



2018

THE 8<sup>TH</sup> INTERNATIONAL MACADAMIA SYMPOSIUM

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GREEN HOPE HEALTH SHARING

# AUSTRALIAN ORCHARD MANAGEMENT FUNDAMENTALS

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# Macadamia production situated predominantly along the **east coast of Australia**





Average grower:

**37 ha** farm size

Average density

**312 trees/ha**

8m x 4m spacing

**11 500 trees**

Average bearing  
tree age

**18 years old**





**Some much larger orchards**



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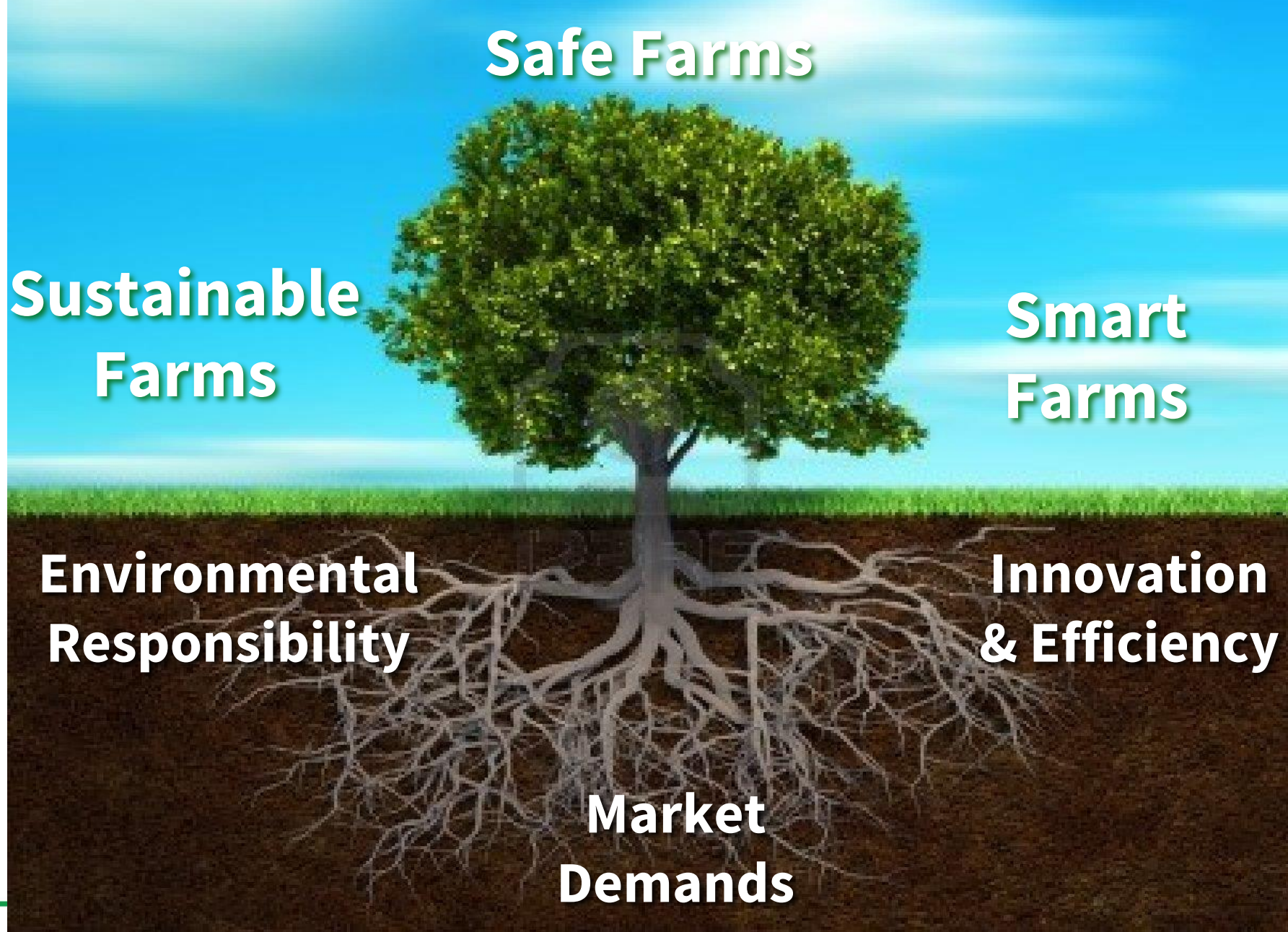
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# Australian Orchard Management Drivers

