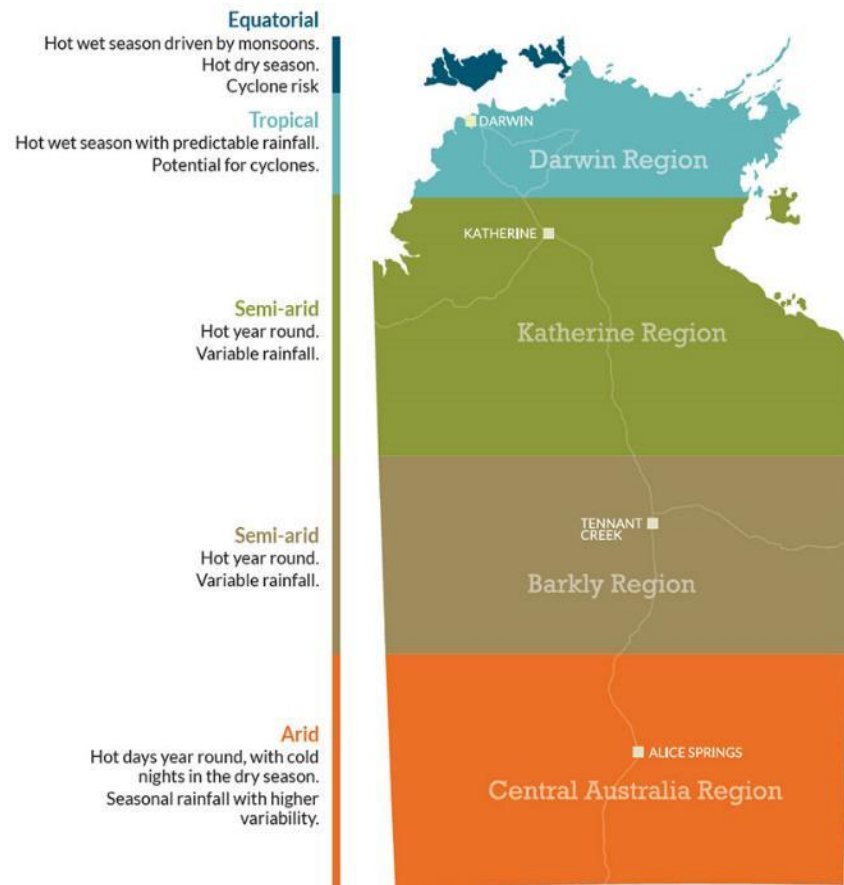
- 5 Distinct Climatic Zones
- Some of the Most predictable weather patterns in Australia

## We have been told

- Abundant Resources for Horticultural Development
  - 1,000,000 ha of Irrigatable land
  - Vast underground water reserves

## Currently Value: \$280M

- Approx 10,000ha irrigated horticulture
- 20,000 ha broad acre, mostly fodder production
- Finite ground water in production areas
- Land tenure and development issues





