



Are We Looking After Country Right?

Integrating measures of Indigenous land and sea management effectiveness

Final Report on Australian Research Council Linkage Grant: LP120200125

June 2017

Beau Austin¹, Marc Hockings², Cathy Robinson³, Colleen Corrigan², Jennifer Macdonald¹, Glenn James⁴, Dermot Smyth⁵, Otto Bulmaniya Campion⁶, Christine Brown⁶, Clarry Rogers⁷, Julie Roy⁷, Winston Thompson⁷ and Stephen Garnett¹

¹ Research Institute for the Environment and Livelihoods, Charles Darwin University, NT 0909, Australia

² School of Health and Environmental Sciences, University of Queensland, St Lucia, Qld 4072, Australia

³ Land & Water Division, CSIRO, 306 Carmody Road, St Lucia, Qld 4072, Australia, Australia

⁴ North Australia Indigenous Land and Sea Management Alliance, PO Box 486, Charles Darwin University, NT 0815

⁵ Smyth and Bahrtdt Consultants, PO Box 1202, Atherton, Qld 4883, Australia

⁶ Balngarra Clan, Malnyangarnak, CMB 10, Winellie NT 0800

⁷ Yugul Mangi Rangers, Yugul Mangi Land and Sea Management, Ngukurr, NT 0852, Australia

This report is provided to partners for reporting purposes only. Images and text included in this document may not be used for any purpose other than reporting.

Citation:

Austin, B.J., Hockings, M., Robinson, C.J., Corrigan, C., Macdonald, J.M., James, G., Smyth, D., Campion, O.B., Brown, C., Rogers, C., Roy, J., Thompson, W. and Garnett, S.T. (2017). *Are We Looking After Country Right? Integrating measures of Indigenous land and sea management effectiveness*. Report to Australian Research Council Linkage Project Partners, June 2017.

Contents

| | |
|---|----|
| Introduction | 4 |
| Objective 1. Identify and articulate aspirations..... | 5 |
| Indigenous partner case study sites | 6 |
| Anangu in Anangu Pitjantjatjara Yankunytjatjara (APY) Lands | 6 |
| Balngarra Clan | 8 |
| Port Curtis Coral Coast | 9 |
| Uunguu Monitoring and Evaluation Committee..... | 10 |
| Yugul Mangi Land and Sea Management | 11 |
| Summary of case studies | 13 |
| Non-Indigenous investor’s perspectives..... | 14 |
| Objective 2. Indigenous standards and measures | 16 |
| Looking after Country Right Workshop | 16 |
| Integrating Measures of Effectiveness at National and International Scales..... | 18 |
| The nature of social indicators used globally in conservation evaluation | 18 |
| Documentation of local contributions at the global scale | 19 |
| Draft Protocol for Measuring Effectiveness..... | 20 |
| Objective 3. Field test and validate..... | 21 |
| Balngarra Clan Planning | 21 |
| Uunguu Monitoring and Evaluation Committee..... | 24 |
| Objective 4. Tracking Impact..... | 26 |
| Conclusions | 28 |
| List of publications and other products arising from the project | 30 |
| Appendix 1. | 32 |

Introduction

Since time immemorial Indigenous knowledge systems, ceremony and cultural practice have created the landscape of what is now known as Australia. These traditions were almost invisible to formal non-Indigenous land management systems until the establishment of the Palm Island Ranger Service in Queensland in 1983 started to recognise the enormous contribution that Indigenous knowledge and traditional practice could make to the management of land and sea they have inhabited for over 50,000 years. Since that time, despite bringing different worldviews, knowledge practices, belief systems and motivations behind partnerships, contemporary Indigenous land and sea management (ILSM) in Australia has helped Indigenous people create jobs, training and income to design and implement a range of natural resource and cultural heritage management programs. The Australian Research Council Linkage project *Integrating measures of Indigenous land management effectiveness* was initiated in 2012 in recognition of the opportunity to account more holistically for the full spectrum of benefits and/or outcomes of Indigenous land and sea management in Australia. This project has endeavoured to ensure that there is a shared understanding of the commonalities and differences in motivation of all those investing in lands and seas, financial resources and time to this important and expanding sector.

The project has also aimed to apply co-research approaches to developing measures of the effectiveness of ILSM in terms of its biophysical, cultural, social and economic objectives for both people and the environment. We use the term ‘co-research’ to describe the process of employing local Indigenous people in all aspects of the project, from research design and methodological selection, to implementation and fieldwork, interpretation of results, and the application of research outcomes locally. The research team worked closely with Indigenous land and sea managers to develop such measures, not only where the aspirations of the local Indigenous people aligned with the objectives of government, philanthropic, non-government conservation and business sectors for the same area, but also identifying what can be done where differing motivations can affect outcomes.

The project has had the following objectives:

- i. Identify and articulate both Indigenous and non-Indigenous conservation, cultural, social and economic priorities and aspirations for case-study areas on lands of local Indigenous and biodiversity importance.
- ii. Identify local Indigenous standards and measures, and draw on relevant international and national standards for protected areas, carbon conservation schemes and payment for environmental services contracts, to develop measures and protocols for assessing performance against the objectives identified in (i).

- iii. Field test and validate protocols at case-study sites in collaboration with Indigenous land managers and ecosystem-service delivery partners to enable the alignment of measures of effectiveness to be negotiated and codified.
- iv. Estimate the potential returns on investment that might be achieved from Indigenous land management, and the commitment to monitoring and evaluation required to track the impact of these returns to Indigenous land managers and investors.

This report provides an account of what has been achieved against these objectives, discusses how the research can be applied, and highlights areas where additional research could be conducted. We also present the potential indicators and methods that can measure effectiveness of ILSM that have been distilled from the project.

Objective 1. Identify and articulate aspirations

Identify and articulate both Indigenous and non-Indigenous conservation, cultural, social and economic priorities and aspirations for case-study areas on lands of local Indigenous and biodiversity importance.

Research was conducted at five case study sites around Australia (Figure 1). As was anticipated the activities undertaken at each site and the lessons learnt varied depending on local context. The five case study sites differ substantially from each other on the basis of culture, history, environment and geography. Though the case study sites don't, and did not seek to, encompass the diversity of Indigenous land and sea practitioners across Australia, their approaches, achievements and challenges have contributed to valuable insights and strategies that can be applied elsewhere in the sector. Four of the case studies were selected by inviting participants in the Australian Government's Working on Country (WoC) and Indigenous Protected Area (IPA) programs to submit an expression of interest. The fifth case study (Balngarra) subsequently joined the project as a result of Beau Austin's collaboration with this group on another project.

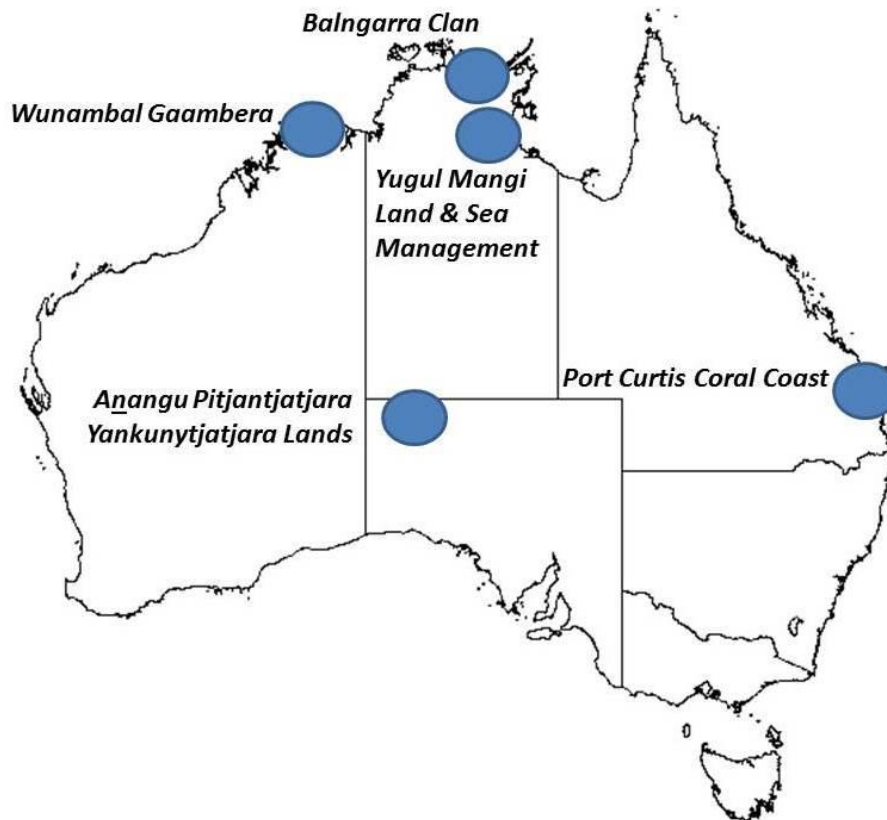


Figure 1. Location of case studies around Australia

For the non-Indigenous investors in Indigenous land and sea management (ILSM) we opted to explore motivations and measures of success at an institutional level rather than a site by site study as most investors have multiple partnerships with a range of ILSM groups and sites.