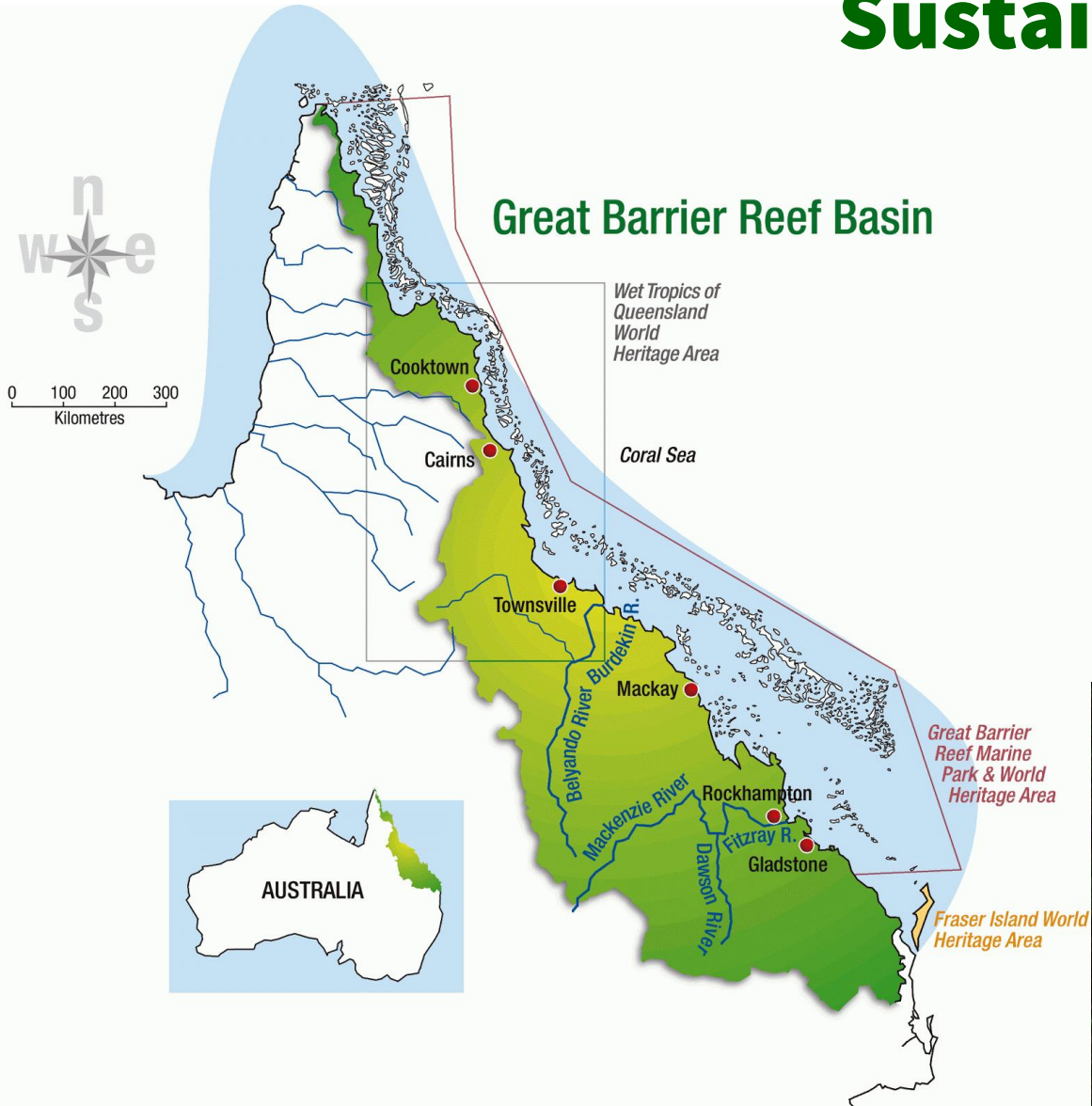








# Sustainable Farms



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# Sustainable Farms

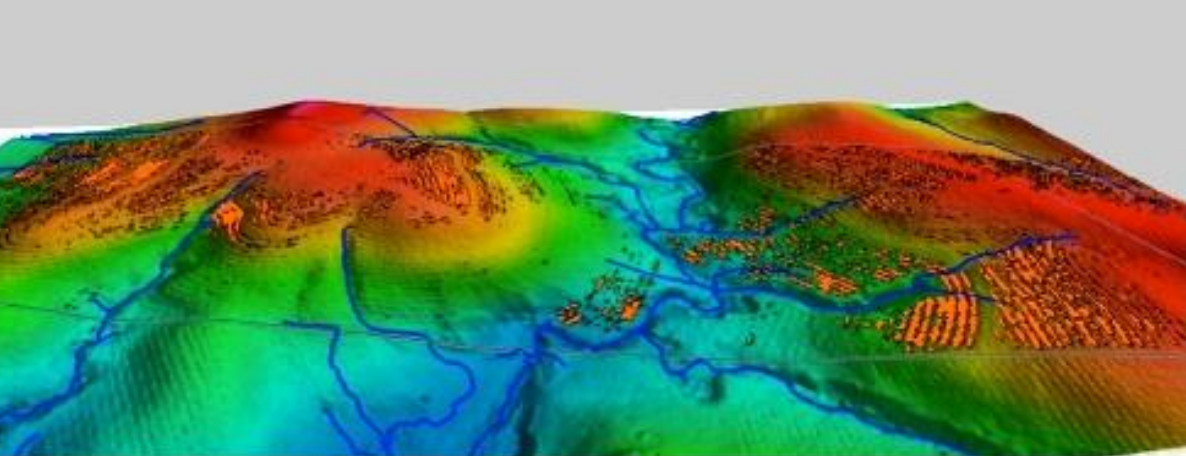
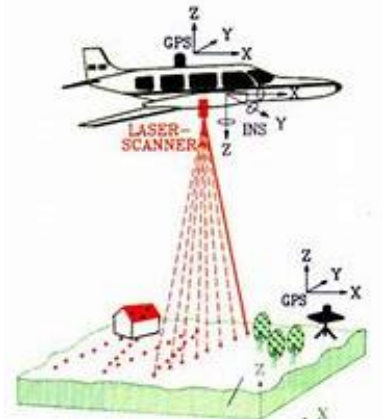


Reducing environmental impact by stopping farm runoff

- Fertilisers
- Chemicals
- Sediment

Drainage management, protecting waterways

- LiDAR mapping
- Rainfall modelling
- Drainage plans





# Sustainable Farms

## Conserving Natural Assets



## SOIL

- Restoring soil health & biodiversity
- Managing erosion

