Biopiracy in Queensland

A broken record that needs repair

Given that repeated calls for reform of access and benefit sharing laws have produced minimal success, perhaps it is time for Australia to stop playing a broken record and look for solutions outside of legislation and bureaucracy.

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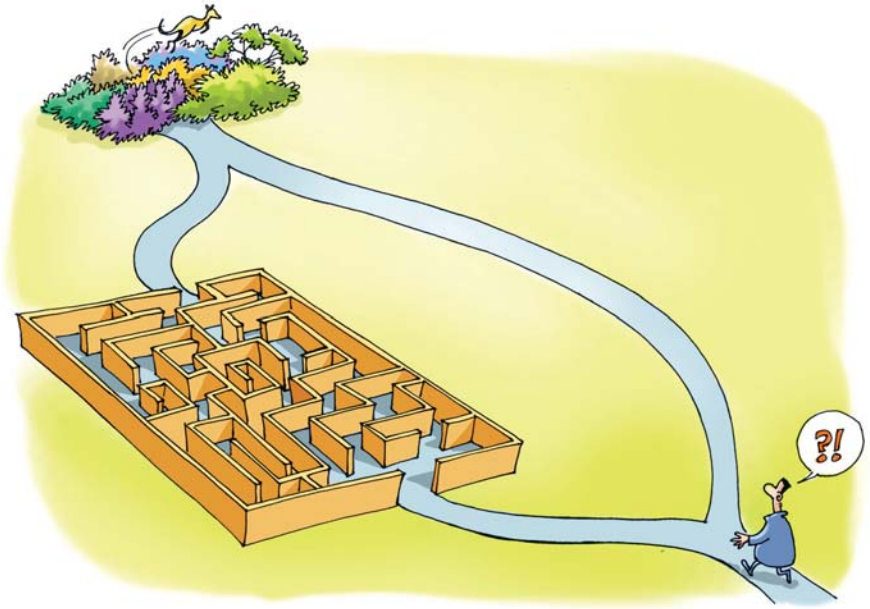
Australia is a megadiverse country, so the protection of its biological resources is a significant priority. Following its ratification of the Convention on Biological Diversity (CBD) in 1993, the Commonwealth Government enacted the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBCA) to protect areas of "national environmental significance". In accordance with the federal distribution of legislative powers, State Governments in Australia have also enacted laws for the protection of biodiversity.[1]



Biodiscovery to biopiracy

Genetic or biochemical analysis of naturally-occurring material is frequently used in scientific research to produce commercial products, especially pharmaceuticals. However, the practice—called *biodiscovery*—raises two important concerns.

First, the unrestrained use of native biological resources for scientific or commercial purposes can cause environmental harm and threaten biodiversity. Secondly, living materials and their associated traditional knowledge have been used and, in some cases, patented without the informed consent or appropriate benefit sharing with the indigenous community—termed *biopiracy*. For example, the smokebush plant (genus *Conospermum)* from Western Australia was investigated in the 1980s and patented as a medication for HIV by the United States (US) National Cancer Institute in 1993.[2] Although the healing properties of smokebush were known to local Aboriginal communities for genera-

tions, the State Government awarded the Institute an exclusive licence to conduct research into the smokebush, with no financial returns for the traditional custodians from whom the knowledge was obtained.[3]

Acts of biopiracy, similar to the smokebush patents, gave rise to Article 8(j) of the CBD, which requires that parties "respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities… and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices." The objectives of Article 8(j) were furthered in the 2010 *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization.*

Article 8(j) was recognised in Australia under section 3(g) of the EPBCA. Substantive provisions for access and benefit sharing (ABS) with Aboriginal and Torres Strait Islander communities were subsequently included in the *Environment Protection and Biodiversity Conservation Regulations 2000* (Cth). However, attempts to harmonize legislation in Australia have, in fact, produced a cacophony. The Council of Australian Governments collectively drafted a *Nationally Consistent Approach for Access to and the Utilisation of Australia's Native Genetic and Biochemical Resources* (NCA) in 2002. It sets out guidelines for biodiversity conservation and protection of Indigenous ecological knowledge. Principle 7 of the NCA obliges governments to "recognise the need to ensure that the use of traditional knowledge is undertaken with the cooperation and approval of the holders of that knowledge and on mutually agreed terms." Nevertheless, the legislative response from the State Governments has been deeply fragmented; in most cases, no legislation was produced at all.