Indigenous partner case study sites

Anangu in Anangu Pitjantjatjara Yankunytjatjara (APY) Lands

Anangu conduct land management work primarily through APY Land Management, which operates under Anangu Pitjantjatjara Yankunytjatjara (APY), across five Indigenous Protected Areas (IPAs) – Watarru IPA, Walalkara IPA, Kalka-Pipalyatjara IPA, Aparra Makiri Puntji IPA and Antara-Sandy Bore IPA – a women’s project and a threatened species recovery project – the Waru Project, or black footed rock wallaby. This land management includes visiting and checking on Country, recording traditional knowledge, intergenerational transfer of stories, songs and knowledge, hunting and collecting bushfoods, fire management, waterhole protection, and feral and threatened or important plant and animal management. APY Land Management receives funding through the Australian Government’s Indigenous Protected Areas and Working on Country programs and other investors and reports back to funders based on the requirements of these programs.



During 2014 and 2015, PhD student Jennifer Macdonald spent six months accompanying Anangu on many field trips to key locations where she spent time getting to know local people, particularly the ladies, as a participant observer of their work, participating in ranger activities and documenting those activities. In collaboration with APY Land Management, conversations were had with Anangu about their aspirations for the management of buffel grass, a highly invasive weed, during a week-long ladies trip to Watarru IPA, and where the ladies discussed the management of buffel grass through the development of inma (song and dance) called 'ukiri kura' or bad grass. This inma communicated their concerns and aspirations for the control of buffel grass and is an example of the possibilities of communicating Anangu aspirations for management in a manner that is appropriate and inclusive.

Jen is currently writing up her observations of how people want to look after their Country and how they know whether their work is being successful, which occurs in a formal sense through reporting processes and informally through community conversations, stories and songs, as well as visiting, checking and being in place. Anangu report changes on Country through stories and songs in Pitjantjatjara, and are involved in the formal Land Management reporting through their 'stories of change', which are predominantly photos, videos and spoken stories in language. Preliminary findings suggest that the most important priorities and aspirations for land management were about:

- Good process in governance.
- Clear two-way communication.
- Jobs on Country.

- Increased capacity to maintain relationships to people and Country.
- Increased capacity to fulfil cultural obligations such as conducting ceremony, caring for place, hunting and burning the land.

Balngarra Clan

The Balngarra Clan from central Arnhem Land in the Northern Territory of Australia have revitalised a traditional practice known as *wulken* to monitor and evaluate whether or not they are 'looking after country right'. They are using this approach to develop partnerships with a range of non-Indigenous organisations to support their aspirations. *Wulken* is when the clan spends around a month camping on part of their country hunting, eating bushfoods, maintaining cultural sites, conducting ceremony, storytelling, singing, painting, weaving and dancing. It is also an opportunity for partners (corporates, governments, NGOs and philanthropies) to join them to 'walk and talk' Country. The research at this site was largely undertaken by Balngarra Clan members themselves but was supported by project researchers Beau Austin and Hmalan Hunter-Xenie at the invitation of the clan who wanted the project to help articulate and crystallise their plans, develop strong mala (or teamwork) among the clan, clarify the processes by which clan members are/can interact with partners and how best to report on their achievements. In particular, the clan developed their own plan for Country (Balngarra Clan 2016a) which articulates aspirations and the measures they feel have highest priority for monitoring (Balngarra Clan 2016b), most of which are related to culture and appropriate process. They also worked with the project to assess the impacts of programs to manage greenhouse gas production from fire management on the local social, cultural and economic landscape (Campion and Austin 2016; Campion et al. *in prep.*).

The key output of this partnership was a final plan containing 24 strategies, comprising 87 actions that can be taken to start realising aspirations, 74 individuals or organisations that can provide assistance or partner with the clan, and a total of 80 indicators to monitor and evaluate clan success. These results form the basis of the indicators and tools reported in Appendix 1, in combination with the Wunambal Gaambera partnership results.

The work conducted by the Balngarra Clan and the ARC Linkage project is now being used as a prototype to be tested with neighbouring clan members in the development of the Arafura Swamp Healthy Country Plan. Contingent on the availability of resources, the mechanism of *wulken* (though called different things by neighbouring clans) will be used to produce an overarching monitoring and evaluation plan for the Arafura Swamp Healthy Country Plan and to effectively integrate the aspirations of local clans with those of their partners and investors. This innovative and practical outcome from the ARC Linkage project will leave a lasting legacy.



Creation of the Balngarra plan for Country makes an important contribution to the Country-based approach to planning that has been developed and implemented at many locations on land and sea across Australia over the last decade (Smyth 2016). This Indigenous-driven planning process based on the concept of traditional Country (land and sea clan estates), rather than contemporary tenure, enables Traditional Owners to articulate their own aspirations and commitments to protect, manage and sustainably use Country whether or not they have legal ownership of the area, and to build the partnerships necessary to achieve these goals.

The articulation of the Balngarra plan for Country with the Arafura Swamp Healthy Country Plan represents an innovative merging of these hitherto separate approaches to planning. While Country-based planning and Healthy Country planning have much in common, they also have distinct differences in process and focus. The potential for the methodology used in the development Balngarra plan for Country to contribute to the Arafura Swamp Healthy Country Plan presents an opportunity to generate outcomes based on the best of both approaches.

Port Curtis Coral Coast

Research along the eastern coast of Australia between Bundaberg and Gladstone was carried out by PhD student Colleen Corrigan in partnership with Indigenous co-researchers associated

with the Gidarjil Development Corporation and Gidarjil rangers and elders (Corrigan et al. 2015). The *Port Curtis Coral Coast Strategic Plan* (2013-2030) urges sustainable planning and development to ensure the absolute care and protection of cultural heritage, land, sea and environment, reflecting the values of elders from four tribes in the region: “our cultural heritage, land, sea and environment are our most valued, respected and prized possessions and each need to be afforded the utmost respect, care and attention.” Two co-researchers, elders from the community, worked with Colleen to follow a research methodology using semi-structured interviews to document local measures of environmental change and social aspects of protected areas and Indigenous natural resources management. Examples of Indigenous indicators included quality of seagrass as food for turtles, good water flow, fragile habitat, human health, weeds/invasive species, dugong habitat, native species abundance and traditional foods. In addition, the Indigenous rangers employed by the Gidarjil Aboriginal Corporation and funded in part through the Working on Country program identified many benefits from involvement in ILSM. The research with the rangers and elders is currently being written up into a peer-reviewed publication. Key preliminary findings suggest that governance, or autonomy, is an important determinant of conservation success. However, two other core factors affect positive well-being which in turn influences outcomes, especially in the Indigenous context: (1) maintaining strong connections within and between society and the natural environment, and (2) maintaining, building, and re-learning knowledge. Evidence of these factors was explored through analysis of the in-depth interviews and other documentation. Lastly, species diversity and spatial maps regarding intergenerational association to place were included.

Because most of Gidarjil Country is not legally owned by Gidarjil people, this case study provides a valuable comparison to the other study sites which are all located on Indigenous-owned land. In Gidarjil Country, like in so many locations where colonial and post-colonial processes dispossessed Traditional Owners of their clan estates, strategic partnership-building is not just a helpful tool for managing Country; it is an essential process for accessing Country, influencing decisions and actively engaging in looking after Country – all of which provide opportunities for economic and social development as well as cultural maintenance. The indicators developed during this project have the potential to be developed further into a Gidarjil plan for Country and/or be applied to other planning instruments in the region.

Uunguu Monitoring and Evaluation Committee

The aspirations of Wunambal Gaambera Traditional Owners for Country have been articulated in the *Wunambal Gaambera Healthy Country Plan 2010-2020* (WGAC 2010). In an effort to increase their capacity to provide strategic direction on the implementation of this plan, Wunambal Gaambera Traditional Owners have established an innovative intercultural committee called the Uunguu Monitoring and Evaluation Committee (UMEC) which is made up of scientists and local Indigenous experts to provide strategic advice on operational, monitoring and evaluation and governance matters. The ARC research team played a vital

role in assisting UMEC to conduct a mid-term review of the effectiveness of their healthy Country work (Austin et al. 2017). A mixed methods approach was used to generate and integrate local and western knowledge for an 'enriched picture' of the progress of their land and sea management work. The Committee is designed to increase the intercultural capacity of the Wunambal Gaambara People and, in so doing, optimise opportunity for equitable outcomes from partnerships. Project researcher Beau Austin spent extended periods working alongside Traditional Owners during 2015 and 2016 to assess progress against Healthy Country Plan targets. This work (Wunambal Gaambara Researchers and Austin 2015) has complemented other reports on biophysical indicators of change in Country and has provided both a baseline against which future change can be assessed, with a group of trained co-researchers empowered to assess change in the future.



