



Landholder engagement in conservation tenders

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CSIRO Ecosystem Sciences

Payments for Ecosystem Services and their Institutional Dimensions Conference



Overview

- Acknowledgements –

- Medieu Agrotech intern and original questionnaire,
- Funding /assistance – Wimmera CMA and CSIRO and earlier work by Land and Water Australia
- Reeson, Langridge and others at CSIRO



It was too late to retract her bid.
Catherine had purchased the
small man on the motorbike.

What are conservation tenders?

- Auctions are a tool for allocating a good with unknown price amongst competing buyers.
- PES auctions are 'reverse auctions for multiple goods' – allocating a fixed budget for an unpriced good between competing sellers.
- Designed as a procurement auction
- Intended to create a market where none exists
- Usually run as a:
 - First price
 - Sealed tender offer
 - Single round
 - Reverse auction

What are conservation tenders?

- Auctions are a tool for allocating a good with unknown price amongst competing buyers.
- PES auctions are ‘reverse auctions for multiple goods’ – allocating a fixed budget for an unpriced good between competing sellers.

Intention:

- Pay selected landholders to supply a desired ecosystem service.
- Landholder entry is voluntary – and considered a commercial decision (though that is not entirely the case as we will see later).
- Tenders detail a price and an agreed set of activities (or outputs etc as relevant).
- Contracts offered to most cost effective ES producers.

How do conservation tenders work?

- Designed as a procurement auction:
 - soliciting tenders to provide a defined set of activities or products
 - In PES case tenders relate to ecosystem services
- Are intended to create a market that:
 - Overcomes asymmetric information about ES production and costs.
 - Farmers know their costs better than the buyer (usually government).
 - The buyer knows (and can measure) the relative values of ES desired.
 - The competitive tender provides an incentive to reveal the (hidden) costs of ecosystem service production.
 - The metric (or measure) quantifies ES production (or a proxy).
- In Australia usually run as a first price, sealed tender, single round reverse auction.

How do conservation tenders work?

- In Australia usually run as a first price, sealed tender, single round reverse auction.
 - First price: Landholders paid the price submitted (as opposed to 2nd price which is next higher tendered price, or a uniform price at last successful tender price).
 - Sealed tender: tender details are confidential and remain unknown by other landholders.
 - Single round: one opportunity to submit a tender in any particular tender (although tenders might be run multiple times).
 - Reverse: Landholders submit a price to supply ES (instead of the more common bidding to buy in auctions).

How tender works from buyer perspective:

1. Design tender and advertise to landholders.
2. Solicit interest in supplying ES.
 - Register interest, follow-up, register for site visit.
3. Quantify likely ES production:
 - Site visit to gather required data
4. Agree management actions (for costing)
5. Open and rank tenders
 - Data input into a production model (metric).
6. Award contracts to best tenders until budget exhausted, target met, or reserve price met.
 - Also manage impact of unsuccessful tenders.
7. Monitor and evaluate performance.

How tender works from landholder perspective:

1. Receive information and invitation to register interest.
2. (Sometimes) attend workshop explaining tender process (including trial tender).
3. Site visit to gather data / clarify details of management requirements (no price discussion).
 - Summary of agreed management actions received.
4. Calculate and submit tender (price and management plan).
5. Receive notification of acceptance (or rejection).
6. If accepted sign contract
7. Receive payments, undertake actions, participate in monitoring.

Conservation tenders can be seen as an economic design problem!

- A conservation tender is essentially a carefully constructed set of flows of information and market signals between participants.
- Success relies on voluntary participation by landholders:
 - Aim is to reveal hidden information and select low cost providers of ES;
 - This could be compromised if participation is insufficient,;
 - We don't get high value ES suppliers entering the tender; and/or
 - High value providers are able to extract surplus.
- Effective design targets and facilitates the level of participation necessary for success.

Conservation tenders and Participation

Defining participation – what is it?

- Completion of contractual requirements?
- Receipt of a contract offer?
- Submission of a tender?
- Engaging until elimination (eligibility or other reason)?
- Engagement in some aspect of the auction process including workshops, expression of interest, other?

Key definitions:

- We define **partial** participation as actively engaging in any step in the PES.
- We define **active** participation as submission of a tender
 - This is the key point for program efficiency.
- We define **complete** participation contract execution.

Steps in landholder participation

1. Receive information

2. Register interest

Attend workshop

3. Site visit by extension officer

4. Agree management actions to cost

5. Calculate and submit tender

6. Accept contract

7a. Payments received.

