

Dear Secretariat,

I am a senior lecturer and the director of Higher Degree Research at the ANU College of Law, and an associate director of the Australian Centre for Intellectual Property in Agriculture (ACIPA). I hold a BA (Hons) and a University Medal in literature, and a LLB (Hons) from the Australian National University. I received a PhD in law from the University of New South Wales for my dissertation on *The Pirate Bazaar: The Social Life of Copyright Law*. I am a member of the Copyright and Intellectual Property Advisory Group of the Australian Library and Information Association, and a director of the Australian Digital Alliance. I have published widely on copyright law and information technology, patent law and biotechnology, access to medicines, clean technologies, and traditional knowledge.

My work is archived at SSRN Abstracts and Bepress Selected Works. I am the author of *Digital Copyright and the Consumer Revolution: Hands off my iPod* (Edward Elgar, 2007), and *Intellectual Property and Biotechnology: Biological Inventions* (Edward Elgar, 2008). I have also edited the thematic issue of *Law in Context*, entitled *Patent Law and Biological Inventions* (Federation Press, 2006). I was a chief investigator in an Australian Research Council Discovery Project, "Gene Patents In Australia: Options For Reform" (2003-2005), and an Australian Research Council Linkage Grant, "The Protection of Botanical Inventions" (2003). I am currently a chief investigator in an Australian Research Council Discovery Project, "Promoting Plant Innovation in Australia" (2009-2011).

I am keen to participate in the EPBC Review. In particular, I would like to submit these two refereed articles for consideration by the inquiry. The pieces focus upon the issue of access to genetic resources, and consider the interplay between intellectual property law, environmental law, contract law, native title law, and international law.

Matthew Rimmer. "The Sorcerer II Expedition: Intellectual Property and Biodiscovery", *The Macquarie Journal of International and Comparative Environmental Law*, Dec. 2008 (forthcoming). Available at: http://works.bepress.com/matthew_rimmer/64

Matthew Rimmer. "Blame It On Rio: Biodiscovery, Native Title, and Traditional Knowledge" *Southern Cross University Law Review* Dec. 2003: 1-49. Available at: http://works.bepress.com/matthew_rimmer/25

I am sorry that I was unable to make this submission by Friday. I do hope that you will accept this late submission.

Kind regards,

Dr Matthew Rimmer

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**THE SORCERER II EXPEDITION:
INTELLECTUAL PROPERTY AND BIODISCOVERY**

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Abstract

This article considers the significance of a leading marine biodiscovery initiative. In March 2004, Dr. J. Craig Venter announced the official launch of the Sorcerer II Expedition, a scientific expedition of discovery, which would survey marine and terrestrial microbial populations. The Expedition has the potential to uncover tens of thousands of new microbial species and tens of millions of new genes. Venter has disavowed that the Sorcerer II Expedition has any commercial ambitions. However, some have viewed the Sorcerer II Expedition with suspicion. Various civil society groups have accused the Expedition of engaging in 'biopiracy'. This article investigates the *Rio Convention on Biological Diversity* 1992 and other relevant international treaties, various national and regional regimes to govern access to genetic resources, and benefit-sharing agreements. It considers the intersection of intellectual property law, contract law, environmental law, and international law in this field. This article provides a blueprint for a nationally consistent scheme for access to genetic resources, and a model for future international developments.

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Introduction

In one drop of water are found all the secrets of the oceans.

Kahlil Gilbran¹

Join genome pioneer Dr. J. Craig Venter as he scours the world's oceans for new life forms and genetic secrets that could help solve the planet's most urgent energy and climate challenges. From Nova Scotia to the Galapagos islands to Antarctica, Dr. Venter embarks on a mission to map the DNA of every microscopic organism in the ocean. Along the way, he discovers new species and new methods of tackling weather anomalies, ocean pollutants and even global warming.

'Cracking the Ocean Code', DVD, Discovery Channel²

Inspired by the scientific expeditions of Linnaeus' 'apostles', Joseph Banks, and Charles Darwin,³ as well as modern-day marine adventurers such as Jacques Cousteau, Dr. J. Craig Venter announced the official launch of the Sorcerer II Expedition in March 2004.⁴ This scientific expedition circumnavigated the globe, surveying marine and terrestrial microbial populations:

The Sorcerer II Expedition was inspired in part by the journeys of the HMS Beagle and HMS Challenger in the nineteenth century. But unlike those pioneering explorers, the Sorcerer II team will classify the species they encounter not by their appearance but by their unique genetic codes, or genomes. Microorganisms represent most of the biomass on the planet, and they are the unsung heroes of the Earth's environment. Microorganisms capture energy from the sun, remove carbon dioxide from the air, and cycle nitrogen through the ecosystem. The Sorcerer II Expedition will catalogue the genes belonging to communities of microorganisms, providing information that could be used to address some of the world's environmental problems. The information, which will be freely available through Internet databases, will

¹ J. Craig Venter Institute (2004), *Sorcerer II Expedition: A Global Voyage of Discovery*, <http://www.sorcerer2expedition.org/version1/HTML/main.htm>

² Venter, J.C. (2005), 'Cracking the Ocean Code', DVD, Discovery Channel.

³ Shreeve, J. (2004), 'Craig Venter's Epic Voyage to Redefine the Origin of Species', *Wired Magazine*, **12** (8), 107-113, 146-151.

⁴ J. Craig Venter Institute (2004), *Sorcerer II Expedition: A Global Voyage of Discovery*, <http://www.sorcerer2expedition.org/version1/HTML/main.htm>

advance the new discipline of environmental genomics and will be used to study the environment, biodiversity, ecology, and evolution.⁵

The Expedition sought to uncover tens of thousands of new microbial species and tens of millions of new genes. The Sorcerer II expedition was undertaken by a not-for-profit scientific and educational organisation, the J. Craig Venter Institute (the Institute).⁶ The voyage and sample collection was funded by the J. Craig Venter Science Foundation, the Discovery Channel Quest Program, the United States Department of Energy, and the Gordon and Betty Moore Foundation.

The Sorcerer II travelled from Nova Scotia through the waters of the Galapagos Islands, French Polynesia, the Great Barrier Reef and the Amazon River, to the Caribbean Sea. The research team collected samples for analysis in the US using the shotgun technique of identifying an organism's DNA sequence. The initial pilot project in the Sargasso Sea discovered at least 1,800 new species and more than 1.2 million new genes doubling 'the number of genes previously known from all species in the world' and nearly 800 photoreceptor genes that convert sunlight to energy.⁷ In the course of the full expedition, the research team took a total of 41 different samples were taken from a wide variety of aquatic habitats collected over 8,000 km: 'The resulting 7.7 million sequencing reads provide an unprecedented look at the incredible diversity and heterogeneity in naturally occurring microbial populations.'⁸

The United States Department of Energy provided funding to the Sorcerer II Expedition in the hope that it would provide insights into alternative energy sources. The United States Secretary of Energy, Spencer Abraham, commented:

⁵ J. Craig Venter Institute (2004) 'IBEA Announces Sorcerer II Expedition to Sample World's Oceans and Land to Characterize and Understand Microbial Populations Using Environmental DNA Sequencing', 4 March.