Queensland was the first State to enact an ABS law: the *Biodiscovery Act 2004.* It was followed by the comprehensive *Biological Resources Act 2006* in the Northern Territory. Like the Commonwealth laws, and in accordance with the NCA, the Northern Territory's ABS scheme covers the traditional knowledge of Aboriginal and Torres Strait Islander communities, as well as biological resources accessed on State land.[4] Under the Act, the *biodiscovery* entity must obtain prior informed consent from the community. Any benefit sharing agreements must be on mutually-agreed terms.

Western Australia recently enacted the *Biodiversity Conservation Act 2016*. Although the regulation of bioprospecting was debated,[5] ABS rules were ultimately discarded. Section 256(3) of the Act allows scope for future regulations on ABS in the context of a government licencing scheme, but creates no substantive obligations. The other States have not yet implemented biodiscovery laws.[6]

Out of all the ABS legislations in Australia, Queensland's is the most likely to see any significant change soon. The *Biodiscovery Act* is reviewed every five years; the most recent findings were published in the 2009 Report[7] and the next report is due for publication this year. Depending on the findings and government response, the Act may be amended for greater consistency with other laws.

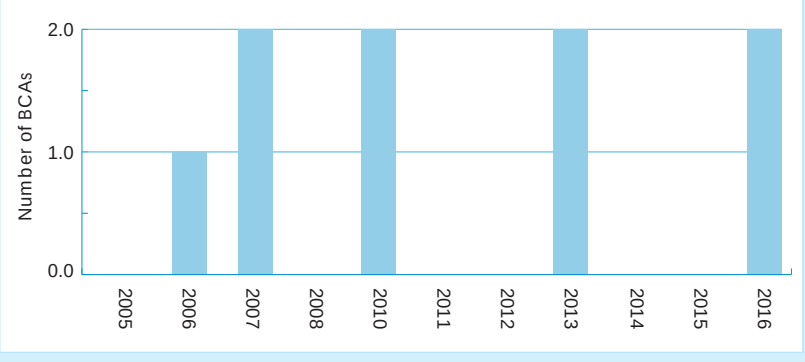
As it currently stands, the Act establishes a permit system, whereby a person can apply to the State Government for a biodiscovery collection authority (BCA) in order to take small amounts of native biological material for biodiscovery research. The BCA application process attracts no fees, but the person must enter into a benefit sharing agreement with the State Government within a year of approval. The agreement limits which commercialization activities can be undertaken, and stipulates the share of benefits—financial or non-financial—to be given to the State.[8]

The Queensland Government administers over 26 million hectares of State land covered by the Act. The subtropical State has high biodiversity and strong research institutions—two factors of significant interest for biodiscovery activities, and therefore BCA applications. But, the Biodiscovery Register tells a different story.

The last decade saw the grant of only nine BCAs (Figure). These numbers are surprisingly low. In contrast, at least 45 benefit sharing agreements were registered in the first three years of the Northern Territory legislation.[9] Although it is bizarre that so few BCAs have been issued, two main limitations of the statute may explain it.

'State land' limitation: The coverage of the *Biodiscovery Act* is limited to biological resources obtained from State land, such as parks and reserves. This is narrower than the Northern Territory law, which applies to private land as well and, notably, native title land

Figure
Number of BCAs issued in Queensland (2005-2016)



Source: Biodiscovery Register (as of 31/05/2016) for collection authorities administered by the Queensland Government Department of Environment and Heritage Protection (EHP)

under exclusive possession by Aboriginal communities. Though inconsistent with the NCA, Recommendation 3.1 of the 2009 Review suggested that the exclusion of private land be maintained in Queensland. The Review also suggested that Indigenous Land Use Agreements (ILUAs) were the most appropriate means of gaining access to native title land for biodiscovery.

Negotiation of access and benefit sharing: When the Queensland legislation was enacted, the protection of traditional knowledge had been the subject of international discussion for nearly two decades. Nevertheless, the Queensland legislation does not establish any mechanism for access and equitable sharing of benefits with Indigenous communities; the Act solely regulates ABS with the State.

The only mention of traditional knowledge and biopiracy is found in Article 10 of the *Code of Ethical Practice for Biotechnology in Queensland,* which stipulates that "Where in the course of biodiscovery we obtain and use traditional knowledge from Indigenous persons, we will negotiate reasonable benefit sharing arrangements with these persons or communities…" and "We will not commit acts of biopiracy and will not assist a third party to commit such acts." Although Recommendation 3.6 of the 2009 Review suggested that similar provisions be added to the *Compliance Code for Taking Native Biological Material under a Collection Authority,* it did not occur. In contrast, the Northern Territory and Commonwealth laws provide scope for fair and equitable benefit sharing agreements with Indigenous people.