### QLD Government Research – 54mm rain event

Treatment	A	B	C
Per cent cover	87	69	6
Total runoff from storm (mm)	1.5	14	38
Per cent of rainfall that ran off	3	26	70
Soil loss (t/ha)	0.03	0.3	22
Depth of soil lost (mm)	0.002	0.02	1.7
Sediment concentration (g/L)	1.5	1.9	63
Nitrogen removed (kg/ha)	0.14	1.9	15.3
Phosphorous removed (kg/ha)	0.02	0.26	4.3

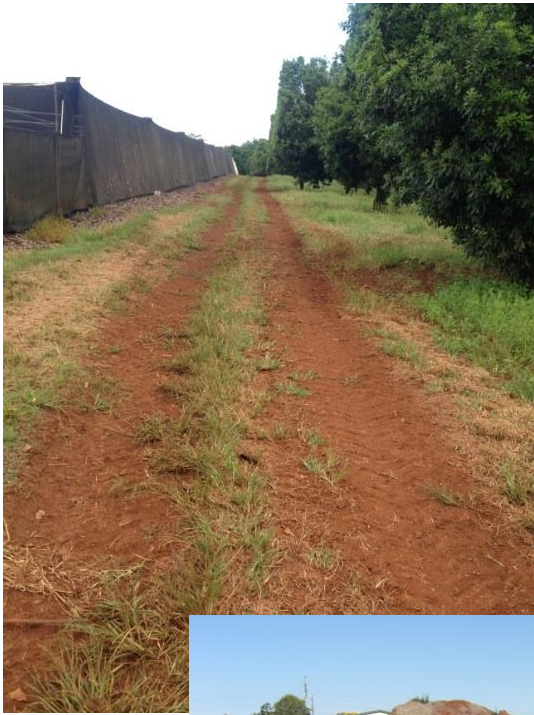


# Sustainable Farms

## Conserving Natural Assets

### SOIL

- Restoring soil health & biodiversity
- Managing erosion
- Increased yield
- Pest/Disease resilience



