

# MARKETS FOR ECOSYSTEM SERVICES

## -Direct payments for Biodiversity in Australia



ECOSYSTEM  
SERVICES PROJECT

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# Structure

- **Current approaches to biodiversity conservation on private land (i.e. regulation & incentives) - Landcare.**
- **Ecosystem services and markets – why?**
- **Links to NRM targets and goals**
- **Single site markets - BushTender.**
- **Interrelated/group bids, multiple outcome & interconnected markets – Corridor Retention; Conservation Beyond Fencing.**
- **Conclusions, warnings and recommendations**







# The Key Point

**Markets for biodiversity are a powerful tool for conserving biodiversity – but the mechanism design must carefully consider the characteristics of the landscape, the services, the issues and the management goals!!!**





# Current Approaches to Biodiversity Conservation

## History of regulations & incentives :

- **Clearing restrictions – Native Vegetation Conservation**
  - Monitoring and enforcement difficult  
→ few prosecutions.
- **Incentives – Landcare/NHT → flat rate, single site, limited strategic alignment – but simple and well understood; low TC's.**



# Structure

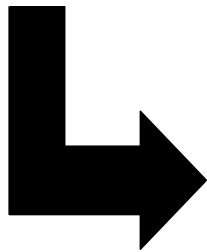
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# Ecosystem services and markets - why?

## Ecosystem services:

- **Valuing the priceless,**
  - e.g. Costanza, Daily, Australian Ecosystem Services Project; The Katoomba Group

