



What do you really need to know?

An overview of the challenges associated with the management of Aboriginal and Torres Strait Islander knowledge by seed bank institutions

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Working paper

CW018

2014



An Australian Government Initiative



Citation

Shepherd M, Perry M and Martin P. 2014. *What do you really need to know? An overview of the challenges associated with the management of Aboriginal and Torres Strait Islander knowledge by seed bank institutions*. CRC-REP Working Paper CW018. Ninti One Limited, Alice Springs.

Acknowledgement

We acknowledge Ms. Leanne Liddle, Manager APY & West Coast, SA Department of Premier and Cabinet, Aboriginal Affairs and Reconciliation, as the source of the title question of this paper; which neatly sums up a key issue in the relationship between Aboriginal and Torres Strait Islander knowledge and seed banks.

The Cooperative Research Centre for Remote Economic Participation receives funding through the Australian Government Cooperative Research Centres Program. The views expressed herein do not necessarily represent the views of CRC-REP or its Participants.

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Contents

Executive summary	iii
1. Introduction	1
1.1 What is Aboriginal and Torres Strait Islander knowledge?	2
1.2 Seed bank institutions and Aboriginal and Torres Strait Islander knowledge.....	2
2. Colloquium presentations and issues arising	3
2.1 What are the issues associated with acknowledging cultural interests in seed biobanking and research?	3
2.2 Do cultural interests remain with the seed?.....	3
2.3 Can current legal mechanisms deal with cultural complexity in scientific research?.....	4
2.4 Is traditional knowledge subject to biopiracy?	4
3. What are some of the risks to effectively dealing with traditional knowledge about seeds through legal and institutional arrangements?	5
3.1 Some political issues.....	6
3.2 Some operational issues	6
3.3 Some unintended consequences	7
4. Components of institutional performance management	7
4.1 Operating protocol	8
4.2 Knowledge into obligation.....	8
4.3 Administrative process.....	9
5. Conclusion	10
6. Options for further collaboration.....	11
References.....	12

Figures

Figure 1: Dimensions of a seed bank and Aboriginal and Torres Strait Islander knowledge relationship	5
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Boxes

Box 1: A declaration of trust for the protection of Aboriginal and Torres Strait Islander knowledge ...	9
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Executive summary

This discussion paper reports on the outcomes of a colloquium held in Canberra on 21 June 2014 at the Humanities Research Centre, Australian National University. The University of New England ran the event in conjunction with the CRC for Remote Economic Participation. We acknowledge the Ngunnawal people as the traditional owners and custodians of the land on which the colloquium took place.

The colloquium was held to discuss the challenges associated with seed banking and Aboriginal and Torres Strait Islander knowledge and to see how those challenges could be responded to effectively, fairly and efficiently.

The four questions posed to structure the discussion were:

1. Do we need to acknowledge cultural interests when biobanking seeds and using them in research?
2. Do cultural interests travel with a seed throughout such processes?
3. Can current legal mechanisms, such as intellectual property, be used to deal with cultural complexity in a scientific research setting?
4. Is traditional knowledge of seeds liable to be subjected to biopiracy?

Responses showed that seed banks currently determine the amount of cultural knowledge that is collected and that it is critical to distinguish between ecological and culturally sensitive information in the collection of seed data. As intellectual property laws have proven inadequate to protect traditional knowledge associated with seeds and prevent biopiracy, other approaches need to be explored, such as the legal principle of kinship and cooperative approaches.

Bridging the gap between collecting data about seeds and being respectful of the cultural integrity of those data raises political and operational issues, and actions may have unintended consequences. Organisations that collect seed need to take these issues into account in their management processes; they can improve their accountability through:

1. an operating protocol for knowledge collection
2. a means to convert the knowledge transaction into obligations, such as through a knowledge trusteeship
3. an administrative process to manage and enforce responsibility.