VS







# Sustainable Farms

## Conserving Natural Assets

### WATER

- Critical scheduling
- Moisture retention
- Dry land supplementary irrigation
- Fertigation opportunity

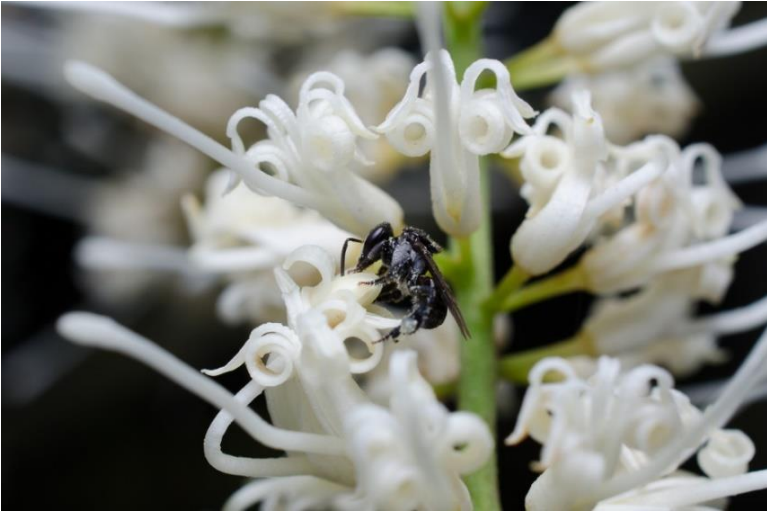




# Sustainable Farms

## Biological Solutions

- Pollination
- Revegetation
- Pest suppressive landscapes
- Restoring biodiversity
- Supporting native fauna







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# Safe Farms

- Food safety and compliance are essential to our customers
- Last 21 years, 100% compliance with National Residue Survey
- Monitors residues of agricultural chemicals and environmental contaminants in Australian food commodities



