

Designing a framework for landholder ecosystem services payments

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Ecosystem Services

- “Benefits people get from nature”
(Millenium Ecosystem Assessment 2005)
- “The conditions and processes by which natural ecosystems, and the species that make them up, sustain and fulfil human life”
(Daily 1997)

Why pay for ecosystem services?

- Development of Victoria
 - wealth creation from commodities / resources

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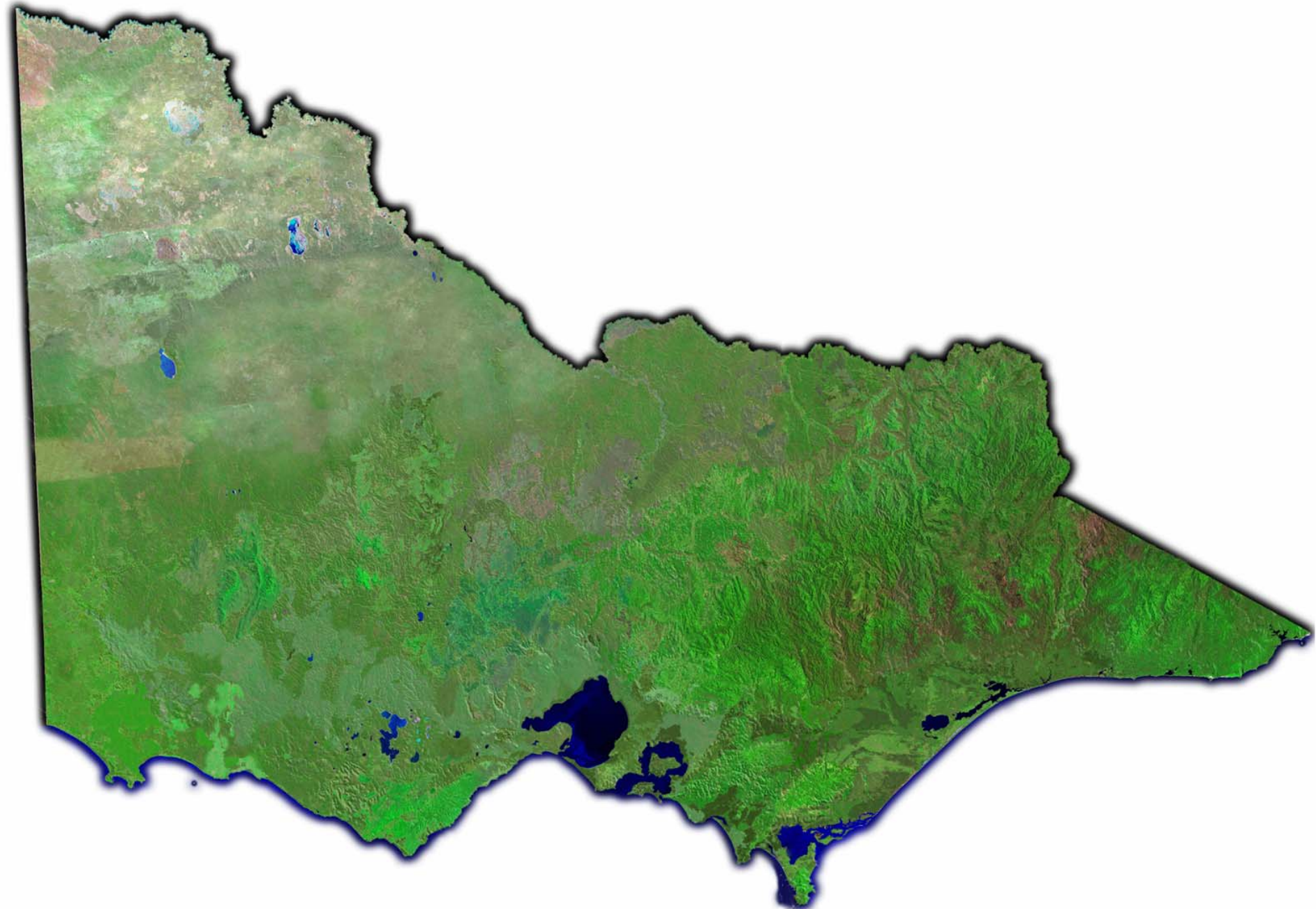
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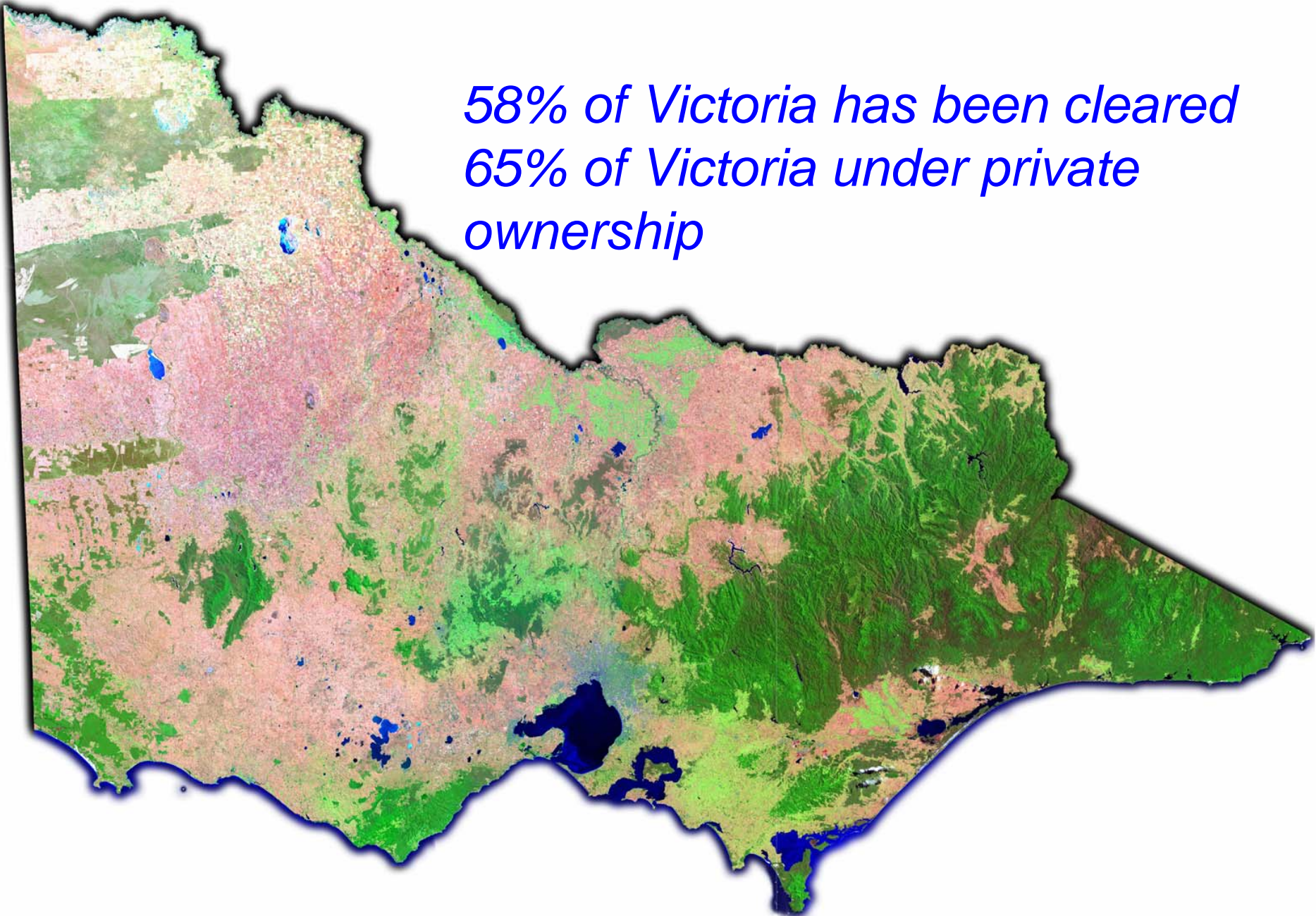
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- Increasing recognition of need to balance agricultural production and ecosystem protection
 - ➡ ensure ecosystems to continue to deliver services incl. productivity benefits

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*58% of Victoria has been cleared
65% of Victoria under private
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Payments for ecosystem services – key design considerations

- **diverse spectrum of private landholders**
 - need better cost-sharing resolution
- **“non-standard” benefits are typical**
 - diverse and individual nature of assets, sites, services, costings, management agreements
 - need to better align individual actions with complex ecosystem function / community priorities
- **more accountable expenditure of public \$\$**
 - need better cost-effectiveness measures