Of these three areas, the first is currently the most developed, and the second two have most scope for further research. Ongoing collaboration between seed bank institutions and stakeholders will also be an important part of further work. This will be supported by the special issue of the *International Journal of Rural Law and Policy*, due mid-2015, which will report in more detail on the colloquium.

1. Introduction

There is a growing interest among Aboriginal and Torres Strait Islander communities in documenting, recording and recovering Aboriginal and Torres Strait Islander knowledge (UTS & NWLLS 2014). Seed bank institutions are potentially an important part of this process due to the knowledge they already hold within collections and because of the potential for ongoing data collection likely to draw on Aboriginal and Torres Strait Islander knowledge. Simultaneously, there is a growing interest among seed banks for the collection of native plant seed and associated knowledge as a form of biodiversity conservation and food security insurance in the face of global-scale climate system impacts on ecosystems.

Effective, efficient and fair institutional arrangements to ensure seed bank collection and storage practices respect Aboriginal and Torres Strait Islander knowledge holders is critical to improve governance and social justice outcomes in remote and regional Australia (Howitt et al. 2014). On 21 June 2014, researchers from the Australian Centre for Agriculture and Law met with a diverse group of researchers and practitioners associated with seed bank institutions, to scope out these issues. This brought together skills from botanical sciences, seed bank management, socio-cultural studies, policy and law.¹

The purpose of the colloquium was, firstly, to scope out perceived challenges associated with seed banking and Aboriginal and Torres Strait Islander knowledge and, secondly, to highlight the type of responses that might prove effective, fair and efficient in dealing with the challenges.

Perceived challenges were aired by a range of invited speakers, in response to the following questions:

1. Do we need to acknowledge cultural interests when biobanking seeds and using them in research?
2. Do cultural interests travel with a seed throughout such processes?
3. Can current legal mechanisms, such as intellectual property, be used to deal with cultural complexity in a scientific research setting?
4. Is traditional knowledge of seeds liable to be subjected to biopiracy?

It is not the purpose of this paper to reiterate the positions presented by each of speakers at the colloquium.² But we will identify the range of issues that arose in discussion following the presentations. This forms the basis for further debate about the use and protection of Aboriginal and Torres Strait Islander knowledge by seed banks.



¹ In addition to the authors of this paper, speakers and participants at the colloquium included Matthew Rimmer (ANU), Sally Norton (Australian Grains Genebank), Sue Scheele (Landcare Research NZ), Shashank Mauria (Indian Council of Agricultural Research), Kylie Lingard (UNE), Leanne Liddle (as noted in the Acknowledgements), Ruth Hawthorn (UNE), Steven Forbes (Botanic Gardens of Adelaide), Peter Cuneo (Mt Annan Botanic Garden), Gerry Turpin (Indigenous Tropical Herbarium, Cairns), Slade Lee (SCU), Charles Dawson (HECUA NZ) and Lucy Sutherland (Australian Seed Bank Partnership).

² Contributions will be published as a special edition of the online *International Journal of Rural Law and Policy* during 2015.

1.1 What is Aboriginal and Torres Strait Islander knowledge?

Aboriginal and Torres Strait Islander peoples' knowledge about their geographic country is potentially a dynamic accumulation of human innovation and ecological adaptation stretching across time (Nolan and Turner 2011). It is an experiential system that is the product of observations across generations, about interrelationships between people and place and the inherent moral responsibilities these connections bring (Whitt 2009). By their nature, these knowledge systems combine cultural and biophysical details as a communal yet individually interpreted way of knowing about survival in a particular place (Bartel 2013). The bond between people and place has been identified as a type of fiduciary relationship (Whitt 2009). This does not mean that such knowledge is a common resource, freely available to all. For the sake of illustration and in relation to the content of this paper, we contend that Aboriginal and Torres Strait Islander knowledge is characterised by traditional functional and ecological knowledge about seeds and by cultural knowledge that may be sacred/secret and is fundamental to cultural integrity. This distinguishes between what is known in relation to the collection, storage and cultivation of any seed and what could be revealed about its cultural significance and traditional uses. This classification reflects that working together requires an approach to respect that not all knowledge can be shared; some knowledge may be public but other knowledge, although shared, may be private; and not all knowledge can be documented or talked about (Orr et al. 2009).