Yugul Mangi Land and Sea Management

The Yugul Mangi Rangers work on behalf of Traditional Owners of the Alawa, Wandarrang, Ritharrngu/Wagilak, Ngandi, Nunggubuyu, Marra and Ngalakgan people. They receive funding through Working on Country Program (now Indigenous Advancement Strategy under the Department of the Prime Minister and Cabinet) and declared the South East Arnhem Land IPA in September 2017. They have articulated those of their aspirations for land and sea management that can be expressed through an IPA plan of management and during 2014 and 2015 Jennifer Macdonald spent six months working alongside the Yugul Mangi Rangers and at the Ngukurr Language Centre, building relationships and having conversations with local people about their aspirations for the management of their Country by participating in field trips to visit key locations and undertake important activities.

Her results suggest that success in caring for Country is measured not only through formal reporting frameworks back to funders, but also through informal conversations between rangers, community members and Traditional Owners. The rangers use stories and photographs to report on the kind of work they are doing, consulting with those Traditional Owners not part of the ranger group both before and after they carry out work on Country. Key measures of success reported include that:

- Indigenous knowledge is supported.
- Indigenous governance leads land and sea management activities.
- Right people are speaking for Country.
- Partnerships with scientists, quarantine and fisheries are strong.
- Management is occurring in a changed landscape, for example with feral animal and fire management.
- Jobs are created on Country.
- More people are out on Country, facilitated by the ranger program.
- Some ranger equipment (food, fuel, etc.) is based at outstations to make working out on Country easier and more efficient.
- Young people are learning about the Dreaming and where it travelled from and to, from the old people and through ceremony.
- Ranger program is learning from the past to be innovative, to ensure a structure that works for local people and avoids hurdles.
- Walks on Country are occurring, to ensure the rangers and young people are learning the oral stories, the songs and the bunggul of Country, so both men and women know the important sites in their IPA, and so they know the relationships between people, plants, animals and Country.

The Yugul Mangi Rangers are keen to ensure that all non-Indigenous people who come to work with them do cultural awareness training, and take time with the rangers to understand the cultural protocols (for example, avoidance relationships) for working in Ngukurr. This will ensure stronger and more respectful partnerships, and by extension, a more successful ranger program. The rangers consider this a tool to ensure that their governance practices lead the land and sea management program and their knowledge is supported.



Doing a comparative study of approaches to assessing the success of land management with Yugul Mangi Land and Sea Management in Ngukurr and APY Land Management in the APY Lands has highlighted similarities and differences encountered between very different local groups, Countries and landscapes. There are similarities and differences in the stories of success in ILSM based on differing experiences of both cultural and physical geography, which offer unique challenges and pathways for different groups (for example, with feral animals and fire management), and with historical geography, which has had variable influences on local groups' abilities to engage in conservation efforts and partnerships, as well as their access to different resources, both human and financial.

Summary of case studies

Two elements are salient in the monitoring and evaluation conducted by Indigenous people at the case study sites. The first is that the primary objective of their engagement with Country is 'cultural'. That is, ILSM is primarily conducted as a means of connecting to Country to meet obligations to ancestors, kin and Country itself. These cultural values of landscapes are more holistic than tends to be the case with Western culture which separates out threatened species, exotic species, biodiversity, carbon, etc. from culture. Usually the only exception to this is where natural values have the potential to negatively impact or impinge on local Western cultural values and/or are embedded within them (e.g. fire management). As such, investment in Indigenous cultural heritage work is likely to have direct and indirect benefits

for biodiversity; and investment in Indigenous biodiversity-focused work needs to include culture-focused activities.

Secondly, the measures of success in management are themselves embedded in the extent to which cultural obligations are fulfilled (e.g. that correct cultural protocols are followed, the right people are speaking for Country, elders are respected, culture is passed on to younger people, important places are visited, etc.). Achievements in typical ILSM activities such as fire management, weed and feral animal control, and persistence of threatened species can only be viewed through a contemporary cultural lens as an important means to achieving locally defined ends. For example, from one perspective the preservation and/or management of locally important food species can be seen as an end in itself as they provide an opportunity for Indigenous people to supplement incomes and maintain healthy lifestyles. However, the presence and persistence of such species needs to take place alongside the correct protocols for their care – e.g. ‘right way’ hunting, sharing, preparing, consumption and disposal of food species. Without this, Country and people cannot be said to be healthy. In this sense, looking after food species, and consuming them, is a means used to ensure the end of meeting obligations to Country. This influences the type and range of indicators and monitoring and evaluation tools deemed to be most appropriate for measuring effectiveness, with a preference for locally meaningful knowledge-making mechanisms based on local Indigenous knowledges, practices and beliefs. These tools can then be usefully complemented with western science to produce an enriched picture of Country that seeks to meet multiple diverse objectives in parallel.

Non-Indigenous investor’s perspectives

Partnerships between Indigenous peoples and non-local investors have been the source of significant innovation in environmental management across the globe. ILSM in Australia is a growing economic sector that has helped Indigenous people create jobs, training and income to design and implement a range of natural resource management programs. However, while the aspirations of Indigenous people for ILSM have now been reported widely, the aspirations of non-local investors in ILSM are less clear. As part of the project, the aspirations of ILSM investors were surveyed (Austin et al. submitted). The analysis highlighted differences among investors along a gradient between those seeking delivery on contracts and those framing their interactions as partnerships, thus opening opportunities for more holistic, long-term and integrated returns on investment (Table 1).

The main conclusion was that partnerships may be more effective if the positioning of investors along this continuum from contracts to partnerships is made explicit from the start as this will then allow Indigenous partners to determine the amount they want to commit to the relationship themselves. The research also developed an argument to support ILSM partners/investors to influence engagement approaches, policy development, strategic

investment and the type of benefits sought, recognising both potential benefits of pragmatic fee-for-service arrangements as well as deeper relationships that underpin ILSM.

Thus there were examples where some investors were happy to provide direct payment to Indigenous people for delivering ecosystem services. How payments were used or leveraged to enhance or increase non-conservation values was up to the Indigenous people themselves so that they were at liberty to gain their own cultural benefits from the process provided the contracted task was completed.

At the other end of the scale were investors who took the view that any delivery of environmental services was a long term partnership driven by empowered Indigenous people who used the external support to strengthen their own institutions and capacity to deliver multiple benefits. For these investors the cultural outcomes of the Indigenous partners were as important as the biophysical results, perhaps in some cases even more important due to the difficulty of directly measuring biodiversity benefits within any reasonable timeframe. While some investors ranked the biodiversity outcomes highly, all recognised the importance of social (e.g. health benefits), cultural (e.g. local language) and economic (e.g. jobs) outcomes for the Indigenous people who they were important and considered them critical to the success of their own investment.

Table 1. Quotes illustrating differences between investor approaches to partnership with Indigenous land and sea managers

| Investor measure of success | Contract delivery / explanation | Partnership / explanation |
|---|--|---|
| Good governance | Well, [we] have got a fairly tight metric. ... we need to see, "Have they delivered this year?" Or "Are they likely to deliver next year," or "Are they going to deliver at some point?" | The fact that relationships go for a long time is, of itself, a measure of success |
| Increased ILSM on Indigenous estates | I think it's been really worthwhile from the point of view of the hectares added to the Reserve System ... | ... it's about a sense of hope, and it's not so much just about conservation at all. What old people articulate is bringing country back, and bringing people along here with it, and getting hope for young kids for jobs, giving purpose for old people to be able to start telling their stories again |
| Informed Indigenous consent | I would like to say they're successful at the moment in the sense that we've left a little bit of space open in all these projects [for the local groups] - to take it a bit their own way | Just participation is a key measure of success for all of those projects, really. ...it's a genuine discussion the whole way through, and a genuine engagement. |
| Sustainable and accountable investment | [Investors reviewed our reports and] all instantly saw the value of these very small amounts of dollars going to communities and how incredibly successful this was. And so it was a great big tick. | In terms of success ideally it's healthy country managed by healthy people in a sustainably financed way that's kind of independent of financial fluctuations. |

Objective 2. Indigenous standards and measures

Identify local Indigenous standards and measures, and draw on relevant international and national standards for protected areas, carbon conservation schemes and payment for environmental services contracts, to develop measures and protocols for assessing performance against the objectives identified in (i).

To meet this objective two approaches were taken: a workshop drawing together Indigenous land and sea managers and practitioners from across the country (*Looking after Country right: How do we measure the effectiveness of Indigenous Land and Sea Management?* Austin et al. 2015) and a review of existing indicators undertaken by Colleen Corrigan as part of her PhD.