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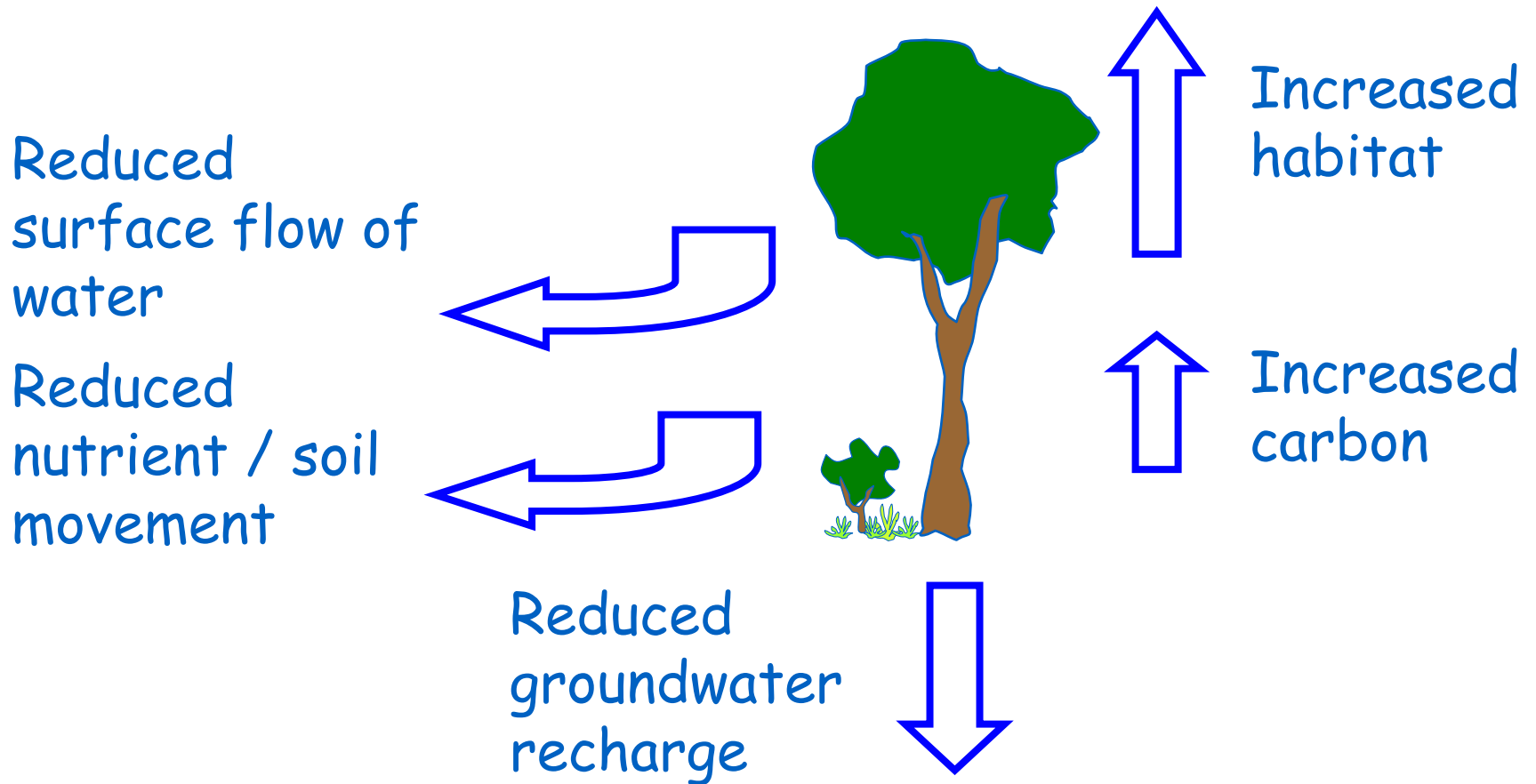
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- **DSE**
 - designing and implementing ecoMarkets

Market-based approaches for delivering ecosystem services payments - ecoMarkets

- DSE concerned with the production of environmental goods and services (EGS) on private (and public) land
 - MBIs offer efficient delivery of EG&S
- To do this the players - landholders and community (investors) - need to be well informed
 - Need to describe & understand ecosystem functions and consequences of land use options
 - Need to clearly articulate significance of assets and units of measurement (metrics)
 - Who are the purchasers? - public / private environmental markets

