

Multiple benefits & knowledge systems of Indigenous land & sea management programs (ILSMPs) – economic perspectives

Natalie Stoeckl, Diane Jarvis, Daniel Grainger, Silva Larson, Michelle Esparon, Jane Addison (James Cook University)

Particular thanks to our partner organisations: Bunuba Dawangarri Aboriginal Corporation, Ewamian Aboriginal Corporation, Gooniyandi Aboriginal Corporation, Walalakoo Aboriginal Corporation and Yanunijarra Ngurrara Aboriginal Corporation



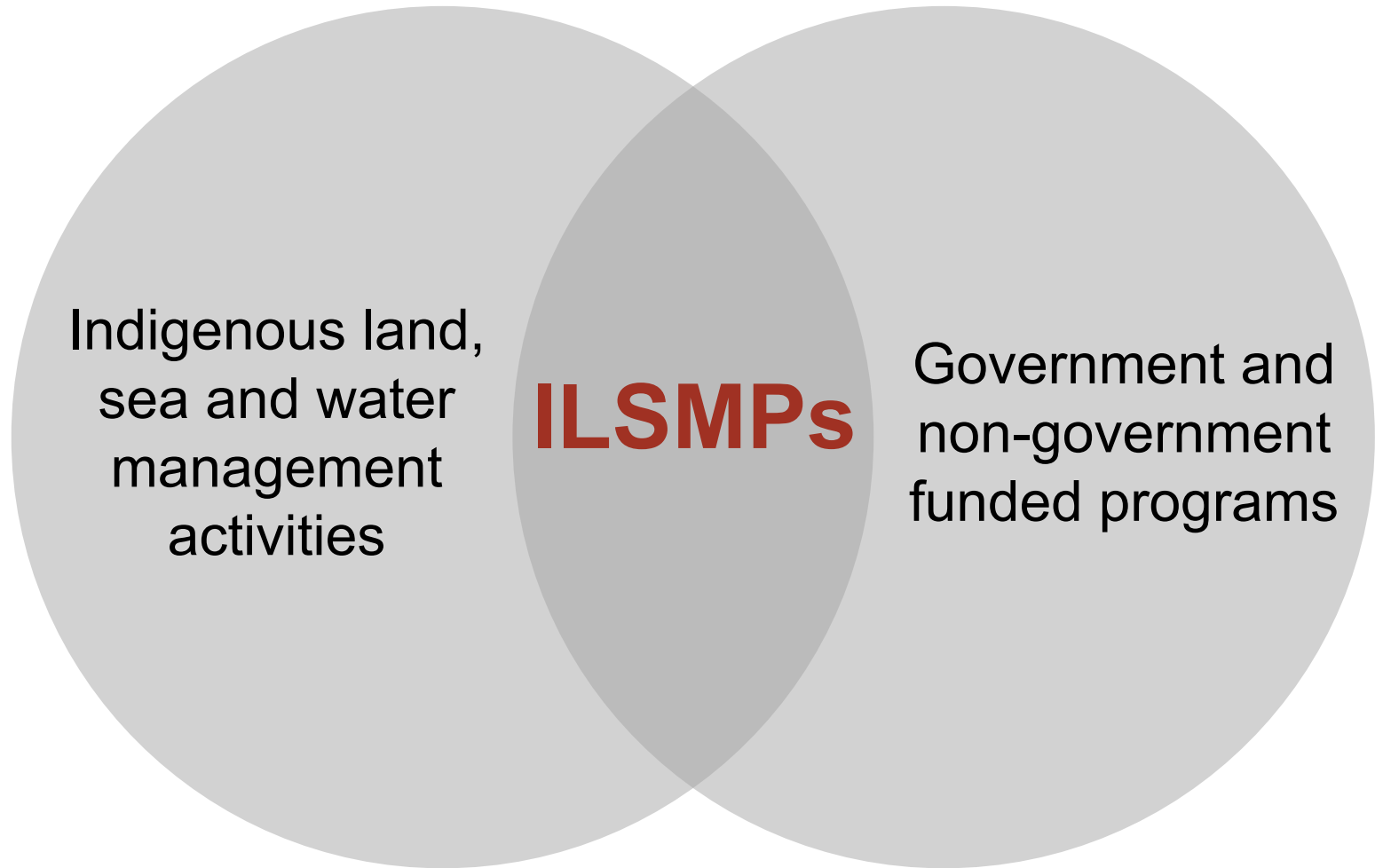
Acknowledgements



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With special thanks to all the workshop and yarn-up participants.

Indigenous land and sea (and water) management programs (ILSMPs)



Motivation

- ILSMPs generate environmental and ecological benefits
- They also generate *co-benefits* – health,¹ social, cultural, political and economic benefits
- Co-benefits are notoriously difficult to quantify
- Information gaps → could end up prioritising programs or activities that generate the most *easily quantified benefits*, not necessarily those that generate most *benefits per se*

Overarching objective: improve our understanding of co-benefits of ILSMPs

Valuing complex social goods (like ILSMPs)

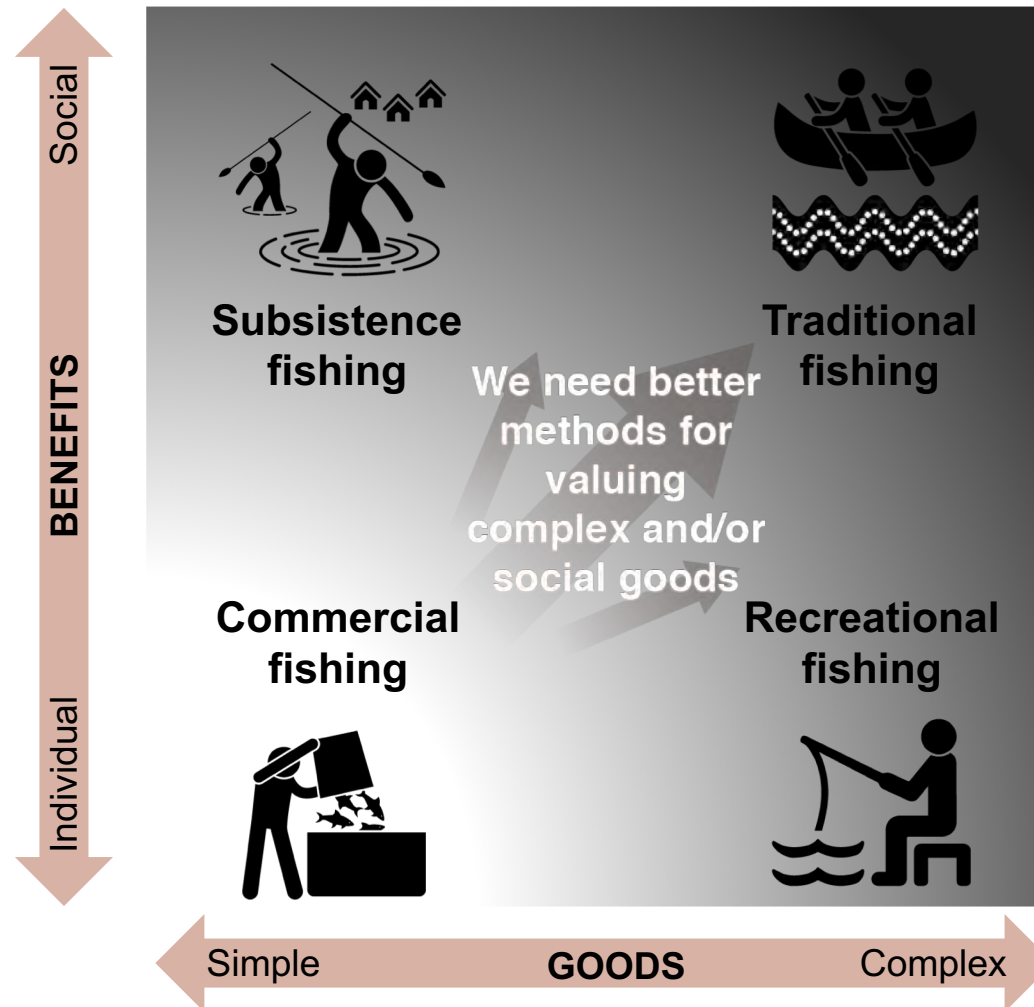
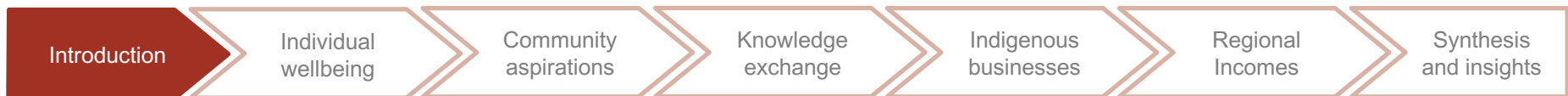
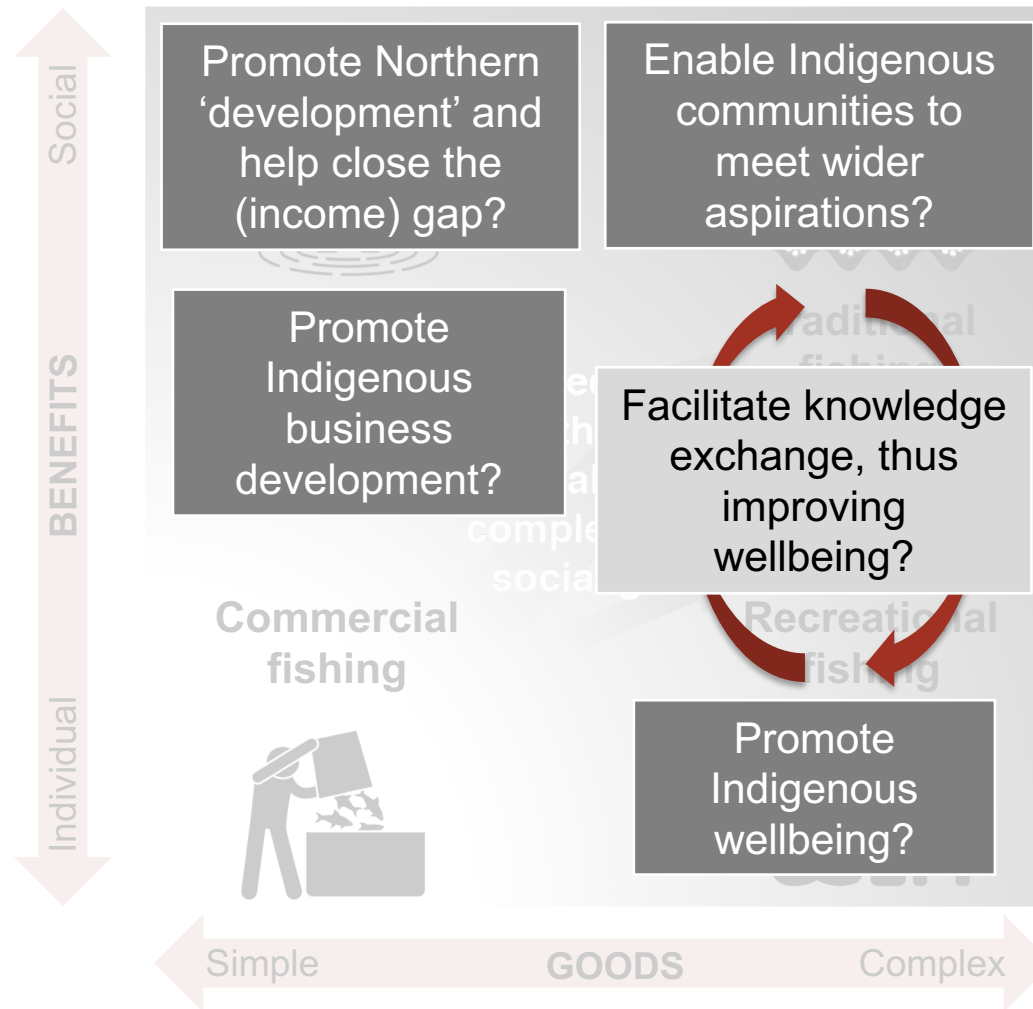