Looking after Country Right Workshop

The workshop affirmed widespread satisfaction with ILSM programs such as the Indigenous Protected Area and Working on Country programs and the partnerships with philanthropic and the private sector and the breadth of benefits for Indigenous people – environmental, social, cultural and economic. For Indigenous ILSM partners, looking after Country ‘right’ was described as meaning that the right people are on Country to:

- Maintain identity and connections to place,
- Pass on knowledge and culture practices, and that
- Elders, as holders of law and knowledge, are in a position to make decisions about Country based on their traditional knowledge, local Indigenous values and customary use of resources.

Indigenous workshop participants described how they know if ‘we are looking after Country in the right’ if communities, and especially elders, are in a position to make decisions about on-country activities and to assess if these activities are delivering the best possible outcomes for the community and for Country (sometimes expressed as “if Country is looking after you”). These outcomes offer benefits to Country, to communities and their members, and to the broader community.

Recent changes to Country such as the introduction of feral animals and weeds have made the job of looking after Country more complex and beyond the scope of locally available resources to address all issues of concern. New knowledge partnerships may be needed to measure if and how changes on Country are being addressed in the right way. The most appropriate measures to determine if Country is being looked after ‘right’ vary from one place to another. This makes it difficult to scale-up local level measures to guide assessment of program goals established at larger scales.

However, several tools and approaches can be used to assess whether Country is being looked after ‘right’ and measure changes to Country. One approach is for communities to track change while on Country when harvesting food, travelling through Country, visiting important

sites and practicing culture. These changes can be communicated through sharing stories, which was thought to be a particularly suitable approach, especially for elders. This can be coupled with Western tools such as video, GIS, or photo points to record sites and presence and abundance of plants and animals. Use of aerial and ground photographs and maps can help identify changes over time. I-Tracker and/or Cybertracker are practical tools for gathering this type of data. Monitoring, assessing and discussing the processes of engagement with government, NGOs, researchers and industry were seen as ways of helping ensure healthy partnerships.

Much is already happening at a local level to understand if Country is being looked after 'right'. Nevertheless, recognition and respect for Indigenous communities' capabilities in understanding and looking after changes to Country can greatly assist in designing innovative tools for measuring effectiveness that incorporate multiple evidence-based approaches and local knowledge, practices and beliefs. This, however, requires additional resources, capacity and collaborative partnerships with governments, NGOs, researchers and industry and improved access to the range of tools and approaches to strengthen, integrate and grow the knowledge base on changes to Country and measures of effectiveness. This new knowledge must be built collaboratively, be driven by Indigenous people, and generate outcomes that benefit local people and their Country. Overall the role of process in any form of monitoring and management is considered critical as is the need to ensure approval of elders, the primacy of local reporting and the need to nurture trusting partnerships (Figure 1).

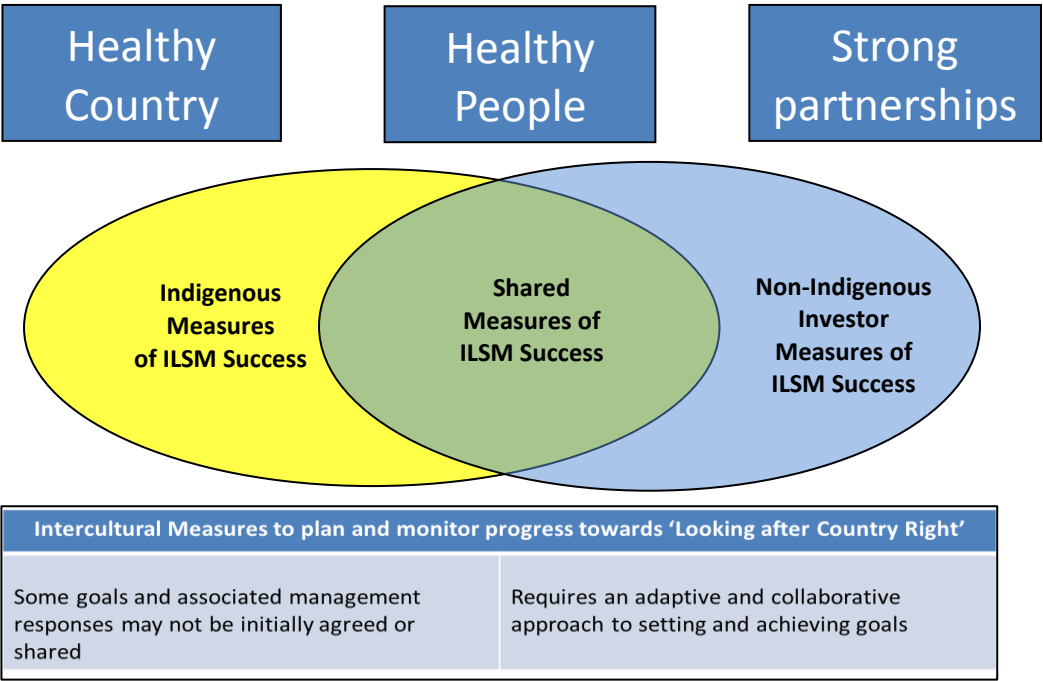


Figure 3. Intercultural frameworks to measure ILSM effectiveness allows a collaborative and adaptive approach to accommodate what 'Looking after Country' right looks like for Indigenous and non-Indigenous investors.

Directions that emerged during discussions and potential future actions arising from the workshop included:

1. Effective monitoring of ILSM relies on the right processes being followed from the start, although there is no 'one size fits all' approach. 'Right process' can start from generic principles (e.g. whole of country-based, Traditional Owner led, two-way knowledge exchanges) but how each of these terms manifests locally is highly dependent on context and will emerge from initial discussions. Development of the processes is in fact an important part of building a relationship of trust between Indigenous people and funders. A major step forward will be to ensure that these aspects of ILSM are themselves monitored. Are Traditional Owners, particularly elders, happy that correct processes have been followed? Are they satisfied with the way partnerships that have been established are progressing? Having these questions asked through institutional monitoring will both recognise their importance to Indigenous people and provide an incentive for improvement. Has the process been documented to ensure it has indeed occurred and been given the weight that is due?
2. Both knowing what tools are available and having the skills and confidence to apply them in the right circumstances makes monitoring effectiveness much more useful and efficient. It ensures that the right things will be monitored in the right way. This can include both tangible changes like patterns of burning and numbers of people employed and intangible aspects like community well-being and elder satisfaction with processes and partnerships.
3. There is a need for Indigenous peoples themselves to develop their own research agenda for which they could seek partners to help answer, in which they would be co-researchers and have a lead role in driving, rather than having the researchers arrive with their own ideas.

Integrating Measures of Effectiveness at National and International Scales

The nature of social indicators used globally in conservation evaluation

As part of her PhD research, Colleen Corrigan conducted an analysis of broad-scale and locally-relevant social indicators currently used within the Global Protected Area Management Effectiveness database. The purpose of this was to understand the nature of social measures that have been applied in a range of evaluations of protected area management across the world and to explore gaps. Particular attention was given to discerning aspects of effectiveness measures that are meaningful in local and/or Indigenous contexts. Using the Global Protected Area Management Effectiveness database, Colleen reviewed 2736 indicators from 38 methodologies applied in over 180 countries. Nearly 700 of these indicators were specifically relevant to Indigenous peoples or local communities and were labelled "social" as a result. The analysis with co-authors examined these social indicators for (1) representation of human well-being dimensions, (2) direction of impacts, and (3) level of neutrality in indicators. The findings show there is limited diversity and representation of important well-being dimensions such as health and governance among

social indicators used in protected area management effectiveness. While impacts on communities and nature were measured using a similar number of indicators, positive wording is used three times more often than negative, which may unintentionally bias evaluations. In this case, important challenges or failures may not be resolved if assessments are not using indicators that can identify them without bias. Recommendations include using and developing indicators with greater diversity, increased clarity, and reduced bias to enhance management and policy responses for biodiversity and human well-being. The review also concluded that a consolidated approach to social assessment should entail seeing local communities and Indigenous Peoples not as entities that are either impacted upon or inflict impact, but as active participants and leaders in the management and custodial roles that allow the use of their traditional ecological knowledge as well as means for this knowledge to be integrated with science. There remains a significant need for tools and evaluative instruments that are responsive to the increased recognition of a more diverse and representative cadre of protected area managers, including private, indigenous, local and even co-managed arrangements. Addressing these gaps in measures would not only present opportunities to assess more comprehensively the progress in achieving global conservation targets, but would allow better understanding of process mechanisms and progress in achieving outcomes for global agreements, such as the Sustainable Development Goals.

