

# Surviving Drought and Climate Change

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Farmers  
BOGGABRI NSW





# Kilmarnock Farming Pty Ltd

Irrigated Crops 1647ha:

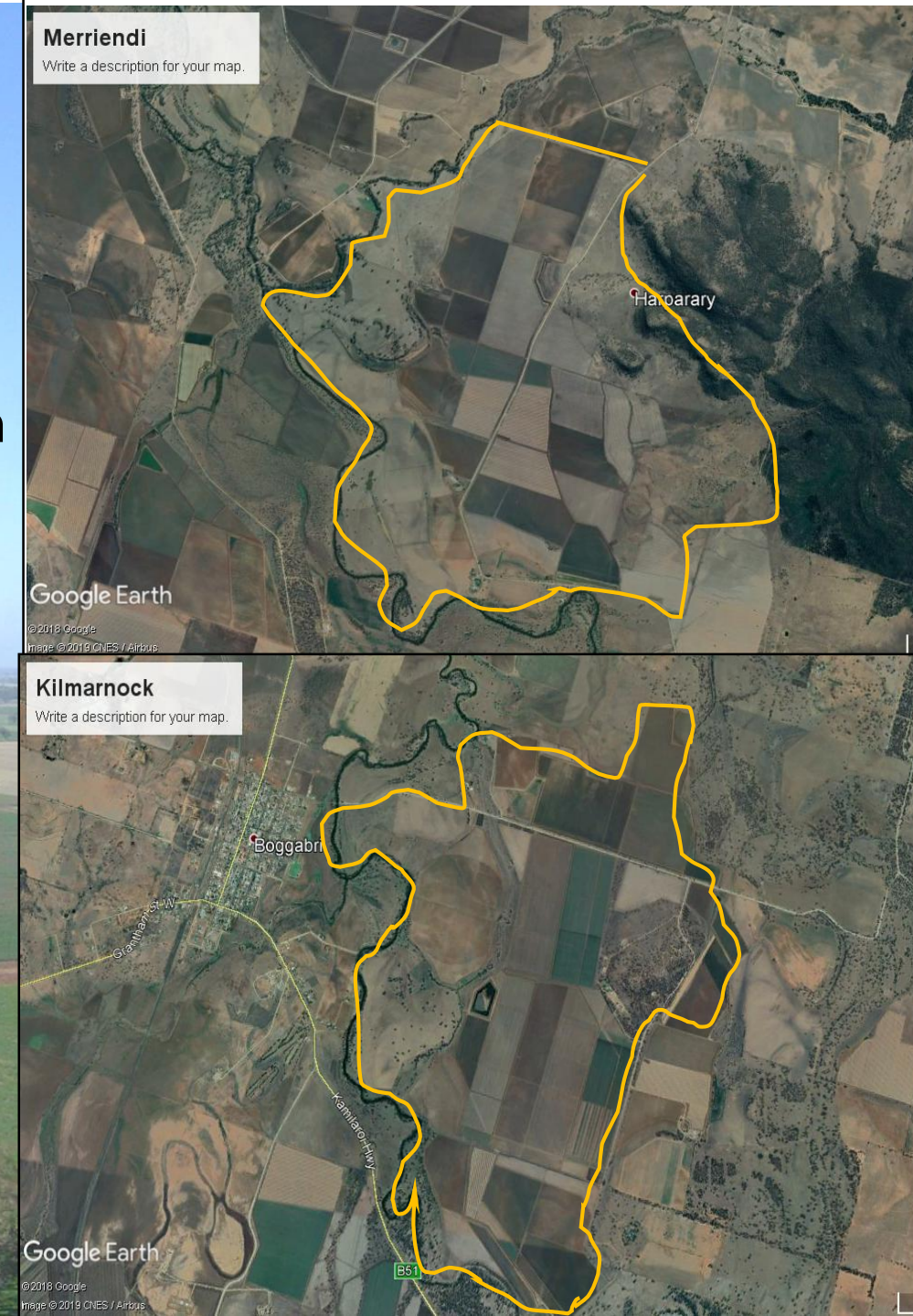
Cotton, Durum, Canola, Sorghum, Corn

Dryland Crops 1212 ha:

Cotton, Durum, Canola, Chickpeas, Sorghum, Corn

Grazing 770ha: Leased out under a Rotational Grazing Management System

Rainfall: 590mm





# Water Sources

## Keepit Dam-Namoi River



- Continuous Accounting
- Carryover 200%,
- Usage 125%
- Trading

- Supplementary Flows

- Overland Flows

- Mix of Licenses to reduce risk

## Bores



- Annual Allocation
- Carryover 300%
- Usage 200%
- Zone trading



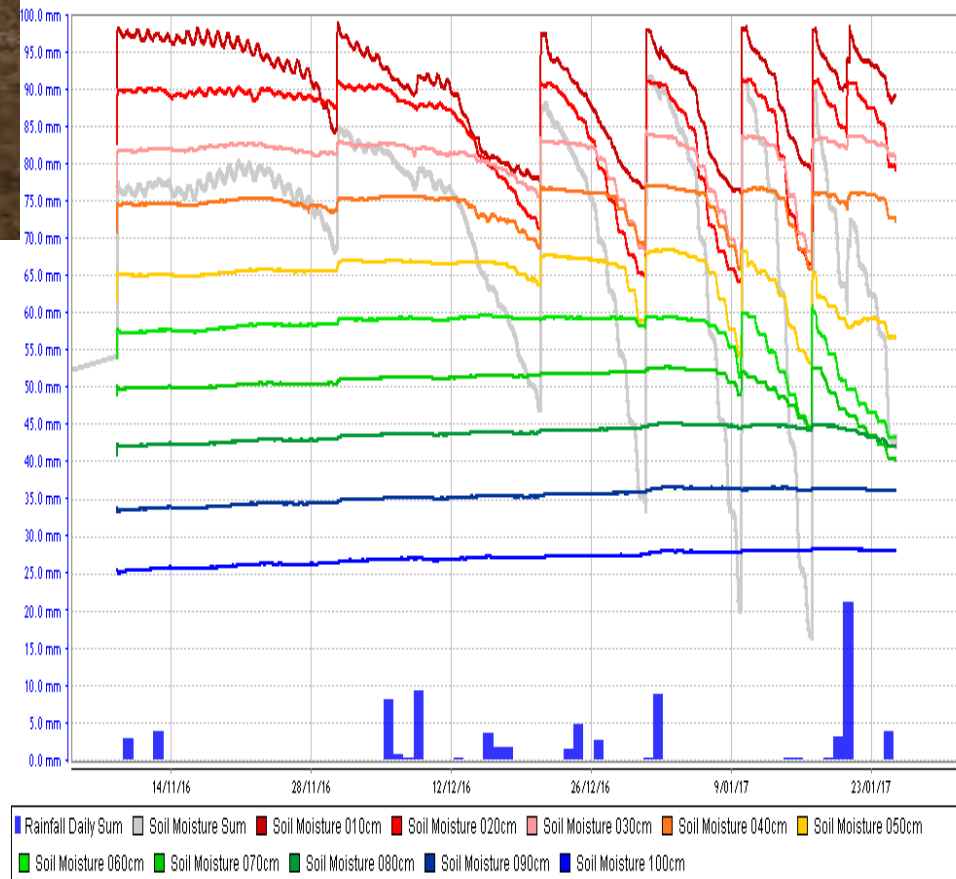
# Irrigation Changes



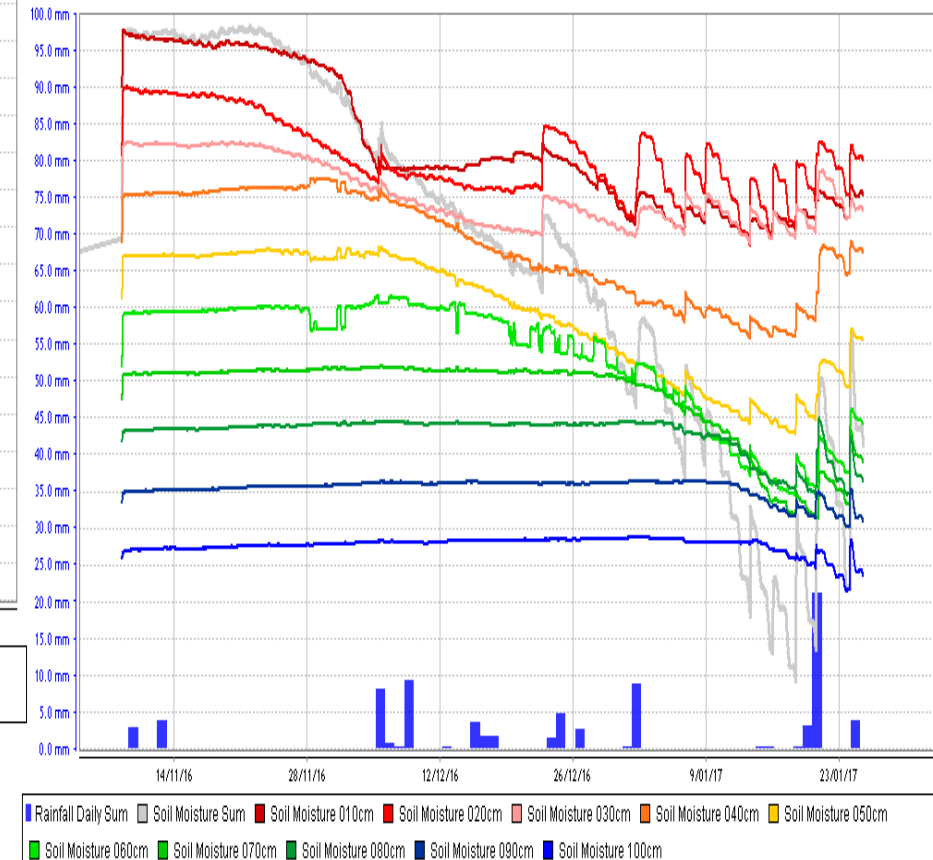


# Soil Moisture Probes

## Furrow Irrigation Field



## Overhead Irrigation Field



# Infrastructure & Management Changes



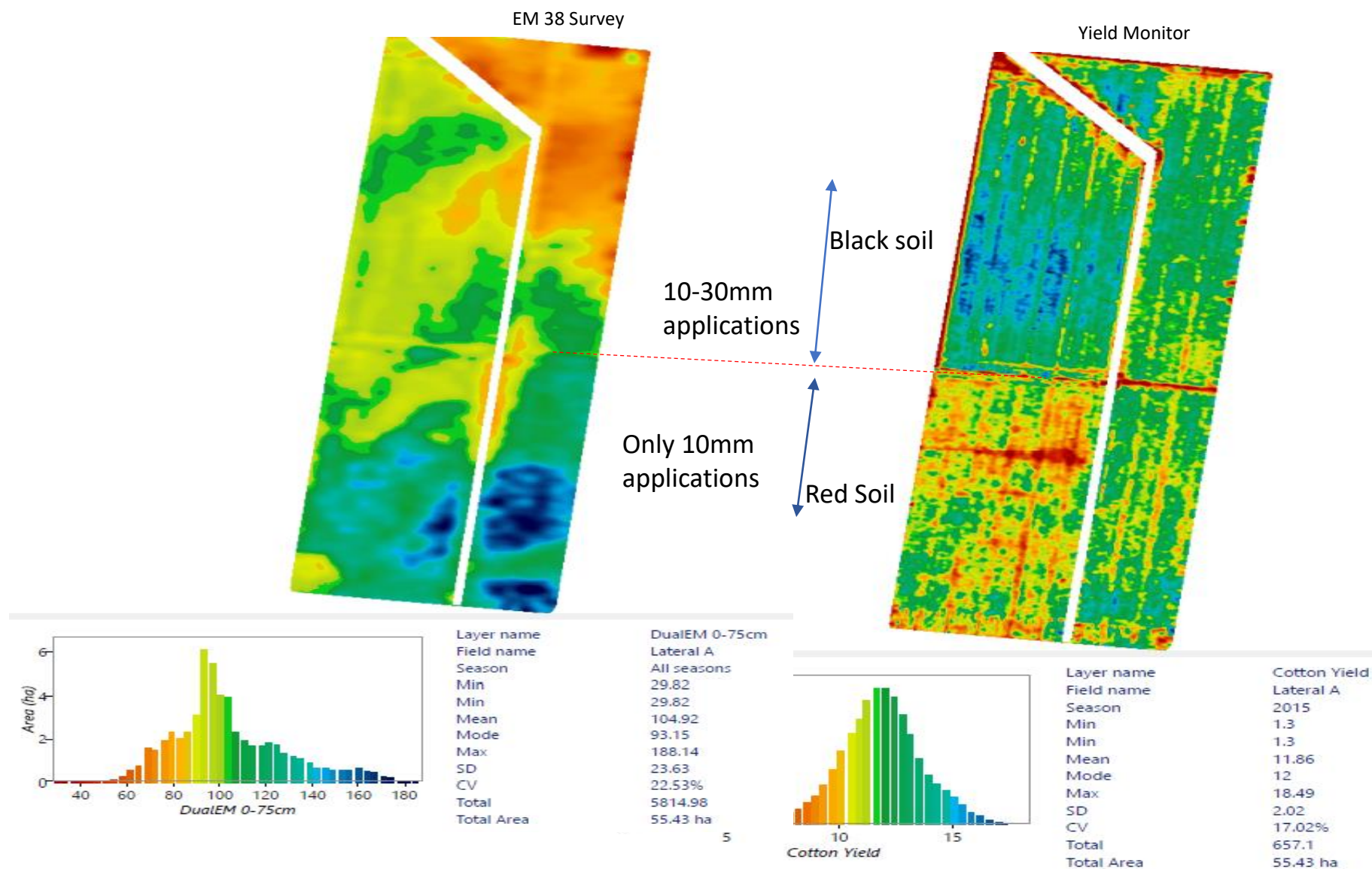
- Split Dam to reduce evaporation of small amounts of water
- Store water in fallow land
- Replace sand with clay