Figure adapted by Jane Thomas from Stoeckl, N., Hicks, C., Farr, M., Grainger, D., Esparon, M., and Larson, S. 2018. The crowding out of complex social goods, *Ecological Economics* 144: 65-72.

Focal research questions: Do ILSMPs



Focal research questions: Do ILSMPs

Methods

Wellbeing approach with qualitative data

Workshops and documentary analysis

Participatory project selection (PPS)

Life satisfaction approach (LAS) with balancing scores

Panel data regression

Input-Output (IO) analysis



Why are these questions important?

If ILSMPs are designed to meet both government and community objectives, there is a better chance of buy-in and success for all

Wellbeing

Workshops and PPS

Wellbeing and LSA

Panel regressions

IO

Introduction

Individual wellbeing

Community aspirations

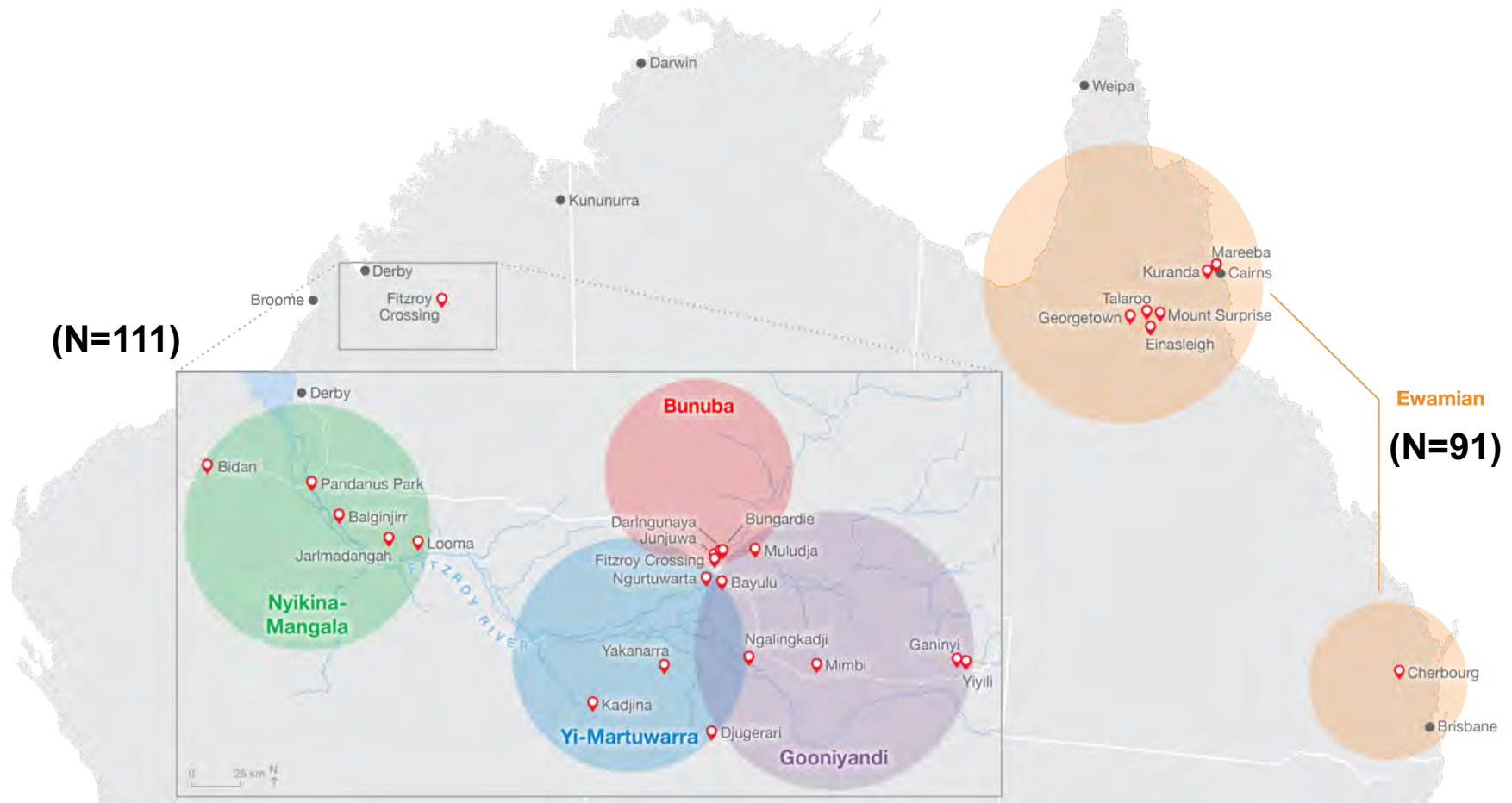
Knowledge exchange

Indigenous businesses

Regional Incomes

Synthesis and insights

Do ILSMPs promote Indigenous wellbeing?



Circles are NOT intended to represent Native Title areas, or other. They merely show regions in which we collected data, and groups we worked with to do this.

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Do ILSMPs promote Indigenous wellbeing?

- Holistic and bottom-up:
 - Which 6 factors (out of 26, from the literature) are most important to the wellbeing of individuals in our partner communities?



QLD (n=91)

WA (n=111)

Health centres

Language

Paid job

Schools

Access to country

Bush tucker

Country looked after

Housing

Safe community

Health centres

Role models

Safe community

Larson, S., Stoeckl, N., Jarvis, D., Addison, J., Prior, S. & Esparon, M. 2018. Using measures of wellbeing for impact evaluation (W-IE): Proof of concept developed with an Indigenous community undertaking land management programs in northern Australia, *Ambio* <https://doi.org/10.1007/s13280-018-1058-3> See also Larson et al., (in review) "ILSMPs and Individual Wellbeing" in Stoeckl et al., Multiple co-benefits of Indigenous land and sea management programs across northern Australia. James Cook University, Townsville

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Do ILSMPs promote Indigenous wellbeing?

Temporal perspective: Which important things have changed the most (satisfaction now vs 5 years ago)?

Attribution determined by those involved: Which of those changes are linked to ILSMPs (unprompted responses)?

QLD (n=91)	WA (n=111)
Country looked after	Communication
Language	Schools
Access to country	Role models
Schools	Country looked after
Legal protection	Empowerment
Role models	Grog/gunja

Larson, S., Stoeckl, N., Jarvis, D., Addison, J., Prior, S. & Esparon, M. 2018. Using measures of wellbeing for impact evaluation (W-IE): Proof of concept developed with an Indigenous community undertaking land management programs in northern Australia, *Ambio* <https://doi.org/10.1007/s13280-018-1058-3> See also Larson et al., (in review) "ILSMPs and Individual Wellbeing" in Stoeckl et al., Multiple co-benefits of Indigenous land and sea management programs across northern Australia. James Cook University, Townsville

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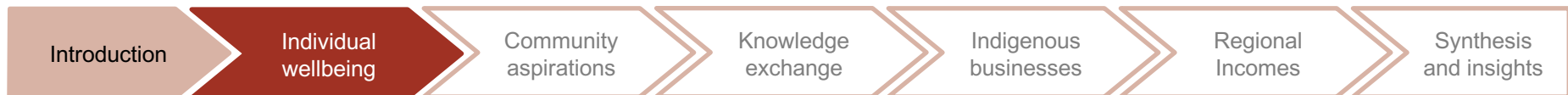
Do ILSMPs promote Indigenous wellbeing?