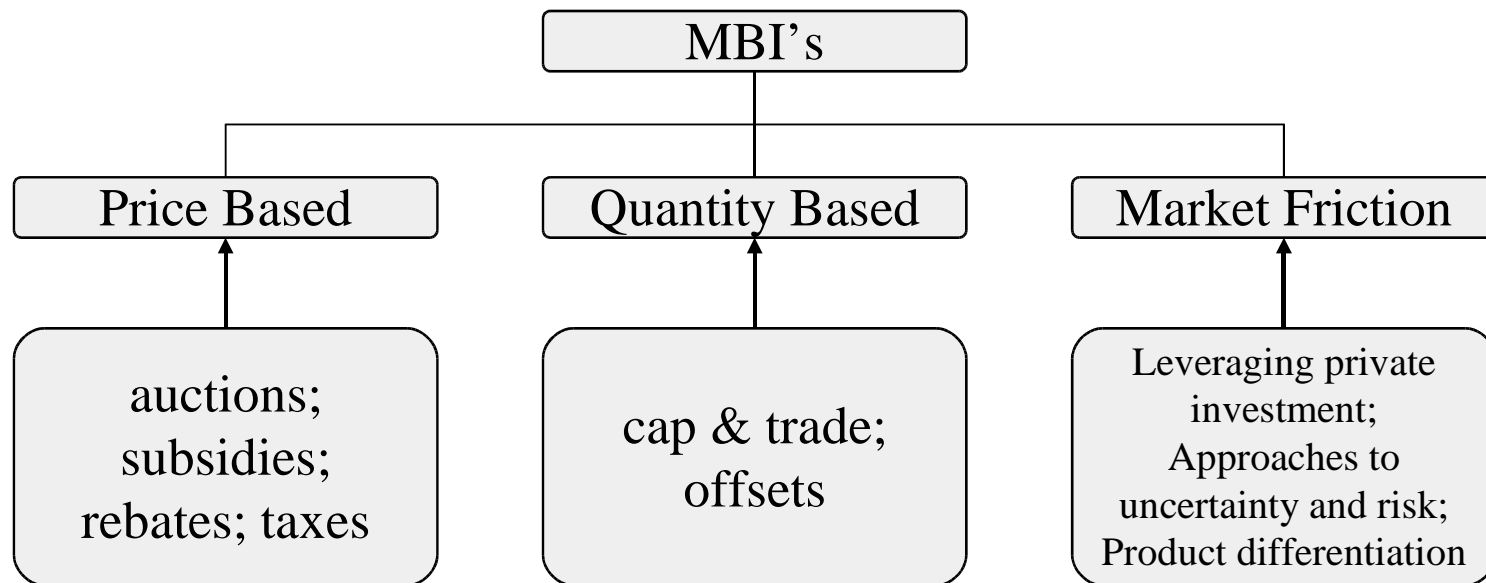


**Increased scientific certainty and awareness of value = emerging markets (and market based instruments)**



# Markets and Market Based Instruments (MBI's)

**Policy tools that encourage positive behaviour using market like approaches:**





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# Markets and MBI's - advantages and links to NRM targets and goals

**Addresses market failures**

**Well designed MBI's are outcome focussed vs input incentives.**

**Flexibility, efficiency and innovation**

**Allowance for landscape heterogeneity often results in increases to total positive “change” – compared to alternatives**

**Often longer term and can be more self-sustaining**

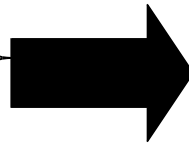
**Leverages new sources of investment**



# Players, motivations and benefits

## Gains from trade

- **Government**
- **NGO's**
- **Private Sector**
- **Landholders**



Process benefits – flexibility; efficiency; innovation; equity of access; broad engagement, information asymmetries

Outcomes – Increased returns on investment; potential for multiple outcomes (e.g. environment and reputation); new markets



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# Single site markets - Price Based MBI

## **Bush Tender – Improved private land biodiversity conservation (VIC Gov)**

- **Auction for land management contracts**
  - 25% more native vegetation conserved compared to fixed price approaches and grant schemes



# Single site markets - Price Based MBI

**Conservation covenants – Improved private land biodiversity conservation (Federal Gov)**

- **Voluntary conservation agreement – linked to land title.**
  - Tax concessions including: income tax deductions; special treatment of capital gains tax



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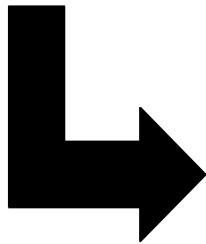