Documentation of local contributions at the global scale

A second element of research for Colleen Corrigan's PhD entailed an overview of global process for documenting the values of conservation areas governed and managed by Indigenous Peoples and local communities. The rationale for this work is that, despite global environmental policies calling for expanded representative, well-connected and effective protected areas, a significant proportion of areas governed and managed by local communities and indigenous peoples is largely under-documented by formal mechanisms and therefore not included in national statistics on protected areas even if the management of such areas is undertaken in a way that would otherwise qualify. International processes to inventory protected areas have been underway for decades, but only recently have diverse governance types been included in global databases. The research outlines the history and context of the development of the Global Registry of indigenous peoples' and community conserved territories and areas, abbreviated as ICCAs. This registry was developed through a long-term consultation process and an international partnership. The Registry adheres to principles of Free, Prior Informed Consent and uses the same technical infrastructure and data standard as the World Database on Protected Areas (WDPA). The paper describes the local benefits of global registration for those who have participated, such as reduced conflict around mining prospects and increased revenue from community-based tourism. It also highlights globally-relevant findings from the Registry, such as over 70% of registered ICCAs have biodiversity conservation as a core objective. In the end, careful documentation of these areas can enhance their value for effective biodiversity protection, and for the achievement of global conservation and development targets. This paper was published in the November 2016 issue of the journal *Parks*.

In parallel to Colleen's work, Dermot Smyth has critiqued the commonalities and contrasts between the ICCA concept globally and the IPA concept in Australia (Smyth 2015), noting that when the ICCA acronym was coined by the International Union for the Conservation of Nature (IUCN) in 2008 it referred to 'Indigenous peoples' protected areas, Indigenous peoples' conserved territories and community conserved areas', abbreviated as 'Indigenous and Community Conserved Areas (ICCAs)'. More recent applications of the ICCA concept have dropped the reference to Indigenous peoples' protected areas, bringing into question the status of IPAs in Australia within the ICCA umbrella. A further complication is that recognition of an ICCA is restricted to areas in which Indigenous peoples or local communities have primary decision-making authority, whereas IPAs in Australia are increasingly based on Country rather than tenure and hence are not limited to areas in which Indigenous peoples are the major decision-makers. Rather, as the result of Country-based (or whole-of-Country) planning approaches, Traditional Owners' authority over Country is being exercised through Indigenous-driven collaborative governance of IPAs – including IPAs incorporating large areas of sea country. These distinctions are much more than semantic debates about the meanings of technical terms. They represent significantly different approaches to recognising the role of Indigenous peoples in managing Country globally and in Australia: the goal of the ICCA concept is to recognise and support Indigenous peoples and other local communities in the management of their traditional areas over which they have retained decision-making authority following colonisation and other marginalisation processes; the goal of Country-based planning and country-based IPAs is to support the re-emergence of Country as an appropriate geographical and cultural scale for managing Australia's environments, whether or not the Traditional Owners have retained primary decision-making authority over those environments. Both approaches provide opportunities for Indigenous peoples' environmental management activities to be recognised and supported, but they differ in intent and impact.

Draft Protocol for Measuring Effectiveness

Beau Austin has worked with some of the ARC partners to develop a draft standard protocol for measuring the effectiveness of ILSM in Australia (below). This document is based on the results and experience of working with ARC project partners, though is yet to be trialled to verify accuracy and efficacy. This work will take place over the next two years through ongoing partnerships generated from the ARC project. The end product will not only include a protocol to guide the work, but a guidebook and toolbox to assist in developing the capacity of ILSM practitioners to conduct their own assessment of effectiveness locally.

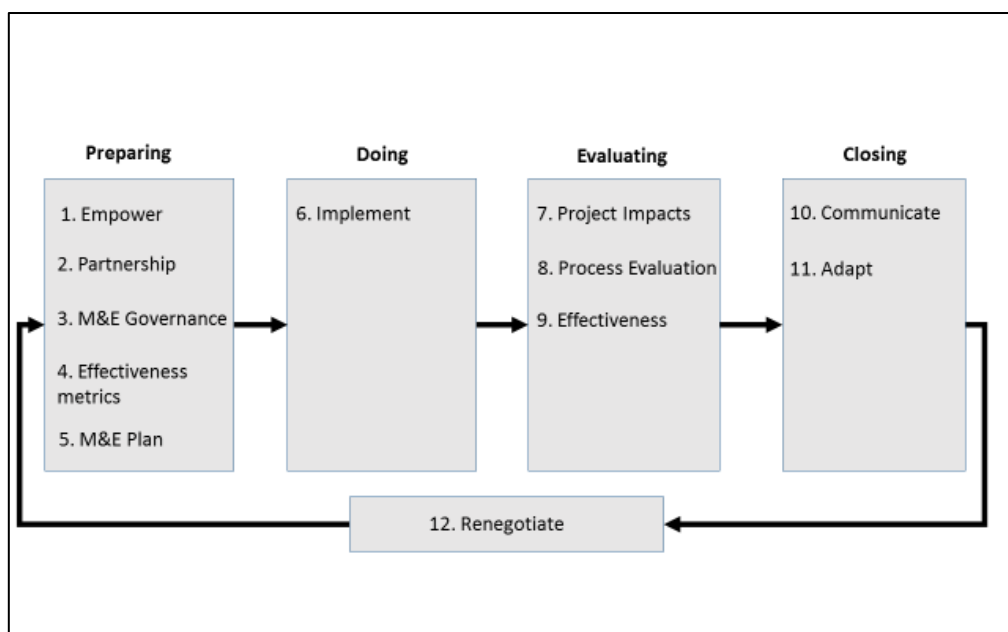


Figure 4. Draft protocol for measuring the effectiveness of Indigenous land and sea management

Objective 3. Field test and validate

Field test and validate protocols at case-study sites in collaboration with Indigenous land managers and ecosystem-service delivery partners to enable the alignment of measures of effectiveness to be negotiated and codified.

Two approaches were taken to collaborating with Indigenous land and sea managers to explore how measures of effectiveness can be negotiated, codified and aligned. The first was planning with the Balngarra Clan, undertaken at their invitation after they were asked to provide advice to the project on the process of ILSM. The second was working with the Uunguu Monitoring and Evaluation Committee to assess the Wunambal Gaambera Healthy Country Plan.

Balngarra Clan Planning

Beau Austin and Hmalan Hunter-Xenie of the research team worked with Otto Bulmaniya Champion, Christine Brown and other members of the Balngarra Clan to assist them in increasing their capacity to connect their autonomous Indigenous governance to external partnership opportunities to establish livelihoods and look after their ancestral estate. One such partnering opportunity of particular interest to the ARC project are the regional and national Payment for Environmental Service (PES) initiatives, such as Healthy Country Planning, the Indigenous Protected Areas program, the Working on Country program, quarantine services and large-scale carbon and greenhouse gas emissions trading partnerships, along with many other ideas for natural and cultural resource-based livelihoods, through the production of a plan. Titled 'Dawal Yarr Nanenan' (Balngarra Clan 2016a), the plan and an accompanying monitoring and evaluation plan (Balngarra Clan 2016b), is enabling the clan to connect their autonomous local governance to intercultural institutions (e.g. Arafura Swamp Rangers Aboriginal Corporation (ASRAC), Arnhem Land Fire Abatement

(ALFA), arts centres, etc.) through locally-led adaptation and innovation. The process by which the Balngarra Clan is seeking to fold contemporary intercultural partnerships into local agendas and knowledges-practices-beliefs is likely to be of interest to PES practitioners, investors, and policy-makers globally, especially those concerned with institutional arrangements and processes that optimise the breadth and depth of benefits realised at local, regional, national and global scales.



The planning process is also an important step in the Balngarra Clan's attempts to assert their ownership and control of their Country through land management, a recognition that external partnerships are important but must be approached by Indigenous people who have first been empowered by articulating their own aspirations. This process is consistent with, and contributes to the development of, the Country-based planning approach as discussed earlier. Until this exercise the Balngarra Clan had never undertaken 'planning' as a discreet stand-alone exercise: decisions were made based on the changing of seasons, births and deaths, timing of ceremonies, marriages, and other significant events. Always in the here-and-now with the past showing the way. In terms of ontology, the future of the clan is being made by their actions in the present.

The final plan contained 24 strategies comprising 87 actions that can be taken to start realising aspirations and a total of 80 indicators to monitor and evaluate clan success. Steps are being made to refine this 'living documents' to meet the quickly changing needs of people and Country. The monitoring and evaluation plan is yet to be officially implemented and is

suffering from a lack of available resources and clan member time. However, through the development of plan there were 74 individuals or organisations identified that would be useful partners in the implementation phase. For example:

- The schools in Ramingining and Maningrida have been in discussions with clan members experienced as teacher's aides, who are working towards updating the outstation school and 'home-schooling' clan children;
- The Arafura Swamp Rangers and Bush Heritage Australia are working to build a satellite ranger base at the outstation to support land management activities and a range of other livelihoods strategies in the plan;
- The Northern Territory Justice Department has been working towards arrangements with the clan that would see young offenders able to serve their sentences at Malnyangarnak rather than in Darwin;
- Charles Darwin University and the Aboriginal Research Practitioners are in advance stages of developing a proposal for a 'Bush University' to be housed on the clan's estate;
- The clan has increased production of arts products that are being sold through art centres in Ramingining, Maningrida and Darwin. They are also stockpiling materials for future production and seeking new partnerships with potential partners in Darwin for their own shopfront art store.