Despite the inconsistencies between jurisdictions, Recommendation 7.1 of the 2009 Review suggested that Queensland should not harmonize with other schemes until after the conclusion of the *Nagoya Protocol*. However, a broader question remains: would that actually benefit traditional knowledge holders in Australia?

US cosmetic company, Mary Kay, was granted a US patent in 2007 for a skin cream made from the extract of the Kakadu plum *(Terminalia ferdinandiana)*, which is part of the traditional knowledge of the Mirarr people in Northern Territory.[11] It appears that the inconsistent Commonwealth laws meant that Mary Kay was able to remove samples of the plum from the country without negotiating with the Mirarr community. Nonetheless, opposition from Indigenous groups probably led to the withdrawal of the Australian patent application in 2011.[12]

The unclear ABS schemes have, to a large extent, been unsuccessful in meeting their objectives: ensuring private returns for Indigenous communities and governments, as well as biodiversity conservation.[13] Thus, ABS legislation might be viewed as more bureaucratic red tape that researchers should seek to avoid—avoidance of which is evidenced by the negligible engagement with the *Biodiscovery Act.*

Broadly speaking, two options seem to be available. The first is full compliance with the *Nagoya Protocol*. Amendments to the Queensland legislation which mirror the laws in the Northern Territory, if coupled

Box

Queensland ABS case study

The traditional knowledge of the Chuulangun Aboriginal community in northern Queensland includes a number of medicinal plant products, particularly from oils and resins of native woody plants. In 2003, the Chuulangun Aboriginal Corporation (CAC) initiated a project with scientists from the University of South Australia (UniSA), with two objectives:

i) To investigate the novel pharmacological actions and chemical compounds of plant species used as traditional medicines; and
ii) To facilitate the preservation and transfer of cultural knowledge about these plants.

UniSA entered into a Collaborative Research Agreement with CAC, which acknowledges the contributions of intellectual property from the community, namely the traditional knowledge about medicinal plant products and their properties. The agreement includes the equal sharing of commercial benefits and ensures that CAC are partners in commercialization decisions.[14] The joint activities are not regulated by any ABS laws; they are solely governed by contract.

The research, led by Dr. Susan Semple from UniSA's Quality Use of Medicines and Pharmacy Research Centre, and David Claudie from CAC, has primarily focused on treatments for inflammatory skin conditions. The plant *Dodonaea polyandra,* known as 'Uncha', has been traditionally used by the Chuulangun community as a treatment for mouth pain, infection of the oral cavity and inflammation.[15]

As well as being recognized as joint authors in several scientific publications about Uncha,[16] David Claudie and George Moreton from CAC were named as joint inventors on a patent application in 2010.[17] While the pharmaceutical development continues, CAC has taken the lead with on-country aspects of the research into collection of plant materials, examination of plant distribution, and analysis of the effects of plant harvesting. As part of the commercialization process, the researchers have sought to adhere to Indigenous ecological practices. The benefit sharing agreement ensures employment opportunities by having members of the Chuulangun community harvest the plants, rather than using Western 'controlled cultivation' methods. This is especially important in the context of Chuulangun spirituality and law, which dictates that only authorized members of the community may harvest Uncha, or it will lose its medicinal effect.

with harmonization across Australia, could have positive implications for Aboriginal communities and would reduce confusion for biodiscovery entities. This, however, would increase the regulatory burden on biodiscovery entities.

The second option is that Australian governments could abandon legislative schemes for ABS in the context of biopiracy and replace them with 'soft' codes and stronger education for Indigenous communities and biodiscovery entities. The removal of bureaucratic ABS laws could allow for individualized arrangements which suit the needs of particular traditional knowledge holders, as well as the nature of the biological research in question. In a similar vein, the 2009 Review did not support additional regulation, but instead recommended improvements to the online information about Indigenous knowledge holders (Recommendation 3.3), an education process about ILUAs and inclusion of a notification system about indigenous occupants under the Compliance Code. As the Queensland law currently stands, ABS agreements with indigenous communities can only occur outside of the legislative framework, commonly in the form of contracts or ILUAs. The extra-regulatory method could reduce transaction costs and yield more benefits for Indigenous communities; a successful example is set out below.