- Mix Bentonite into leaking channels



# Variable Rate v Soil Type Irrigation Trial





# Using Zero Till and Cover Crops





# Research Directions – New Dams

Hoover Dam-  
Natural  
desalination





# Research Directions

- Transmission losses
  - Storage to Farm
  - Intra Farm

Concrete Channels



Buried Mains & Transmission

California Aqueduct





# Research Directions

- Water Storage
  - Evaporation on farm- storages and channels- membranes, polymers, floating covers
  - Aquifer Recharge- Excess surface water is stored in ponds with high infiltration into upper aquifers





# Research Directions

- Field Efficiencies
  - Irrigation methods

Gated  
Pipe



Surface Drip



Sprinkler



Single  
year lay  
flat



# Crop Type

Tomatoes





# Crop Type

Raisins





# Crop Type

Dates



# Crop Type



Stone fruit



# Crop Type



Almonds





# Crop Type

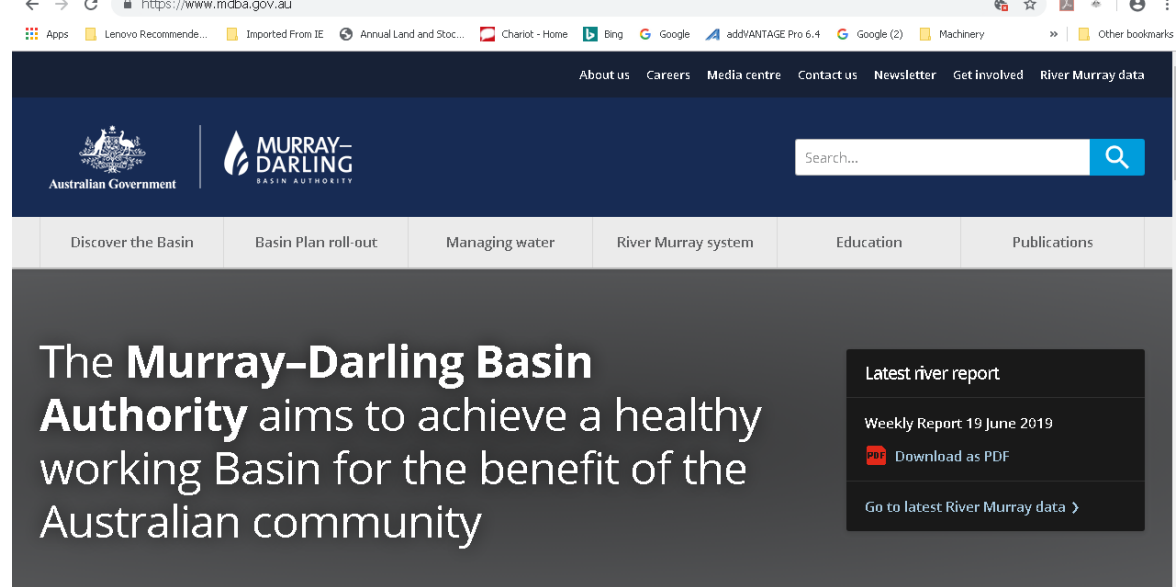
Maybe even Hemp





# Murray Darling Basin Plan

- not designed to stop droughts
- Best environmental, social and economic outcomes for what water is available
- Question of climate change
- Best chance of reasonable outcome







Thank you