# Multiple outcome markets.....

**Heterogeneity – when is a single issue market versus a multiple issue market appropriate?**

**Key, and often confused, issue!!!**

- **Explicit consideration of interacting bids**
- **Group bids**

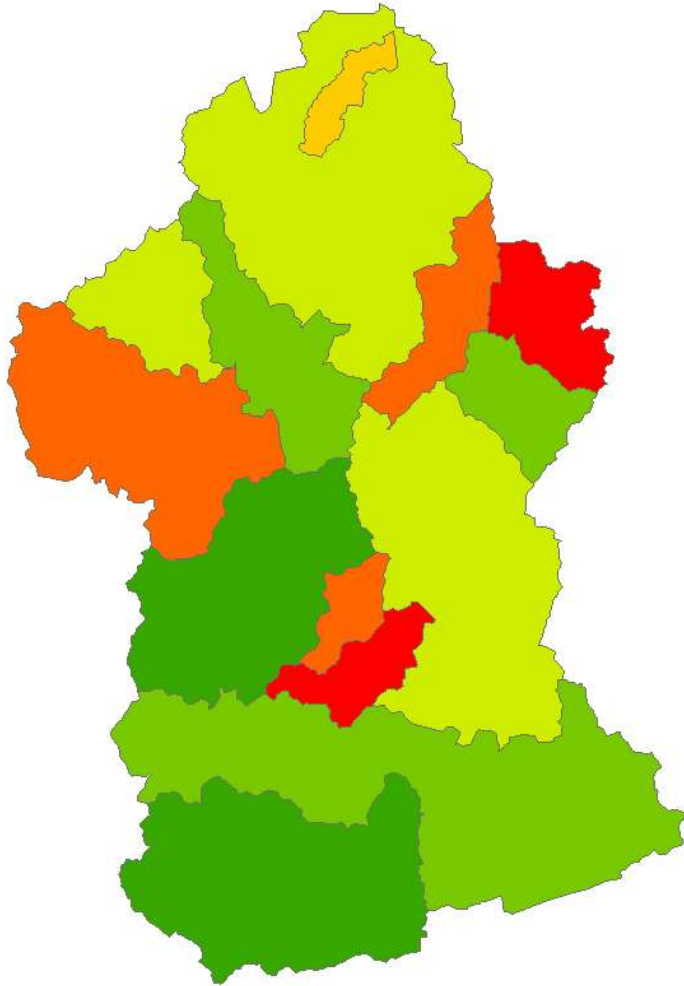


**Strategic outcomes; multiple and landscape benefits BUT more complex and increased uncertainty may cause failure**





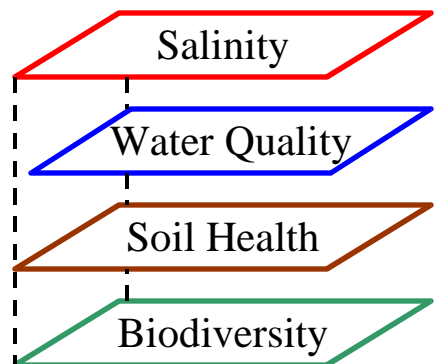
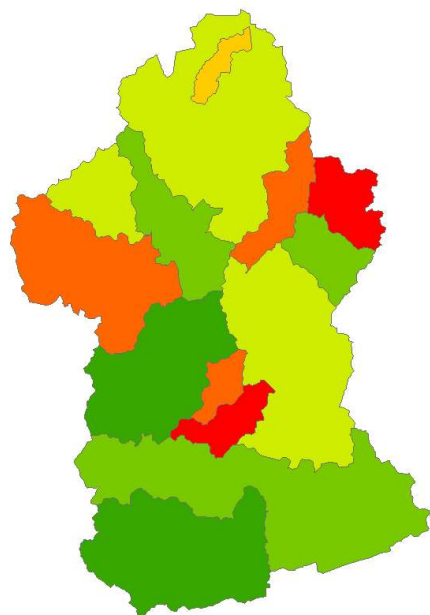
# When might a market be better? Single versus multiple outcome...



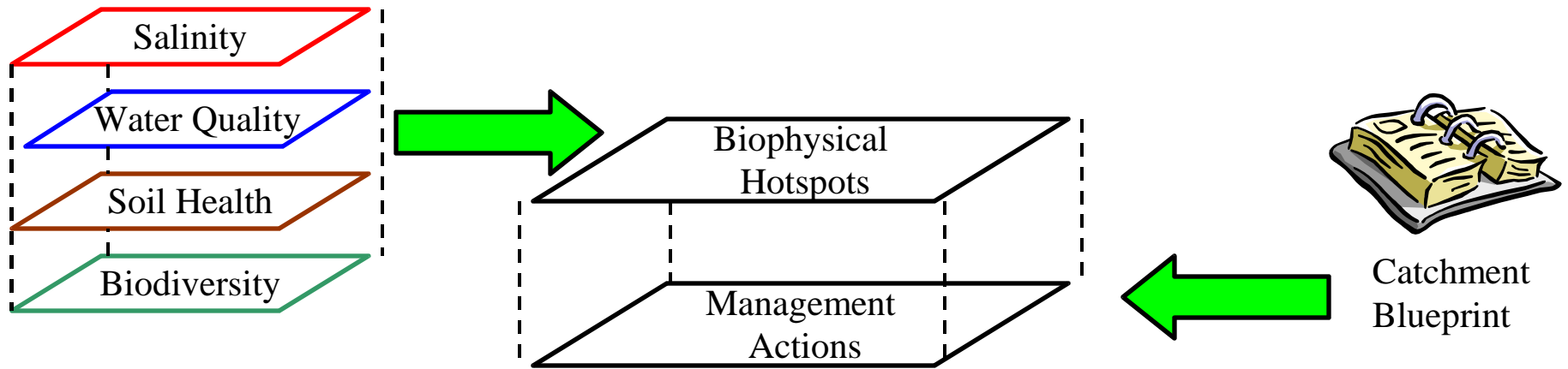
Biophysical  
Hotspots?