1.2 Seed bank institutions and Aboriginal and Torres Strait Islander knowledge

The disclosure of traditional knowledge during seed collection and the risk this may cause to cultural integrity is fundamentally an institutional performance problem. This prompts us to question if, and how, legal institutional arrangements might help create synergy rather than conflict between Aboriginal and Torres Strait Islander knowledge custodians and seed banks. There are at least three distinct elements to such arrangements

- an operating protocol for knowledge collection
- a means to convert the knowledge transaction into legal obligations
- an administrative process to manage and enforce responsibility.

The discussion below begins with the issues identified in response to the discussion questions (1–4 above). This is followed by identifying the dimensions of the challenge, conceived as the range of potential risks (political, operational and unintended) that were identified during the colloquium as potential issues for seed banks to effectively deal with traditional knowledge about seeds. We then provide an overview of the components of institutional performance that might be applied to seed bank and Aboriginal and Torres Strait Islander knowledge transactions. The next steps for the project are identified in the conclusion.



2. Colloquium presentations and issues arising

2.1 What are the issues associated with acknowledging cultural interests in seed biobanking and research?

Seed banks focus on the collection of samples (seed, DNA, in-vitro culture and microorganisms) and associated data (what, how, where, when and taxonomy). Aboriginal and Torres Strait Islander knowledge might be part of the dataset that is kept in an inventory with the sample. Samples and data may then be accessed for breeding, training and research purposes, subject to a material transfer agreement that provides for fair sharing of the benefits obtained. In this context, benefits amount to standard measures of performance associated with a research institution, such as acknowledgement as a source of data and material in publications. Any traditional knowledge held as data may be caught in this attribution to the seed bank institution.

Seed banks currently decide the extent of traditional knowledge that is collected when cataloguing seed. An informal best practice approach or industry norms may guide institutions with such decisions. For example, institutional networks such as the Australian Seed Bank Partnership³ provide a forum for sharing best practice experience and engaging in peer review of performance. However, guidelines about collection of traditional knowledge are various and not standard across jurisdictions. A few guidelines identified to date include those produced by Desert Knowledge CRC (Orr et al. 2009), Territory Natural Resource Management (2013) and Flora Bank (1998). We shall return to the issue of a knowledge collection protocol in the third part of the paper.

A critical issue raised at the colloquium is the need to distinguish traditional functional and ecological knowledge about seeds from cultural knowledge/secrets that are fundamental to cultural integrity. This distinguishes between what is known in relation to the collection, storage and cultivation of any seed and what could be revealed about its cultural significance and traditional uses. Given that a seed bank is focused on preservation and storage of seeds, secret cultural information about a seed is really not required. This helps to address the risk that traditional cultural knowledge will be compromised by exposure. This is the reason for being clear about what knowledge needs to be disclosed for seed storage and preservation purposes, and the source of the opening question that is the title of the paper.

2.2 Do cultural interests remain with the seed?

Legal momentum for acknowledgement of cultural interests in seeds comes from state support for the *United Nations Declaration on the Rights of Indigenous Peoples* (UN 2008). A key practical question arising out of this is can Aboriginal and Torres Strait Islander nation resource sovereignty coexist with existing state interests and how? Aboriginal and Torres Strait Islander interests in seeds might include respect and recognition, conservation, participation, economic development, and control. Dealing with such diversity might be enabled through a process based on Aboriginal and Torres Strait Islander cultural regions to ensure free, prior and informed consent in relation to any traditional knowledge about seeds. Other approaches to protecting traditional knowledge associated with seed include laws for protection of plant varieties and farmers' rights, equitable benefit sharing under biodiversity law, negotiated access to traditional knowledge databases and use of intellectual property law (patents). Negotiated access to

³ The Australian Seed Bank Partnership is a seed conservation program run by the Council of Heads of Australian Botanic Gardens Inc.

knowledge databases is an approach that has worked well for medicinal uses of indigenous plants in India. It may have broader application but is subject to outstanding questions such as whether that approach is sensitive to and useful for event-specific tracking of Aboriginal and Torres Strait Islander knowledge transactions.