⁶ In 2004, The Center for Advancement of Genomics (TCAG), Institute for Biological Energy Alternatives (IBEA), and J. Craig Venter Science Foundation Joint Technology Center (JTC) were consolidated to form J. Craig Venter Institute.

⁷ Venter, J.C. et al. (2004), 'Environmental Genome Shotgun Sequencing of the Sargasso Sea', *Science*, **304**, 66-74.

⁸ Rusch, D. et al. (2007) 'Sorcerer II Global Ocean Sampling Expedition: Northwest Atlantic through Eastern Tropical Pacific', *The Public Library of Science Biology*, **5** (3), 398-431.

What excites the Department and our Office of Science about this project is its range of potential benefits. Scientists have used DOE funds to determine the genetic sequences of all the microorganisms occurring in a natural microbial community, which may lead to the development of new methods for carbon sequestration or alternative energy production. This will offer a direct and early test of one of the central tenets of DOE's Genomics: GTL program - that microbes can be used to develop innovative solutions to address national energy needs.⁹

The participation of this funding agency suggests that the Sorcerer II Expedition was more than merely an exercise in basic science. The Institute sought to explore biological energy solutions to environmental issues such as global warming and new biological sources of cleaner and more efficient fuels, such as hydrogen. There was an underlying motivation to conduct research on micro-organisms, with a view to achieving useful commercial outcomes.

The Sorcerer II Expedition is an example of a spectacular 'Big Science' project, which seeks to have a broader public appeal beyond science. The venture was funded by the Discovery Channel, which supported projects spearheaded by scientists and explorers who are at the vanguard of their fields: 'Their research activities will be chronicled via online and televised dispatches from sites around the world, in lecture series, and in landmark television specials that capture the toil, genius, setbacks and exhilaration that are the lifeblood of the search for knowledge.'¹⁰ The press release for the Institute observed:

Public education about the Expedition, its goals, and environmental genomics is an important component of the Sorcerer II Expedition. An interactive website, www.sorcerer2expedition.org is also being launched today so that teachers, students, kids and parents can follow the progress of the Sorcerer II Expedition. In addition to public lectures and outreach in the various countries, the Expedition is also being filmed as part of a Discovery Channel documentary. The Expedition has received support from Discovery through the

⁹ J. Craig Venter Institute (2004), 'IBEA Announces Sorcerer II Expedition to Sample World's Oceans and Land to Characterize and Understand Microbial Populations Using Environmental DNA Sequencing', 4 March.

¹⁰ Ibid.

Channel's Quest Program, a unique program intended to help fund scientific projects and capture on film the research activities of scientists.¹¹

The Discovery Channel broadcast a film of the Sorcerer II Expedition entitled 'Cracking the Ocean Code' to its network, which covers 89.1 million households across United States with its mix of information and entertainment.¹²

Since leaving Celera Genomics, Venter has taken a new approach to data access and scientific inventions. He has disavowed that the Sorcerer II Expedition has any commercial ambitions: 'Given the paramount scientific importance to the world of making these genomic sequencing data freely available, another guiding principle of the Expedition is that no patents or other intellectual property rights will be sought by IBEA or its collaborating scientists on these genomic sequence data.'¹³ With the Sorcerer II Expedition, Venter has changed his approach to the dissemination of genetic information. He has promised: 'Because genomic sequencing data from the Expedition should be of great interest to the international research and educational communities, these data will be made publicly and freely available to all.'¹⁴ He insisted that 'data will be deposited in the publicly available GenBank database.'¹⁵ He observed: 'After their public release, these data will be freely and publicly available worldwide and may be used by anyone for any purpose.'¹⁶ It is worth evaluating whether this model of data sharing is a viable means of disseminating information.

The Institute has emphasized that it would comply with relevant international treaties, national laws, and memoranda of understanding:

Consistent with national laws and applicable international treaties, and under the guidance of the U.S. Department of State, IBEA obtains permits for research and sampling from every country in which samples will be taken. Scientific collaboration, education and training are an

¹¹ Ibid.

¹² Venter, J.C. (2005), 'Cracking the Ocean Code', DVD, Discovery Channel.

¹³ J. Craig Venter Institute (2004), *Sorcerer II Expedition: A Global Voyage of Discovery*, <http://www.sorcerer2expedition.org/version1/HTML/main.htm>

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ Ibid.

important part of the Sorcerer II Expedition as the vessel travels around the globe. IBEA/ the Expedition has signed memoranda of understanding with many country collaborators including those in Mexico and Chile, as is in discussions with several other countries on similar MOUs.¹⁷

The Institute emphasized that such memoranda recited five fundamental principles of the Sorcerer II Expedition. First, ‘the purpose of the Expedition is to advance scientific knowledge of microbial biodiversity and humankind basic understanding of oceanic biology, yielding insights into the complex interplay between groups of microorganisms that may affect environmental processes.’¹⁸ Second, ‘genomic sequence data from the study will be publicly available world-wide without charge, and freely used by anyone for any purpose.’¹⁹ Third, ‘no intellectual property rights will be sought by IBEA or its collaborating scientists on these genomic sequence data.’ Fourth, ‘IBEA and its research collaborators will coauthor one (or more) scientific journal articles that describe and evaluate these genomic sequence data.’²⁰ Fifth, ‘IBEA will provide training opportunities to scientists and students in the countries where sampling is conducted’.²¹

However, some have viewed the Sorcerer II Expedition with suspicion. In March 2004, the Canada-based Action Group on Erosion, Technology, and Concentration (ETC Group) issued a press release titled ‘Playing God in the Galápagos.’²² The non-government organisation worried about the implications of such research: ‘Although the [J. Craig Venter Institute] has promised not to patent the raw microbes it collects and sequences, patents could be claimed on modified microbes or on new life forms engineered from the collected microbes.’²³

¹⁷ Ibid.

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ Ibid.

²¹ Ibid.

²² ETC Group (2004) ‘Playing God in the Galapagos: J. Craig Venter, Master and Commander of Genomics, on Global Expedition to Collect Microbial Diversity for Engineering Life’, *Communique*, **84**, March/ April.