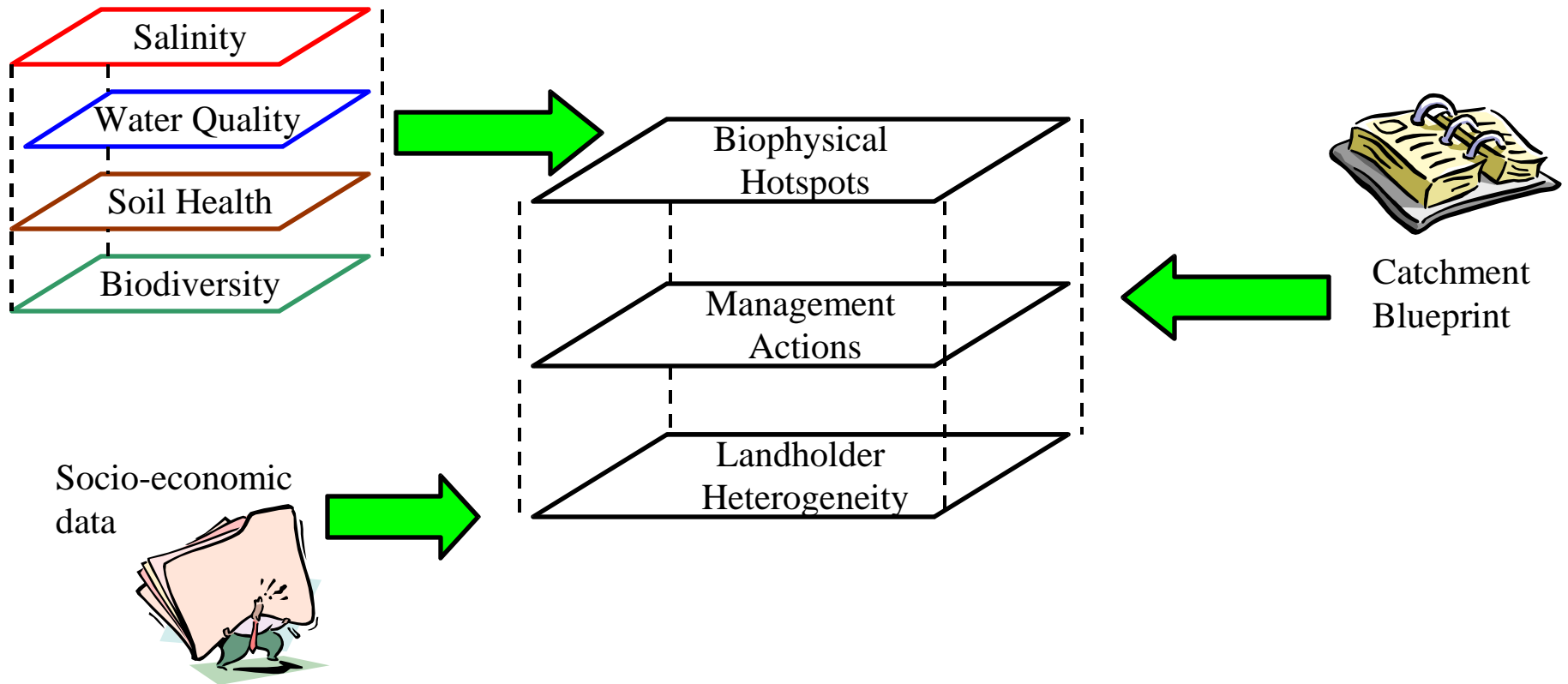
# Multiple targets?



