MEATING THE FUTURE

A Sustainable Strategy

Trafalgar Station
Charters Towers

Roger Landsberg
Today’s talk

• Climate change and adaptive management

• Sustainable systems of management

• Carbon Farming analysis

• Future scenarios and generation change
Climate Change and Adaptive Management

• Already dealing with variable climate

• Adaptive management is pre-empting or responding quickly to variable climatic conditions

• Maximising herd productivity and enterprise profitability while managing the environment
“Trafalgar” location
Property Description

“Trafalgar”

- Semi-arid tropics (600mm variable rainfall)
- 33,000 ha
- Savanna woodland
- Range of land types
- P deficient soils (<4ppm)
- Not suitable for farming
- 3500 head cattle sustainable carrying capacity
- Healthy range of native flora and fauna
- Family owned since 1913
Trafalgar Key Goals

• Management change in 1987 to focus on sustainability
  – Environmental awareness
  – Cost efficiencies
  – Genetic improvement
  – Risk reduction
  – Use of technology & innovation
  – Meeting public and market perceptions
  – Increased knowledge
Key enterprise drivers (External)

Climate

Government Policy

Prices

Globalisation
Key enterprise drivers (Internal)

- Personal goals & aspirations
- Natural resource management
- Herd management
- Financial management
Personal Goals and Aspirations

• Match goals and aspirations to property capability
• Draw up a Business Plan
• Maintain sound ecological principles
• Start succession and/or retirement plan early
Pasture and Grazing Management

1. Spell 15 – 20% of property annually
2. Conservative stocking (30% utilisation)
3. Fire to control woody growth
4. Selective development
5. Woody weed control
1. Breeding through to turnoff direct to works @ >300kg DW@ 28mths average

2. 1200 commercial breeders & small stud herd of 200 breeders

3. Genetic focus on temperament, fertility and growth. Improved poll % is a goal without losing the primary selection criteria.
Financial Management

• Strategic planning
• Business structure
• Recording
• Marketing
  – market intelligence
  – climate forecasting
• Investment strategy
Use of Technology

• Electronic herd recording
• Electronic financial recording
• Communications
• Machines
• Infrastructure

Time saving and efficiency gains
Benefits

• Increased human and animal productivity

• Reduced financial and environmental risk

• Improved environmental health and biodiversity

• Improved triple bottom line
Sales Performance by GM

Trafalgar vs Region

$/AE

- GM/AE
- 313C Region Average

Year:
- 2005
- 2006
- 2007
- 2008
- 2009
- 2010
- 2011
Biodiversity

• > 106 bird species

• Small mammal species

• Reptile species
## Methane Reduction

<table>
<thead>
<tr>
<th>Year</th>
<th>Herd size (AEs)</th>
<th>Weaning %</th>
<th>Live Weight Gain (kg/hd/day)</th>
<th>CH₄ Emissions * Per head (kg/hd/yr)</th>
<th>Total property (tonnes/yr)</th>
<th>Percentage Reduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1987</td>
<td>4300</td>
<td>65</td>
<td>0.3</td>
<td>79</td>
<td>340</td>
<td>-</td>
</tr>
<tr>
<td>2009</td>
<td>3300</td>
<td>85</td>
<td>0.6</td>
<td>56</td>
<td>185</td>
<td>46%</td>
</tr>
</tbody>
</table>

(* Based on data from Dr Ed Charmley CSIRO Townsville)

The 46 percent reduction in methane emissions is equivalent to 3565 tonnes of CO₂ per year.
Taking your eye off the ball!
Carbon Farming Initiative
Scenario Development

• 50% reduction in herd numbers
• 10% increase in growth rates due to lower stocking rates
• 20% increase in branding rate
• 100% increase in savanna burning due to fire mitigation measures. No additional fire impact on tree biomass
• Retain 2000ha of 5 y/o regrowth for 100 years
CFI Scenario Development (contd)

• Emissions calculated using FarmGAS model for livestock and savannah burning
• Regrowth sequestration calculations used Donaghy et al. 2009 models
• Run over 20 years
• No seasonal variability in calculations
• Financial impact assessed by Net Present Value (NPV) of changes using a discount rate of 4.5%
CFI Scenario Development (contd)

• Cattle income calculated using a net price after expenses of $1.23 p/kg of beef sold
• Range of net carbon prices after expenses (including risk management costs)

• Breakeven carbon price calculated to match baseline income to alternative management income
Scenarios

2. Reduce stocking rates and regrowth retention
3. Reduce stocking rates only
4. Regrowth retention only. (livestock stocking rate was reduced by 10% over 20 years to match reduction in livestock carrying capacity. Change in livestock emissions was not included)
Emissions and Sequestration Results

- Reducing stocking rates halved livestock emissions saving 3677t CO$_2$-e per year
- Regrowth sequestration 2000ha 8900 tCO$_2$-e per year
- Total improvement in emissions & sequestration 12,577t CO$_2$-e per year
- 251,540t CO$_2$-e over 20 years
## Financial Results

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Net Carbon Price $ per tCO2-e</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$5</td>
</tr>
<tr>
<td>Current/Baseline (Cattle only)</td>
<td>4,465,661</td>
</tr>
<tr>
<td>Reduce stock &amp; regrowth retention(cattle &amp; carbon income)</td>
<td>3,304,831</td>
</tr>
<tr>
<td>Reduce stock only (cattle &amp; carbon income)</td>
<td>2,681,796</td>
</tr>
<tr>
<td>Regrowth only (cattle &amp; carbon income)</td>
<td>4,900,984</td>
</tr>
</tbody>
</table>

- Financial impact calculated by Net Present Value (NPV)
- Discount rate 4.5%
- Carbon Net price of $10 and $20 tCO2-e after expenses
- Cattle income Net price $1.23kg beef after total expenses (incl interest)
The Future for the Y’s?

Globally
• Food security
• Sustainably produced
• Beef – luxury food

Nationally
• No national vision
• Asia’s quarry or food bowl or the World’s national park?

Property level
• Market or policy driven?
• Diversification will be necessary
• Rangeland product can have conservation values
• Knowledge is the key
Thankyou