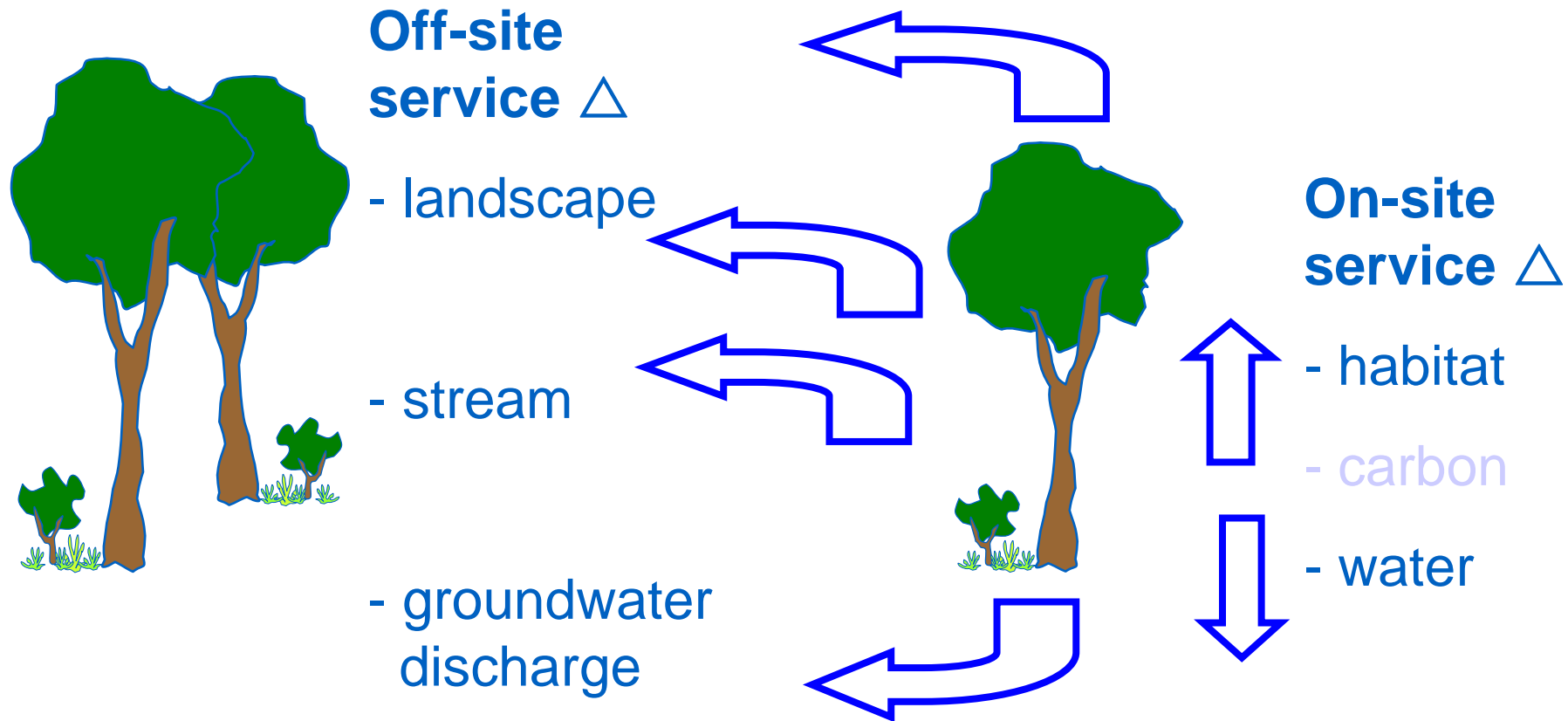
Understanding land use change impacts on ecosystem function