# Single management strategy = single outcome?

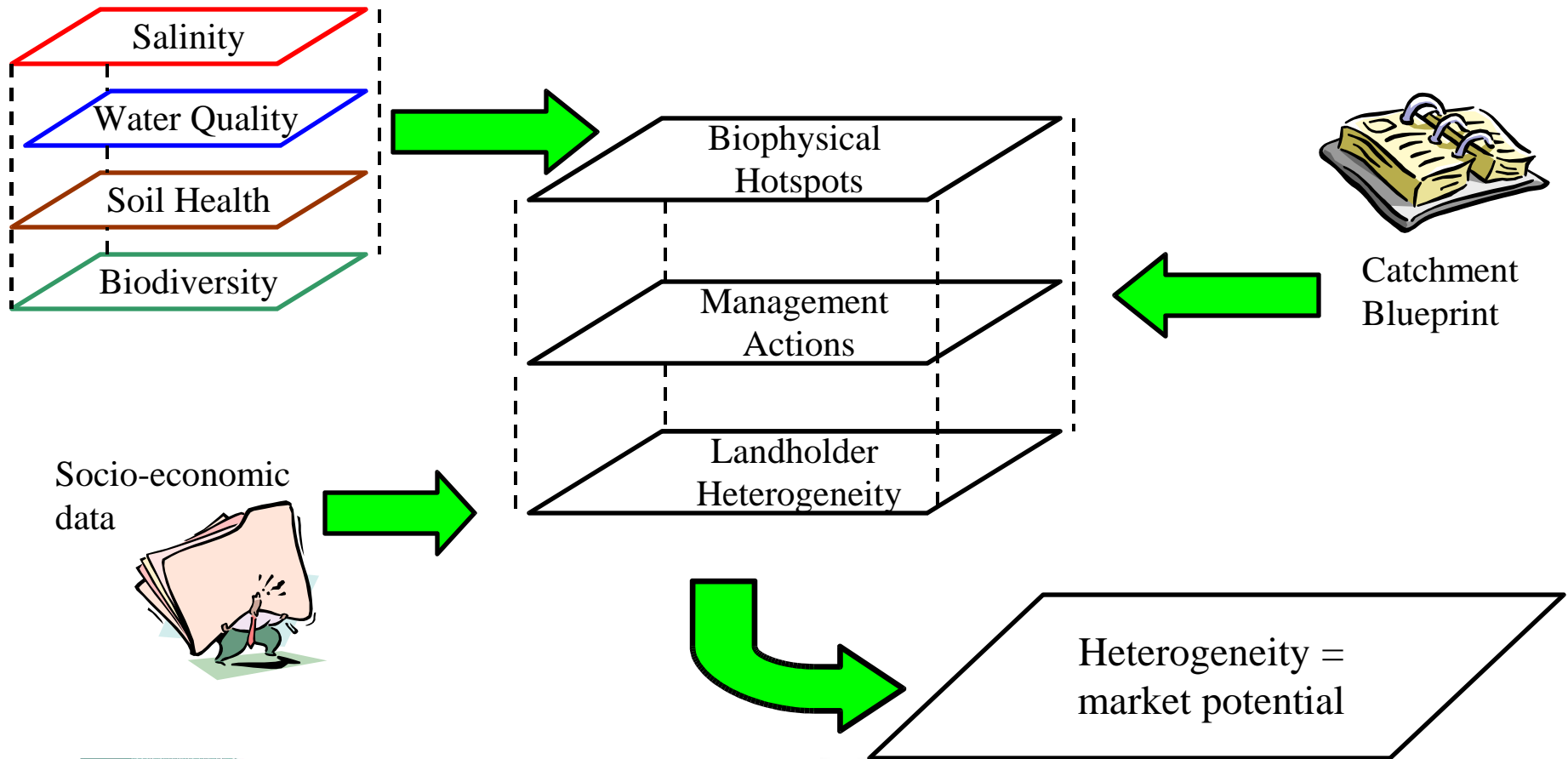


# Landholder heterogeneity?



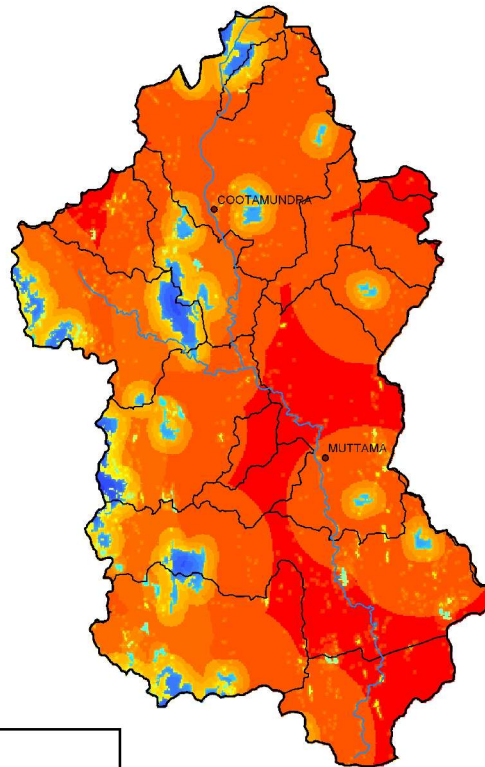


# Rapid Assessment - When might a market be better?



# Habitat Value - Muttama

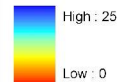
Muttama Catchment



## Legend

- Major streams
- Catchment boundary
- Subcatchment boundaries

## Habitat value



0 5 10 20 Kilometers



# Conceptualisation

Biophysical Hotspots Overlapping		Management Actions Overlapping	
		Yes	No
	Yes	1. Multiple outcome	2. Programs/Markets
	No	3. market – site Programs/Markets management actions reasonably specified, but greater freedom in location	4. Separated single biophysical markets – specified, but greater flexibility in management actions.



# Findings

- **Not all issues are amenable to application of an MBI.**
- **Bundled markets are not necessarily possible – desirable correlations between issues and actions are often weak or non-existent.**
  - Salinity and Biodiversity = weak/no correlation
- **Inappropriate inclusion of multiple issues may result in market failure – complexity; TC's; etc**





# Multiple outcome markets.....

## E.G. Corridor Retention vs Establishment/Conservation

- Needs to link to the landscape & NRM goals

QLD – Corridor Retention  
Landscape possibilities,  
multiple options

WA – Highly cleared landscape  
with many nodes  
Group Bids – markets vs  
facilitative processes depending  
on the actual landscape  
characteristics and resources

## Green Bank (greening Australia) – Risk-perception gap

- Lives and dies by environmental science and investment analysis



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# Global Scale Opportunities

**Relatively limited in comparison to most other ecosystem service markets:**

- **Single species flagship markets – arguably not a market for biodiversity (a charity?); conservation science encouraging but not conclusive - except in limited circumstances (focal species vs habitat hectares, Bios)**
  - Often construed as a market for access and recreation – what are you really selling?
  - Beware perverse outcomes – Koala.....
- **Property rights not really resolved**
  - What are the implications for other species???
  - Depending on “use” - still not excludable, non-rival and transferability issues.
- **Advances in public private partnerships represent good opportunity for immediate advances.**



# Conclusions, warning and recommendations

1. What is the product??? Really???
2. Clearly articulated – definition of property rights over something that is difficult to define and understand scientifically
3. Excludability, non-rival product – highly limited market without!
4. Transaction costs in thin markets.
5. Beware inappropriate inclusion of multiple outcomes!
6. Private/Private Markets: progress is being made in definition, packaging and marketing – even though market lacks definition.
7. The discipline of markets is improving incentives, as well as encouraging innovation in conserving biodiversity.



# For more information....

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