Temporal perspective: Which important things have changed the most (satisfaction now vs 5 years ago)?

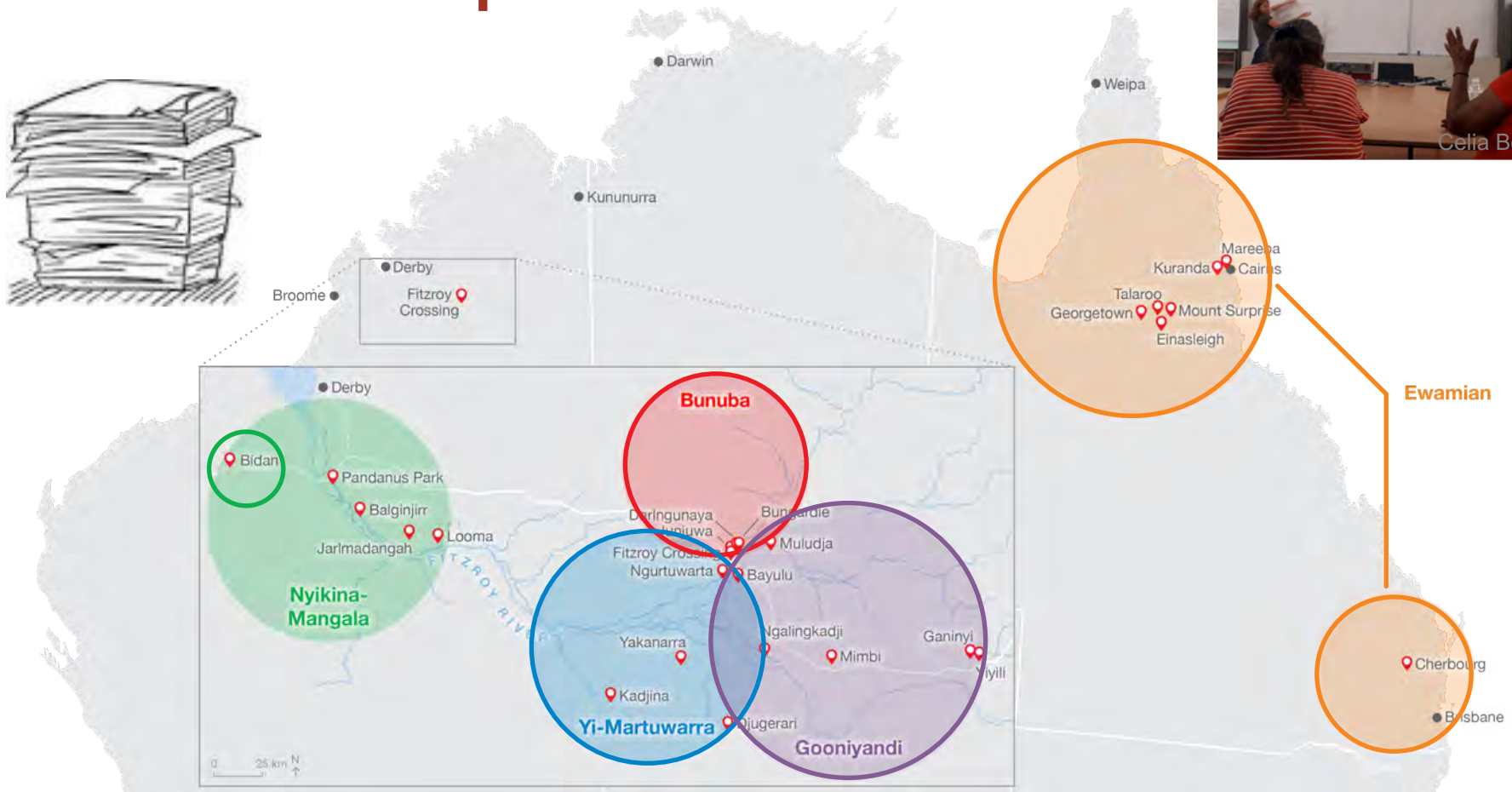
Attribution determined by those involved: Which of those changes are linked to ILSMPs (unprompted responses)?

QLD	Yes	When (if) they promote things that Indigenous people feel are important	
Country			
Language		Schools	
Access to country		Role models	
Schools		Country looked after	
Legal protection		Empowerment	
Role models		Grog/gunja	

Larson, S., Stoeckl, N., Jarvis, D., Addison, J., Prior, S. & Esparon, M. 2018. Using measures of wellbeing for impact evaluation (W-IE): Proof of concept developed with an Indigenous community undertaking land management programs in northern Australia, *Ambio* <https://doi.org/10.1007/s13280-018-1058-3> See also Larson et al., (in review) "ILSMPs and Individual Wellbeing" in Stoeckl et al., Multiple co-benefits of Indigenous land and sea management programs across northern Australia. James Cook University, Townsville



Do ILSMPs help Indigenous communities meet wider aspirations?



Addison, J., Stoeckl, N., Larson, S. Jarvis, D., Bidan Aboriginal Corporation, Bunuba Dawangarri Aboriginal Corporation RNTBC, Ewamian Aboriginal Corporation, Gooniyandi Aboriginal Corporation RNTBC, Yanunijarra Ngurrara Aboriginal Corporation RNTBC & Esparon, M. In review. The ability of community based natural resource management to contribute to development as freedom, and the role of access.

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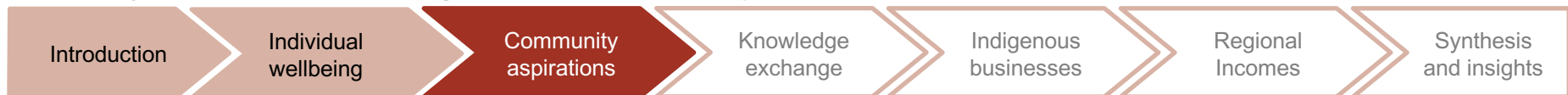
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What goals and aspirations were identified during workshops with communities?

Freedom	Qld	WA			
	Ewamian	Bidan	Bunuba	Gooniyandi	Yanunijarra
Control, leadership, empowerment & independence					
Appropriate economic development					
Employment & training					
Improved relationships & respect for our way outside community					
Inter & intragenerational knowledge transfer of culture					
Community cohesion & wellbeing					
On-country infrastructure & services					
Access & control over country					
Benefit sharing from country					
Two-way learning					
Language					
Looking after country					
Community sustainability					
Appropriate educational development					

Addison, J., Stoeckl, N., Larson, S. Jarvis, D., Bidan Aboriginal Corporation, Bunuba Dawangarri Aboriginal Corporation RNTBC, Ewamian Aboriginal Corporation, Gooniyandi Aboriginal Corporation RNTBC, Yanunijarra Ngurrara Aboriginal Corporation RNTBC & Esparon, M. In review. The ability of community based natural resource management to contribute to development as freedom, and the role of access.



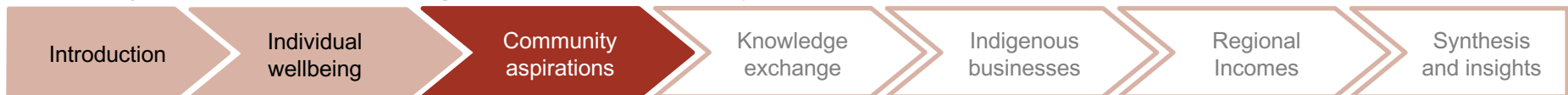
To what extent have ILSMPs helped or hindered progress towards goals?

U - Linked to ILSMP noted without prompting

P - Link to ILSMPs noted when prompted

	Qld	WA			
	Ewamian	Bidan	Bunuba	Gooniyandi	Yanunijarra
Control, leadership, empowerment & independence					
Appropriate economic development					
Employment & training					
Improved relationships & respect for our way outside community					
Inter & intragenerational knowledge transfer of culture					
Community cohesion & wellbeing					
On-country infrastructure & services					
Access & control over country					
Benefit sharing from country					
Two-way learning					
Language					
Looking after country					
Community sustainability					
Appropriate educational development					

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To what extent have ILSMPs helped or hindered progress towards goals?

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P - Link to ILSMPs noted when prompted

	Qld	WA			
	Ewamian	Bidan	Bunuba	Gooniyandi	Yanunijarra
Control, leadership, empowerment & independence		U	U	P	U
Appropriate economic development				P	
Employment & training	U	U	P		U
Improved relationships & respect for our way outside community					U
Inter & intragenerational knowledge transfer of culture			P	P	U
Community cohesion & wellbeing					
On-country infrastructure & services					
Access & control over country					U
Benefit sharing from country					P
Two-way learning				P	
Language				P	
Looking after country					U
Community sustainability					
Appropriate educational development				P	

Addison, J., Stoeckl, N., Larson, S. Jarvis, D., Bidan Aboriginal Corporation, Bunuba Dawangarri Aboriginal Corporation RNTBC, Ewamian Aboriginal Corporation, Gooniyandi Aboriginal Corporation RNTBC, Yanunijarra Ngurrara Aboriginal Corporation RNTBC & Esparon, M. In review. The ability of community based natural resource management to contribute to development as freedom, and the role of access.

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Do ILSMPs can help Indigenous communities meet wider aspirations ?