***7b. Ongoing actions as required.
Participate in monitoring.***

Partial participation

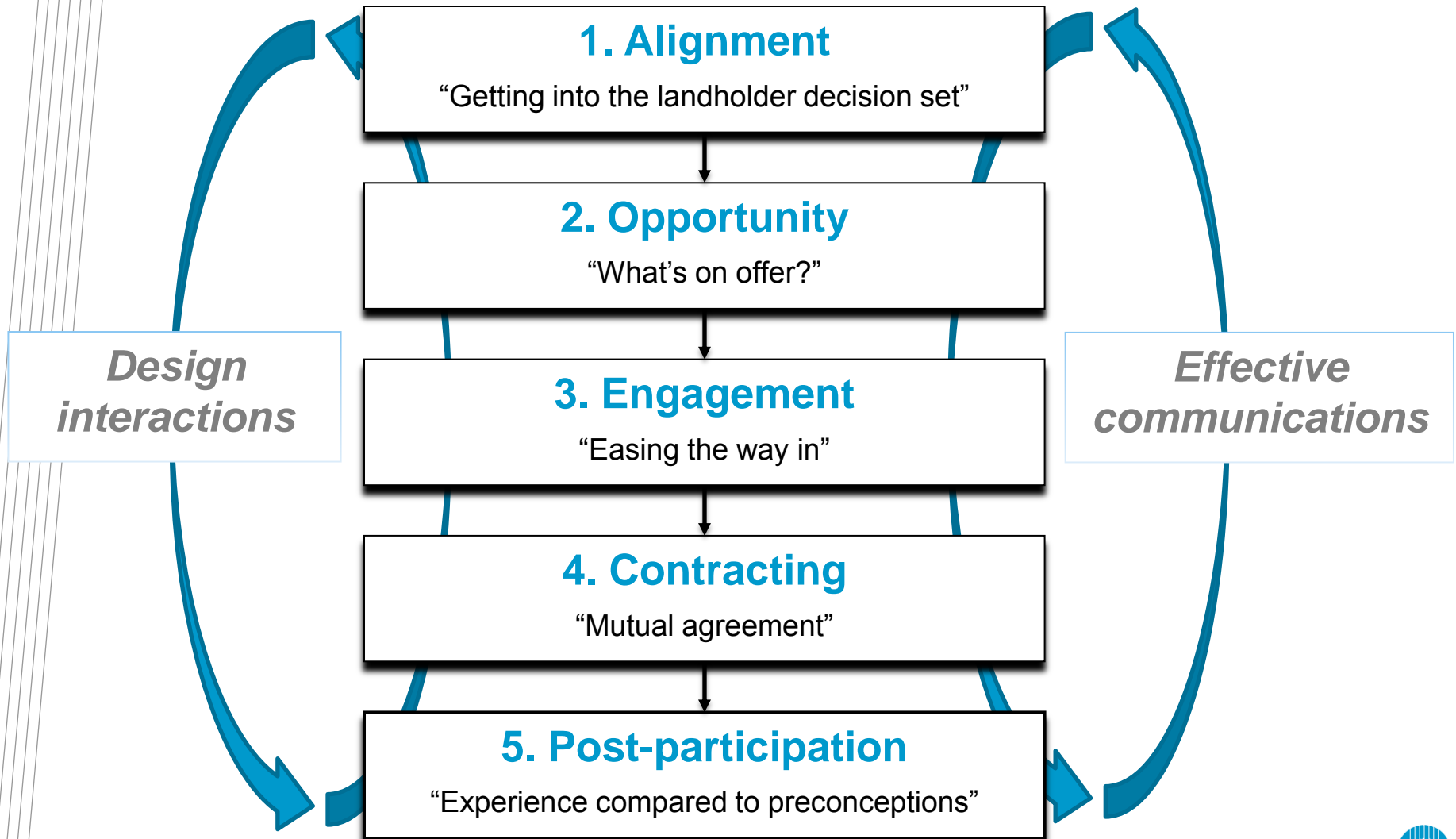
Active participation

Complete participation

Understanding landholder participation ...

- In order to explain and explore PES design we developed a 5-stage model of landholder participation
- The model is developed along mechanism design concepts:
 - Uses a broad range of economic (and behavioural) theory of which institutional and behavioural economics and landholder adoption literature critical.
 - Applies a pragmatic design approach identifying barriers to participation and 'designing' effective counters in exploring the trade-offs between efficient instrument design and pragmatic incentive delivery.
- Presented as a linear step-wise process but in practice decisions at one stage impact on and across others.

A framework for understanding landholder participation in conservation tenders ...



The state of play in Australia

- I will illustrate the participation discussion with examples from Australia ... so first some context.
- The biodiversity conservation problem:
 - Agriculture has tended to replace rather than co-exist with biodiversity.
 - In some areas more than 95% of the original native vegetation has been cleared and replaced with cropping or exotic pastures.
 - Few or no opportunity for large scale reserves – so biodiversity conservation is on private land.
 - Activities generally involve:
 - ✓ Removing any destructive activities (may be all ag uses)
 - ✓ Management of threats (weeds, feral animals, fire and others).
 - ✓ Active rehabilitation in some (relatively few settings).

High diversity



Grazing



Typical development trajectory of an ecological community in Australia

Fertilise
+ more
grazing



Add exotic
Pasture
/weeds



Low diversity

The state of play in Australia

- Paying for conservation on private land where few other options available
- Tend to replace other income producing opportunities
- Relatively strong property rights.
- Other factors of importance:
 - ✓ A history of governments and regions engagement
 - ✓ Almost no agricultural production subsidies:
 - PES tend to be stand-alone programs.
- Increasing use of conservation tenders in Australia – especially at regional and national scale.

The state of play in Australia

PES market context:

- **Relatively strong property rights:**
 - ✓ Clear land tenure (excepting where indigenous title overlaps).
 - ✓ Native vegetation (and biodiversity) legally protected from active destruction.
- **Other factors of importance:**
 - ✓ Multiple levels of engagement with landholders
 - Regional scale has been particularly important in last 10 years.
 - ✓ A history of governments and regions engaging with landholders for improved environmental management
 - ✓ Almost no agricultural production subsidies:
 - So fewer perverse incentives or opportunities for cross-compliance.
 - PES tend to be stand-alone programs.