On-site service for multiple attributes



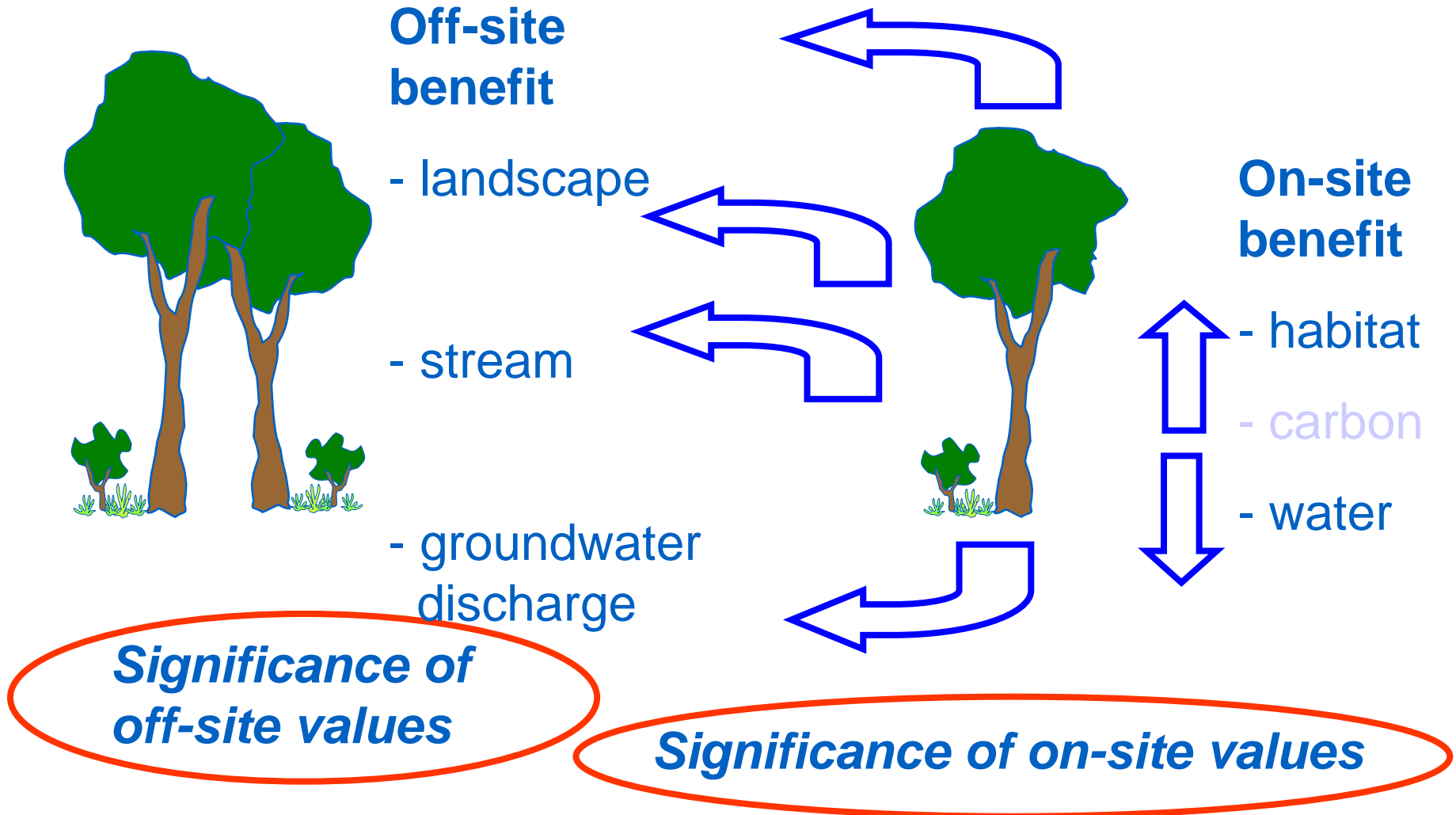
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On-site and off-site services for multiple attributes



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Ecosystem services in Victoria – Metrics

attribute	change in level of function	desirable change	significance
terrestrial biodiversity	Δ habitat score (in habitat maintained or improved / ha)	increase	EVC & thr. spp status / site condition / landscape function
aquatic function	Δ water "quality" (soil t/ha at stream) Δ water quantity (water mm/ha at stream)	increase ?	Priority river reaches
saline land	Δ saline land (ha groundwater < 2m)	decrease	Environ. significance of impact site ?
carbon sequestration	Δ carbon seq. (tonnes/ha)	increase	n/a

Connecting public and private environmental markets

Landholder

Land use change

- attitude
- capacity/flexibility
- innovation

Auction

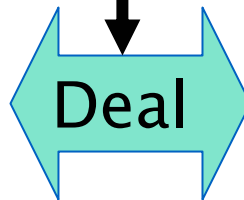
- competition
- collusion (+/- ve)
- contract design
- monitoring & compliance