U - Linked to ILSMP noted without prompting

P - Link to ILSMPs noted when prompted

	Qld	WA			
	Ewamian	Bidan	Bunuba	Gooniyandi	Yanunijarra
Control, leadership, empowerment & independence		U	U	P	U
Appropriate economic development				P	
Employment & training			P		U
Improved relationships & respect					U
Inter & intragenerational knowledge			P	P	U
Community cohesion & well-being					
On-country infrastructure & services					
Access & control over country					U
Benefit sharing from country					P
Two-way learning				P	
Language				P	
Looking after country					U
Community sustainability					
Appropriate educational development				P	

Yes

If they are designed to empower (generate 'freedom')

Addison, J., Stoeckl, N., Larson, S. Jarvis, D., Bidan Aboriginal Corporation, Bunuba Dawangarri Aboriginal Corporation RNTBC, Ewamian Aboriginal Corporation, Gooniyandi Aboriginal Corporation RNTBC, Yanunijarra Ngurrara Aboriginal Corporation RNTBC & Esparon, M. In review. The ability of community based natural resource management to contribute to development as freedom, and the role of access.

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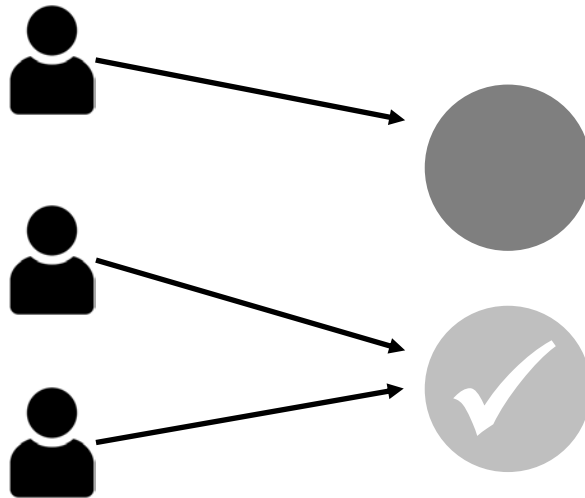
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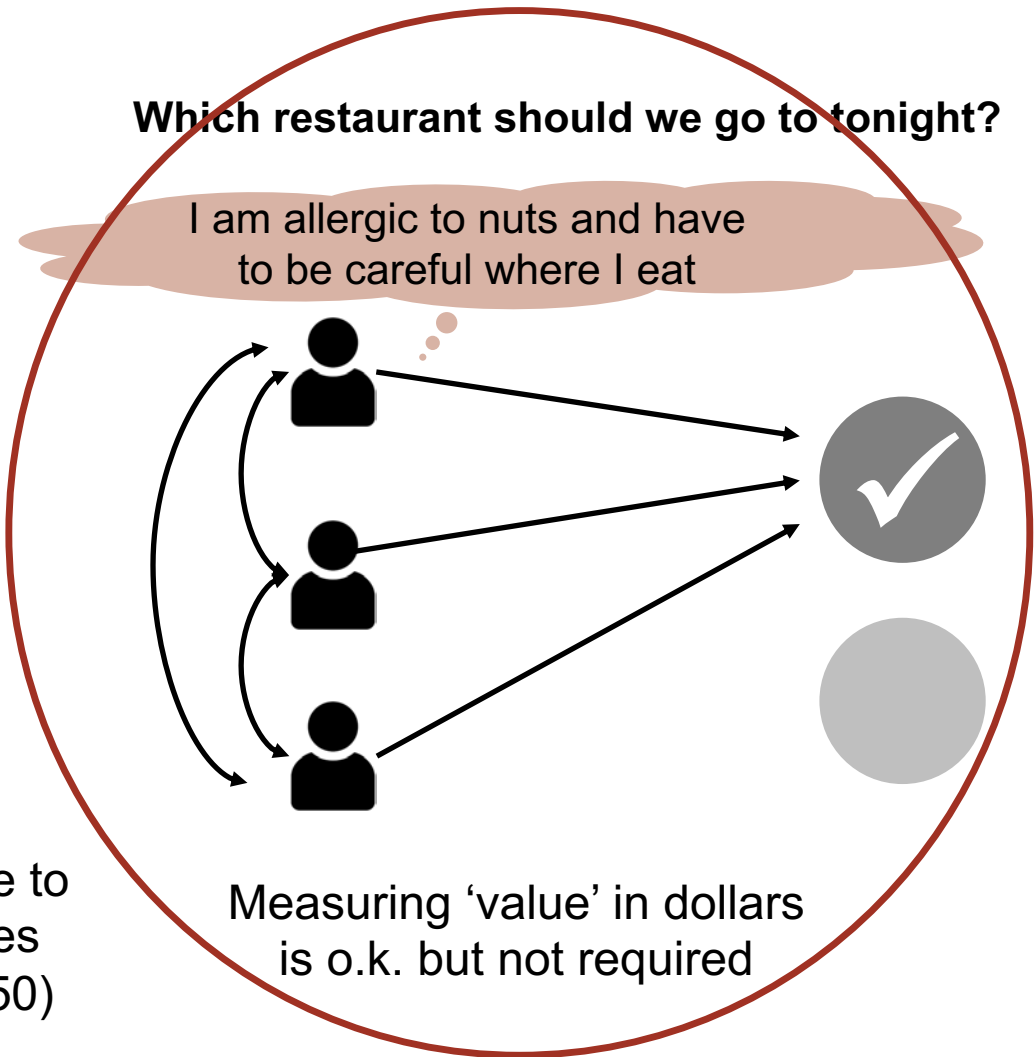
Individual versus community choice...

What is your favourite restaurant?



May need to use \$ to measure to ensure consistent preferences when aggregated (Arrow, 1950)

Which restaurant should we go to tonight?



Grainger D, and Stoeckl, N. (in review) A simple valuation method for complex social goods.

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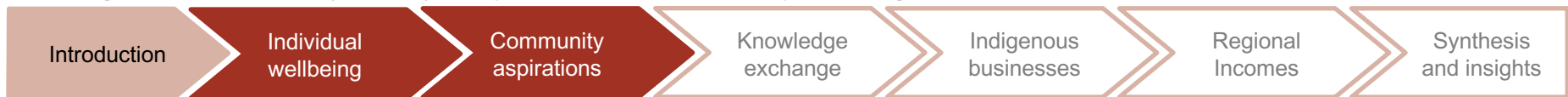
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Participatory Project Selection (PPS) tool – project selection for community wellbeing

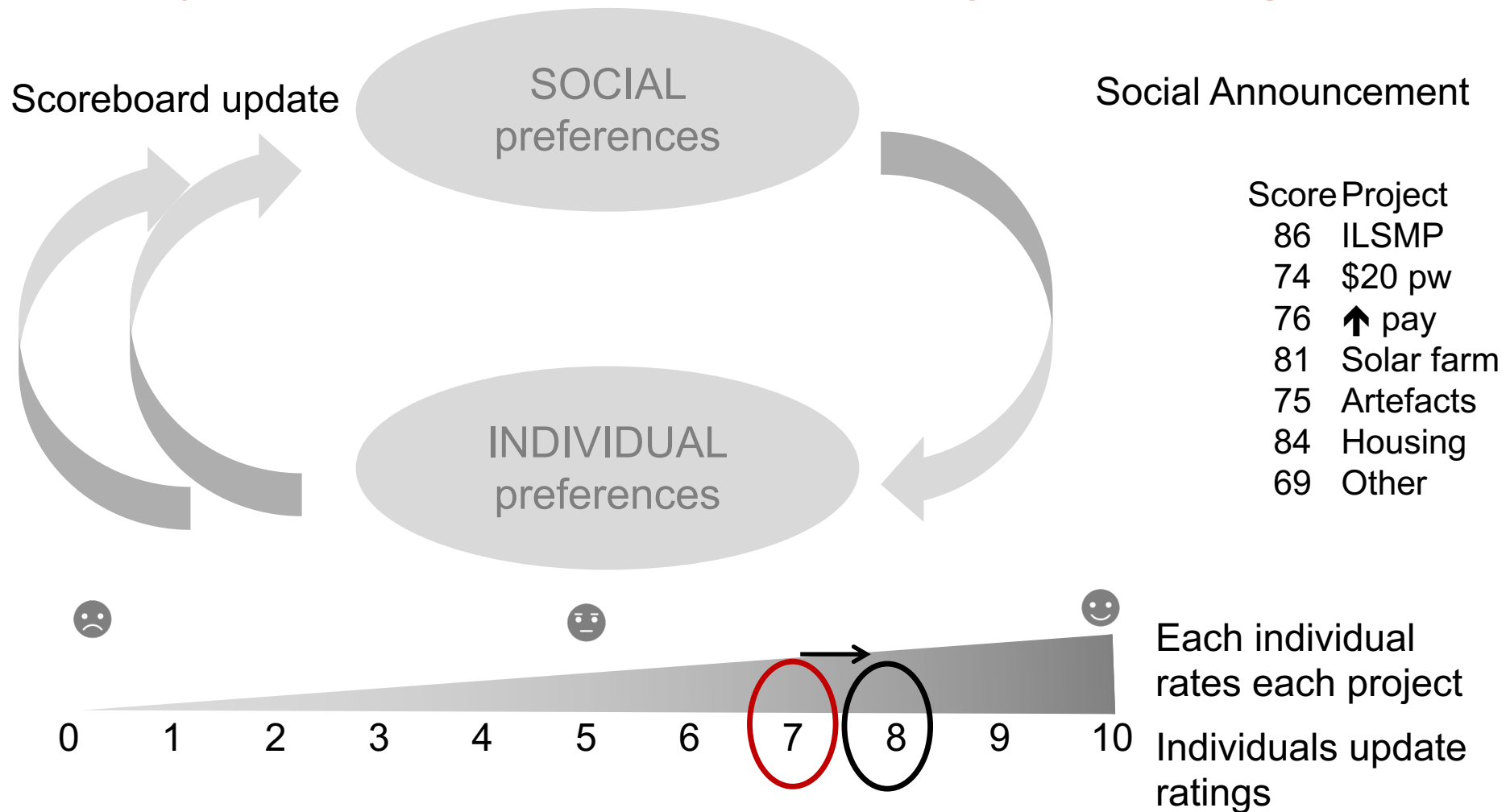
1. More Ewamian land management programs (ILSMP)
2. Electricity house rebate (\$20 p.w.)
3. Govt increasing PBC board and employee payments (↑ pay)
4. Build solar farm on Talaroo* (solar farm)
5. Ewamian enterprise artefact making* (artefacts)
6. Housing on country*
7. Do something else

* Projects selected by the 8 EAC board members

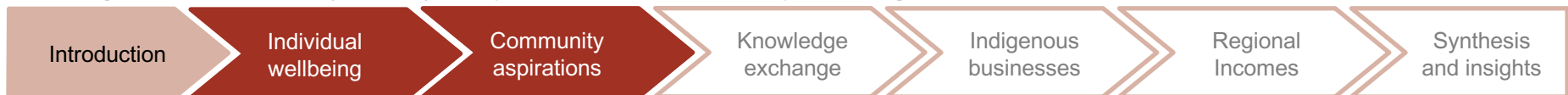
Grainger D, and Stoeckl, N. (in review) A simple valuation method for complex social goods.