²³ Ibid.

The ETC Group noted that there was good reason to suspect J. Craig Venter of ulterior commercial motives. In 1991, J. Craig Venter became embroiled in controversies over filing patents on express sequence tags when at the National Institutes of Health.²⁴ In 1999, Venter and his company, Celera Genomics, filed patents on hundreds of medically-significant genes as part of the privately led shotgun-sequencing of the human genome.²⁵ In 2002, Venter left Celera in 2002 after the genome failed to make the kind of money the investors had hoped for - he is predictably scathing about the 'morons' who controlled the money there and did not understand his vision.²⁶

The Group observed that 'Venter's work poses ethical and environmental concerns about the use of biodiversity to build new life forms from scratch.'²⁷ The ETC Group called Venter the 'greediest biopirate,' and awarded him a 'Captain Hook Award for Biopiracy' in 2006.²⁸ The group alleged that he was 'undertaking, with flagrant disregard for national sovereignty over biodiversity, a US-funded global biopiracy expedition on his yacht, Sorcerer II, to collect and sequence microbial diversity from the world's oceans and soils.'²⁹ The ETC Group speculated: 'The genetic material will play a role in his most ambitious project to date: building an entirely new artificial organism.'³⁰

The Sorcerer II Expedition is at the vanguard of new developments in environmental genomics and biodiscovery. Legal historian Alain Pottage has suggested that the scientific expedition is emblematic of a new mode of bioprospecting:

²⁴ Cook-Deegan, Robert (1994), *The Gene Wars: Science, Politics, And The Human Genome*. New York and London: WW Norton and Company.

²⁵ Davies, Kevin (2001), *The Sequence: Inside The Race For The Human Genome*. London: Weidenfeld and Nicolson.

²⁶ Ewing-Duncan, D. (2005), 'The Arrogant Adventurer', *The Guardian*, 21 July.

²⁷ ETC Group (2004,) 'Playing God in the Galapagos: J. Craig Venter, Master and Commander of Genomics, on Global Expedition to Collect Microbial Diversity for Engineering Life', Communique, **84**, March/ April.

²⁸ The Coalition Against Biopiracy (2006), 'The Captain Hook Awards', http://www.captainhookawards.org/winners/2006_pirates

²⁹ Ibid.

³⁰ Ibid.

Modes of bioprospecting have been profoundly transformed by the emergence of sequencing technologies, bioinformatics, and synthetic biology. These technologies have their effects on the ‘materiality’ of collections and the media into which they are collected. Bio-collecting was once ordered by the logic of Linnaean nomenclature or Darwinian genealogies, but in the era of ‘bio-information’ collections are articulated in a number of media, topologies and ‘kinetic’ modes.³¹

The Sorcerer II Expedition provides a strong impetus for timely debate about the legal protection of research of environmental genomics, the distribution of benefits related to those developments, and the type of legal regimes necessary to prevent and remedy biopiracy. Given the significant potential for exploitation of public resources, there is a need for a comprehensive analysis of the available options for federal and state regulation.

This article will consider the legality of the Sorcerer II Expedition in light of larger issues about intellectual property, informed consent, and benefit sharing. Section one considers the framework established by the *Rio Convention on Biological Diversity* 1992, and the development of the Bonn Guidelines in respect of informed consent and benefit-sharing. Section two considers the collaborative agreements reached between the Venter Institute and a number of nation states – including Bermuda, Ecuador, Mexico, Chile, French Polynesia, New Caledonia, and Vanuatu. It evaluates the allegations made by the ETC Group that the Sorcerer II Expedition is engaged in ‘marine biopiracy’. It considers whether the intellectual property and data-sharing policies of the Sorcerer II Expedition have sufficient rigour and integrity. Section three considers the collaborative agreement reached between the Venter Institute and the Australian Government. It explores the patchwork of Federal and state Australian regulation on access to genetic resources. Such developments were contemporaneous with the Sorcerer II expedition. The Conclusion suggests that large-scale bioprospecting ventures, such as the Sorcerer II Expedition, demands better local, national, and global regulation of access to genetic resources.

³¹ Pottage, A. (2006), ‘Too Much Ownership: Bio-prospecting in the Age of Synthetic Biology’, *Biosocieties*, **1**, 137-158.

I. *The Rio convention on biological diversity 1992*

In the balmy atmosphere of the 1992 Earth Summit in Rio de Janeiro, a convention to conserve global biodiversity seemed like an idea whose time had come. The Convention on Biological Diversity was agreed at Rio, in principle, as a framework that would help the world's biological resources to be utilized in a controlled and prudent way. Scientists, governments and commercial companies would work together in harmony, the convention's authors hoped.

Rex Dalton, 'Natural Resources: Bioprospects Less Than Golden',³²

The Sorcerer II Expedition took place against the backdrop of a complex web of international environmental, trade and intellectual property treaties dealing with access to genetic resources. The *Rio Convention on Biological Diversity 1992* provides a framework for access to genetic resources based upon access permits, informed consent, and benefit-sharing. The *Bonn Guidelines on Access to Genetic Resources and Benefit-Sharing 2002* provide further guidelines for the development of nation regimes dealing with access to genetic resources. Furthermore, there also a number of other relevant treaties affecting access to genetic resources, including *United Nations Law of the Sea Convention 1982*, the *TRIPS Agreement 1994*, and the *United Nations Draft Declaration on the Rights of the Indigenous Peoples*.

A. *The rio convention on biological diversity 1992*

The *Rio Convention on Biological Diversity 1992* has lofty aspirations and ambitions. Article 1 provides a sense of the sweeping aims of the treaty: 'The objectives of this Convention, to be pursued in accordance with its relevant provisions, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.' Biodiversity experts, Kerry ten Kate and Sarah Baird, note that the *Rio Convention on Biological Diversity 1992* is premised on a grand bargain: 'The Convention can be seen as an instrument to promote the

³² Dalton, R. (2004), 'Natural resources: Bioprospects less than golden', *Nature* **429**, 598 - 600 (10 June).

equitable exchange, on mutually agreed terms, of access to genetic resources, and associated knowledge in return for finance, technology and the opportunity to participate in research'.³³

The *Rio Convention on Biological Diversity* 1992 is the most highly subscribed environmental treaty in the world, with 189 states and the European Community members as of February 2007. The United States Government, though, raised objections about the treaty at the Rio Earth Summit. William K. Rielly, then the administrator of the Environmental Protection Agency, stated that the United States refused to participate in the *Rio Convention on Biological Diversity* 1992 because of objections its benefit sharing requirements and financial mechanisms, as well as its treatment of intellectual property rights and what it called the conventions 'limited requirements' for domestic conservation.³⁴ Subsequently, the United States Congress has refused to ratify the *Rio Convention on Biological Diversity* 1992. Professor Robert Blomquist suggests that there are several strong themes behind this recalcitrant response – including institutional tension between the President and the Congress concerning foreign affairs; conservative concern about international environmental law; American corporate interest in maximizing biotechnology profits; and complexities in resolving international economic and physical matters through legal policy instruments.³⁵ The academic hoped that the United States Government would adopt a more engaging, pro-active, environmental diplomatic posture in the future, and ratify the *Rio Convention on Biological Diversity* 1992. However, as yet, America has shown no enthusiasm to play such an international leadership role. The *Rio Convention on Biological Diversity* 1992 has been limited in its capacity to regulate the biotechnology industry insofar as it is centred in the United States.