Society (Investor)

Biophysical/ecological metric

- farm linked to catchment scale
- terrestrial habitat, carbon, saline land, water quantity, water quality

Cost (\$)



Social preferences

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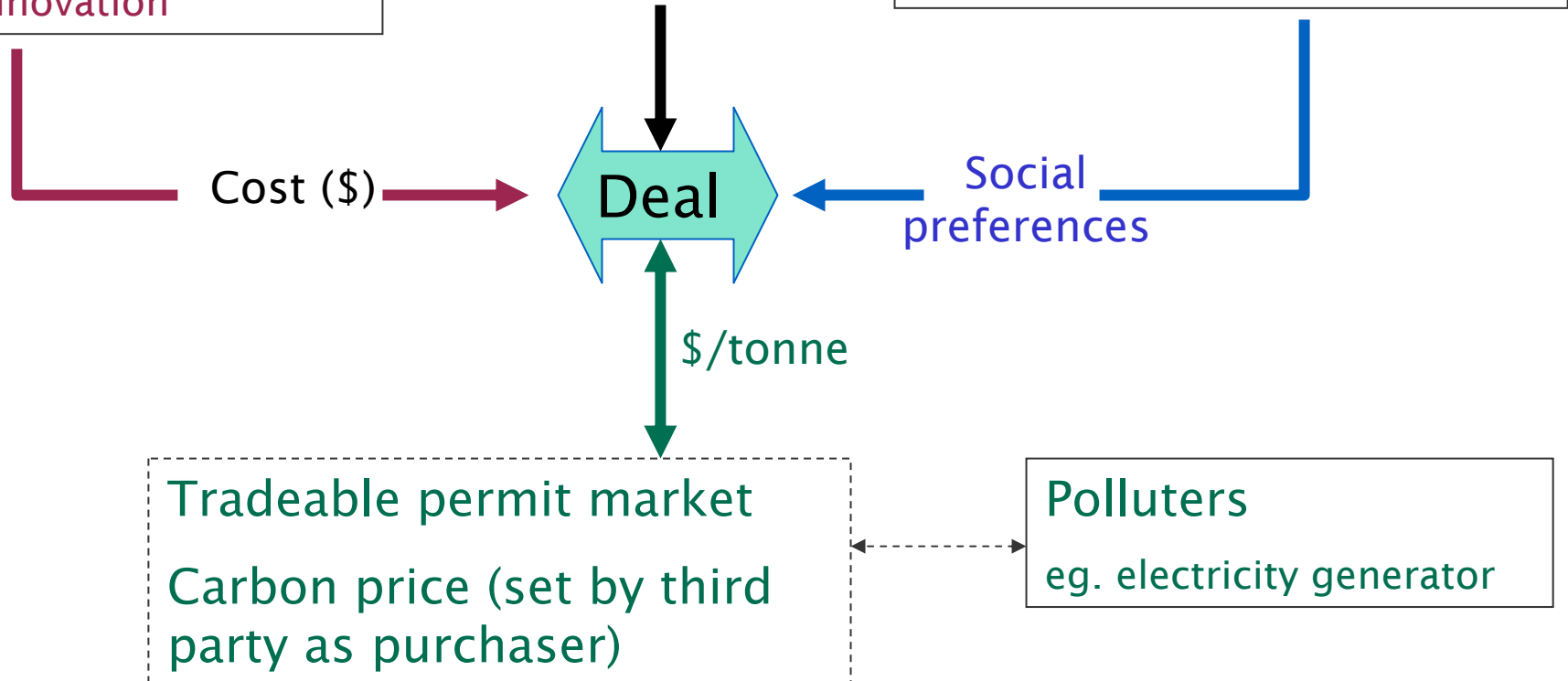
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Victorian Government ecoMarkets Project

\$14m Victorian Govt investment into setting up science / market framework

- Better science to link actions (paddock-scale) and outcomes (catchment-scale) through sophisticated land/water models
- Enable consideration of trade-offs (ie. avoid negatives) and capture synergies between outcomes
- Better design of investment tools (eg. auctions) – link to emerging private environmental markets (eg. carbon offsets)
- Practical demonstrations in CMAs
- www.dse.vic.gov.au and search “ecoMarkets”