2.3 Can current legal mechanisms deal with cultural complexity in scientific research?

Biological knowledge is some of the most important information possessed by any culture, and intellectual property laws have not proven adequate in protecting this sort of community cultural knowledge. Intellectual property law has tended to monopolise knowledge, as evidenced by its use in development of biotechnology. Experience in New Zealand using a principle of kinship in the Waitangi Tribunal Claims associated with land, indigenous flora and fauna and traditional knowledge and culture has provided a means to specify core cultural values that must be respected. With kinship, come rights and obligations of stewardship, by people over plant material, to be protected and fulfilled in partnership. Even so, there remains difficulty in returning proceeds to people for use of their cultural heritage, such as when cultural stories are used in the commercialisation of plants. This overall experience may provide some comparative insights in relation to institutional processes that respect cultural integrity.

2.4 Is traditional knowledge subject to biopiracy?

Scientific endeavour is known to have resulted in the appropriation and commodification of traditional knowledge (Hardison and Bannister 2011).⁴

Contemporary seed bank institutions are attempting to implement more cooperative approaches to knowledge gathering, for example; the Royal Botanic Garden at Kew has developed a cooperative approach to conserve seeds locally and share knowledge through global biodiversity conservation projects such as the Millennium Seed Bank Partnership⁵ and Useful Plants⁶ project. The Royal Botanic Gardens Melbourne is part of this approach. Such collections provide a public interest function by storing seeds and associated data for conservation purposes. Where traditional knowledge is part of the data, access is determined based on the terms of prior informed consent agreements.



⁴ However, the exposure of sensitive cultural knowledge has not necessarily been restricted to the historical activities of botanical science institutions. For example, the Australian *Native Title Act 1993* requires Aboriginal and Torres Strait Islander Australians to divulge their knowledge in order to make a title claim.

⁵ See www.kew.org/science-conservation/millennium-seed-bank

⁶ See www.kew.org/science-conservation/research-data/science-directory/projects/project-mgu-useful-plants-project

3. What are some of the risks to effectively dealing with traditional knowledge about seeds through legal and institutional arrangements?

The challenge discussed above is to effectively bridge a gap between collection and management of seeds and data in seed banks and respect for cultural integrity in relation to Aboriginal and Torres Strait Islander knowledge about seeds that potentially forms part of a dataset. Any consideration of Aboriginal and Torres Strait Islander culture and interactions with scientific institutions is fraught with complex political and operational issues and unintended consequences (Figure 1 below). Engaging with these is a fundamental part of supporting the transition to effective and respectful management of Aboriginal and Torres Strait Islander knowledge in seed bank institutions.

The relationship between seed bank practice, traditional knowledge and cultural integrity raises several questions about potential risks and their management. Risk is a socially constructed phenomenon based on what people know, understand and believe (Martin and Williams 2010). Effectively minimising risk requires a process wherein different interests and values are considered important, and the threats to these are carefully identified and their likelihood evaluated.