³³ Kate, Kerry Ten and Sarah Laird (1999), *The Commercial Use Of Biodiversity: Access To Genetic Resources And Benefit-Sharing*, London: Earthscan.

³⁴ Bell, D.E. (1993), 'The 1992 Convention on Biological Diversity: The Continuing Significance of U.S. Objections at the Earth Summit', *George Washington Journal of International Law & Economics*, **26**, 479-537.

³⁵ Blomquist, R. (2002), 'Ratification Resisted: Understanding America's Response to the Convention on Biological Diversity, 1989-2002', *Golden Gate University Law Review*, **32**, 493-585.

Article 3 of the *Rio Convention on Biological Diversity* 1992 emphasizes that genetic resources belong to sovereign states, and are not freely available or ‘the common heritage of mankind’: ‘States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.’

Article 15 of the *Rio Convention on Biological Diversity* 1992 provides a comprehensive framework to govern access to genetic resources. Article 15 (1) recognises ‘the sovereign rights of States over their natural resources, the authority to determine access to genetic resources rests with the national governments and is subject to national legislation.’ Article 15 (2) provides that ‘each Contracting Party shall endeavour to create conditions to facilitate access to genetic resources for environmentally sound uses by other Contracting Parties and not to impose restrictions that run counter to the objectives of this Convention.’ Article 15 (3) stresses that ‘the genetic resources being provided by a Contracting Party... are only those that are provided by Contracting Parties that are countries of origin of such resources or by the Parties that have acquired the genetic resources in accordance with this Convention.’

Article 15 (4) declares that access to genetic resources is dependent upon agreements made between access-providers and users of genetic resources: ‘Access, where granted, shall be on mutually agreed terms and subject to the provisions of this Article.’ Article 15 (5) explains the key concept of informed consent: ‘Access to genetic resources shall be subject to prior informed consent of the Contracting Party providing such resources, unless otherwise determined by that Party.’ Article 15 (6) provides scope for scientific research on genetic resources: ‘Each Contracting Party shall endeavour to develop and carry out scientific research based on genetic resources provided by other Contracting Parties with the full participation of, and where possible in, such Contracting Parties.’ Article 15 (7) stresses the importance of benefit-sharing: ‘Each Contracting Party shall take legislative, administrative or

policy measures... with the aim of sharing in a fair and equitable way the results of research and development and the benefits arising from the commercial and other utilization of genetic resources with the Contracting Party providing such resources.’

The *quid pro quo* for access to genetic resources is the sharing of benefits of technology resulting from exploitation, and financial resources more generally. Article 16 of the *Rio Convention on Biological Diversity* 1992 is designed to facilitate technology transfer. Article 17 is intended to facilitate the exchange of scientific information; and article 18 deals with technical and scientific co-operation. Article 19 focuses upon the distribution of benefits arising from biotechnology; and article 20 deals with financial support and incentives for biodiversity conservation.

In addition, it is also worth noting that Article 8 (j) of the *Rio Convention on Biological Diversity* 1992 places particular emphasis upon the protection of traditional knowledge: ‘Subject to its national legislation, [states should] respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.’

B. Bonn guidelines on access to genetic resources and benefit-Sharing 2002

The *Rio Convention on Biological Diversity* 1992 has had a mixed history. Kerry ten Kate commented:

In the wake of the CBD, benefit-sharing agreements are increasingly common. Most benefits have flowed to scientific institutions, in the form of training and technology...The story is not one of unalloyed success, however. There is evidence that the anticipated bureaucracy, delay, and expense of compliance with the first wave of access laws have deterred foreign and domestic scientists and thus have unwittingly stifled not only commercial research, but also

essential conservation work. Confusion over which government bodies are authorized to grant access has not helped.³⁶

Acknowledging such concerns, there have been international efforts to provide a more strategic and flexible approach to access to genetic resources, informed consent, and benefit-sharing.

In April 2002, the 6th Conference of the Parties to the *Rio Convention on Biological Diversity* 1992 adopted the *Bonn Guidelines on Access to Genetic Resources and Benefit-Sharing*. Article 11 emphasizes that the guidelines are intended ‘to provide Parties and stakeholders with a transparent framework to facilitate access to genetic resources and ensure fair and equitable sharing of benefits’ and ‘to provide guidance to Parties in the development of access and benefit-sharing regimes.’ Moreover, the guidelines are designed ‘to inform the practices and approaches of stakeholders (users and providers) in access and benefit-sharing arrangements.’ Article 11 emphasizes the need to provide financial resources, technology transfer, and capacity building to least developed countries, small island developing States among them, as well as Indigenous communities. Article 11 also stresses that ‘taxonomic research, as specified in the Global Taxonomy Initiative, should not be prevented, and providers should facilitate acquisition of material for systematic use and users should make available all information associated with the specimens thus obtained.’

Article 13 stipulates that ‘each Party should designate one national focal point for access and benefit-sharing and make such information available through the clearing-house mechanism’. The article describes the functions of this body: ‘The national focal point should inform applicants for access to genetic resources on procedures for acquiring prior informed consent and mutually agreed terms, including benefit-sharing, and on competent national authorities, relevant indigenous and local communities and relevant stakeholders, through the clearing-house mechanism.’

³⁶ ten Kate, K. (2002), ‘Global Genetic Resources: Science and the Convention on Biological Diversity’, *Science*, **295**, 2371 - 2372.

Article 26 stresses that ‘consent of the relevant competent national authority(ies) in the provider country.’ In addition, ‘the consent of relevant stakeholders, such as indigenous and local communities, as appropriate to the circumstances and subject to domestic law, should also be obtained.’ Article 26 emphasizes that a prior informed consent system should embody the virtues of legal certainty and clarity; efficiency; transparency; and harmony with the objectives of the *Rio Convention on Biological Diversity* 1992.