These partnership are but a few of the potential partnerships available to the clan if time, money and social capital can be further leveraged to realise opportunities. However, as the clan is yet to formally establish the Ngala Dakku Naworrk Aboriginal Corporation, the progress is steady, but slow.



The work conducted by the Balngarra Clan and the ARC Linkage project is now being used as a prototype to be tested with neighbouring clan members in the development of the Arafura Swamp Healthy Country Plan. Contingent on the availability of resources, the mechanism of *wulken* (though called different things by neighbouring clans) will be used to produce an overarching monitoring and evaluation plan for the Arafura Swamp Healthy Country Plan and to integrate effectively the aspirations of local clans with those of their partners and investors. It is anticipated that this innovative and practical outcome from the ARC Linkage project will leave a lasting legacy for the Traditional Owner groups involved, while also contributing to the further development of methodologies associated with Country-based planning and Healthy Country planning approaches.

Uunguu Monitoring and Evaluation Committee

In 2015, the Wunambal Gaambera Healthy Country Plan reached its mid-point, which triggered an evaluation to enable adaptive management through the assessment of effectiveness. The evaluation was used to appraise the need for adaptation, contribute to the evidence base for healthy Country, and to report on achievements. The Uunguu Monitoring and Evaluation Committee (UMEC) and their collaborators adopted a multiple evidence-based approach to enable an enriched picture of the status and trend of Healthy Country targets. This intercultural committee has successfully integrated western scientific and local Indigenous knowledge for adaptive management by embodying the principles of ‘co-motion’ and ‘co-production’, moving and working together in ways that embrace ‘difference’ by positioning it as a strength as opposed to a problem.



UMEC members adhere to terms of reference and mode of practice that were drafted collaboratively at the first meeting of UMEC in 2011. These allow for synthesis of the diverse

knowledge and experience of Indigenous and non-Indigenous experts in a non-colonising way through four key mechanisms.

- i. UMEC does not 'capture' and communicate any specific Indigenous knowledges-practices-beliefs that belong in the autonomous Indigenous domain, but creates space for the input of 'meta-level' data from Traditional Owners. The participatory approach is key, affording Traditional Owner-generated knowledge equal legitimacy to that of western science. A process of 'participatory triangulation' (i.e. combining the expert knowledge of local people, rangers, investors and scientists) is then engaged in by committee members to reach negotiated outcomes.
- ii. By only offering recommendations for consideration by the WGAC, UMEC does not undermine Traditional Owner authority to make decisions about Country. Recommendations can be used, ignored and/or reinterpreted. More often than not recommendations are seen as providing useable information.
- iii. The measurement and communication of 'intangible' targets and/or other aspects of integrated and intercultural natural resource management is a challenge faced by Indigenous peoples' and local communities throughout the world when working with outside support and development agencies and governments. We have demonstrated that the use of participatory action research can go some way to resolving this problem (e.g. use of participatory action in the Wunambal Gaambera mid-term evaluation provided to UMEC) as it does not require disclosure of sensitive and sacred knowledge, stories or practices, but relies on local peoples' self-assessment of the relative status and trend of such social, cultural and spiritual 'assets'.
- iv. Through dialogue within UMEC, data/information can be interpreted by members based on their unique experiences and expertise. Local Indigenous knowledge holders, Traditional Owners, Indigenous rangers, ecologists, anthropologists, funders and planners all bring unique worldviews and techniques for interpreting monitoring and evaluation data.

UMEC is the result of patient investment over many years. The model provides a useful case study for other Traditional Owner groups to learn about growing and implementing a locally-owned, participatory and integrated approach to measuring ILSM effectiveness. UMEC has demonstrated the potential for, and value of, incorporating local knowledge and opinions through participatory methods of evaluation. This model outlines a way of doing knowledge integration from the bottom up (Austin *et al.* 2017).

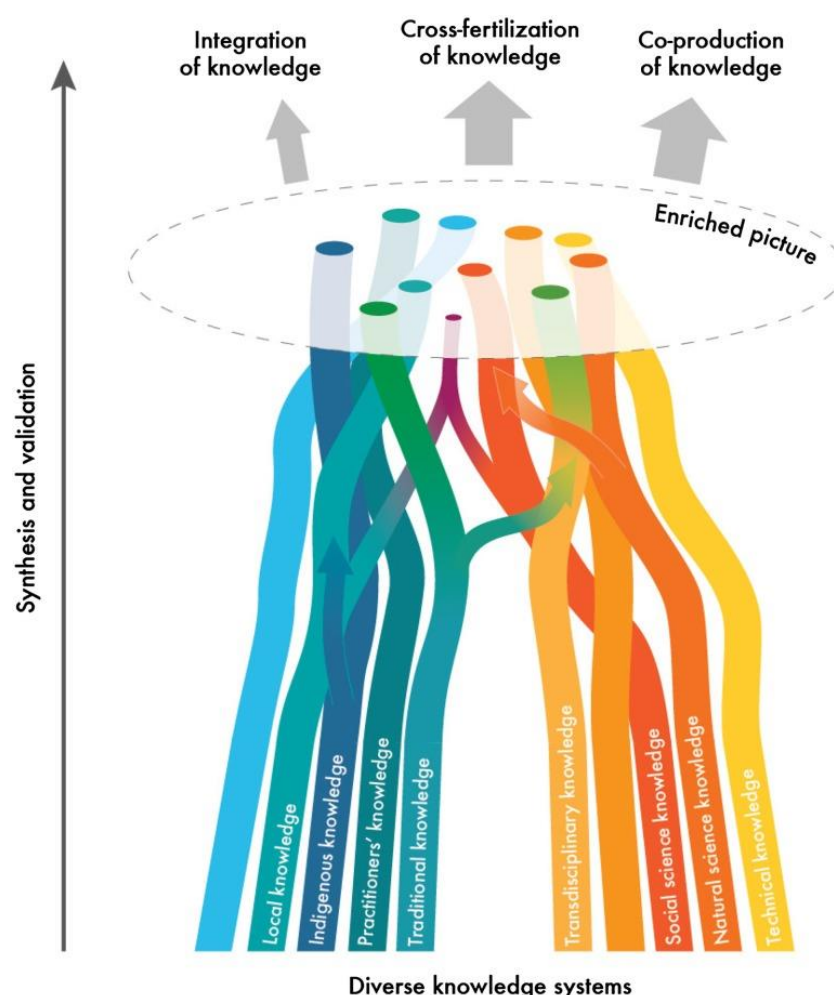


Figure 5. Illustration of multiple evidence base approach borrowed from Tengo et al. (2014) and used to inform the development of ARC project outputs (see particularly Austin et al. (2017) and Campion et al. *in prep.*). By employing tools from multiple knowledge disciplines (e.g. Appendix 1) and enriched picture of the status and trend of Healthy Country and Healthy People to provide more nuanced assessments of ILSM management effectiveness.

Objective 4. Tracking Impact

Estimate the potential returns on investment that might be achieved from Indigenous land management, and the commitment to monitoring and evaluation required to track the impact of these returns to Indigenous land managers and investors.

This objective proved to be beyond the capacity of the project given the findings from the other research undertaken. Returns on investment were found to be entirely contextual from both Indigenous and non-Indigenous points of view. From an investor's point of view the returns on investment depends heavily on where the objective of the relationship with Indigenous land and sea managers falls on the scale between providing contracts to deliver specified services through to collaborating with providers to ensure multiple objectives are met.

Contract-based arrangements provide opportunities for specific cost-benefit analysis in terms of the quality of the ecosystem service produced but such analyses will say nothing of the social value of the process and make a marginal difference to long-term sustainability.

Investment in long-term partnerships is likely to have greater benefit but requires a far deeper understanding of local context and investment in relationships so that both sides develop trust. This takes time and resources and substantial ceding of power and responsibility to Indigenous groups. The return on investment must thus be calculated by the investing organisation based on what the time scale over which they are seeking to realise returns.

Similarly, the commitment to monitoring and evaluation required to track the impact on investments will depend on the extent to which Indigenous partners are empowered and the level of trust developed between partners. As described by the Balngarra clan, intercultural partnerships have been ‘tied up with Balanda string’ and mostly ignore local ways of being, knowing and doing and forces Indigenous partners to ‘think and act’ like non-Indigenous partners. Balngarra clan members, however, recognised that a good partnership should use each partner’s strings to bind each other in a way that works for both and ensures that the autonomy of the Indigenous partners is not challenged.

