

# Incentivising the co-benefits of carbon farming through multifunctional auction schemes



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Part of a research project involving:

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- Enhancing soil health (erosion control, increased organic matter)
- Enhancing biodiversity on farms
- Improved connectivity, increased habitat area
- Conservation of biodiversity and ecosystems
- Livestock shelter
- Food production
- Fuel production
- Fibre (wool) production

- Windbreaks
- Pest and weed management
- Pollination
- Salinity control and mitigation
- Water quality: reduced pollutant runoff into waterways

- Better livelihoods and community cohesion
- Improved physical and mental health
- Knowledge sharing and education
- Indigenous land management
- Aesthetics
- Avoided land conversion
- Indigenous community development

- Economic co-benefits: Selling carbon credits
- Saved time, money, and resources
- Reduced agricultural externalities
- Infrastructure improvement
- increased farm income diversity

**Services**

- Provisioning
- Regulating
- Supporting
- Cultural



**Environmental**



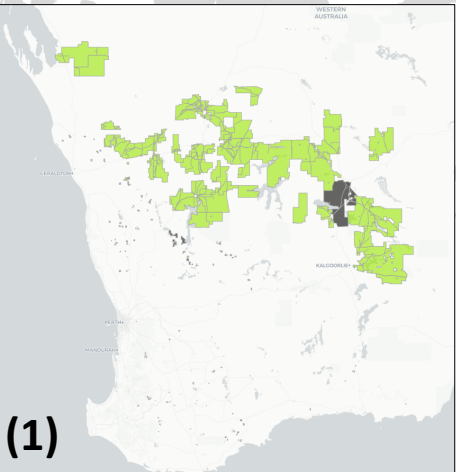
**Socio-cultural**



**Economic**



**Carbon Farming**



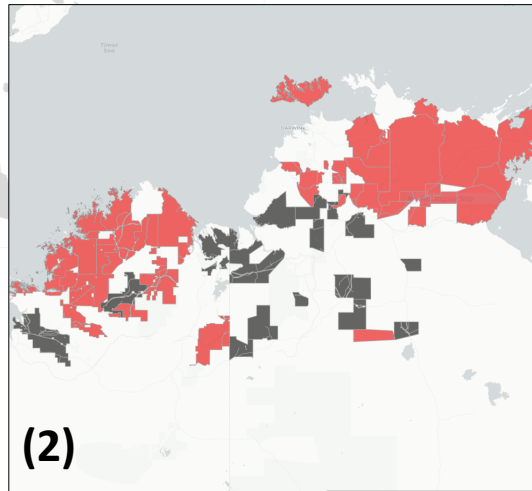
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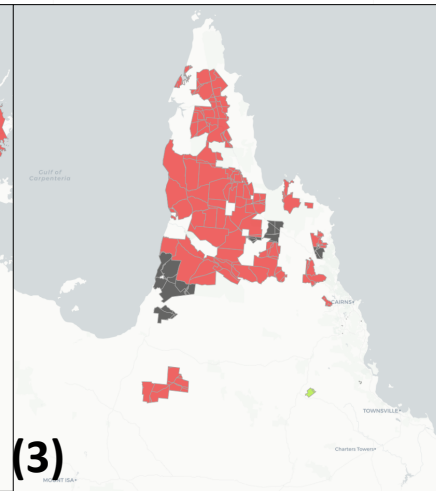
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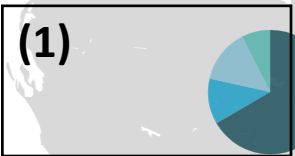
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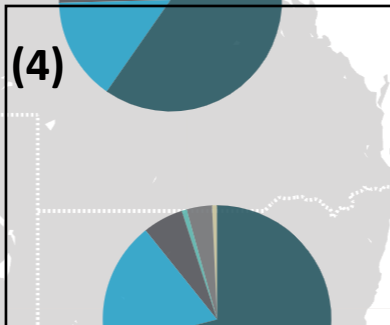
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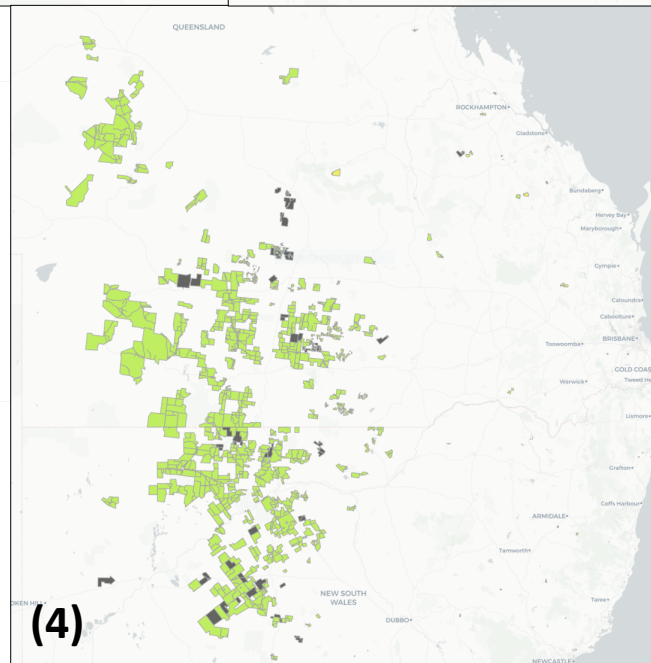
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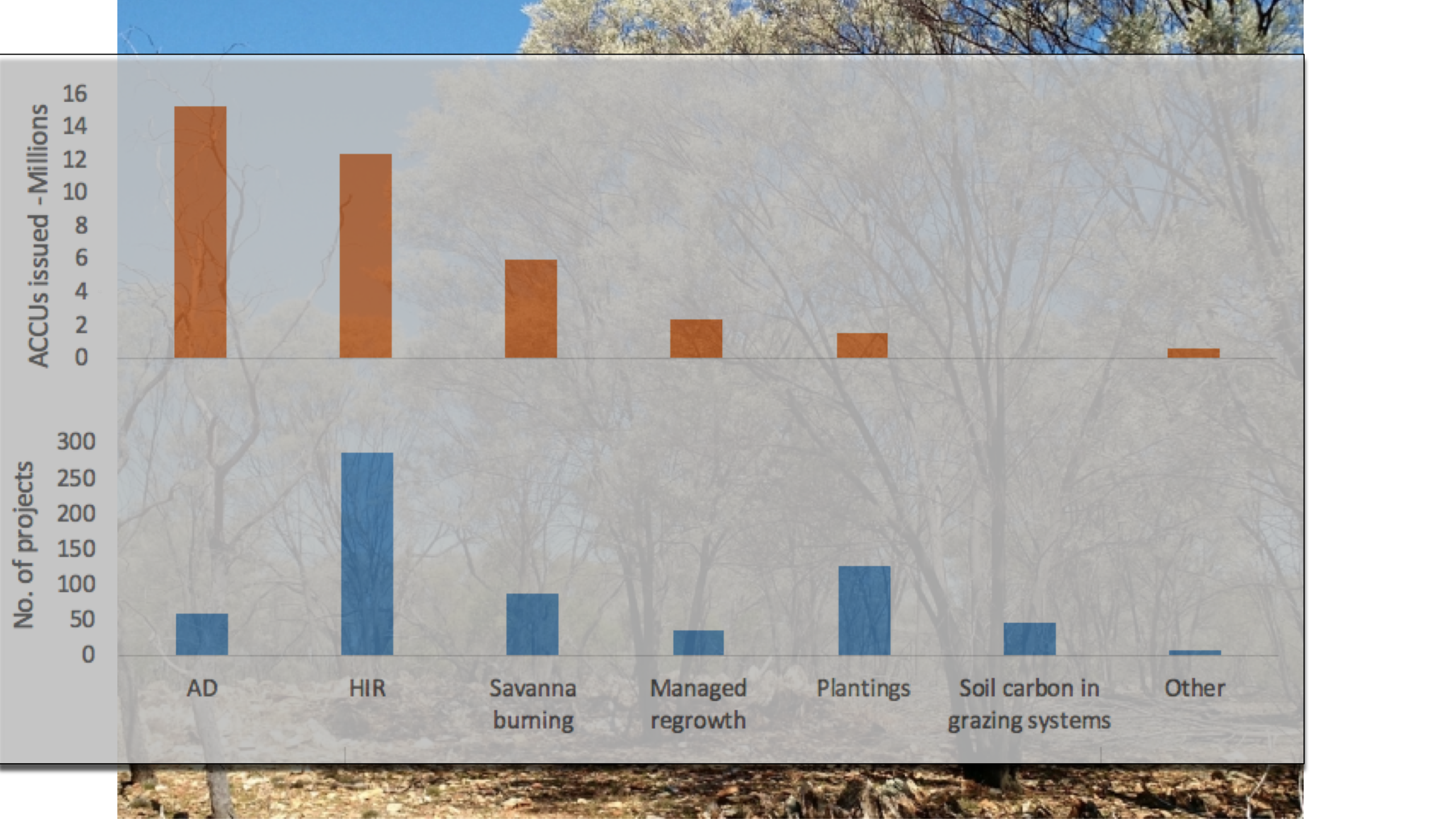
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**LEGEND:**