Appendix 2 of the *Bonn Guidelines on Access to Genetic Resources and Benefit-Sharing* 2002 provides inclusive definitions of monetary and non-monetary benefits. Clause 1 notes that monetary benefits may include: access fees; sample fees; up-front payments; milestone payments; payment of royalties; licence fees in case of commercialization; trust funds; salaries and preferential terms where mutually agreed; research funding; joint ventures; and the joint ownership of relevant intellectual property rights. Clause 2 provides that non-monetary benefits may include the sharing of research and development results; scientific collaboration; product development; education and training; admittance to *ex situ* facilities of genetic resources and to databases; technology transfer; institutional capacity-building; access to scientific information relevant to conservation and sustainable use of biological diversity; contributions to the local economy; food, health and livelihood security benefits; social recognition; and joint ownership of relevant intellectual property rights.

The realisation of the lofty aims and aspirations of the *Rio Convention on Biological Diversity* 1992 has been somewhat tortuous. *Nature* journalist, Rex Dalton, has observed that ‘the convention has done little to ease tensions that exist between scientists searching for potentially valuable compounds and officials in the developing countries where most bioprospecting takes place’.³⁷ Sarah Laird and Rachael Wynberg have reflected that the *Rio Convention on Biological Diversity* 1992 has engendered increasingly hostile reactions amongst industry groups:

³⁷ Ibid.

Industry and researcher perceptions of the CBD, and ABS in particular, have become increasingly negative in the last decade. Some continue to cite the positive role the CBD can play in promoting equitable relationships, conservation and best practices in industry, but many more consider the negative impacts to far outweigh the positive. Rather than coming together over the last 13 years to create simple, workable legal and regulatory frameworks for access and benefit-sharing, providers and users of genetic resources are increasingly estranged, and the environment in which bioprospecting takes place is often characterized by misunderstanding, mistrust, and regulatory confusion.³⁸

The authors comment that researchers from academia and industry have made a number of recommendations through which to improve the policy process in respect of access to genetic resources.

C. Other treaties

The *Rio Convention on Biological Diversity* 1992 also interacts with a number of other international treaties dealing with access to genetic resources - such as the *United Nations Law of the Sea Convention* 1982, the *TRIPS Agreement* 1994, and the *United Nations Draft Declaration on the Rights of the Indigenous Peoples* 2006.

The *United Nations Law of the Sea Convention* 1982 aims to establish ‘a legal order for the seas and oceans which will facilitate international communication, and will promote the peaceful uses of the seas and oceans, the equitable and efficient utilization of their resources, the conservation of their living resources, and the study, protection and preservation of the marine environment.’ There has been much policy interest in bioprospecting activities on the high seas.³⁹ Henry Nicholls comments:

The *United Nations Law of the Sea Convention* 1982 endowed coastal nations with the sovereign right to explore and exploit all resources within their ‘exclusive economic zone’ —

³⁸ Laird, S. and R. Wynberg, (2006) ‘The Commercial Use of Biodiversity: An Update on Current Trends in Demand for Access to Genetic Resources and Benefit-Sharing, and Industry Perspectives on ABS Policy and Implementation’, <http://www.biodiv.org/doc/meetings/abs/abswg-04/information/abswg-04-inf-05-en.doc>, p 5.

³⁹ Arico, Salvatore and Charlotte Salpin, (2005) *Bioprospecting of Genetic Resources in the Deep Seabed: Scientific, Legal, and Policy Aspects*. UNU-IAS Report, May.

usually a body of water stretching 200 nautical miles out to sea . Most coastal states exercise this right, granting permits to outsiders wanting to conduct research in their waters...

Beyond national waters (with a few exceptions) are the 'high seas'. Here, there is little regulation. According to UNCLOS, mineral resources on the deep seabed are considered the 'common heritage of mankind'; this means that any benefits deriving from them should be shared with the international community. But when it comes to biological resources, just about anything goes.⁴⁰

Similarly, Julia Jabour-Green and Dianne Nicol have expressed concerns that 'the high seas may be vulnerable to exploitation because of increased levels of interest in freely available biological resources.'⁴¹

There has been much debate in a variety of forums as to whether the granting of intellectual property rights should be made conditional upon evidence of an access permit, informed consent, and a benefit-sharing agreement. The Working Group on Access to Genetic Resources and Benefit Sharing has decided 'to establish a group of technical experts to explore and elaborate the possible options, without predjudging their desirability, for the form, intent and functioning of an internationally recognised certificate of origin/source/legal provenance and analyse its practicality, feasibility, costs and benefits, with a view to achieving the objectives of Article 15 and 8(j) of the Convention.'⁴² The supporters of a development agenda have argued that the *TRIPS Agreement* 1994 should be amended to require a disclosure of origin and benefit-sharing. However, United States industry groups have been lobbying against such a proposal, suggesting that it would dampen foreign investment.⁴³ Another option would be to enshrine the principle of the disclosure of the geographical origin of genetic resources in the *Patent Co-Operation Treaty* 1970. Switzerland has proposed that the

⁴⁰ Nicholls, H. (2007), 'Sorcerer II: The Search for Microbial Diversity Roils the Waters', *The Public Library of Science Biology*, **5** (3), 380-383 at 381.

⁴¹ Jabour-Green J and D. Nicol (2003), 'Bioprospecting In Areas Outside National Jurisdiction: Antarctica And The Southern Ocean', *Melbourne Journal Of International Law* **4** (1), 76-111 at 96.

⁴² Working Group on Access to Genetic Resources and Benefit-Sharing, <http://www.biodiv.org/programmes/socio-eco/benefit/default.aspx>

⁴³ Sell, S. (2006), 'Intellectual Property and the Doha Development Agenda', *Global Social Policy*, **6**, 147-150 at 149.