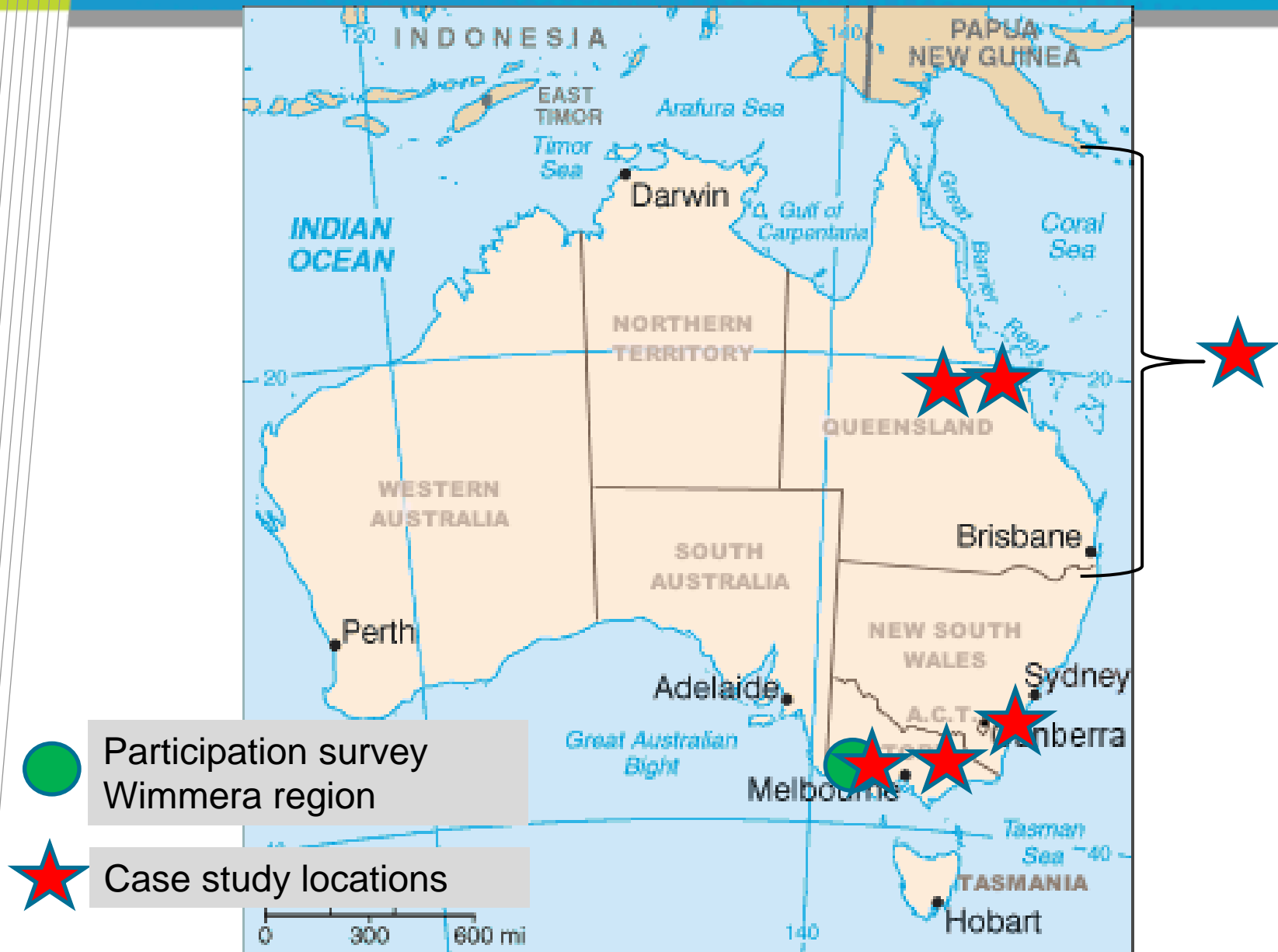
State of conservation tenders in Australia

- Increasing adoption as a government investment tool
- The Australian Government has used tenders in several major programs:
 - Environmental Stewardship
 - Forest Conservation Fund
 - Biodiversity hotspots program
- At the state level Victoria uses as default biodiversity investment tool on private land (BushTender).
- Common but by no means default option at regional (watershed) level.
- Tenders appear to be a tool that will stay and we are seeing increasing understanding and subtlety in use:
 - Metric design and application, more complex investment decisions, greater adoption.
- But there remain challenges and varying levels of discomfort in the community about competitive payment schemes.

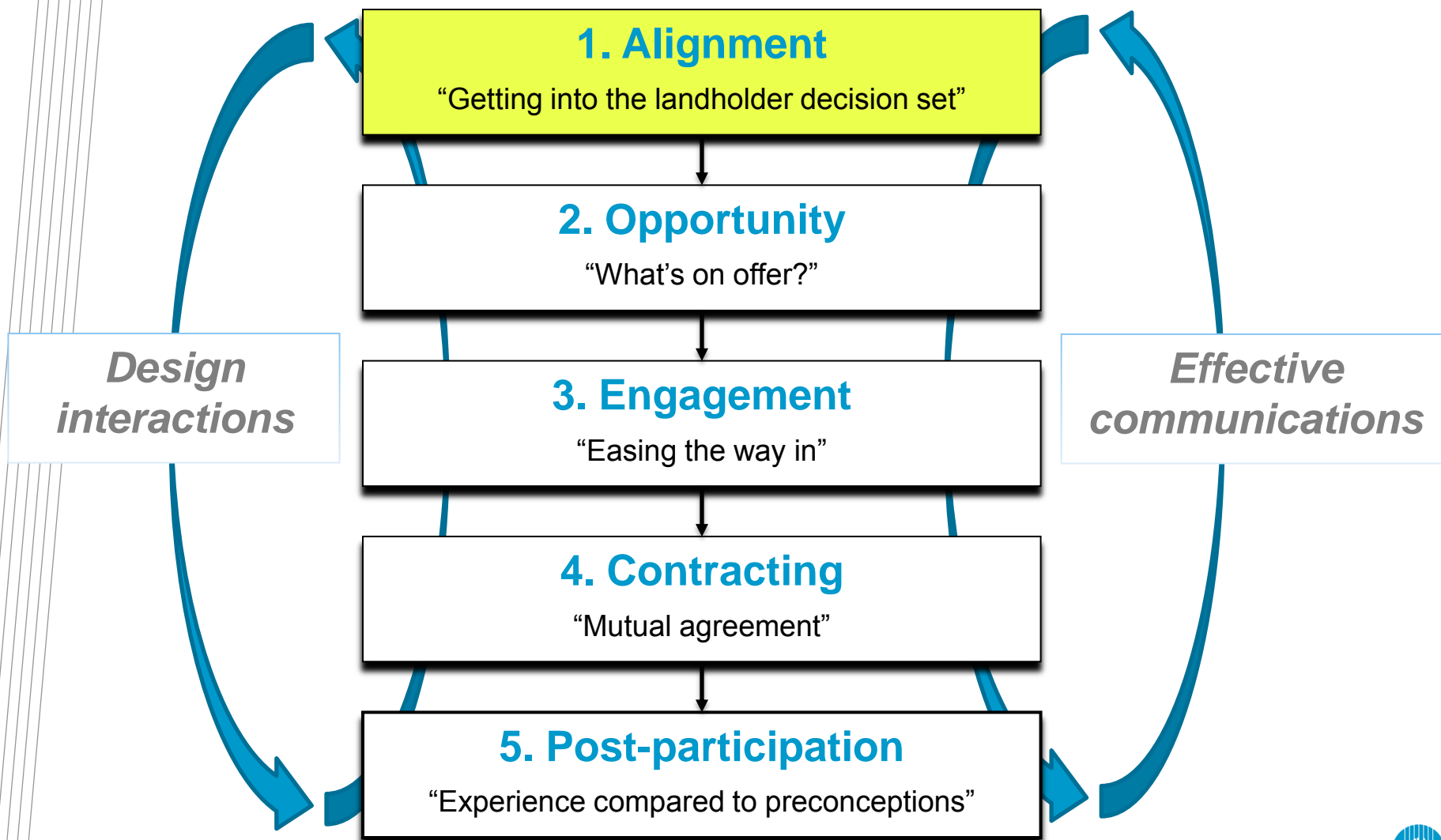
Participation evidence from the field

- Two studies to illustrate engagement in conservation tenders:
 1. *Barriers to and opportunities increasing participation in conservation auctions*, S. Whitten, A. Reeson, J. Windle and J. Rolfe, 2007, Report to Land and Water Australia.
 - Includes results from the design parameters and participation performance of six case studies of tenders across Australia.
 2. Questionnaire responses from > 300 landholders in Wimmera region of Australia about their participation experience in conservation tenders.