- Vegetation
- Landfill and Waste
- Agriculture
- Savanna Burning
- Energy Efficiency
- Transport
- Industrial Fugitives
- Facilities

**Legend:**

- Savanna Burning
- Vegetation



ACCU issued - Millions

16  
14  
12  
10  
8  
6  
4  
2  
0



No. of projects

300  
250  
200  
150  
100  
50  
0



AD

HIR

Savanna  
burning

Managed  
regrowth

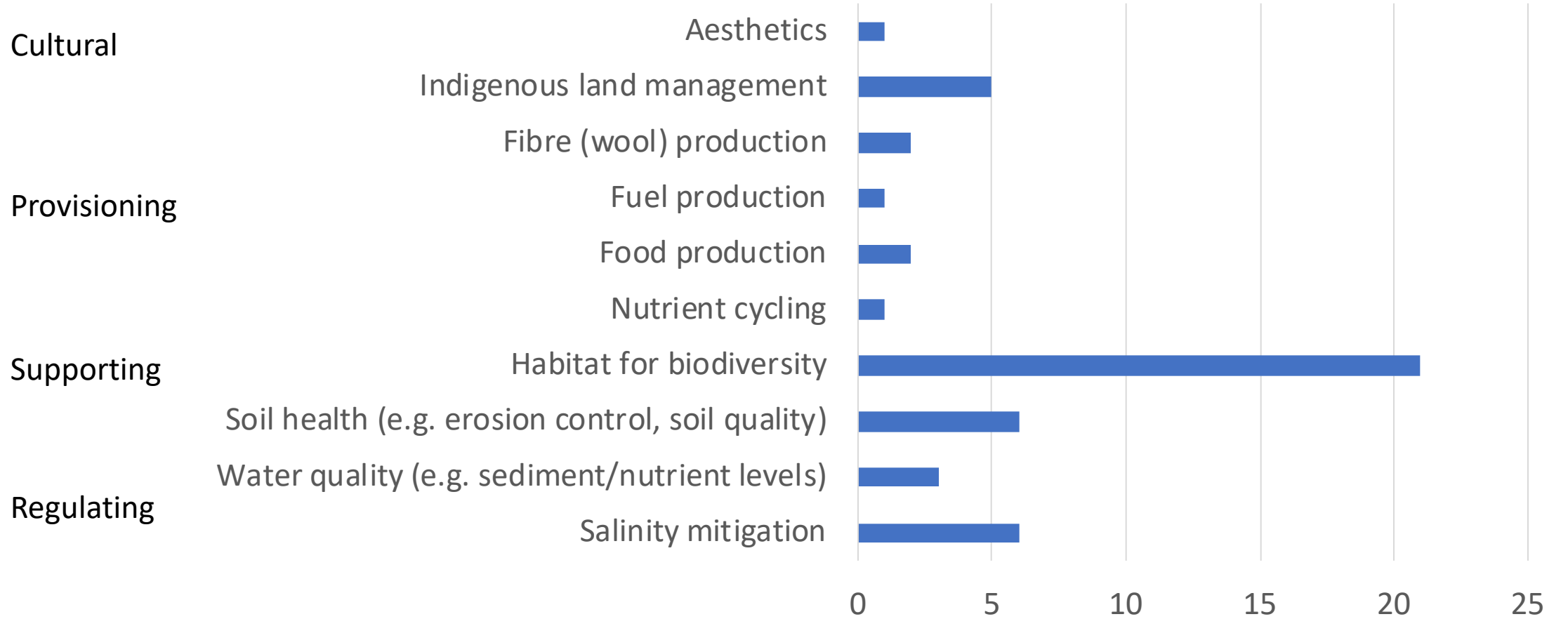