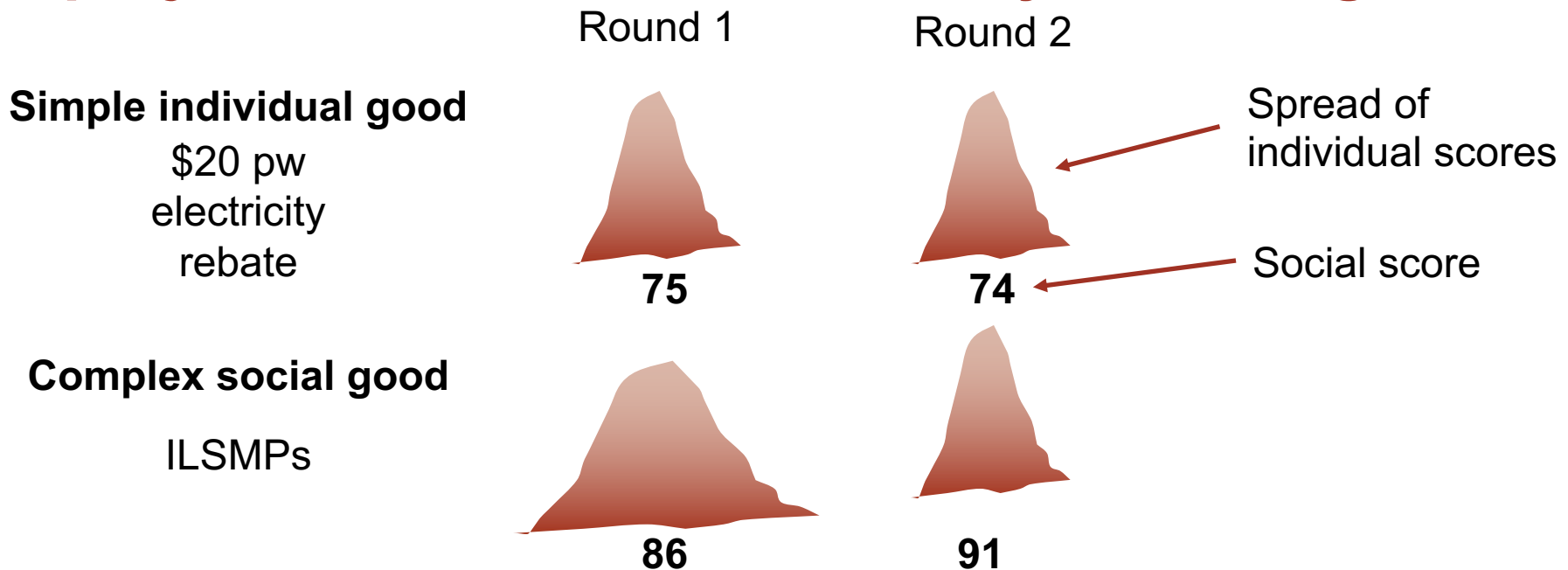
Participatory Project Selection (PPS) tool – project selection for community wellbeing



Grainger D, and Stoeckl, N. (in review) A simple valuation method for complex social goods.



Participatory Project Selection (PPS) tool – project selection for community wellbeing



ILSMPs 'worth' more, to Ewamian people than a weekly electricity rebate

ILSMPs undervalued if no social interaction / knowledge exchange

Grainger D, and Stoeckl, N., (in review) A simple valuation method for complex social goods..

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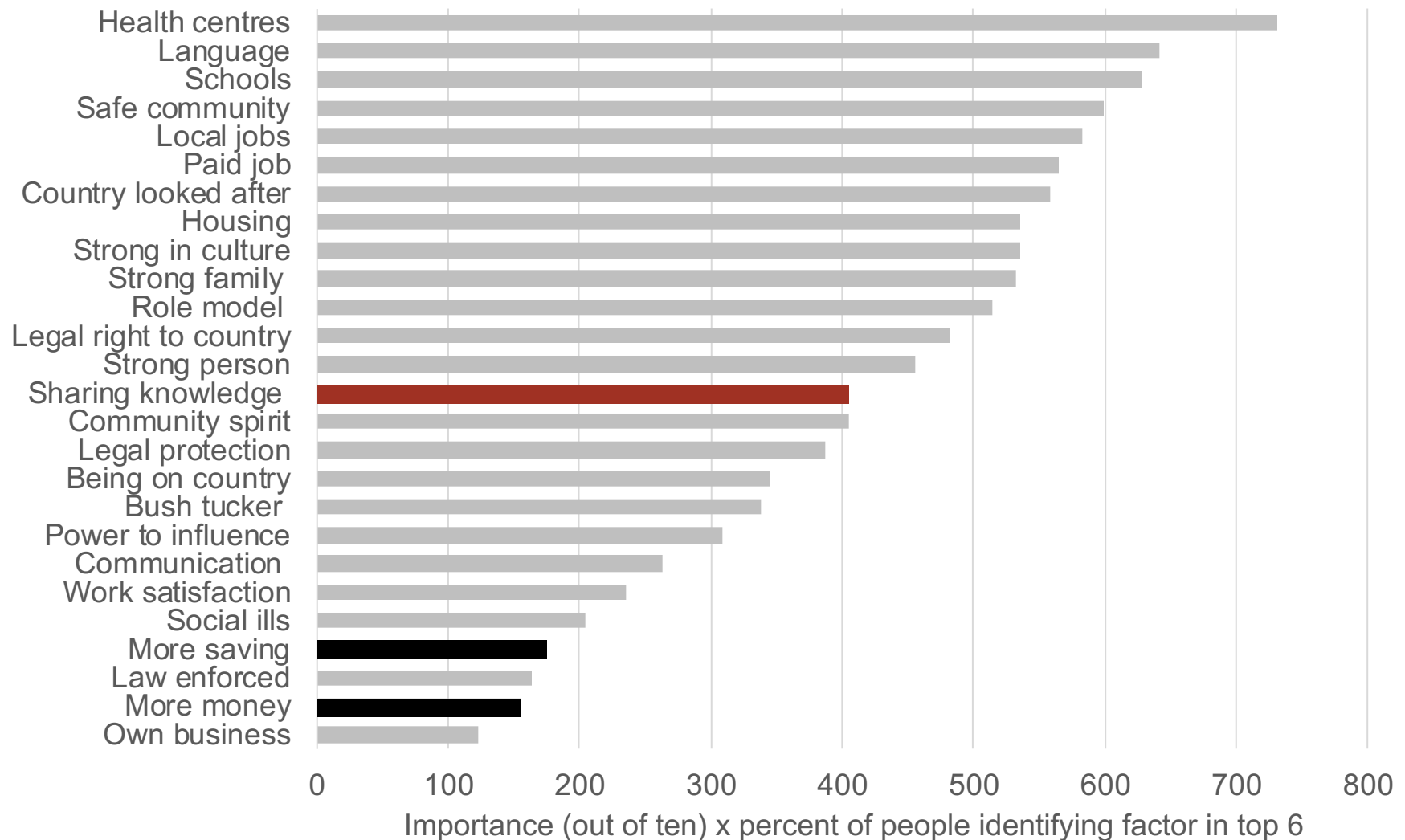
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Does knowledge exchange enhance wellbeing?