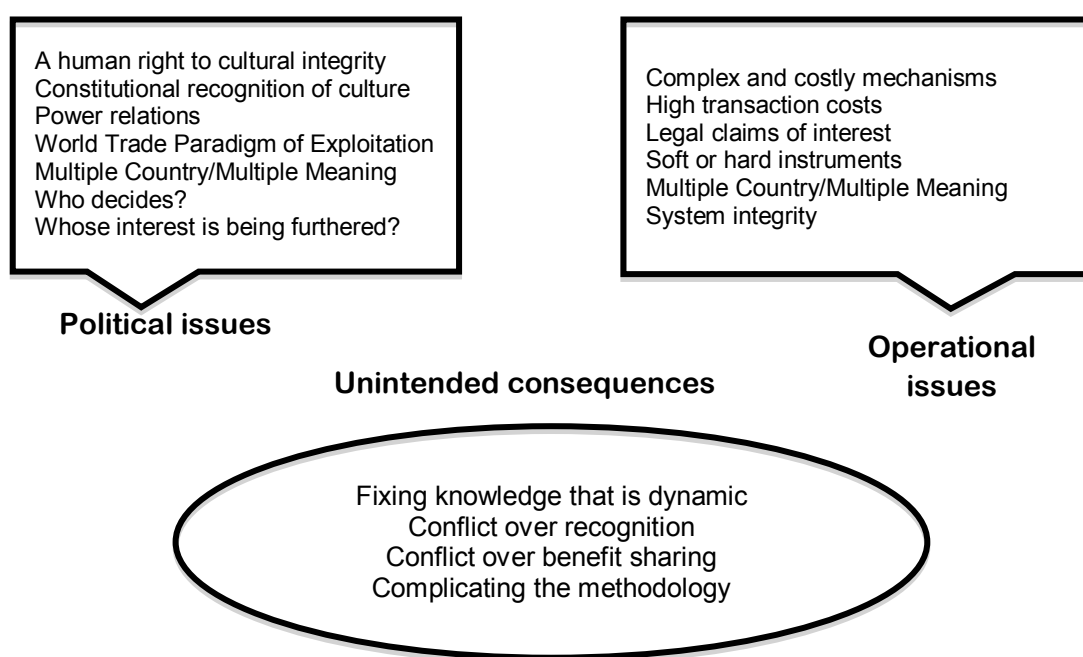


Figure 1: Dimensions of a seed bank and Aboriginal and Torres Strait Islander knowledge relationship

The following pages document the risks associated with Aboriginal and Torres Strait Islander knowledge and seed bank practices. These are grouped as questions about potential political, institutional or unintended consequences. Following this we identify some important components of a performance management system that might effectively, fairly and efficiently implement institutional accountability for Aboriginal and Torres Strait Islander knowledge.

3.1 Some political issues

Virtually any approach to consideration of cultural issues in science is rife with political complexity. Any scientific initiative taken comes with decisions about who to engage in these issues. Equally, a decision *not* to engage can also trigger the same complexities, for it represents a decision by one interest group to exclude other interest groups.

1. The issues intersect with issues of human rights. It is a matter of human rights to have your cultural integrity respected, and there are a number of places in the world where constitutional provisions (as well as international conventions) intersect with the issues.
2. With the capture of data about culture comes recognition of some sort of cultural interest. This could easily translate into issues of power in relation to the management of species. Issues of power cannot be ignored.
3. There is a discussion of the problem of ‘scientism’, the political dominance of a reductionist worldview and the exclusion of other perspectives. Generally, this is associated with exploitative capitalism. It is possible that existing arrangements can be criticised on this basis.
4. There is a political and practical question about whose culture needs to be identified, and this is particularly difficult where species have inherited a number of cultural heritages. The issue of culture within the seed is not limited to cultures of Indigenous people; many seeds have a very complex political and cultural ancestry (e.g. Canadian wheat, varieties of corn, etc).
5. The issue of who has the right to determine what can be captured, disseminated, protected and kept secret all have significant political dimensions.
6. On the other side of the coin, the decision by the science community that cultural issues are not important enough to be captured is also a political choice that could be criticised.
7. Any such system will ultimately come to reflect the competing aims of different stakeholders and the likelihood that some will use any such instrument to pursue their particular objectives.