**Australian Government**  
**Department of Agriculture**  
**and Water Resources**

National Residue  
Survey 2016–17  
Macadamia

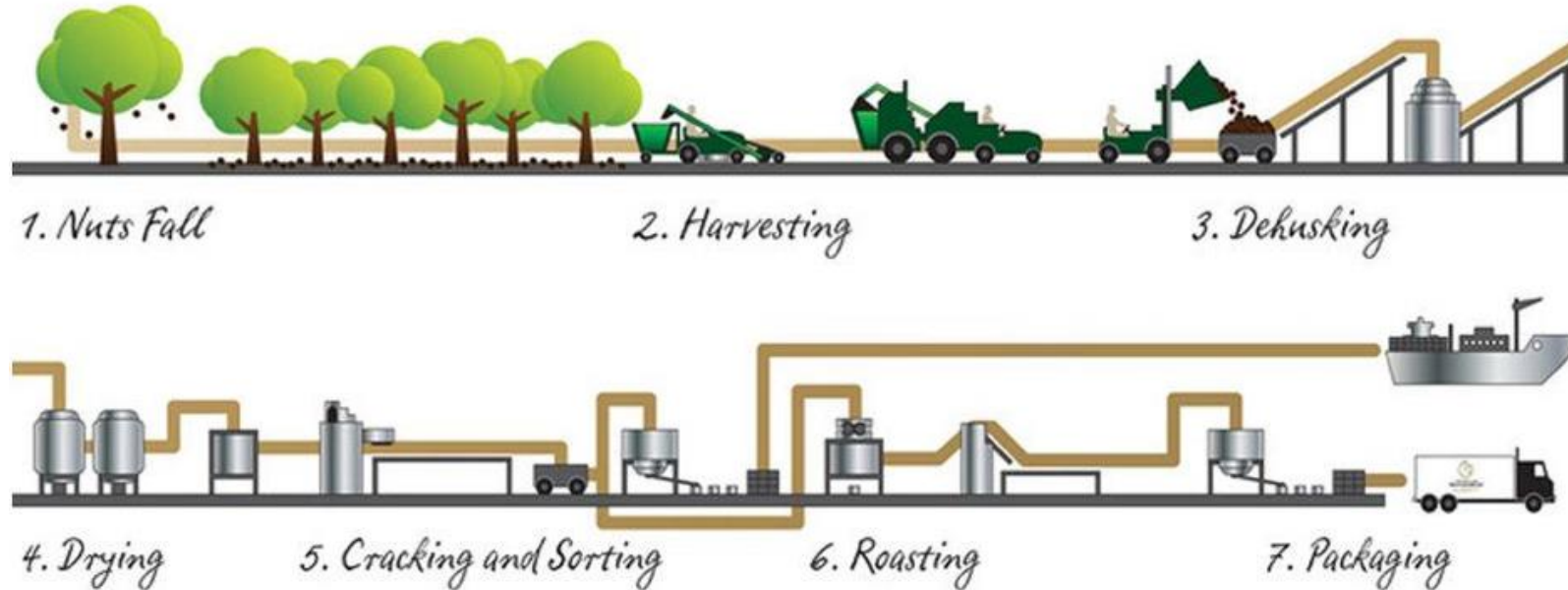


- This record is unmatched by any other Australian fresh product



# Safe Farms

- Premium quality, consistent products



- Quality assurance code of practice, training & compliance



Freshcare Food Safety & Quality – On-Farm



Freshcare Food Safety & Quality – Supply Chain



Freshcare Environmental

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The best defence against pests and diseases is to implement sound biosecurity practices on your farm. Quick and simple measures built into everyday practice will help protect your farm and your future.



Farm  
Inputs

Farm  
Outputs



People  
Vehicles  
Machinery



Production  
Practices

Train  
Plan  
Record



Ferals  
and  
Weeds



# Smart Farms

- Implementing innovative technology driving farm efficiency & automation

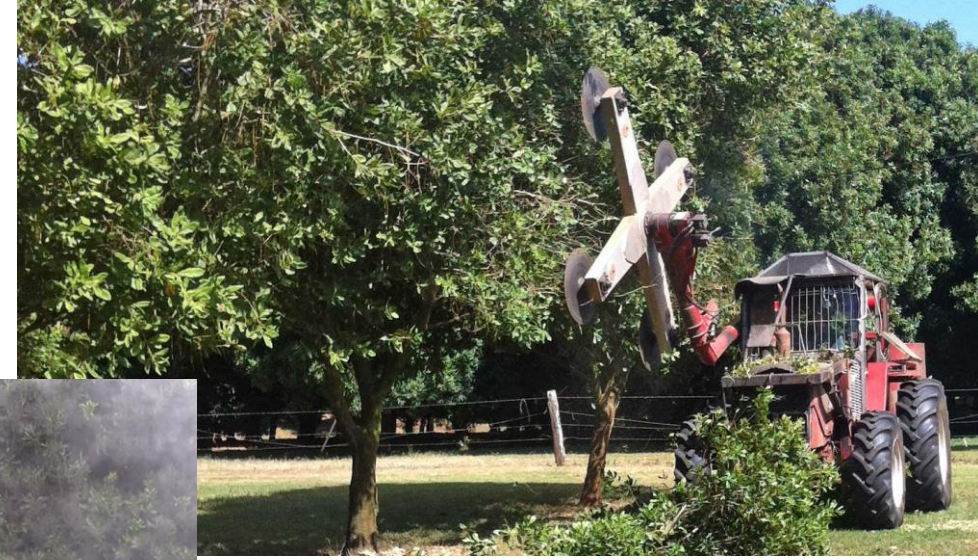


- Capable of harvesting 4 tonnes nut/hour
- In orchard dehusking



# Smart Farms

- New farms established with GPS technology, used to guide farm operations





# Smart Farms

- Environmental monitoring
- Tree shakers & abscission strategies
- Irrigation monitoring & automated scheduling
- Robotics











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