NORTHERN AUSTRALIA  
FOOD FUTURES

NT FARMERS

we DO grow these





NORTHERN AUSTRALIA  
FOOD FUTURES

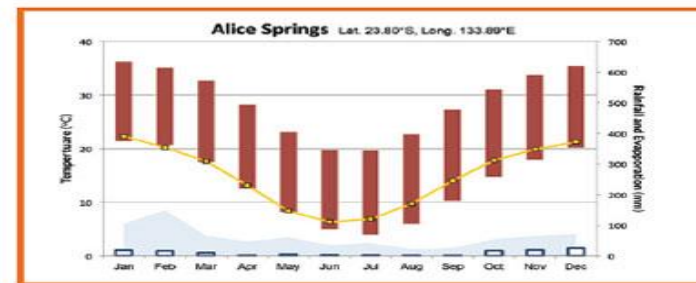
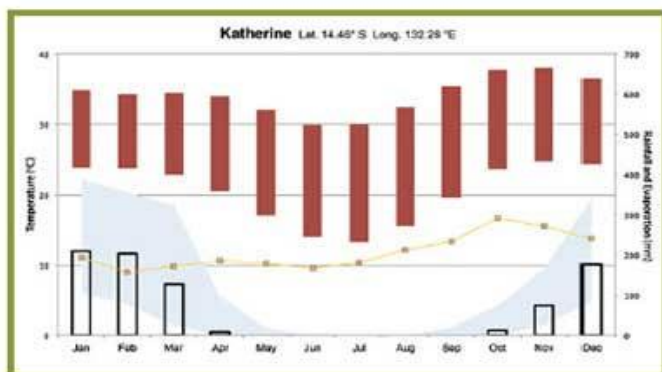
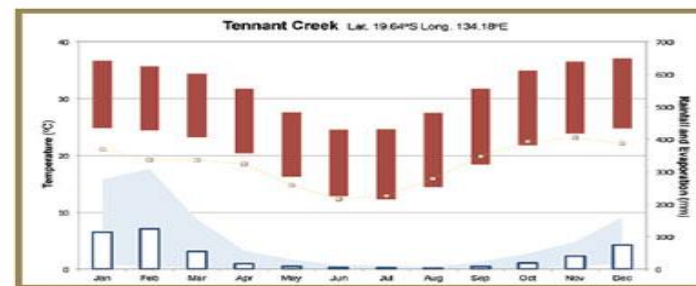
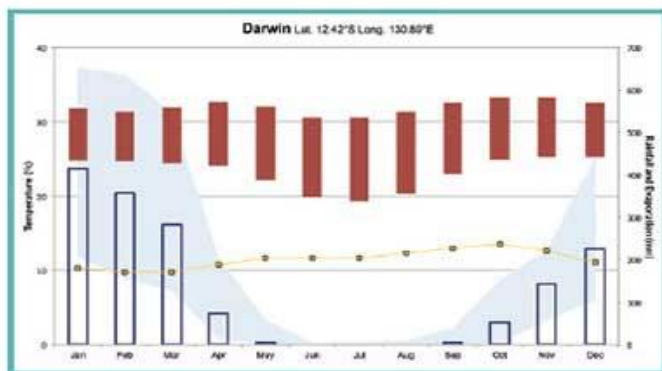
NT FARMERS

# And we can grow these





# PREDICTABLE WEATHER PATTERNS



## Key to climate charts

- Average monthly min and max temperatures (°C)
- Average monthly rainfall (mm)
- Monthly rainfall variability for 80 % of long term record (mm)
- Average monthly evaporation (mm)



# Our Success Factors

1. Markets and economics drive all development
  - Unique market windows due to climate
  - Range of timing due to climatic zones
  - Quality advantages
2. High initial prices for
  - high cost of development
  - cost of learning
  - Individual business failures
3. Start small and grow big
4. Governments critical in
  - R, D & E
  - Biosecurity
  - Land releases in precincts for suitable land.
  - Water resource investigations





## Crop Impacts

### Mango

- Pest and disease changes
- Irrigation demands and stresses
- Flowering triggers (Accumulated cool units)
- Fruit Development Heat sums
  - Heat unit =  $((\text{Max } T + \text{Min } T)/2) - 12$
- Sunburn on Fruit on the tree & in bins
- Removal of Field Heat
- Rain damage
- Cooling for and during Transport

### Vegetables & Melons

- Planting windows
- Harvest windows
- Variety selections
- Fertiliser rates and leaching
- Organic mulch or Recycling plastic





NORTHERN AUSTRALIA  
FOOD FUTURES

NT FARMERS

## Crop Impacts



### Citrus

- Lemon Harvest period Jan-Feb
- Oleosclerocis on skin

### Nursery and Turf

- Amenity products and varieties
- Water Smart gardens

### Broad Acre

- Planting windows on black and red soils
- Cloudy days vs growth rate and plant architecture
- Crop rotation options and timing







NORTHERN AUSTRALIA  
FOOD FUTURES

NT FARMERS

## Industry Impacts

### Best practice management

- Integrated Pest Management
- Soil health and tillage practices
- Water use efficiency
- Best practice engagement and extension
- Use weather tools for in-time decision making



### Industry logistics and capacity

- Cool chain improvements
- Developing Capability and Capacity
- Decarbonising power requirements
- Recycling and waste reduction