Location of case studies and Wimmera region landholder participation survey.



A framework for understanding landholder participation in conservation tenders ...



Understanding landholder participation ...

Alignment - Degree to which desired actions lie within the existing landholder decision set:

- Perception of need
- Acceptance of treatment actions / compatibility with enterprise
- Complexity and social acceptability of innovation

Case study evidence:

- Evidence of alignment correlated with higher participation.
- Adjusting PES to enhance alignment increased participation.

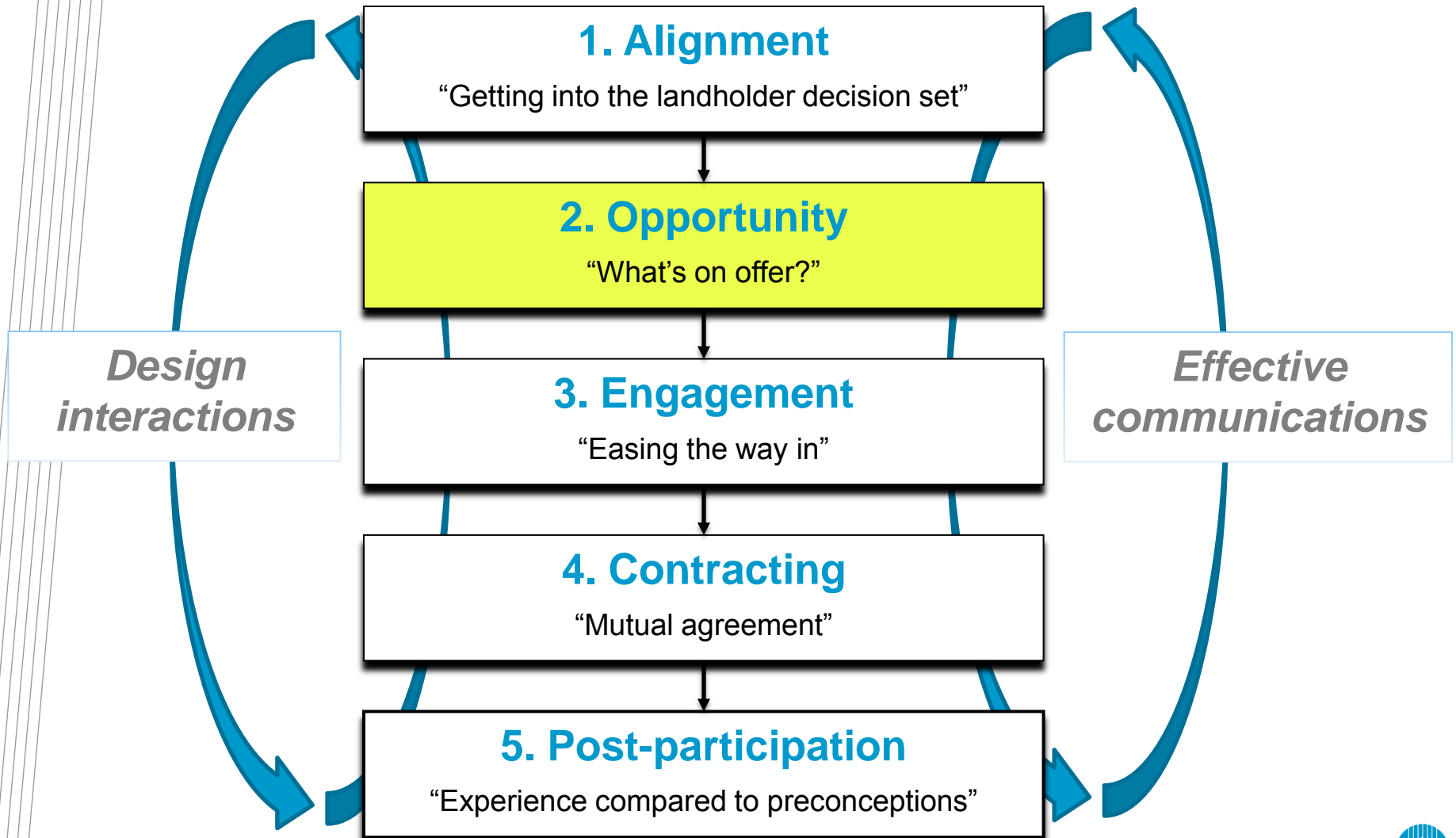
Participants views ... apparent correlation between alignment and participation

Environmental Issue

P = partial participant, NP = non-participant

	<i>Not a problem</i>	<i>Minor Issue</i>	<i>Major issue</i>
	<i>P</i> <i>NP</i>	<i>P</i> <i>NP</i>	<i>P</i> <i>NP</i>
Improved soil health via increased organic matter and reduced compaction	27 28	43 45	29 22
Protecting and restoring (bush) wetlands	21 48	34 38	44 13
Managing dryland salinity	69 65	20 19	10 14
Reducing soil erosion	53 46	30 35	16 17
Actions to conserve native flora and fauna	14 40	43 36	42 18
Controlling pest animals and weeds	3 8	35 35	62 56
Protecting rivers and streams (RIVER only)	22 *	22 *	56 *

A framework for understanding landholder participation in conservation tenders ...



Understanding landholder participation ...

Opportunity - Incentives represent an opportunity to landholders – dependent on:

- Scale of incentives vs costs and other (non-monetary or production) benefits
- Accessibility and constraints imposed by MBI

Factors affecting opportunity:

- Perceived eligibility (often low)
- Difficulty in trialling or reversing management change
- Perceptions about implementation and opportunity costs
- Interactions with other aspects of landholder change (complexity, skills, time-scarcity).