Patent Co-Operation Treaty 1970 Regulations should be amended to permit nations to amend their patent laws to require the lodgement of declarations of the source of genetic resources in patent applications. In Switzerland's view, the proposed amendments to the *Patent Co-Operation Treaty* 1970 Regulations would 'present one simple and practical solution to the issues arising in the context of access to genetic resources and traditional knowledge and the fair and equitable sharing of the benefits arising out of their utilization'.⁴⁴

Expanding upon Article 8 (j) of the *Rio Convention on Biological Diversity* 1992, Article 31 of the *United Nations Draft Declaration on the Rights of the Indigenous Peoples* 2006 aspires to provide for comprehensive protection of traditional knowledge: 'Indigenous peoples have the right to maintain, control, protect and develop their cultural heritage, traditional knowledge and traditional cultural expressions, as well as the manifestations of their sciences, technologies and cultures, including human and genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, oral traditions, literatures, designs, sports and traditional games and visual and performing arts.'⁴⁵

II. Playing god in the galapagos

At the international level, there is widespread concern that the Sorcerer II Expedition whilst serving a public good in the form of the database may yet result in a loss of public rights. By the end of 2004, 14 countries, including Chile, Ecuador and French Polynesia, had apparently entered into legal arrangements with the Expedition. The agreements signed by states, research institutions and government bodies raise questions of national sovereignty, ownership, access and research rights. France, in relation to French Polynesia, was initially reluctant, to grant access before

⁴⁴ World Intellectual Property Organization (2003), 'Proposals By Switzerland Regarding The Declaration Of The Source Of Genetic Resources And Traditional Knowledge In Patent Applications', Working Group On Reform Of The Patent Cooperation Treaty, Fourth Session, Geneva, 19-23 May.

⁴⁵ *United Nations Draft Declaration on the Rights of the Indigenous Peoples*, <http://daccessdds.un.org/doc/UNDOC/LTD/G06/128/65/PDF/G0612865.pdf>

intervention because it wanted to protect its national patrimony. However, it acceded to the request, after pressure from the US Government. Ecuador is in the midst of a public furore over the allegedly inappropriate authorisation to export samples from the Galapagos National Park.

The ETC Group released a communiqué on the Sorcerer II Expedition, raising larger concerns about commercialisation and bioprospecting: ‘In the Sorcerer’s wake, governments are left with troubling questions about public domain diversity and private patenting, unresolved ethical and ecological concerns about the human-made creation of novel life forms, and huge gaps in the global community’s capacity to address new technologies’.⁴⁶ The ETC Group argued that the Sorcerer II Expedition called into question the efficacy of the *Rio Convention on Biological Diversity* 1992: ‘As fascinating as the IBEA initiative is, it challenges national sovereignty and raises more doubts about the already problematic access and benefit-sharing work of the Convention on Biological Diversity (CBD).’⁴⁷ The ETC Group observed: ‘In light of the failure of the United Nations CBD to provide for protection against the privatization of collective resources and knowledge, societies need to urgently engage in debates about the orientation and implications of new technologies, and strategies to recuperate the social control of science for the common good, as well as strategies to prevent the privatization of collective resources.’⁴⁸ The group contended that there needed to be a stronger international forum to regulate the introduction of new technologies: ‘The United Nations must create a new mechanism that will make it possible for the international community to monitor the development of new technologies whose introduction could affect (positively and/or negatively) human health, the environment, or society’s well-being.’⁴⁹

In a letter to the ETC Group, the Institute’s lawyer, Reid Adler, wrote, ‘no patents or other intellectual property rights will be sought by IBEA on these genomic DNA

⁴⁶ ETC Group (2004) ‘Playing God in the Galapagos: J. Craig Venter, Master and Commander of Genomics, on Global Expedition to Collect Microbial Diversity for Engineering Life’, *Communique*, **84**, March/ April.

⁴⁷ Ibid.

⁴⁸ Ibid.

⁴⁹ Ibid.

sequence data.’⁵⁰ But Adler also asserted: ‘After these data are published, researchers in a given country may wish to study microbes that have particular scientific interest or have potential commercial value.’⁵¹ The ETC Group comments: ‘In other words - and this is a critical distinction - there is nothing to prevent Venter or any other researcher from claiming monopoly patents on commercially useful results derived from microbes or sequence data.’⁵²

The anti-biotechnology group feared that Venter could seek patents in respect of micro-organisms and microbes found during the Sorcerer II Expedition:

A global maritime microbe-hunting expedition launched by J. Craig Venter of human genome mapping fame threatens to turn a nation's biomaterials from public domain goods into patentable, private commodities. Although the Institute for Biological Energy Alternatives (IBEA) - one of Venter's three non-profit institutes and the one leading the initiative - has promised not to patent the raw microbes it collects and sequences, patents could be claimed on modified microbes or on new life forms engineered from the collected microbes.⁵³

The ETC Group observed, that although Venter promises that intellectual property on raw microbes and their gene sequences would not be sought, there was nothing to prevent patent claims on commercially useful results derived from collected diversity.

A. The pirates of the caribbean

The Sorcerer II Expedition first conducted a pilot study at the Bermuda Biological Station for Research in St George: ‘The Sargasso Sea was chosen as a pilot study for the environmental genome shotgun sequencing strategy because it was thought to have very low nutrients and thus low species diversity.’⁵⁴ In February and May 2003, the J. Craig Venter Institute researchers undertook a pilot study and collected sea water samples from six marine research sites in the Sargasso Sea off Bermuda, Using

⁵⁰ Ibid.

⁵¹ Ibid.

⁵² Ibid.

⁵³ Ibid.

⁵⁴ J. Craig Venter Institute (2004), ‘IBEA Researchers Publish Results from Environmental Shotgun Sequencing of Sargasso Sea in *Science*’, Press Release, 4 March.

the whole genome shotgun sequencing and high performance computing developed to sequence the human genome, the researchers discovered at least 1,800 new species and more than 1.2 million new genes from the Sargasso Sea.⁵⁵ J. Craig Venter commented:

The field of environmental genomics has the potential to revolutionize the way our oceans, soil, and whole ecosystems and environments are studied. By taking relatively small samples of water or soil and using the tools and techniques of shotgun sequence analysis, we are able to identify and characterize the vast legions of unseen organisms living in the environment. It is estimated that over 99% of species remain to be discovered. Our work in the Sargasso Sea, an area thought to have low diversity of species, has shown that there is much that we do not yet understand about the ocean and its inhabitants.⁵⁶

The Institute commented: ‘One of the most important single discoveries from the Sargasso Sea environmental shotgun sequencing study is the 782 new rhodopsin-like photoreceptor genes.’⁵⁷ The Institute stressed that such research could have application in the development of alternative energy sources: ‘Better understanding of these photoreceptor genes could be very important to IBEA researchers as they explore the mechanisms of photosynthesis as a means to efficiently and economically produce hydrogen as a fuel source.’⁵⁸

In a piece for *Nature*, Rex Dalton commented that the Sorcerer II Expedition to Bermuda and the work of the commercial bioprospecting company, Diversa, had prompted a reconsideration of Bermuda’s laws on access to genetic resources:

[Venter’s] voyage into the Sargasso Sea also took the genomics pioneer into uncharted waters. The rules on bioprospecting in this small British protectorate are still a work in progress. And experience with expeditions such as Venter’s has prompted Bermuda to temporarily shut down some research projects until it strengthens its regulations. Bermuda is now rewriting its scientific collection rules completely, in preparation for joining the Convention on Biological

⁵⁵ Venter, J.C. et al. (2004), ‘Environmental Genome Shotgun Sequencing of the Sargasso Sea’, *Science* **304**, 66-74.