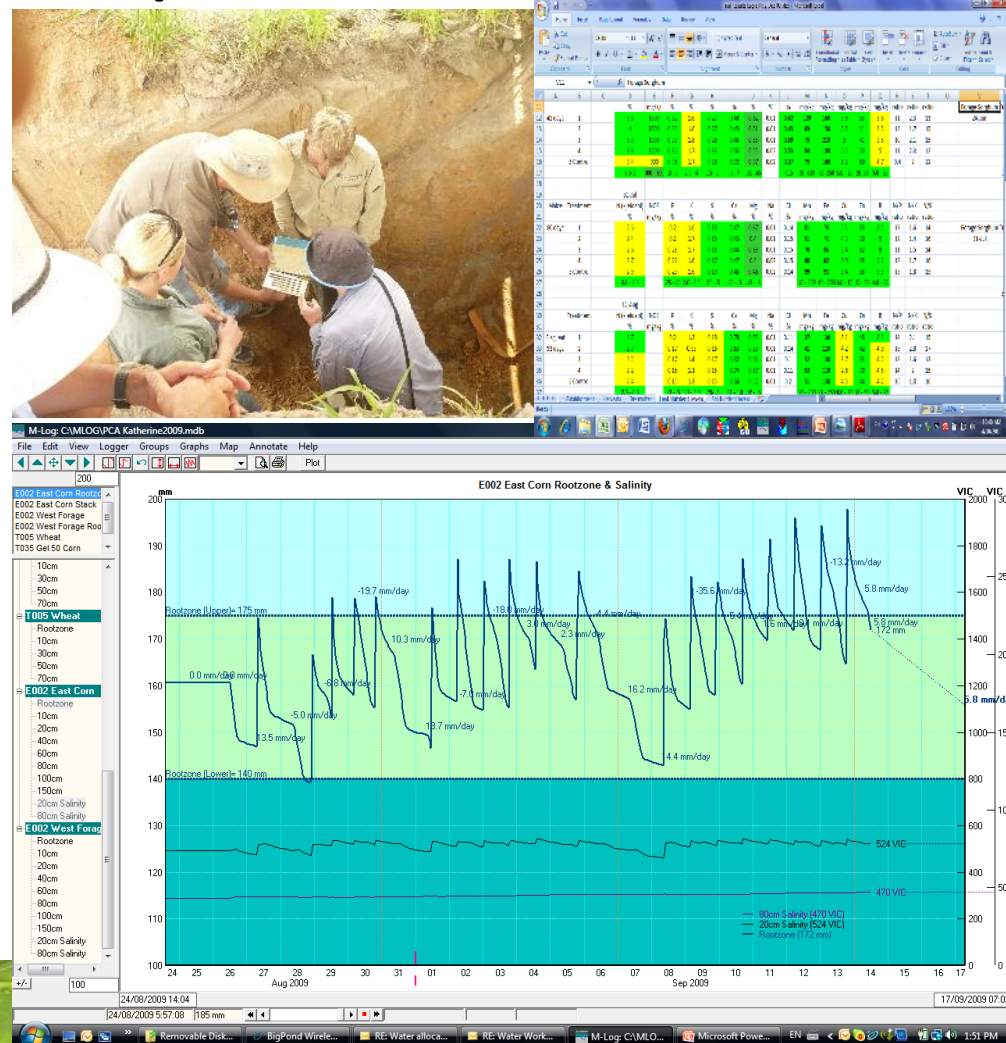
## People Impacts

### Farmers- Technical

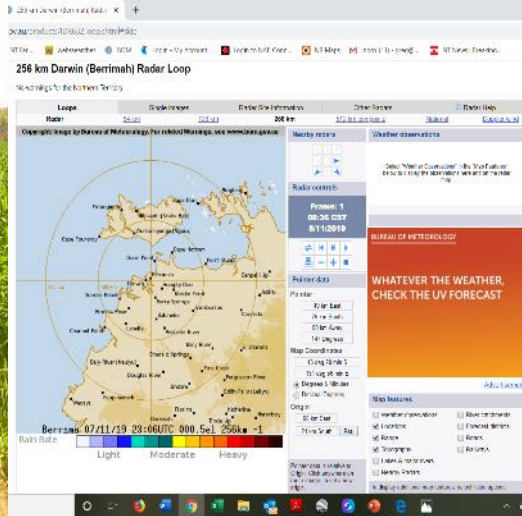
- Farmers are professionals at adapting to changes in weather
- Experienced in accessing knowledge and technology
- Improved forecasting accuracy by BOM and range of products gives more tools
- NT climate is now being viewed as comparatively stable and predictable therefore attracting great interest