Larson et al., (in review) How important is knowledge exchange to Indigenous wellbeing, and do ILSMPs facilitate beneficial exchanges of knowledge?" in Stoeckl et al., Multiple co-benefits of Indigenous land and sea management programs across northern Australia. James Cook University, Townsville

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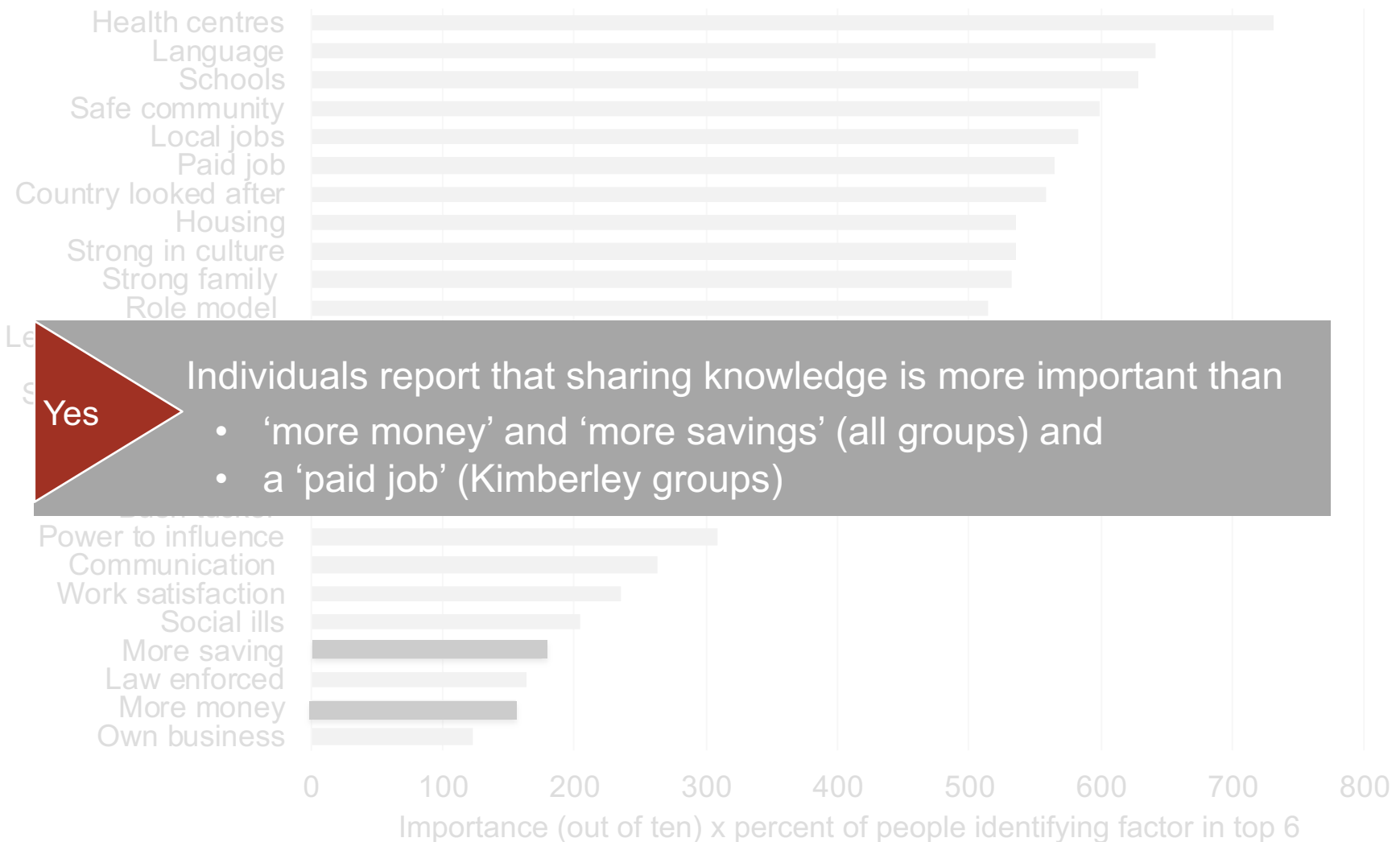
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Does knowledge exchange enhance wellbeing?



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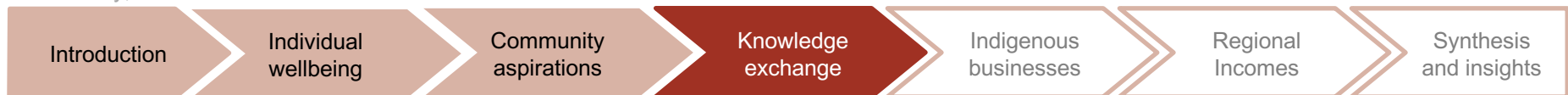
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Do ILSMPs facilitate knowledge exchange, and if so, what type of knowledge is exchanged?

Yes ~ 40% of respondents report KE associated with ILSMPs

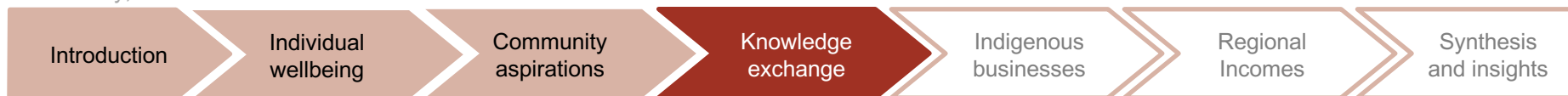
Larson et al., (in review) How important is knowledge exchange to Indigenous wellbeing, and do ILSMPs facilitate beneficial exchanges of knowledge?" in Stoeckl et al., Multiple co-benefits of Indigenous land and sea management programs across northern Australia. James Cook University, Townsville



Do ILSMPs facilitate knowledge exchange, and if so, what type of knowledge is exchanged?

	Examples	
Western-generated knowledge for management of country	Use of chemicals Driving boat GIS mapping	Weather and tides Trapping crocodiles
Administrative and communications skills	Understanding legislation Business management / managing budgets / office administration	Meeting and learning from others Networking Dealing with stakeholders
Traditional / Indigenous generated knowledge	Learning from elders about country Learning stories and dance Names and locations of water holes Burning and use of fire	Learning about plants and animals, bush tucker and bush medicine Learning language Teaching young kids

Larson et al., (in review) How important is knowledge exchange to Indigenous wellbeing, and do ILSMPs facilitate beneficial exchanges of knowledge?" in Stoeckl et al., Multiple co-benefits of Indigenous land and sea management programs across northern Australia. James Cook University, Townsville



Statistical modelling of link between overall life satisfaction and the KE that is linked to ILSMPs

Impact and value of ILSMP-facilitated KE

Overall impact of learning on LS	+ ve
Value of learning relative to value of being employed	~ 3 to 6 times
Type of learning driving this effect	Traditional knowledge
Overall impact of sharing knowledge on LS	- ve
Value of sharing knowledge relative to being employed	~ 3 to 5 times
Type of knowledge being shared driving this effect	Traditional knowledge

Benefits of learning

Costs of sharing (if inappropriate)

Jarvis et al, in prep. Does knowledge exchange enhance or reduce Indigenous wellbeing, and by how much? A case study developed with communities undertaking Indigenous land and sea management programs in northern Australia

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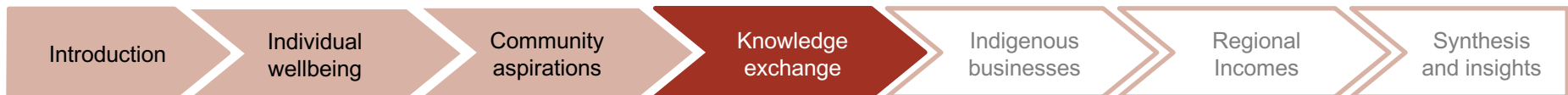
Does ILSMP-facilitated KE enhance or reduce Indigenous wellbeing?

Impact and value of ILSMP-facilitated KE

Overall value	Yes	But these preliminary findings suggest ILSMP design should consider incorporating Indigenous designed protocols for sharing traditional knowledge
Type of learning driving this effect		Traditional knowledge
Overall impact of sharing knowledge on LS		- ve
Value of sharing knowledge relative to being employed		~ 3 to 5 times
Type of knowledge being shared driving this effect		Traditional knowledge



Jarvis et al, in prep. Does knowledge exchange enhance or reduce Indigenous wellbeing, and by how much? A case study developed with communities undertaking Indigenous land and sea management programs in northern Australia

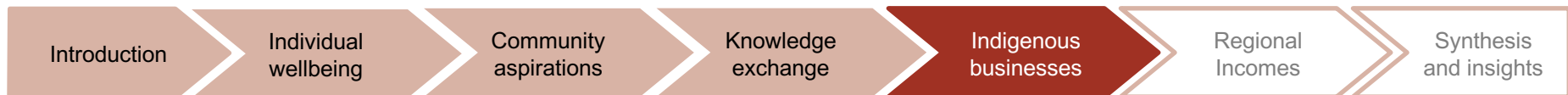


Do ILSMPs promote Indigenous business development?

Specific aims/questions:

- Collate insights from the literature regarding those factors that are most/least likely to promote Indigenous economic development and/or economic independence for Indigenous businesses across northern Australia
- Look for evidence to suggest that ILSMP expenditure helps kick-start Indigenous businesses – even those not involved in land and sea management

Jarvis, D., Stoeckl, N., Addison, J., Larson, S., Hill, R., Pert, P. & Watkin Lui, F. 2018. Are Indigenous Land and Sea Management Programs a pathway to Indigenous economic independence? *The Rangeland Journal* 40:415-429.



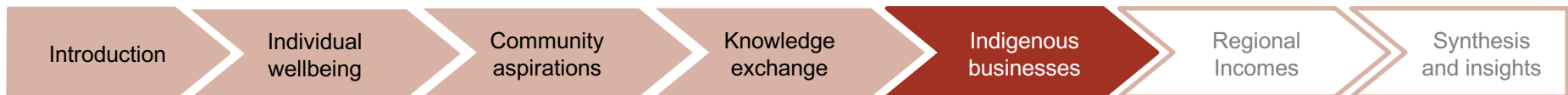
Do ILSMPs promote Indigenous business development?



Number of Indigenous businesses

Source: Australian Government Office of the Registrar of Indigenous Corporations

Jarvis, D., Stoeckl, N., Addison, J., Larson, S., Hill, R., Pert, P. & Watkin Lui, F. 2018. Are Indigenous Land and Sea Management Programs a pathway to Indigenous economic independence? *The Rangeland Journal* 40:415-429.

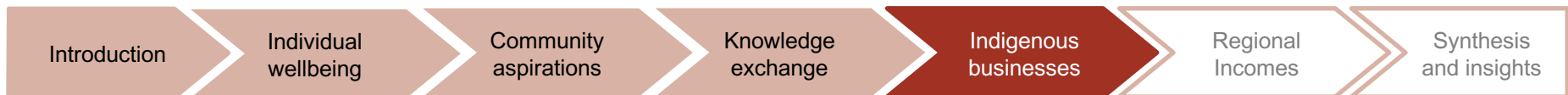


Do ILSMPs promote Indigenous business development?