⁵⁶ J. Craig Venter Institute (2004), ‘IBEA Researchers Publish Results from Environmental Shotgun Sequencing of Sargasso Sea in *Science*’, Press Release, 4 March.

⁵⁷ Ibid.

⁵⁸ Ibid.

Diversity as a protectorate of the United Kingdom, which has already adopted the convention. And lessons learned from Venter's scientific expedition and from a separate commercial project started in 1999 by Diversa, a San Diego firm seeking drugs from microbes, technology tools and industrial chemicals, will influence the formation of these rules.⁵⁹

Of particular concern was that the Sorcerer II Expedition and Diversa collected marine samples under a decades- old collection permit held by the Bermuda Biological Station for Research in St George.⁶⁰ The Station is funded by the United States National Science Foundation and NASA.

The Bermuda Government expressed concerns that it was only minimally aware of what was taking place in its waters. As *The Royal Gazette* noted, 'The Bermuda Government, like many around the world, is now waking up to the possibility that genetic material can be taken and used for commercial gain without passing on a penny to the Island'.⁶¹ The Director of Conservation Services, Jack Ward, was concerned that the San Diego biotechnology company, Diversa, was marketing a biotechnology tool called DiscoveryPoint Fluorescent Proteins based on a protein collected from a coral in Bermuda, and for which the firm is seeking a patent.⁶² The research station would receive a 1% royalty, but the government and people of Bermuda will get nothing.

The Institute was collecting specimens in the Sargasso Sea, which falls under Bermuda's jurisdiction under the International Law of the Sea. However, Ward acknowledged that it was almost impossible to police the waters: 'Bermuda has no

⁵⁹ Dalton, R. (2004), 'Natural resources: Bioprospects less than golden', *Nature* **429**, 598 - 600
10 June.

⁶⁰ The Bermuda Biological Station for Research has since been renamed the Bermuda Institute of Ocean Sciences, <http://www.bbsr.edu/>

⁶¹ Theriault, T. (2004) 'Preventing Biological Piracy in Bermuda's Waters', *The Royal Gazette*, <http://www.theroyalgazette.com/apps/pbcs.dll/article?AID=/20040709/NEWS/107090067> (9 July).

⁶² Diversa, <http://www.diversa.com/>

further control over it all.’⁶³ He observed that the Government found it impossible to regulate the Sorcerer II Expedition: ‘[Venter] basically came in and was opportunistic. He took the samples and ran his processes.’⁶⁴ Ward was also wary that the Sorcerer II Expedition had received a large amount of funding from the United States Department of Energy.

The Bermuda Government was concerned that the State received no financial benefits from such bioprospecting ventures. Ward observed: ‘There is a value issue here. Something that held value has been put in the public domain and made valueless for the people of Bermuda.’⁶⁵ Ward observed that in future the Government would negotiate benefit-sharing agreements with research teams directly to ensure Bermuda gets a legitimate share of any financial gains earned from its genetic resources: ‘We want to be involved through the entire process.’⁶⁶ He noted that the Bermuda Government could ask for anything from 1.5 percent to 15 percent – ‘which is what the Australians are trying to ask for’ - of potential profits gleaned from its biological wealth.⁶⁷

However, Ward did not find fault with either Diversa or Venter for the work they did: ‘We should have been more proactive.’⁶⁸ He observed: ‘Right now, because the permit is in place, there would be nothing to say anything they would do would be illegal.’⁶⁹ He said: ‘I would think that Dr. Knap would be sensitive and say ‘let’s talk’ though.’⁷⁰

⁶³ Theriault, T. (2004) ‘Preventing Biological Piracy in Bermuda’s Waters’, *The Royal Gazette*, <http://www.theroyalgazette.com/apps/pbcs.dll/article?AID=/20040709/NEWS/107090067>, 9 July.

⁶⁴ Ibid.

⁶⁵ Dalton, R. (2004), ‘Natural resources: Bioprospects less than golden’, *Nature* **429**, 598 – 600, 10 June.

⁶⁶ Theriault, T. (2004) ‘Preventing Biological Piracy in Bermuda’s Waters’, *The Royal Gazette*, <http://www.theroyalgazette.com/apps/pbcs.dll/article?AID=/20040709/NEWS/107090067>, 9 July.

⁶⁷ Ibid.

⁶⁸ Ibid.

⁶⁹ Ibid.

⁷⁰ Ibid.

Venter took umbrage that the scientific magazine, *Nature*, reported these charges. He quipped that the reporter who wrote this article ‘must have come to *Nature* from the *National Enquirer*’.⁷¹ Similarly, Tony Knap of the Bermuda Biological Station for Research was incensed by the coverage of *The Royal Gazette*:

We are working with Bermuda Government representatives to determine the best practice. Many other countries are dealing with similar issues. The United States, for example, does not claim any value or collect revenue from its marine genetic resources. We continue to talk to the Bermuda Government officials about equitable benefit sharing, making sure that everyone benefits.⁷²

Knap emphasized that the Bermuda Biological Station for Research had only received a milestone payment of \$1,645 for a product derived from a discovery in Bermuda.⁷³ The Station had set up a fund to benefit Bermuda's students in order to pay for DNA sequencing chemicals. (It is questionable, though, whether the United States Government represents best practice, as it is not a signatory to the *Rio Convention on Biological Diversity* 1992).

In response to the *Nature* article, Bermuda’s Ministry of the Environment, the Bermuda Biological Station for Research, and Diversa wrote a letter to *Nature*, denying that any moratorium had been placed on bioprospecting activities in Bermuda:

Bermuda's Ministry of the Environment has not shut down any research projects relating to biodiversity access, even on a temporary basis. New laws and regulations are under development to enhance bioprospecting, not to prevent or hinder such research activities. Contrary to your News story, the Ministry of the Environment is not displeased with Diversa's

⁷¹ Ewing-Duncan, D. (2005), ‘The Arrogant Adventurer’, *The Guardian*, 21 July

⁷² Titterton, S. (2004), ‘Bio Station's Tony Knap lashes out at ‘Inaccurate’ Ocean Story’, *The Royal Gazette*, <http://www.theroyalgazette.com/apps/pbcs.dll/article?AID=/20040713/NEWS/107130017>, 13 July.