3.2 Some operational issues

1. The mechanisms used could be very cumbersome and costly, and the transaction costs associated with implementation could be very high. There is an issue of cost and benefit, both to the scientific community and to those whose culture is embodied in the seeds.
2. The possibility that recognition could lead to claims of interest, which in turn could complicate many transactions, is something which should be considered. Associated with this is the issue of power to determine what should be included.
3. A variety of instrumental approaches might be considered, ranging from the very soft approach such as developing practice guidelines or merely exchanging information about different approaches, through to voluntary standards or codes, and through to legal recognition. At this stage understanding of the issues is such that softer approaches are more likely to be useful.
4. There is a practical problem that seeds often span multiple cultures because they span different geographies. The issues of whose cultural identities should be reflected and could become very complicated.
5. There are possible difficulties in ensuring integrity in any such system.

3.3 Some unintended consequences

1. Once something is documented it becomes to some degree made rigid.
2. There is a risk of conflict over cultural interests and recognition, or potentially over some economic interest that might be claimed as a result of cultural recognition.
3. Cultural recognition clearly has the potential to make some aspects of scientific work more complex.

4. Components of institutional performance management

Institutional accountability with respect to Aboriginal and Torres Strait Islander knowledge is an element of socio-cultural performance management. Viewing the problem this way emphasises the role of a seed bank as part of a larger social system, where a structured and objective-driven approach is required to respectfully engage with communities, the people that make up those communities and the knowledge those people hold. A structured and objective-driven approach is one where strategic issues of concern for an institution and its stakeholders are used to set detailed performance objectives by which performance can be measured (Christen et al. 2006a). This is particularly confronting for science-based institutions such as seed banks, where social and cultural knowledge may be viewed as being less rigorous and therefore subordinate to quantifiable biophysical knowledge.

Good institutional governance emphasises responsibility and trust in the development of information exchange and sharing mechanisms that respect cultural integrity and Aboriginal and Torres Strait Islander knowledge in the interests of common good (Bessire et al. 2010). This is part of building the social capital of the institution (MacGillivray 2004): from within, to develop a practical understanding of what an equitable research relationship entails; and outwardly, to aid source communities in building capacity to maintain their cultural integrity and receive acknowledgement and benefits associated with future uses (Laird and Wynberg 2002). These are critical elements in a field where knowledge and biological resources are increasingly subject to commodification and where distinctions between public and private research are increasingly blurred (Laird and Wynberg 2002). Under such circumstances, it is only right that a practical process exists to help define the scope and substance of moral commitments related to biobank processes (Brownsword 2013).

The need to define clear processes is reinforced by legal developments related to biodiversity resource access and benefit sharing. Institutions such as the Australian National Botanic Gardens in Canberra and the Royal Botanic Garden in Sydney have endorsed principles for access to genetic resources and associated Aboriginal and Torres Strait Islander knowledge that reflect international legal provisions with the intent to promote harmonised access and benefit-sharing arrangements (CBD Unit Royal Botanic Gardens, Kew, 2000).⁷ Participating institutions are to develop and implement policy about acquiring, documenting uses of and sharing the benefits associated with genetic resources (CBD Unit Royal Botanic Gardens, Kew, 2000). In managing acquired resources and knowledge, the standard of performance is that institutions will make a reasonable and sincere effort to comply with the guidelines and principles.

Institutional efforts to improve the way that Aboriginal and Torres Strait Islander knowledge is recognised, assessed and valued are considered key issues for the development of policy and law (Vernooy and Ruiz

⁷ This is related to provisions in the *Convention on Biological Diversity* (CBD) and the *Convention on International Trade in Endangered Species of Wild Fauna and Flora* (CITES).

2012). We contend that practices are needed to enable the accountability of seed bank institutions for the Aboriginal and Torres Strait Islander knowledge they collect as well as to keep clear of culturally sensitive or secret knowledge. We view this as a matter of responsibility, where legal principles from equity can be used to improve accountability through a knowledge trusteeship arrangement (Martin and Jeffery 2007).

As mentioned in the introduction, there are three components of improved accountability of seed banks for their collection and handling of Aboriginal and Torres Strait Islander knowledge:

1. an operating protocol for knowledge collection
2. a means to convert the knowledge transaction into obligations
3. an administrative process to manage and enforce responsibility.

