



Animals in Extensive Production Systems

1.1.1 Historical innovation in agriculture

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Technologies allowing increased production

Australia is an “old” country with relatively low soil fertility, particularly low phosphorous (P)

A range of “new” technologies have dramatically changed livestock production systems (and cropping systems)

Research and development continues to improve outcomes from available inputs and investigate new options



Horse to tractor - mechanisation

- Moving from horse drawn equipment to tractor increased area that could be sown/harvested
- Modern tractors and harvesting equipment reduces teams needed from large numbers to 2-3 people to completely harvest a crop
- Also better suited sowing equipment
- Use of Round-Up to allow minimum till production system (less tractor work needed, less soil compaction etc) (herbicide/insecticide – optimising use)



Fertiliser use

- Optimising use of fertilisers on low fertility soils can make a huge difference to production in crops/pastures
- Particularly phosphorous and nitrogen
- 53,000,000 ha across Australia are fertilised with something (mostly N or P)
- Some areas trace minerals also
- Lime for acid soil areas
- Impact of energy pricing (required for fertiliser production)



Sub-clover

- In southern Australian production systems sub-clover has been used successfully to improve N level in soil, also good grazing plant
- Common in sheep/wheat zone (see upcoming lecture)
- Set hard seed at end of spring and germinate at “autumn break” – seeds are buried (hence the name)



New genotypes

Bos indicus cattle
(as an example)

Significant impact in
northern Australia
in particular

Other similar
examples



Dorothea Mackellar's My Country

"I love a sunburnt country": learn the history of one of Australia's best loved poems.

[BACK TO ALL STORIES](#)

One of Australia's best known and beloved poems.

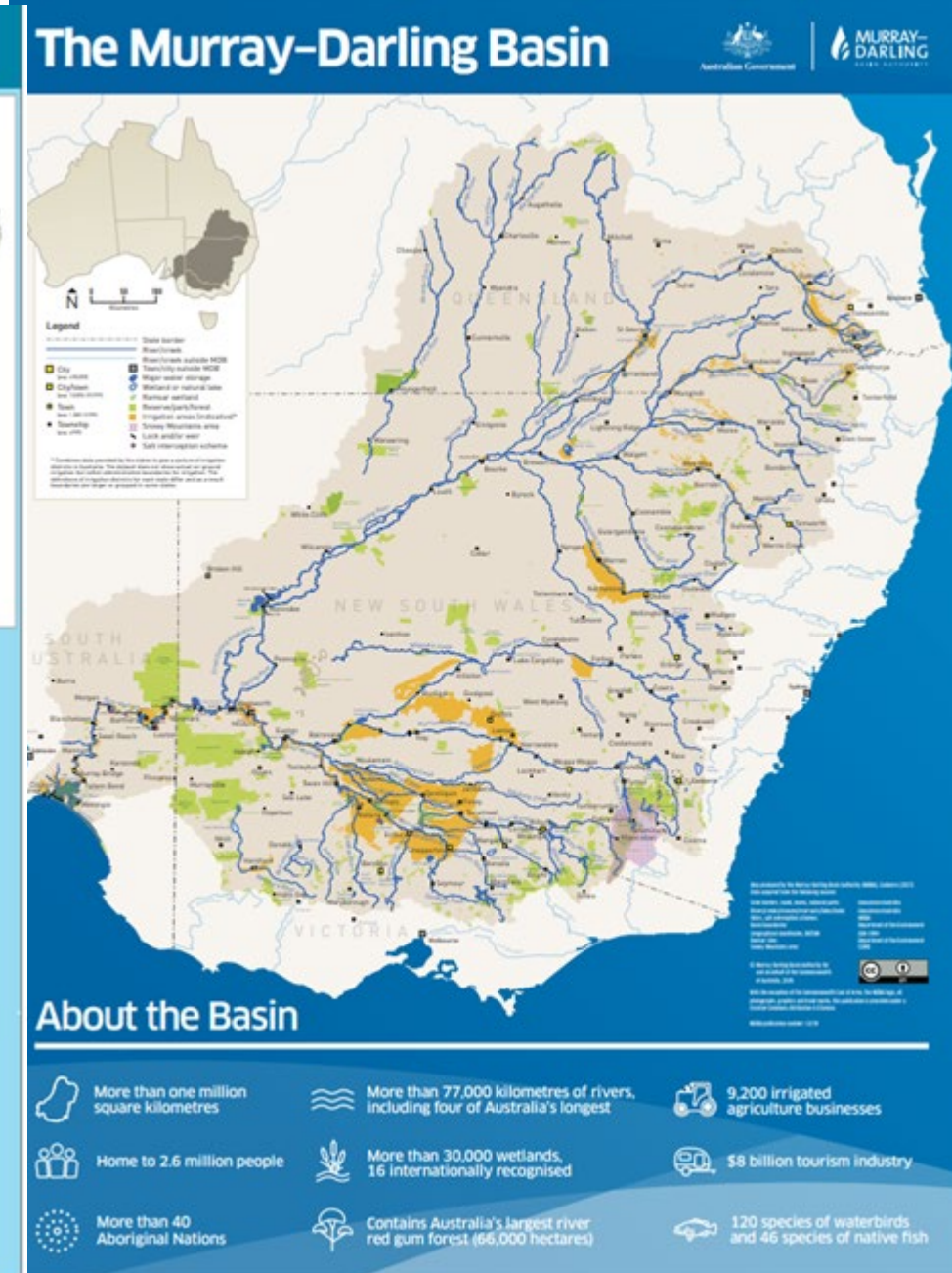
*"I love a sunburnt country,
A land of sweeping plains
Of ragged mountain ranges
Of droughts and flooding rains"*

Water reticulation

- Australia is often a dry land (see poem by Dorothea Mackellar)
- Irrigation from dams/rivers
- Use of poly pipe (stock water)
- Water can dictate grazing availability



Irrigation



Herbicide and insecticide

- High return on use short term, some found to have longer term impact
- Significant regulation to avoid negative impact
- Roundup highly beneficial in no-till operations to improve soil conservation – social license challenges





VARIABLES VARY BY PLANT TYPE AND ANIMAL SPECIES,
PRIMARY GOAL IS TO MAXIMISE PLANT
GROWTH (CHEAPEST FORM OF FEED)



PLANT GROWTH PHASE THEN EATEN, THEN
RESTED TO ALLOW REGROWTH



ENTERPRISES VARY AS TO GRAZING STRATEGY
THAT MAXIMISES FARM PRODUCTION

Rotational grazing