Plantings

Soil carbon in  
grazing systems

Other

# Reviewed 29 studies on co-benefits of carbon farming in Australia

## Co-benefits considered



**Opportunities to  
value co-benefits in  
carbon markets**

**Public payments for emissions  
reduction or sequestration**

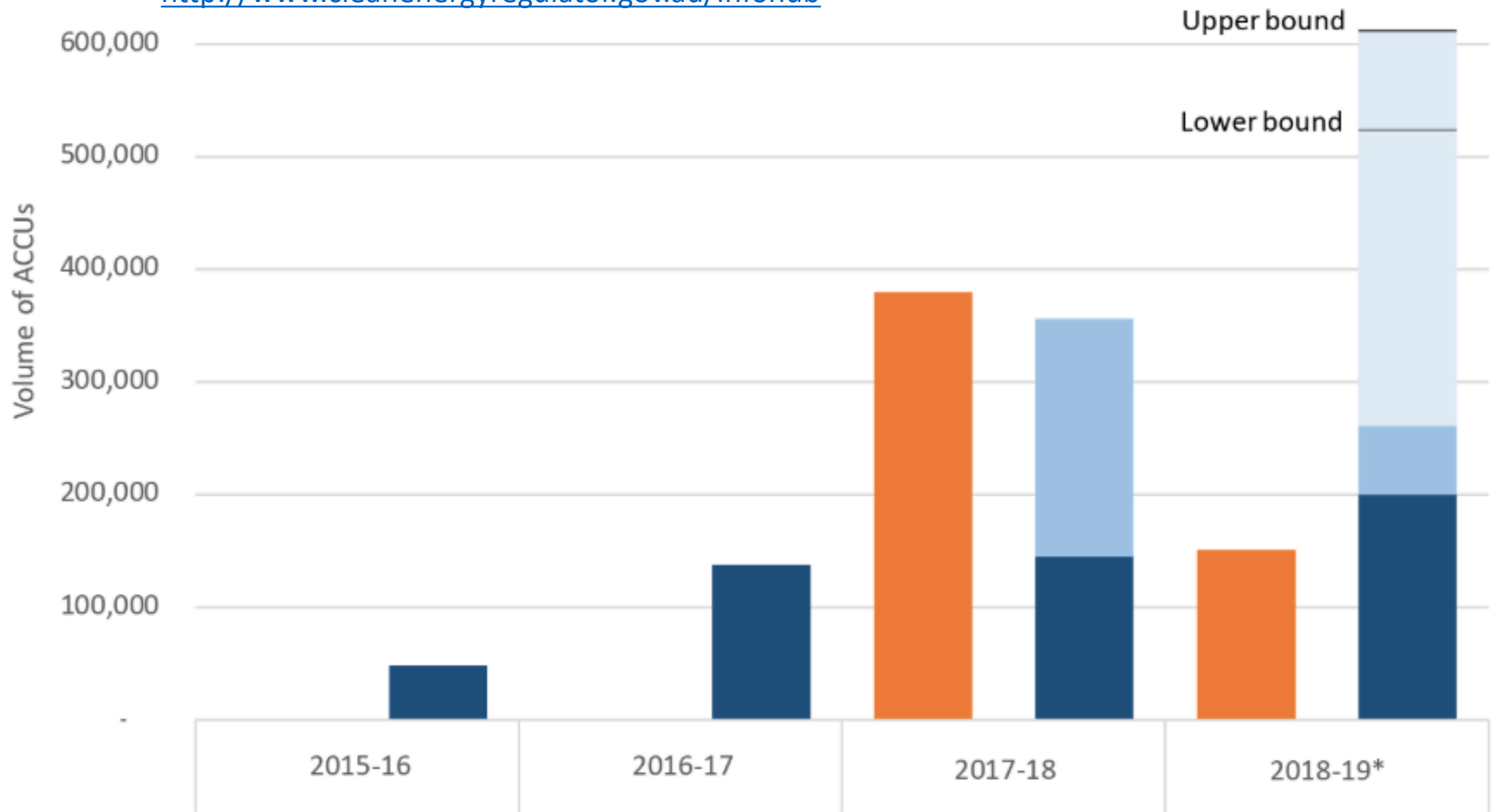
- auction-based approaches
- e.g. Emissions Reduction Fund (ERF)