These are discussed in greater detail below.

4.1 Operating protocol

This component of institutional performance is critical to ensuring that exposure of culturally sensitive information (to the detriment of the person imparting it) is minimised. This approach is consistent with broader developments in strategic performance management that emphasise wellbeing and capacity building in the development of effective natural resources governance arrangements (e.g. Fenton 2006, Schirmer and Casey 2005, Chesson 2004). For example, the *Model Code of Practice* for community-based collectors of native plant seed identifies a common message across the sector about shared motivations and ethical position, including expected practices, operational choices, standard of service, and product quality (Flora Bank 1998). However, such a code is not currently standard practice for seed bank institutions across all jurisdictions.

The code identified above potentially supports development of an integrated approach to social performance by seed banks that fosters partnerships that are underpinned with trust and confidence and recognition of the social foundations of knowledge (Fenton 2006). This reinforces the social licence nature of the issues (Martin and Shepherd 2011), centred on the question ‘What is it that you actually need to know about a seed?’ The answer to this, in the context of an integrated social performance management system, is not simply about finding out and recording everything that is known in relation to a seed and plant. The risk to avoid is capturing knowledge that may fracture cultural integrity. When seed bank collectors are taking samples, it is of critical importance that protocols are in place to enable the collection of knowledge that is ecological but not culturally sensitive (Nolan and Turner 2011). A best practice approach or industry norms may guide institutions with such decisions. For example, institutional networks such as the Australian Seed Bank Partnership provide a forum for sharing best practice experience and engaging in peer review of performance.

4.2 Knowledge into obligation

Law may play a part in facilitating the transmission of reliable information between parties involved in transactions about seeds and related knowledge (Ferrari 2013). Legal tools can be practically deployed to provide rules that help build trust between stakeholders involved in a knowledge exchange. Trusteeship is one legal tool in particular that provides a frame of reference for interpretation and understanding the moral significance of human conduct. This is a concern with moral content, the nature of obligation, the demands of justice and the conditions of right (Bain 2003). For institutional accountability this entails an

approach to performance management that has a fit purpose and is compatible with community custodial obligations (Brownsword 2013). What this demands in practice is building institutional and legal structures that are flexible enough to support a range of Aboriginal and Torres Strait Islander obligations while allowing access to seeds and Aboriginal and Torres Strait Islander knowledge and resulting in benefit sharing (Vernooy and Ruiz 2012). An enforceable knowledge trust arrangement has been proposed as a way to achieve this (see Box 1 below) (Martin and Jeffrey 2007).

Box 1: A declaration of trust for the protection of Aboriginal and Torres Strait Islander knowledge

A simple written or verbal declaration of trust can take the following form:

1. a description of the information being provided
2. the use for which it is provided
3. any restrictions that the provider of knowledge wants placed on its use or dissemination
4. what the knowledge provider wants done with any commercial proceeds that might arise, including to whom they should be distributed.

(Note: This approach draws on existing equity principles to enforce just behaviour between people using (a) a duty to honour confidences, (b) a duty to honour assurances (c) the obligation not to mislead or deceive, and (d) an obligation not to engage in unjust enrichment.)

This approach potentially transforms the knowledge transaction into legally enforceable obligations. This makes knowledge trusteeship a suitable administrative approach to reform the performance of seed bank institutions with respect to the collection, use and ongoing provision of Aboriginal and Torres Strait Islander knowledge.

4.3 Administrative process

Defining the responsibilities of a seed bank in terms of accountability for Aboriginal and Torres Strait Islander knowledge is not only about satisfying concerns that are external to the institution. It is also about clearly defining the boundaries for which the institution is prepared to be accountable (Shepherd and Martin 2011). This means that a seed bank should be able to choose the conditions under which it will or will not accept information and choose how to administer the related responsibility (Martin and Jeffrey 2007). A declaration of trust may help ensure that the obligations are clear and at the forefront of administrative choices.