### Farmers - Social

- Need the right to discuss opinions, impacts, strategies alternatives without judgement
- Wary of knee jerk reactions of regulators and decisions made due to pressure from activists.
- & Snake-oil salesmen



# People Impacts



## Farm workers - WHS

- Airconditioned and protected machinery
- Move to night harvest
- Labour from SE Asia and Pacific
- Recent Hort Award changes/penalty rates and working hours
- Recent heat shut-down provisions for construction interstate and NT
- Seasonal Workers want more hours
- Farmers manage workers heat exposure

## Farm Workers - Technical

- Work with increasing amounts of technology
- Access to factual data
- Facilities that maximise productivity will provide options to deal with changes in climate and unpredictable weather



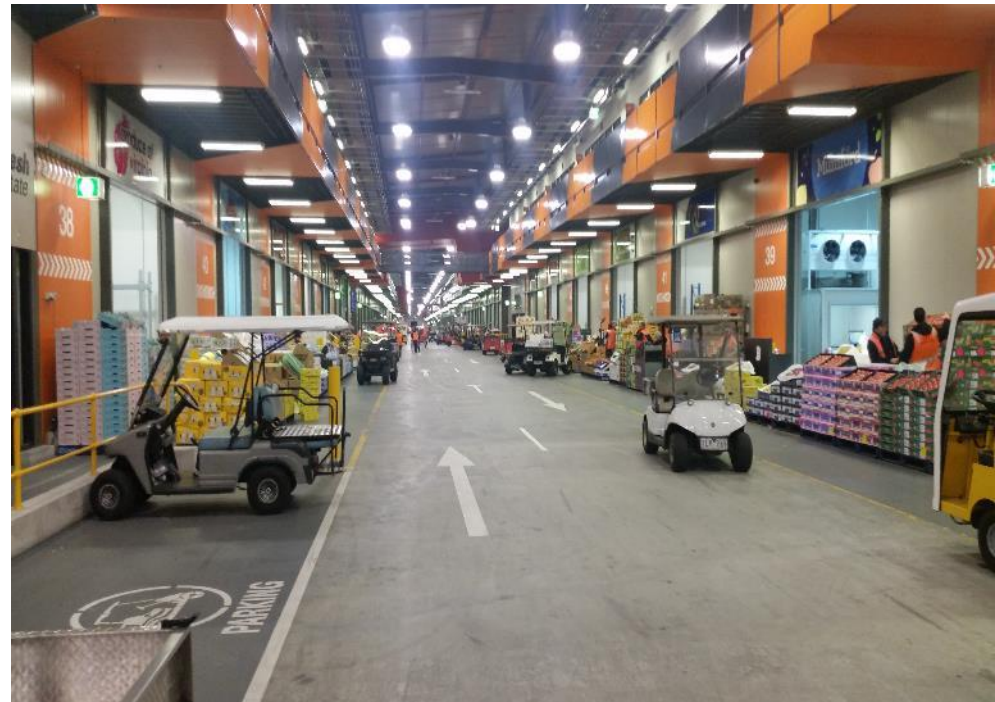
NORTHERN AUSTRALIA  
FOOD FUTURES

NT FARMERS

## Markets Impacts

### Fruit, Veg, Fibre and Forestry

- Global commodities
- Economics driven
- Always on supply somewhere
- Trade and climate agreements
- Carbon farming?





NORTHERN AUSTRALIA  
**FOOD FUTURES**

**NT** FARMERS



NORTHERN AUSTRALIA  
**FOOD FUTURES**  
CONFERENCE 2020

**Investment in Northern Agriculture**

**DARWIN, 27-28 APRIL 2020**

<http://wired.ivvy.com/event/NAFF16>