**Compliance-driven approaches**

- offsetting emissions above baselines
- e.g. Safeguard mechanism

**Voluntary offsetting**

- private businesses
- individuals
- State/Territory gov.
- Carbon credit spot market



■ Voluntary Demand

■ Safeguard Surrender

■ Forecast Voluntary and State and Territory Government Demand

■ State and Territory Government Demand

## Limiting factors - compliance-driven and voluntary demand

Demand Source	2017–18	2018–19 (to date)
Emissions Reduction Fund contracts	10.92 million	6.71 million
Safeguard mechanism (compliance year 2016–17)*	0.38 million	0.15 million
State and territory government demand	0.21 million	0.06 million
Voluntary demand	0.14 million	0.20 million

### Limiting factors

- Level of voluntary demand for carbon credits? with co-benefits ??
- Level of compliance-driven demand? with co-benefits??
- Creating demand for biodiversity, soil and cultural benefits via offsetting schemes  
→ controversial





- \$2.55b from 2014 plus \$2b top-up in 2019 (Climate Solutions Fund)
- “In 2014 the Government invested \$2.55 billion in the Emissions Reduction Fund to boost **agricultural productivity**, support **jobs for Indigenous communities**, improve **biodiversity** and **water quality**, and **reduce greenhouse gas emissions**”<sup>1</sup>
- But... no recognition of co-benefits in ERF prices - “lowest cost abatement”

<sup>1</sup> <https://www.environment.gov.au/climate-change/government/emissions-reduction-fund>

# Multifunctional auctions

## US Conservation Reserve Program (CRP)

- Started in 1985: Goal to reduce soil erosion on cropland
- Auction mechanism chosen to achieve lowest cost erosion control
- Modified over time:
  - Erosion risk
  - Wildlife benefit
  - Water quality benefits
  - Air quality benefits
  - State or national conservation priority area
  - Enduring benefits
  - Cost

# Regrowth Benefits Tool (QLD)



Characteristics

Carbon

Biodiversity

## Threatened species (Animals)

Species	NCA*	EPBC**
<a href="#">Grantiella picta (painted honeyeater)</a>	V	V
<a href="#">Lophochroa leadbeateri (Major Mitchell's cockatoo)</a>	V	

## Threatened species (Plants)

Species	NCA*	EPBC**
<a href="#">Sclerolaena walkeri</a>	C	V

### \*Nature Conservation Act (NCA) codes

E=Endangered, PE=Extinct in the wild, I=International, C=Least concern, NT=Near threatened, P=Prohibited, R=Rare (omitted), SL=Special least concern, V=Vulnerable

### \*\*Environment Protection and Biodiversity Conservation Act (EPBC) codes

CD=Conservation Dependent, CE=Critically Endangered, E=Endangered, EX=Extinct, XW=Extinct in the Wild, V=Vulnerable

Carbon estimates are indicative only. They are based on a simple forest growth model<sup>1</sup> and assume 'average climate'.

# LOOC-C (CSIRO)

## Human-induced regrowth

Co-benefits	Rating
Farm Profitability	■ ■
Farm Resilience	■ ■ ■ ■
Enviro/Social Benefits	■ ■
Disbenefits	■ ■

**30.860**

(tCO2-e) per ha over 25 years

<https://looc-c.farm>

# Renewable energy auctions

China:

- Criteria include local economic and employment benefits


Brazil:

- Small family farmers preferred in biodiesel tax breaks and auctions

Technology-specific auctions:

- Method-specific auctions for carbon farming?





# Possible scenario 2020-2030

- Increased pressure for ambitious emissions reduction targets
- Enhanced role for Safeguard mechanism (or alternative)
- Federal Government targets niche emission abatement activities with public co-benefits
- ERF replaced by multifunctional auction scheme
- State and Territory government offsets rolled into multifunctional scheme