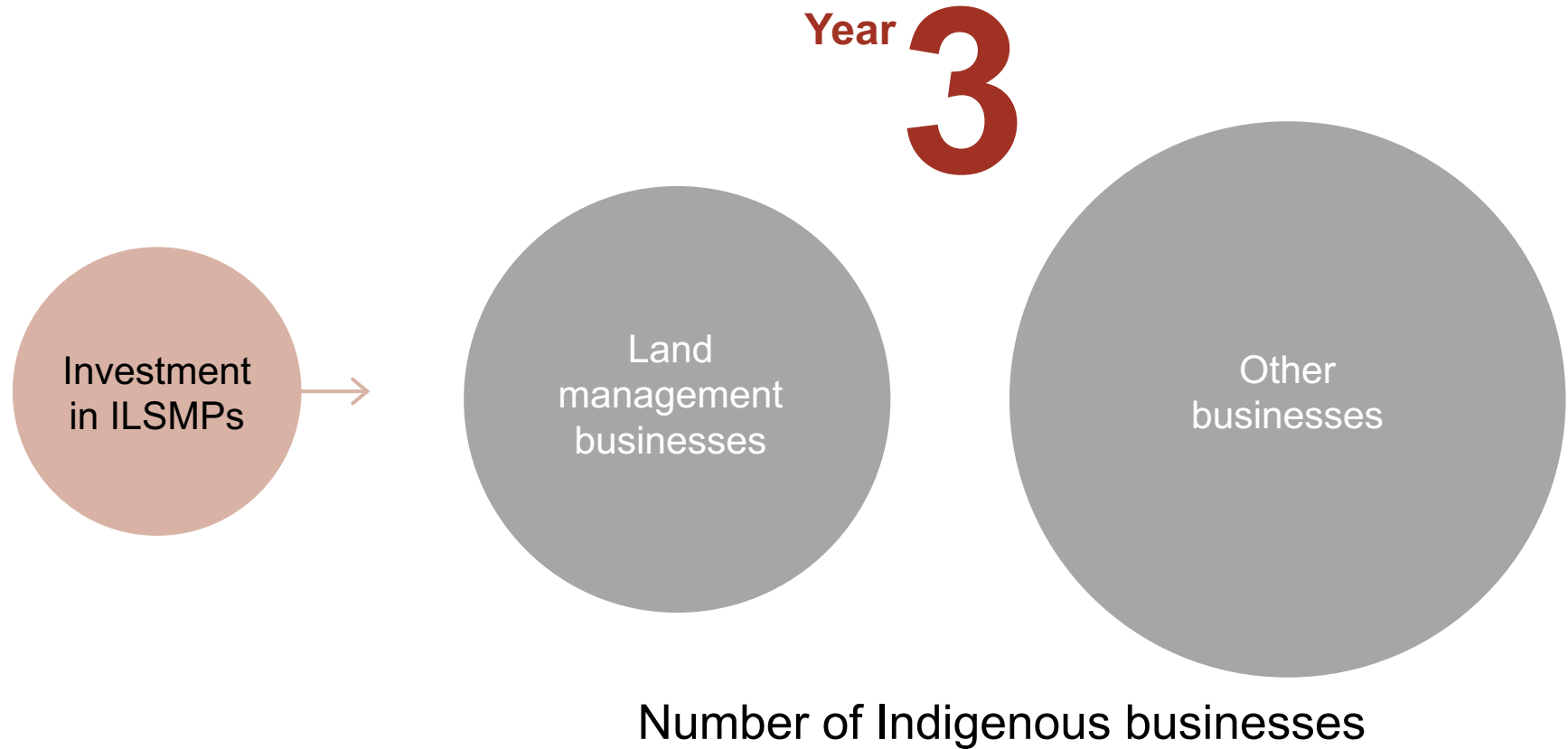


Source: Australian Government Office of the Registrar of Indigenous Corporations

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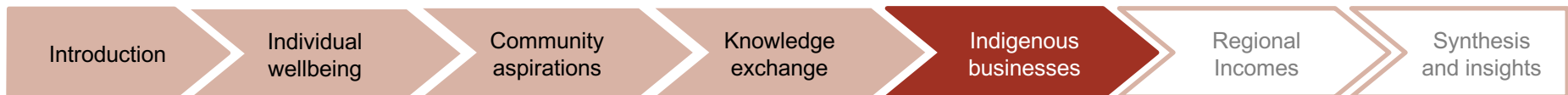


Do ILSMPs promote Indigenous business development?



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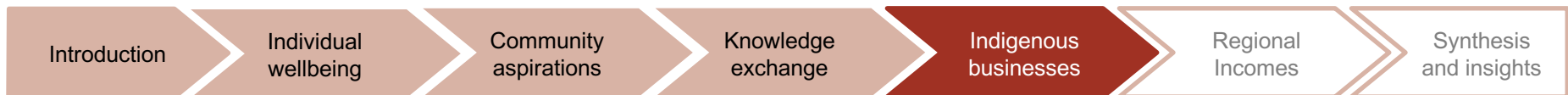


Yes, ILSMPs promote Indigenous business development



Source: Australian Government Office of the Registrar of Indigenous Corporations

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Do ILSMPs contribute to northern development and help close the (income) gap?

Australian Statistical Geography Standard
Level 3 Statistical Areas



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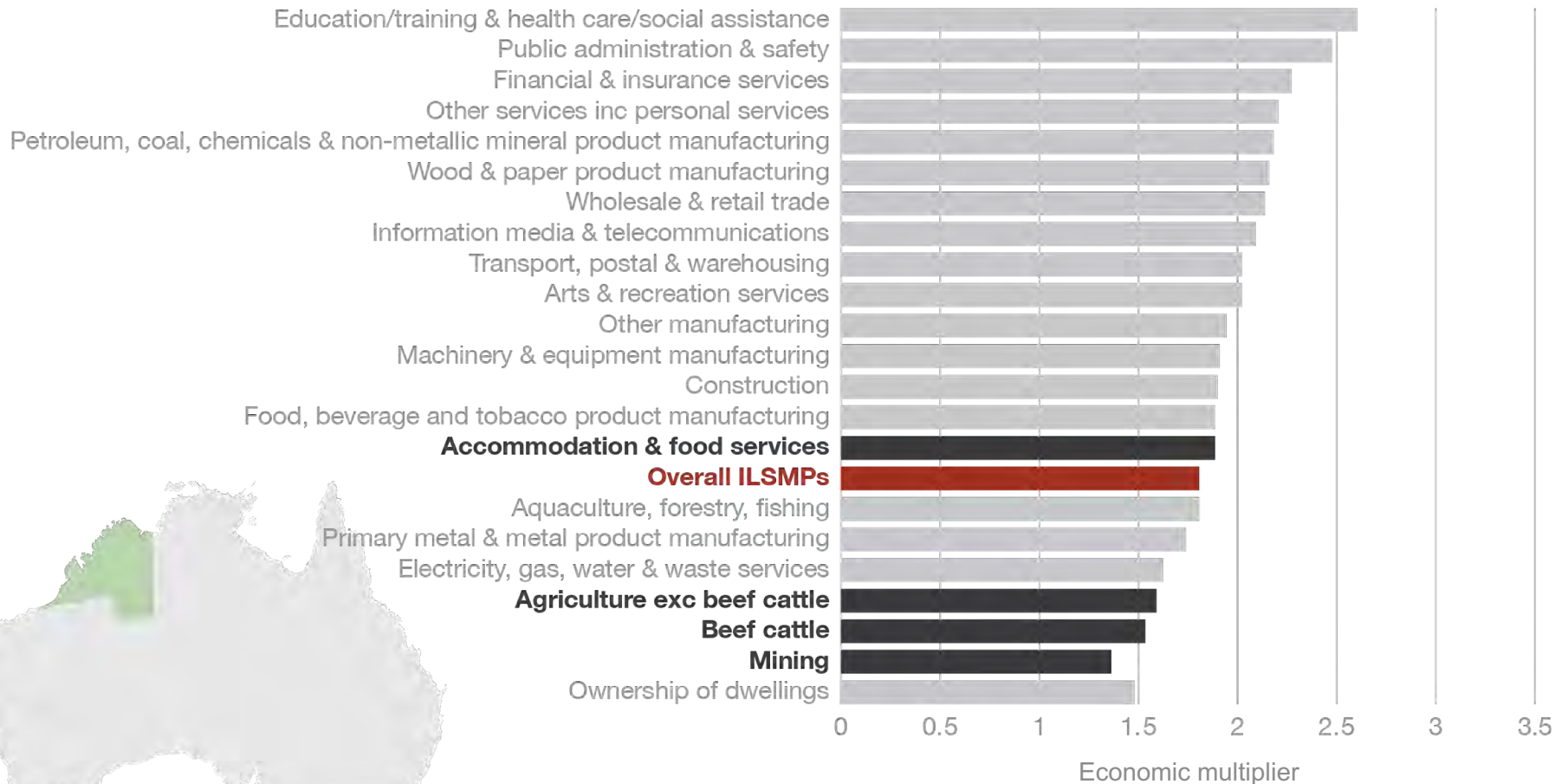
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Bang for your buck – Kimberley



Jarvis, D., Stoeckl, N., Hill, R. & Pert, P. 2018. Indigenous Land and Sea Management Programs: Can they promote regional development and help 'close the (income) gap'? *Australian Journal of Social Issues* 53:283-303.