There are a few useful examples of how such partnerships can be done well (see: Social Ventures Australia’s *Social Return on Investment* approach and method), whereby meaningful engagements and dialogue are established and a legacy of enhanced capacity to report returns on investment achieved. However there is a need to ‘institutionalise’ these sorts of engagements as standard *modus operandi*, which requires an equal matching of investment in intercultural capacity development among ILSM funders.

The Social Ventures Australia SROI methodology makes an important contribution to establishing a minimum measurement of value by using proxy dollar values associated with avoid costs by government, which is a useful tool for demonstrating the economic return on investment based on the public goods and services generated. However, there is a need to work with Traditional Owners and Indigenous rangers to develop mechanisms for measuring the total value of investment in land and sea management based on the value generated locally across all social, cultural, environmental and spiritual aspects. To achieve this, we need effective ways of translating holistic local conceptions, of Country and its intertwined relationships with Indigenous people, into knowledge objects that can be ‘categorised’ and ‘valued’ using western scientific knowledge practices, such as economic valuation. It is fundamentally important that we understand accurately what benefits are being produced if we are to build valuation measures that are capable of detecting change and measuring management effectiveness. The underlying ‘conceptual model’ of Indigenous land and sea management, and its accurate translation to non-Indigenous partners, remains poorly understood to potential market-based investors in ILSM. To ignore this would mean that any measures of return on investment will need to contend with foundations built on ‘shaky ground’.

Similar challenges in assessing return on investment in ILSM have recently been expressed by economists from James Cook University¹ who undertook a literature review of benefits associated with IPAs. This review found that while benefits are most often reported in monetary terms it does not mean that such benefits are most important, rather that they are most easily measured. This indication that lack of price does not mean lack of value highlights the importance of recognising non-market benefits so that resources can be directed in ways that generate most overall value per investment dollar.

The ARC project has already contributed significantly to this foundational work of conceptualising and translating that which is to be measured and valued – i.e. the benefits created by enhanced capacity and implementation of Indigenous land and sea management in Australia. The project will continue to do so as the work of PhD students is completed and publications are used to inform and drive future work to demonstrate return on investment.

Conclusions

Over more than three decades, the Indigenous land and sea management (ILSM) sector has grown exponentially and demonstrated a capacity to work across a huge range of culturally and socially diverse practitioners. Similarly it has attracted investment from a wide range of sources. Numerous culturally distinct Indigenous groups continue to ‘look after country’ in every type of landscape in Australia, from deserts to tropical rainforests, savannas to mangroves, woodlands to coral reefs. This ‘looking after country’ is the sum expression of obligations to family, kin, ancestors, ceremony, law, language and country. It is a very old practice, expressed in diverse contemporary ways.

The motivations behind and sources of investment in ILSM in Australia are also diverse reflecting a full range of alignments with local interests in culture and society, conservation of biodiversity, avoiding greenhouse gas emissions, managing invasive animals and plants, looking after threatened species, and increasing remote Indigenous economic participation.

Given this diversity it is a major challenge to identify appropriate frameworks to measure the effectiveness of ILSM. Local Indigenous people have their own ways of measuring impact, as do investors. This task is also made difficult due to differences in worldviews, knowledge practices, belief systems and motivations behind partnerships. At the core of this task is the development of shared understandings, interculturally accepted conceptual models, and integrated measures of effectiveness.

¹ Farr, M., N. Stoeckl, M. Esparon, D. Grainger, and S. Larson (2016). *Economic values and Indigenous protected areas across Northern Australia. Final report*. Technical report for the Northern Australian Environmental Resources Hub of the National Environmental Research Program, Project 5.1 Research priorities for Indigenous Protected Areas across Northern Australia. Townsville: James Cook University.

The research from this study provides guidance on intercultural monitoring and evaluation that can provide the basis to measure progress towards meeting agreed goals. It has contributed significantly to both the conceptual framing of 'measuring success' and moved closer to shared functional understandings of the work being done together.

Further, we have identified both a draft standard protocol for measuring ILSM effectiveness, plus a toolbox from which ILSM practitioners and their investors can select appropriate approaches/methods to collaboratively measure their effectiveness (see Appendix 1). These outputs require further testing in the field, though will no doubt prove to be useful in iteratively identifying the best ways of measuring and communicating ILSM success across local, regional and national scales.

The re-emergence of Country as an ancient, continuing and appropriate scale for planning and managing Australia's environments highlights the importance of monitoring and communicating the effectiveness of ILSM as it is increasingly applied not only on Indigenous-owned land in remote central and northern Australia, but potentially across all tenures Australia-wide, including sea country.

List of publications and other products arising from the project

- Austin, B.J., T. Vigilante, S. Cowell, I.M. Dutton, D. Djanghara, S. Mangolomara, B. Puermora, A. Bundamurra and Z. Clement (2017). The Unguu Monitoring and Evaluation Committee: Intercultural Governance of a Land and Sea Management Program in the Kimberley, Australia. *Ecological Management and Restoration* 18, 124-133.
- Austin, B.J. and C. Gore-Birch (2017). *Strengthening Partnerships for People and Country*. Presentation to the National Native Title Conference, Townsville, June 2017.
- Austin, B.J., C.J. Robinson, J.A. Fitzsimons, M. Sandford, F. McDonald, D. Hinchley, E. Ens, J.M. Macdonald, C. Corrigan, M. Hockings, R. Kennett, H. Hunter-Xenie, and S.T. Garnett (*in press*). Integrated Measures of Indigenous Land and Sea Management Effectiveness: Challenge and Opportunity for Improved Conservation Partnerships. *Conservation and Society*.
- Austin, B.J., C.J. Robinson, M. Hockings and S.T. Garnett (Editors) (2015). *Looking After Country Right: How Do We Measure the Effectiveness of Indigenous Land and Sea Management?* Workshop Proceedings, Mary River, Northern Territory, Australia, 1-3 September 2015.
- Austin, B.J., C.J. Robinson, M. Tofa and S.T. Garnett (*in review*). Investor Aspirations for Indigenous Land and Sea Management Partnerships in Australia. *Australasian Journal of Environmental Management*.
- Austin, B.J. and S.T. Garnett (2018). Perspectives on Success from Indigenous Entrepreneurs in Northern Australia. *International Journal of Entrepreneurship and Small Business* 33, 176.
- Balngarra Clan (2016a). *Dawal Yarr Nanenan: Balngarra Clan's Plan for Dawal 2015-2025*.
- Balngarra Clan (2016b). *Monitoring and Evaluating Dawal Yarr Nanenan 2015-2025*. (Draft).
- Bark, R.H., C.J. Robinson and K.W. Flessa (2016). Tracking cultural ecosystem services: water chasing the Colorado River restoration pulse flow. *Ecological Economics* 127, 165-172.
- Campion, O.B., B.J. Austin, H. Hunter-Xenie and C. Brown (2014). *Evaluation for what? Integrating measures of Indigenous land and sea management effectiveness*. Presentation to the Australasian Evaluation Society Conference, Darwin, July 2014.
- Campion, O.B. and B.J. Austin (2016). Dabboh and Smoke Money: Burning Bush for People and Country. In *Outlooks on Biodiversity: Indigenous Peoples' and Local Communities' Contributions to the Implementation of the Strategic Plan for Biodiversity 2011-2020*. Report prepared by the Forest Peoples Partnership for the Convention on Biological Diversity Convention of the Parties 13, December 2016.
- Campion, O.B., C. Brown, B.J. Austin and Balngarra Dawal (*in prep*). Beyond the nature-culture binary: mobilising Indigenous knowledge systems for sustainability. *Ecology and Society*.
- Corrigan, C. (2016). *A Global Review of Social and Ecological Indicators in Protected Area Evaluation*. Presentation at the Society for Conservation Biology Oceania Conference, Brisbane, 6-8 July 2016.
- Corrigan, C., H. Bingham, N. Pathak Broome, T. Hay-Edie, G. Tabanao and N. Kingston (2016). Documenting local contributions to Earth's biodiversity heritage: the Global Registry. *Parks* 22, 55-68.
- Corrigan, C. J., C. Robinson, N.D. Burgess, N. Kingston, and M. Hockings (2017) Global Review of Social Indicators used in Protected Area Management Evaluation. *Conservation Letters*: online : 30 AUG 2017, DOI: 10.1111/conl.12397
- Corrigan, C., M. Holden, and M. Hill (2015). *Port Curtis Coral Coast case study: in partnership with Gidarjil Development Corporation*. Report to the *Looking After Country Right Workshop*, Mary River, Northern Territory, Australia, 1-3 September 2015.
- Garnett, S.T., B.J. Austin and K.K. Zander (2016) Culture-based enterprise opportunities for Indigenous people in the Northern Territory, Australia. Pp 111-132 in Iankova, K., A. Hassan and R. L'Abbé (Eds), *Indigenous people and economic development. An international perspective*. Gower, Farnham.
- Garnett, S.T., I. Leiper, N. Collier, B. McGowan, A. Sivongxay, N. Burgess and B.J. Austin (2015). Contributions of Indigenous peoples and local communities to global biodiversity targets. Presentation to the *Traditional Knowledge, Customary Sustainable Use and Community-based Monitoring and Information Systems and Indigenous Peoples and Local Communities Collective Action Under the Convention on Biological Diversity* CBD Workshops, Panajachel, Guatemala, 5-7 June 2015.
- Macdonald, J.M. (2016). *Who decides? Success in Indigenous land and sea management*. Presentation at the Society for Conservation Biology Oceania Conference, Brisbane, 6-8 July 2016.