Understanding landholder participation ...

Case study evidence - opportunity:

- Landholders likely to be aware eligible but not of biodiversity value.
 - Confirmed by survey results.
- Evidence on trialability by contract length gave mixed evidence – but permanency appeared to reduce participation (but also likely to have been poorly aligned).
- Range of tendered prices suggest participant landholders considered the incentives substantive (but we don't know about non-participants!).

Understanding landholder participation ...

Case study evidence - opportunity:

- Landholders likely to be aware eligible ... but not of biodiversity value.
 - Confirmed by survey results.
- Evidence on trialability:
 - Mixed evidence on interaction between contract length
 - Permanency appeared to reduce participation (but also likely to have been poorly aligned).
- Range of tendered prices suggest participant landholders considered the incentives substantive
 - (but we don't know about non-participants!).

Participants views on opportunity ...

Environmental incentives are an opportunity to improve my land management (%)

Disagree +/- Strongly		Unsure		Agree		Strongly Agree	
P	NP	P	NP	P	NP	P	NP
6	14	3	20	53	66	39	10

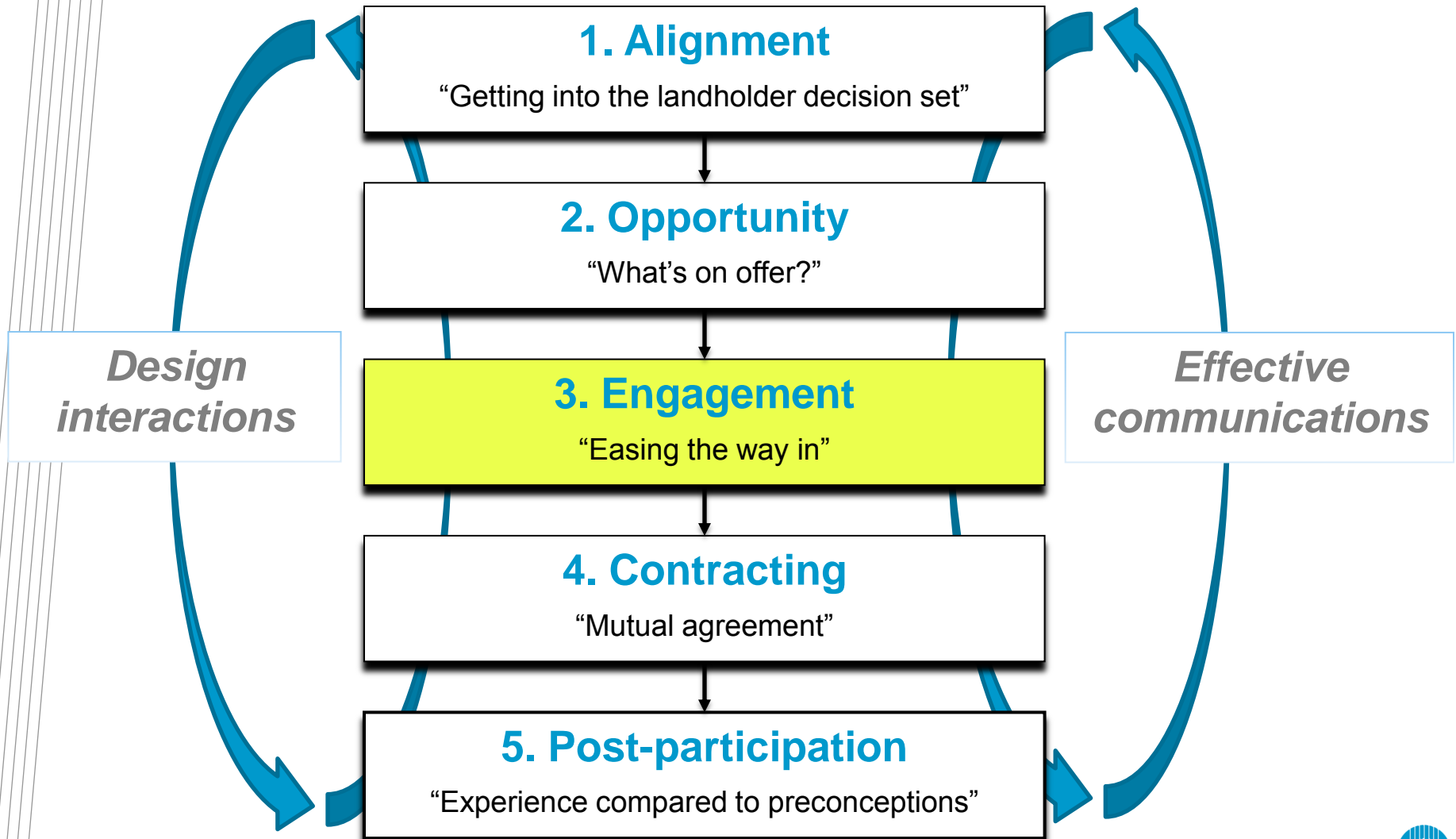
How confident were you that your tender would cover your costs sufficiently?

Unsure	14
I did not seek to recover costs	61
Maybe	13
Mostly	11
Very	1

Did you hope to ... %

Implement management changes	68
Make a profit	2
Both	30

A framework for understanding landholder participation in conservation tenders ...



Understanding landholder participation ...

Engagement – make it easy for landholders (within reason)

- Clear staged communication and engagement process.
- Be pragmatic in applying auction design theory to application
- Structure information exchange
 - The site visit is critical as it provides one-on-one interaction.
- Standardise the management plan

Understanding landholder participation ...

Engagement – make it easy for landholders (within reason)

- Clear staged communication and engagement process.
- Be pragmatic in applying auction design theory to application:
 - Eligibility, price caps, reserve prices, auction format, management plan structure, tender submission rules ...
- Structure information exchange to overcome information asymmetries and motivate landholders.
 - The site visit is critical as it provides one-on-one interaction.
- Standardise the management plan (opt-in / opt-out clauses) for simplicity, clarity and comparability.

Understanding landholder participation ...

Case study evidence - engagement:

- All followed a staged communications plan:
 - Anecdotal evidence that individual contact improved participation (but may introduce other issues).
 - Some difficulty in targeting communication ... but survey confirmed mail out the preferred option.
- Site visit highly regarded by landholders
 - But also a very expensive component in running a tender.
- Workshops on tender highly regarded and promote participation.
- Difficulty in tender assembly adversely affects participation.