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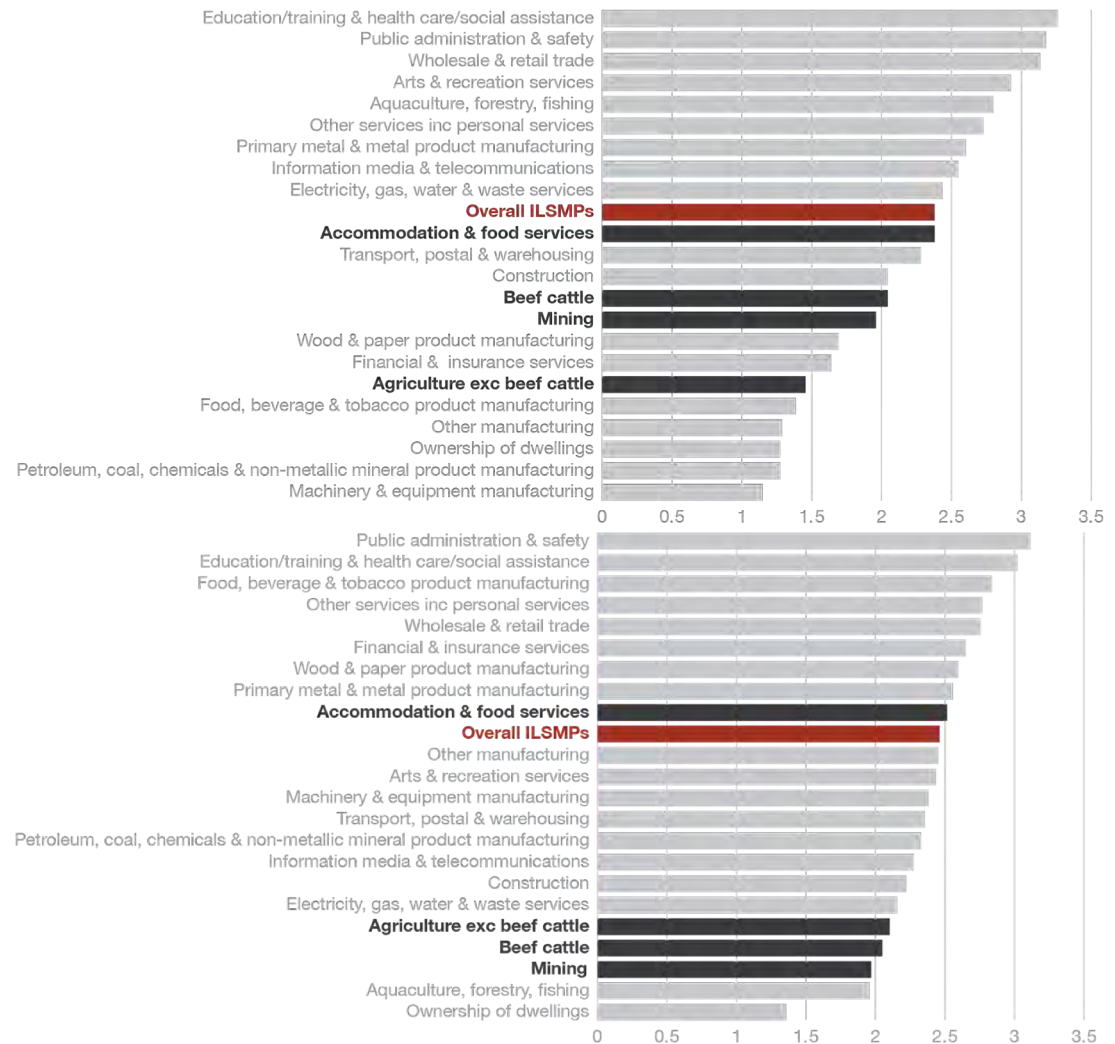
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Bang for your buck – NT and far north QLD



Jarvis, D., Stoeckl, N., Hill, R. & Pert, P. 2018. Indigenous Land and Sea Management Programs: Can they promote regional development and help 'close the (income) gap'? *Australian Journal of Social Issues* 53:283-303.

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Yes, ILSMPs contribute to northern development and help close the (income) gap

Does ILSMP expenditure make a contribution to regional economies?
Does the economic 'impact' of ILSMPs compare favourably to the 'impact' of other industries?

Yes

\$100 invested in an ILSMP will do more for regional growth than \$100 invested in some other industries

Does the total income benefits that flow to Indigenous people from ILSMP expenditure exceed those of non-Indigenous people?

Yes

Better if money spent on Indigenous people and with Indigenous-owned businesses (or businesses that employ Indigenous people)

Jarvis, D., Stoeckl, N., Hill, R. & Pert, P. 2018. Indigenous Land and Sea Management Programs: Can they promote regional development and help 'close the (income) gap'? *Australian Journal of Social Issues* 53:283-303.

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Overall, what can be said about the co-benefits of ILSMPs ?

ILSMPs create a diverse range of co-benefits

Which accrue to a diverse range of people / communities: individuals, families, business, communities and Australia

This diversity needs to be embraced for both program design and for monitoring

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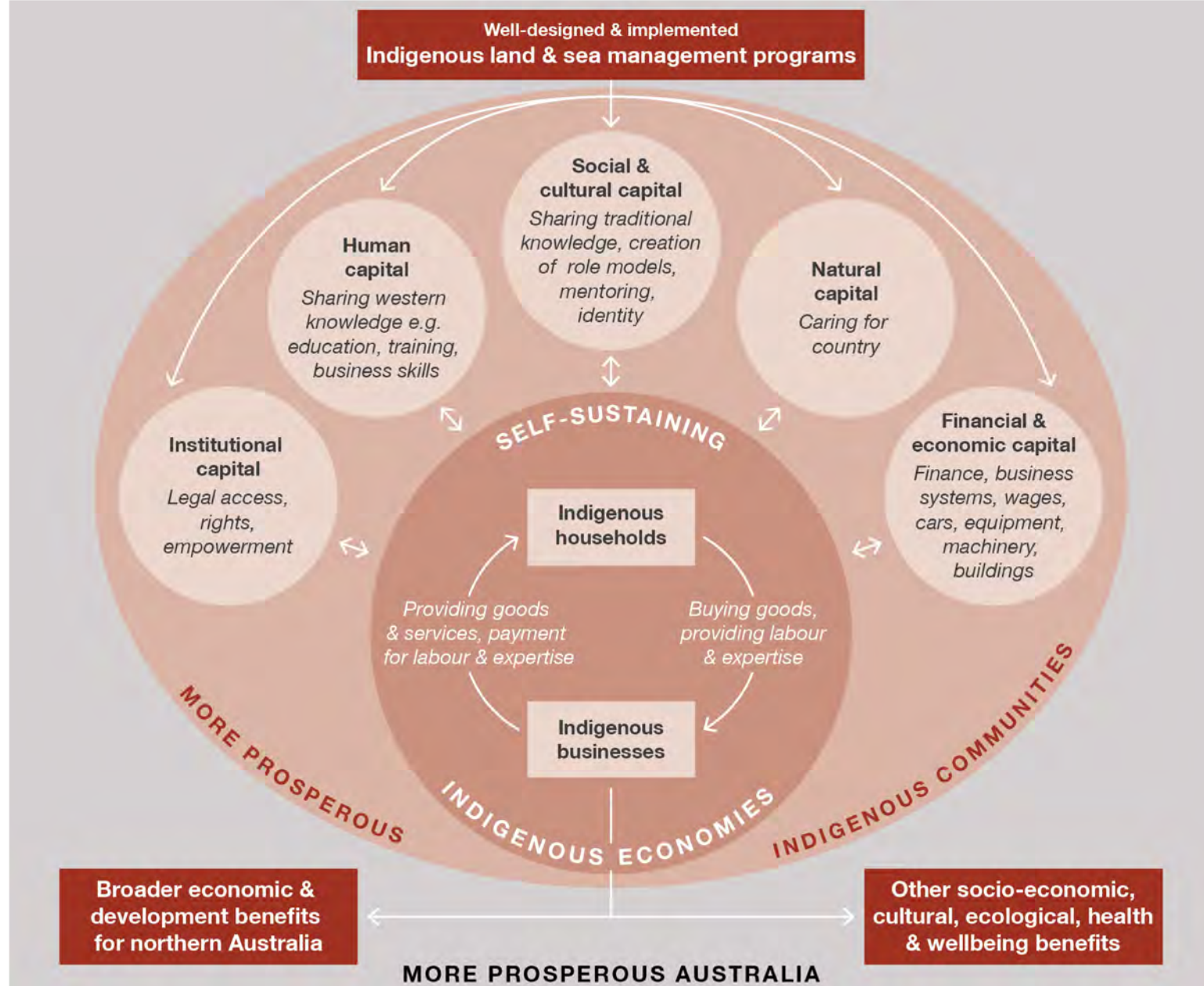
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Outputs available on Hub website

Completed

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3 Policy notes

1 Science summary

4 scientific journal articles

Soon to appear

Final, wrap-up factsheet

2 policy notes

Final science summary

In review

Final report

2 scientific journal articles

Soon to submit for review

2 scientific journal articles

Indicators of impact

- Indigenous uptake
 - Initiation to speak at 'Thinking beyond borders' IPA and Economic development conference in Cairns, June 2018
 - Request to refine project-selection tool for use in Ewamian AGMs
- Government uptake
 - PM&C working with Social Ventures Australia to trial small number of our suggested indicators for economic development in ILSMP monitoring
- Research uptake
 - Blog on complex social goods (World forum on natural capital)
 - Invitations to speak at
 - Centre for Aboriginal Economic Policy Research (ANU) in Nov 2018
 - Australian Agricultural and Resources Economics Water Forum, at the University of Adelaide, Mar, 2019.
 - ARC – Indigenous Discovery Project. *Knowledge Integration for Torres Strait Sustainability*

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