- Robinson, C.J., G. James and P.J. Whitehead (2016). Negotiating Indigenous benefits from payment for ecosystem service (PES) schemes. *Global Environmental Change* 28, 21-29.
- Smyth, D. (2015). Indigenous Protected Areas and ICCAs: Commonalities, Contrasts and Confusions. *Parks* 21, 73-84.
- Smyth, D., J. Gould, M. Ayre, E. Bock, M. Dulfer-Hyams and T. Vernes (2016) Indigenous-driven Co-governance of sea country through collaborative planning and Indigenous Protected Areas. *Indigenous Law Bulletin* 26, 15-20.
- Wunambal Gaambera Researchers and B.J. Austin (2015). *Traditional Owner Evaluation of the Wunambal Gaambera Healthy Country Plan*.

Appendix 1.

Potential intercultural indicators and tools for evaluating ILSM effectiveness: Measures, Indicators and monitoring and evaluation tools

| Value | Possible Indicators ¹ | Possible monitoring and evaluation Tools/Sources ² |
|---------------------------|---|---|
| Access | Number of campfires on Country. Presence/status of access roads. Presence/status of service delivery. Presence/status of infrastructure. Number of 'right people' on 'back to Country' trips. Number of days per year spent on Country. | Logbook for people on Country; participatory research (e.g. interviews, ranking, focus group discussions, transect walks, surveys, timelines, storytelling, art, photography); social return on investment. |
| Aesthetics | Abundance of key indicator species (right time, right place, right species). Vegetation colour in accordance with season. Water colour, taste and smell (right time, right place). Enjoyment of recreation sites. Significant/sacred sites are protected. | Cultural mapping; significant/sacred site surveys; biodiversity surveys; participatory research (e.g. interviews, ranking, focus group discussions, transect walks, surveys, timelines, storytelling, art, photography); photo point monitoring; fire scar mapping; vegetation mapping; water quality monitoring; local seasonal calendars. |
| Biodiversity | Abundance of key indicator species (right time, right place, right species). Hunting/fishing/harvesting performance. Status of threatened species. Trends in size of protected area networks. Trends in numbers of invasive species. | Biodiversity surveys; camera trapping; participatory research (e.g. interviews, ranking, focus group discussions, transect walks, surveys, timelines, storytelling, art, photography); threatened species surveys; invasive species surveys; National Reserve System data. |
| Community safety | Trends in perceived safety. | Participatory research (e.g. interviews, ranking, focus group discussions, transect walks, surveys, timelines, storytelling, art); social return on investment. |
| Ecosystem function | Perceived abundance of key indicator species (right time, right place, right species). Hunting/fishing/harvesting performance. Water colour, taste and smell (right time, right place). Distance travelled to access potable water. 'Right way' fire. Work is planned and implemented using local seasonal calendars. Trends in human health. Trends in size of protected area networks. Ecosystem services (e.g. pollination, water flows, etc.). Landscape fragmentation | Seasonal calendars; participatory research (e.g. interviews, ranking, focus group discussions, transect walks, surveys, timelines, storytelling, art, photography); National Reserve System data; fire scar mapping; two-way environmental health monitoring; water quality monitoring; GIS. |

| Value | Possible Indicators ¹ | Possible monitoring and evaluation Tools/Sources ² |
|--|---|--|
| Education, training, employment & development | <p>Number and level of educational qualifications completed.</p> <p>School attendance.</p> <p>Number of ILSM-related jobs.</p> <p>Income from 'on Country' enterprise activities.</p> <p>Number of 'right people' on 'back to Country' trips.</p> <p>Number of days per year spent on Country.</p> <p>Ceremonies happening at the 'right time'.</p> <p>Indigenous knowledge is being passed on to younger generations.</p> <p>Young people singing and dancing the 'right way'.</p> | <p>People on country logbook; skills and employment records; financial accounting; (e.g. interviews, ranking, focus group discussions, transect walks, surveys, timelines, storytelling, art, photography, mapping); cultural mapping; school/education dept. records; social return on investment.</p> |
| Identity & cohesion | <p>Number of days per year spent on Country.</p> <p>Number of campfires on Country.</p> <p>The 'right people' making decisions for the 'right things' on Country.</p> <p>Indigenous knowledge is being passed on to younger generations.</p> <p>Young people singing and dancing the 'right way'.</p> <p>The 'right language' being spoken on Country.</p> <p>Enjoyment of recreation sites.</p> <p>All visitors obtain appropriate permissions to access Country before arriving.</p> <p>Maps, signs and other information about Country use 'proper' local names for places.</p> <p>Significant/sacred sites are protected.</p> <p>Resources are being shared in accordance with local law, custom and tradition.</p> | <p>Logbook for people on country; participatory research (e.g. interviews, ranking, focus group discussions, transect walks, surveys, timelines, storytelling, art, photography, mapping); cultural mapping; fire scar mapping; visitor permit compliance/monitoring; significant/sacred site surveys.</p> |
| Human rights | <p>Indigenous knowledge is being passed on to younger generations.</p> <p>Ceremonies happening at the 'right time'.</p> <p>The 'right people' making decisions for the 'right things' on Country.</p> | <p>Participatory research (e.g. interviews, ranking, focus group discussions, transect walks, surveys, timelines, storytelling, art, photography, mapping); visitor permit compliance/monitoring; significant/sacred site surveys.</p> |
| Material | <p>Number of campfires on Country.</p> <p>Significant/sacred sites are protected.</p> <p>Hunting/fishing/harvesting performance.</p> <p>Health of animals and plants (e.g. fat content, taste, size, appearance, etc.).</p> <p>Trends in human health (i.e. life expectancy, prevalence of disease, etc.).</p> | <p>People on country logbook; Significant/sacred site surveys, water quality monitoring, cultural mapping, seasonal calendars, participatory research (e.g. interviews, ranking, focus group discussions, transect walks, surveys, timelines, storytelling, art, photography, mapping).</p> |

| Value | Possible Indicators ¹ | Possible monitoring and evaluation Tools/Sources ² |
|-----------------------|---|--|
| | <p>Abundance of key indicator species (right time, right place, right species).</p> <p>Distance travelled to access potable water.</p> <p>Water colour, taste and smell (right time, right place).</p> | |
| Place/Heritage | <p>Abundance of key indicator species (right time, right place, right species).</p> <p>Hunting/fishing/harvesting performance.</p> <p>Significant/sacred sites are protected.</p> <p>Indigenous knowledge of Country is being passed on to younger generations.</p> | <p>Significant/sacred site surveys, cultural mapping, seasonal calendars, participatory research (e.g. interviews, ranking, focus group discussions, transect walks, surveys, timelines, storytelling, art, photography, mapping), National Reserve System data.</p> |
| Spiritual | <p>Enjoyment of recreation sites.</p> <p>Number of campfires on Country.</p> <p>Number of 'right people' on 'back to Country' trips.</p> <p>Number of days per year spent on Country.</p> <p>Ceremonies happening at the 'right time'.</p> <p>Young people singing and dancing the 'right way'.</p> <p>The 'right language' being spoken on Country.</p> <p>Perceived abundance of key indicator species (right time, right place, right species).</p> <p>Hunting/fishing/harvesting performance.</p> <p>Significant/sacred sites are protected.</p> <p>Trends in perceived safety.</p> | <p>People on country logbook; seasonal calendars, participatory research (e.g. interviews, ranking, focus group discussions, transect walks, surveys, timelines, storytelling, art, photography, mapping); significant/sacred site surveys.</p> |

1 These indicators have been developed based on fieldwork conducted through the ARC Project and adaptation of the cultural ecosystem service framework. Their relevance to other Indigenous groups will vary and it is not intended that all indicators would necessarily be applied in concert. Rather, in local efforts to monitor ILSM trends and status of intercultural values groups are encouraged to consider these lists while developing their own set of locally meaningful indicators.

2 This list is by no means exhaustive, rather indicates the variety of tools discussed throughout the ARC Project. For further guidance on the application of these tools and others refer to key references.