Particular institutional processes and administrative arrangements for enforcement in the seed bank sector need to be further defined and are a possible future direction for this research. Experience of multi-bottom-line performance management provides some guidance about how broader dimensions of institutional performance can be utilised for improving accountability (Christen et al. 2006b).



5. Conclusion

Aboriginal and Torres Strait Islander knowledge presents multiple issues for seed bank performance management due to the knowledge already held within collections, the potential for further access to knowledge through ongoing collection practices and the possible further use of knowledge as data attached to a seed. The nature of Aboriginal and Torres Strait Islander knowledge as a collective, inter-generational, yet individually interpreted understanding of relationships between people and place and the moral responsibilities such connections bring mean that the risk of fracturing cultural integrity due to exposure of culturally sensitive information is high. This understanding is an important part of improving social justice outcomes for Aboriginal and Torres Strait Islander communities in remote and regional Australia. In terms of institutional governance it represents a social licence issue tied to the core business of a seed bank.

The issues associated with Aboriginal and Torres Strait Islander knowledge and seed bank practices present a number of challenges to the management of Aboriginal and Torres Strait Islander knowledge, including:

- status and use of knowledge as part of a seed dataset
- a standard approach to distinguish functional and ecological knowledge about seeds from culturally sensitive Aboriginal and Torres Strait Islander knowledge
- appropriate mechanisms for tracking Aboriginal and Torres Strait Islander knowledge through seed bank collection, storage and further use stages
- finding legal mechanisms that do not alienate and monopolise Aboriginal and Torres Strait Islander knowledge
- provision for equitable benefit sharing.

Such issues may be categorised as being risks of political and operational nature or unintended consequences. This general classification of risk provides a basis for further analysis of these issues as potential risks to the seed bank social licence.

The institutional governance and social licence performance of a seed bank may be considered in three parts: a standard operating protocol for knowledge collection, a process to turn expectations from the knowledge transaction into legal obligations, and an administrative process that allows obligations to be managed and enforced. The first two elements have received varying levels of attention, but standard practice is not yet apparent across the seed bank sector.

Protocols already developed may provide a suitable basis for a knowledge standard for an Aboriginal and Torres Strait Islander seed bank if this is something that seed bank institutions are interested to pursue. For legal obligations, knowledge trusteeship is one example of an approach with theoretical potential to find a balance between protecting Aboriginal and Torres Strait Islander knowledge without alienating or appropriating it from its custodians and community. The practical application of knowledge trusteeship is an area for further research in relation to seed bank practices.

Administrative processes provide the greatest scope for further research. This is where the theory of social systems management is brought into the realm of seed bank institutional performance through the practice of obtaining and retaining a social licence. An integrated approach to social licence management by seed banks is not merely a public relations exercise. Any approach ought to foster partnerships between a seed bank and Aboriginal and Torres Strait Islander communities that is underpinned with trust and confidence

and recognises and protects the socio-cultural foundation of Aboriginal and Torres Strait Islander knowledge.

Institutional arrangements to address these issues need to be developed and fine-tuned for a ‘best fit’ application to seed bank practice. This is where the scope for future collaboration lies, to support a transition to more effective and respectful management of Aboriginal and Torres Strait Islander knowledge by seed banks.

6. Options for further collaboration

There are a few options for moving ahead with further work on the issues raised at the colloquium. This discussion paper is the first of these in its attempt to capture the main points made and threads of discussion from the colloquium. The second collaborative outcome is the special issue of the *International Journal of Rural Law and Policy* which is planned for publication in mid-2015.

The third aspect of ongoing collaboration is to set up discussion between seed bank institutions and stakeholders to further explore and begin to sketch what a transition to more effective and respectful management of Aboriginal and Torres Strait Islander knowledge by seed banks might look like in practice. There are some possible approaches identified in this paper, but these are not an exhaustive coverage of the options. Researchers from the Australian Centre for Agriculture and Law will be able to facilitate this and in the process identify options for future research, where appropriate.

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