Participants views on engagement ...

- **Workshops:**

- 79% of workshop attendees thought they were 'Useful in understanding the tender process'

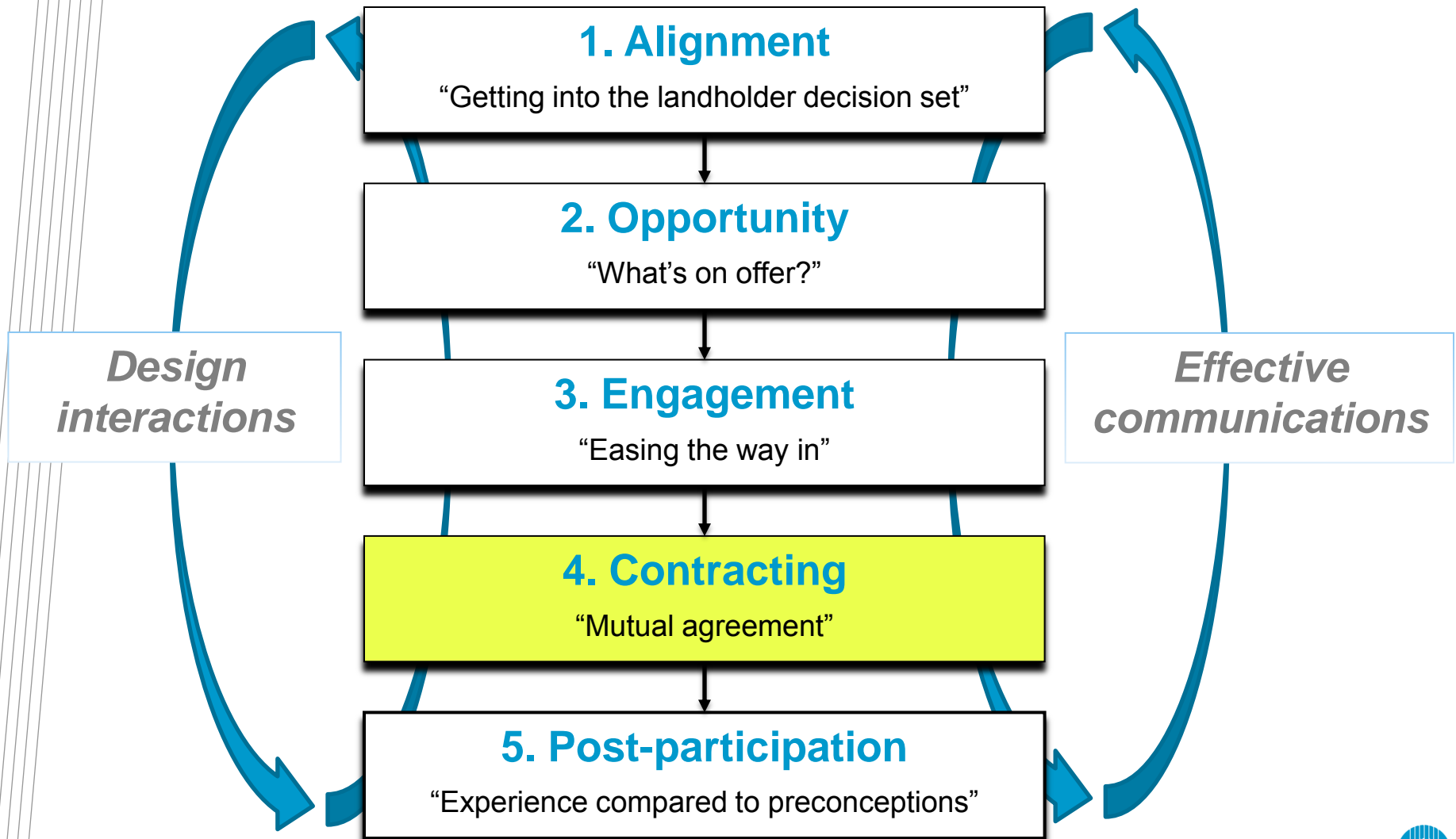
- **Site visit:**

- 26% thought it was 'Useful in learning about wetland/bush management'
- 19% thought it was just a formality which had to be gone through
- May be a feature of Wimmera implementation process ...

- **Tender assembly:**

<i>How easy was it to assemble your tender?</i>	<i>%</i>
Very hard	0
Difficult but manageable	26
Mostly straightforward	56
Straightforward	18

A framework for understanding landholder participation in conservation tenders ...



Understanding landholder participation ...

Contract

- Constraints on landholder options reduce participation
- Who the contract is with (government / non-government) matters.
- Specific contractual parameters are important:
 - Payment structures,
 - Risk sharing,
 - Process of preparing and signing contracts.

Case study evidence:

- Restriction may influence participation but depends on alignment.
- Longer contracts reduce participation
 - (trade-off against time for ecosystem service to be delivered).
- No strong evidence on payment structures

Understanding landholder participation ...

Contract

- Degree to which landholder options constrained: loss of control, reduced flexibility, contract length ...
- Who the contract is with (government / non-government).
- Specific contractual parameters: Payment structures, risk sharing, process of preparing and signing contracts.

Case study evidence:

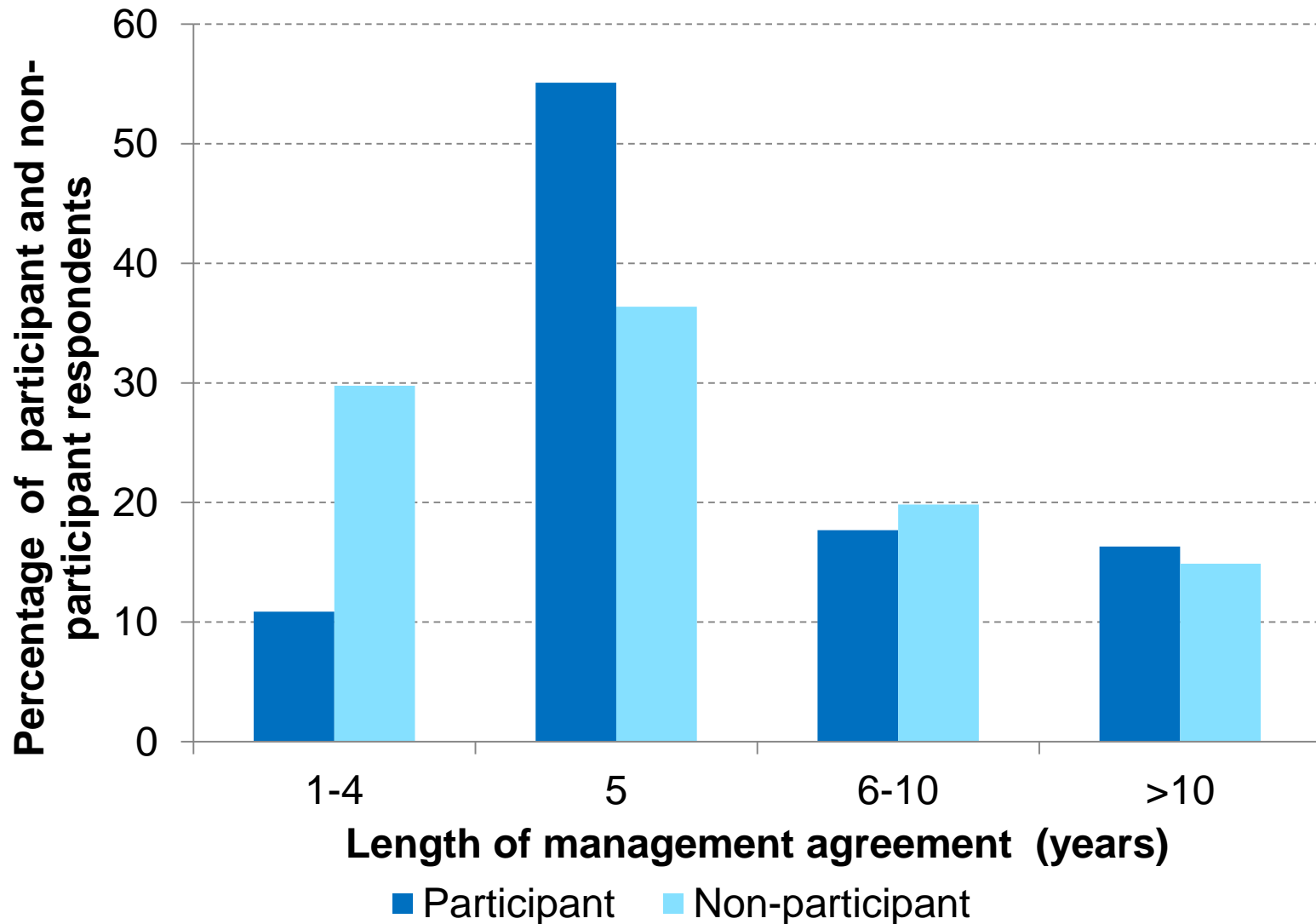
- Degree of restriction may influence participation depending on alignment.
- Some evidence that longer contracts reduce participation (trade-off against time for ecosystem service to be delivered).
- No strong evidence on payment structures (externally constrained by source of funding).

Contracting participation evidence ...

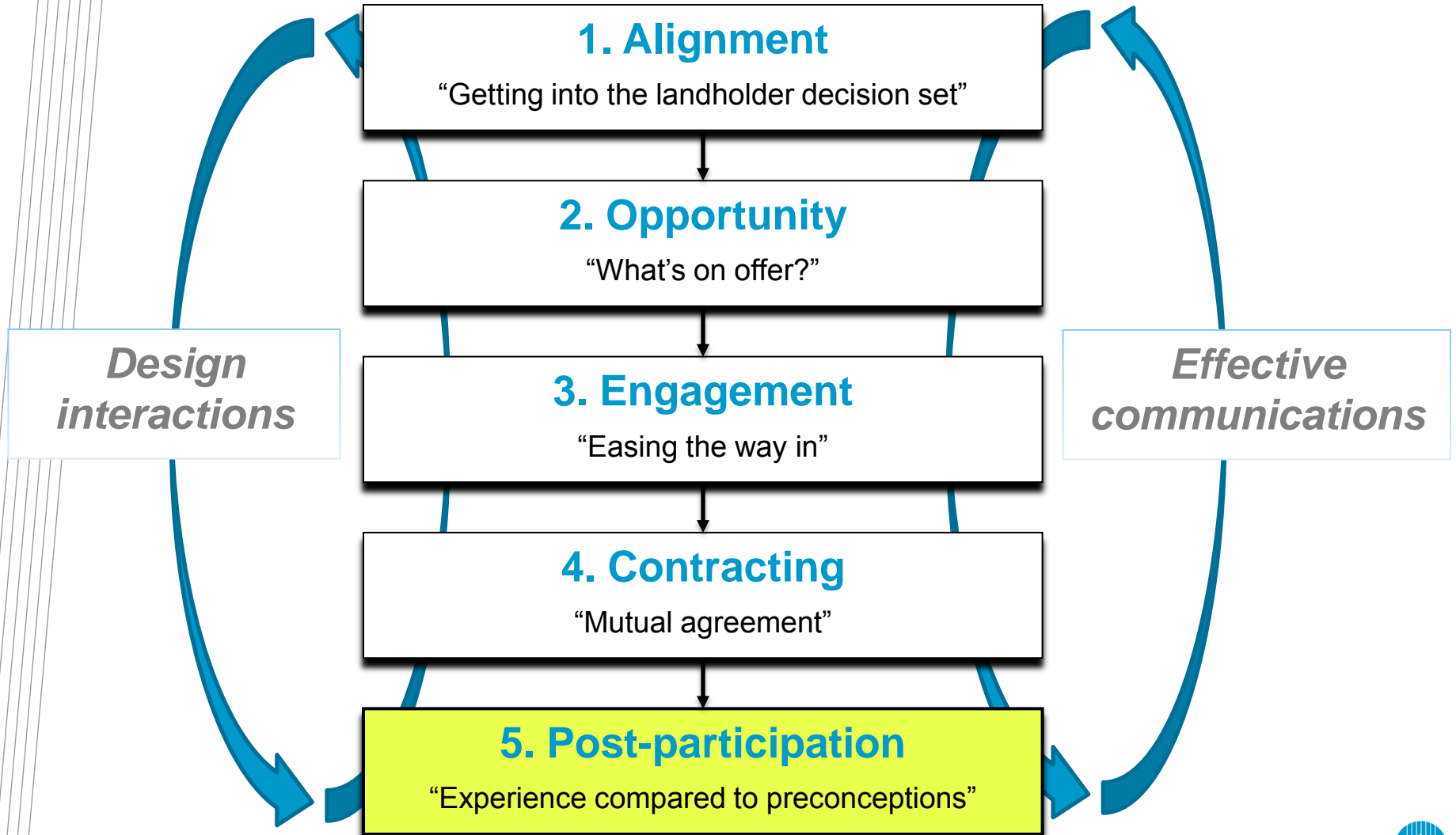
- Evidence that loss of control and party contracting may reduce participation.
- Positive contracting experience by respondents:

<i>Was the contracting process reasonable?</i>		<i>Was the monitoring process reasonable?</i>	
Yes	No	Yes	No
94	6	91	9

Contract length preference is around 5 years (which may be too short for ecosystem service provision):



A framework for understanding landholder participation in conservation tenders ...



Understanding landholder participation ...

Post participation

- Often forgotten but important to future participation
- Identify opportunities to 'crowd-in' positive experiences

Case study evidence:

- Unknown interaction between monitoring and participation experience.
- Strong anecdotal evidence of a need for more feedback to unsuccessful tenders
 - Confirmed by survey responses.

Post-participation evidence ...

- Participant responses positive:
 - Very high levels of future interest in participation.
 - Generally positive feedback on experience.

With the benefit of hindsight, how would you change your tender? (%)

Higher price	Lower price	Different site or mgt plan	No change
35	2	5	58

Who did participate – and would they participate in future?

- Most participants would participate in the future.
- A majority of participants had not been involved in previous schemes.
- A majority of non-participants are interested.

		Have you had previous funding	
		No	Yes
Non-participant (%)	Would you participate in a future tender?		
	Not at all	31	4
	Maybe	34	3
Participant (%)	Probably / definitely	23	5
	Not at all	4	4
	Maybe	14	2
	Probably / definitely	57	19

Conclusions ...

- Design matters for participation.
- Our framework does seem to explain participation decisions
- More generally:
 - Perceived non-alignment or no opportunity important reasons for non or partial participation.
 - Pro-active engagement processes 'ease the way in' for participants.
 - Tendering (including contracting) experience is positive
... but a perception problem remains.
- Post participation can be improved:
 - More detailed feedback!

Conclusions ...

- Conservation tenders can be designed to aid in managing participation.
- Our framework for understanding participation does seem to explain many participation decisions
- Evidence from case studies and landholders also supports the framework.
- More generally:
 - A large proportion of non-participants and partial participants gave reasons of perceived non-alignment or no opportunity.
 - The pro-active parts of the engagement process do appear to 'ease the way in' for participants.
 - Tendering (including the contracting) experience of participants is positive ... but a perception problem remains.
- Post participation can be improved:
 - More detailed feedback can be given without potential for participants to strategically manipulate outcomes.

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Web: www.ecosystemsproject.org (old site)

Reference: *Barriers to and opportunities increasing participation in conservation auctions*, S. Whitten, A. Reeson, J. Windle and J. Rolfe, 2007, Report to Land and Water Australia.
Landholder participation survey results will soon be in a working paper.

www.csiro.au

Thank you

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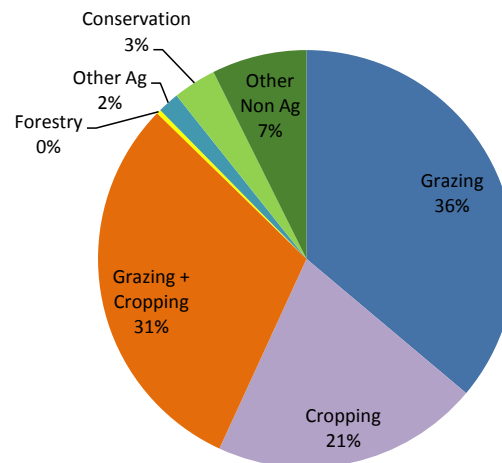
It sounds simple but?

Purchaser (often government) perspective	Activity	Landholder (seller) perspective
1. <i>Design and advertise tender</i>	→	1. <i>Receive information</i>
2. <i>Solicit interest in ES supply. Follow-up (workshop?)</i>	← ↘ ↙	2. <i>Expression of interest (register). Attend workshop Register for site visit.</i>
3. <i>Site visit by extension officer: - Collect data - Clarify management options</i>	→ ←	3. <i>Site visit by extension officer: • Discuss management options • (no price discussion) 4. <i>Agree management actions to cost.</i></i>
4. <i>Details of proposed management and site sent with tender sheet</i>	→ ↘	5. <i>Calculate and submit tender</i>
5. <i>Evaluate tenders Award contracts</i>	↙ ↓	
6. <i>Formal contract offer sent. Letters of rejection sent</i>	↓ →	6. <i>If accepted sign contract and commence agreed actions.</i>
7a. <i>Signed contract received. Payments commence.</i>	↙ ↓	7a. <i>Payments received.</i>
7b. <i>Monitor and evaluate performance.</i>	↓ ↘	7b. <i>Ongoing actions as required. Participate in monitoring.</i>

Basic performance metrics

	Mailed Out	Deceased RTS refused etc	Returned	Return rate %	Registered interest (EOI)	Submitted Tenders	Successful Tenders
Habitat (W)	694	43	203	31.18	90	128	93
Buloke (B)	259	6	72	28.46	31	27	18
River (R)	86	1	41	48.24	36	36	21

Main Farming Activity of Respondants



Case studies ...

Six case studies were examined against the participation framework:

- FBA biodiversity: \$180,000 – 26 tenders.
- Desert Uplands – landscape linkage: \$330,000 – 28 tenders.
- Queensland Government VIP – non-remnant vegetation: 109 tenders
- Wimmera CMA – Salinity: 2 rounds, \$730,000 - 45 tenders
- Goulburn Broken CMA – Bush Returns: 2 rounds, \$780,000 – 36 tenders
- Southern Rivers Bush Incentives: 2 rounds, \$740,000 – 64 tenders