Red tape versus contract

In some respects, successful examples of ABS agreements with Indigenous communities like the UniSA-CAC collaboration (see Box on page 37) illustrate that tailor-made contracts can have more equitable outcomes than 'ticking boxes' under an inadequate legislative scheme. The low engagement with bureaucratic frameworks suggests a reticence to invoke red tape where a personalised contract would suffice. As such, one could argue that education and awareness about ABS would have better outcomes for traditional knowledge holders than the same old song of 'more government regulation'. Nevertheless, it is expected that the upcoming *Biodiscovery Act* review will recommend compliance with the *Nagoya Protocol*, as foreshadowed by the 2009 Review.[18]

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Like any framework, the *Nagoya Protocol* does not perfectly meet the needs of Indigenous communities, regardless of how consistent the laws are. Although there is little chance of uniform implementation of the *Nagoya Protocol* internationally, it is doubtful that the federal and State Governments will think laterally about the ABS issue. To that extent, the question for Australia is no longer *"Should* Nagoya-compliant ABS legislation be implemented?" but "In what *form?"* ■

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Notes

1 Relevant State legislation includes: *Environmental Protection Act 1994 (Qld); Environmental Protection Act 1970* (Vic); *Environment Protection Act 1993* (SA); *Protection of the Environment Operations Act 1997* (NSW); *Environmental Management and Pollution Control Act 1994* (Tas).

2 Kerr, P. 2010. "Bioprospecting in Australia – Sound Biopractice or Biodiversity?" 29(3) *Social Alternatives* 44, 45. Patent US5672607 "Antiviral naphthoquinone compounds, compositions and uses thereof".

3 Biber-Klemm, S., Cottier, T., Cullet, P., and Berglas, D. S. "The Current Law of Plant Genetic Resources and Traditional Knowledge". In *Rights to Plant Genetic Resources and Traditional Knowledge: Basic Issues and Perspectives* editors Susette Biber-Klemm and Thomas Cottier, 98. Centre for Agriculture and Biosciences International. 2006.

4 Collings, N., and Heidi Evans, H. 2009. "Access and benefit sharing: protecting biodiversity and Indigenous knowledge". *Indigenous Law Bulletin* 7(14): 11.

5 Western Australia. 2015. *Parliamentary Debates.* Legislative Assembly, 312-348. February 18.

6 The other States are New South Wales, Victoria, Tasmania and South Australia.

7 DLA Phillips Fox. 2009. *Statutory Review of the Biodiscovery Act 2004 (Qld)* Report No RPB01 / 0475042.

8 *Biodiscovery Act 2004* (Qld) ss 10, 33-34.

9 Holcombe, S., and Janke, T. 2012. "Patenting the Kakadu Plum and the Marjarla Tree". In *Intellectual property and Emerging Technologies* editors Matthew Rimmer and Alison McLennan, 293, 296. Edward Elgar.

10 Bull, J. and Shaw, T. 2014. "Implications of Nagoya Protocol implementation in Australia". *Australasian Biotechnology* 24(3): 59.

11 Holcombe, S., and Janke, T. 2012. Note 9.

12 Australian Patent Application 2007205838 "Compositions comprising kakadu plum extract or acai berry extract" filed 19 January 2007; withdrawn 12 October 2011.

13 Lawson, C. 'Patents and Access and Benefit-sharing Contracts: Conservation or Just More Red Tape?' (2011) 30(2) *Biotechnology Law Report* 197.

14 IP Australia. 2016. *Chuulangun Aboriginal Corporation and University of South Australia.* https://www.ipaustralia.gov.au/about-us/public-consultations/indigenous-knowledge-consultation/chuulangun-aboriginal-corporation. Accessed: October 1.

15 Simpson, B. S. et al. 2013. "Learning from Both Sides: Experiences and Opportunities in the Investigation of Australian Aboriginal Medicinal Plants". *Journal of Pharmacy and Pharmaceutical Science* 16(2):259, 264.

16 Simpson, B. S. et al. 2012. "Rare, seven-membered cyclic ether labdane diterpenoid from *Dodonaea polyandra*". Phytochemistry 141: 84; Simpson, B. S. et al. 2014. "Polyandric Acid A, a Clerodane Diterpenoid from the Australian Medicinal Plant *Dodonaea polyandra*, Attenuates Pro-inflammatory Cytokine Secretion in Vitro and in Vivo". Journal of Natural Products 77: 85.

17 Australian Patent Application 2010317657 "Anti-inflammatory compounds"; PCT PCT/AU2010/001502; WIPO WO 2011/057332 A1. Inventors: Susan Jean Semple, Bradley Scott Simpson, and Jacobus Petrus Gerber (University of South Australia), Ross Allan McKinnon (Flinders University), David Claudie and George Moreton (Chuulangun Aboriginal Corporation), and Jiping Wang (Monash University).

18 DLA Phillips Fox. 2009. Note 7.