⁷³ Knap, A. (2004), ‘Setting the Record Straight’, *The Royal Gazette*, <http://www.theroyalgazette.com/apps/pbcs.dll/article?AID=/20040713/OPINION/107130029>, 12 July.

research activities in Bermuda. The ministry greatly values the ongoing collaborations with the Bermuda Biological Station for Research (BBSR), and appreciates the station's responsibility in ensuring a proactive and consultative approach to issues of environmental access.⁷⁴

The group concluded: 'Diversa, BBSR and the ministry look forward to exploring ways of expanding the bioprospecting benefits realized to date by the people and the government of Bermuda.'⁷⁵ Bermuda's Ministry of the Environment stressed that the Biostation's permit would remain in place. However, the permit would be tightened up to ensure that any research with potential commercial spin-offs from Bermuda's genetic material makes some provisions for the Island: 'They will have a collection permit but it will specifically exclude things of a specific nature dealing with genetic resources'.⁷⁶ The Bermuda Government would still allow any legitimate collection for scientific purposes.

The Bermuda Government plans on becoming a signatory to the *Rio Convention on Biological Diversity* 1992 and will be working with an overseas expert to develop a policy to protect its biological wealth. Ward observed: 'The reason for the convention being signed in the first place was to ensure compensation where appropriate to countries for any product developed from their genetic resources.'⁷⁷ He noted, though, that it would be difficult to forge an appropriate regime for access to genetic resources for Bermuda: 'There is no model which we could follow: Every country is struggling with this at the moment because things are changing so fast.'⁷⁸

⁷⁴ Ward, J., Knap, A. and J. Short (2004), 'Bermuda welcomes careful prospectors', *Nature* **430**, 723 – 723, 12 August.

⁷⁵ Ibid.

⁷⁶ Theriault, T. (2004) 'Preventing Biological Piracy in Bermuda's Waters', *The Royal Gazette*, <http://www.theroyalgazette.com/apps/pbcs.dll/article?AID=/20040709/NEWS/107090067>, 9 July.

⁷⁷ Ibid.

⁷⁸ Ibid.

B. Ecuador and the andean pact

The Andean Pact is the first regional agreement of its kind, and binds the countries of Bolivia, Columbia, Ecuador, Peru and Venezeula.⁷⁹ Resolution 391 of the *Cartagena Agreement* 1996 provides for a common regime on access to genetic resources in the Andean Region. The decision seeks to ‘establish the conditions for just and equitable participation in the benefits of the access’, ‘lay the foundations for the recognition and valuation of the genetic resources and their by-products and of their associated intangible components’ and ‘promote conservation of the biological diversity and the sustainable use of the biological resources that contain genetic resources’. The agreement seeks to ‘promote the consolidation and development of scientific, technological and technical capacities at the local, national and subregional levels’ and strengthen ‘the negotiating capacity of the Member Countries.’ The *Cartagena Agreement* 1996 lays down extensive directions on national authorities, access to genetic resources, informed consent, and benefit-sharing agreements.

The Institute entered into a memorandum of understanding with the government of Ecuador to collaborate on microbial diversity.⁸⁰ The agreement noted that the Institute is undertaking ‘a global oceanic expedition to carry out a scientific research project on board the R.V. Sorcerer II, involving microbial sampling for the study of microbiological diversity in the Galapagos using a ‘whole environment’ genomics approach, with the objective of characterizing the microbiological diversity of the coastal waters and the terrestrial communities around the Galapagos Islands to determine the complex interrelationship between groups of micro-organisms that affect regional and global environmental processes.’⁸¹ It also noted that ‘the Parque Nacional Galápagos (National Galapagos Park) has authorized the research permit based on the criteria issued by the Estación Científica Charles Darwin (Charles Darwin Scientific Station), a high-level academic and scientific institution that

⁷⁹ ten Kate, Kerry and Sarah Laird (1999), *The Commercial Use Of Biodiversity: Access To Genetic Resources And Benefit-Sharing*, Earthscan, London, p. 16.

⁸⁰ J. Craig Venter Institute and the Ministry of the Environment of Ecuador (2004), ‘Memorandum of Understanding for a Collaboration on Microbial Diversity’, http://www.sorcerer2expedition.org/permits/Ecuador_MOU_English.pdf, 15 March.

⁸¹ Ibid.

recommended the approval of said research for its great value toward the better understanding of the role played by microorganisms in the marine environmental processes, and based on the report issued by the University of Guayaquil's technical and scientific Advisor.'⁸² It concluded that 'the parties agree that the output of this collaboration shall be of great scientific value and great benefit to both the public and scientific communities, in Ecuador and worldwide, by ensuring that the genomic data arising from this collaboration be made available to the scientific community pursuant to the provisions established in Resolution 391 of the Cartagena Agreement.'⁸³

The terms of the agreement, though, are somewhat lacking in detail and precision. Clause 4 notes: 'Given that the collaboration which is the object of this MOU is for the great benefit to the public and to the scientific communities in Ecuador and throughout the world through the publication of basic scientific research, the parties agree that the nucleic acid libraries generated from the sampling activities shall be used exclusively for purposes of generating public information on sequencing.'⁸⁴ Clause 4 adds that 'neither party shall pursue nor exercise intellectual property rights over the genomic data and results developed through the Project Plans since this information is part of the genetic patrimony of the state of Ecuador.'⁸⁵ Clause 4 concluded: 'The parties agree that the samples collected through the Project Plans are solely for basic scientific purposes, and under no circumstances shall the Parties be able to make any commercial use of the samples or of the information obtained from them.'⁸⁶ Clause 5 deals with publication and data-sharing: 'Once the data have been analyzed, all the information shall be deposited in public databases and published in scientific forums, where it shall be acknowledged that the information obtained is part of the genetic patrimony of the state of Ecuador.'⁸⁷ The weakness of this agreement is that there is nothing preventing the Sorcerer II Expedition from commercialising

⁸² Ibid.

⁸³ Ibid.

⁸⁴ Ibid.

⁸⁵ Ibid.

⁸⁶ Ibid.

⁸⁷ Ibid.

derivative products. The memorandum of understanding has attracted some critical attention, accordingly.⁸⁸

Lucia Gallardo of Acción Ecológica, an environmental advocacy organization based in Quito, contended: ‘Venter’s expedition challenges national sovereignty over biodiversity.’⁸⁹ She added: ‘Although Venter’s researchers can point to a Memorandum of Understanding (MOU) signed by government authorities in Ecuador, we believe it is inadequate and violates our laws on access to biodiversity’.⁹⁰ Elizabeth Bravo of Acción Ecológica, contended: ‘Venter's institute has flagrantly violated our Constitution and several national laws, including the Andean Pact Decision 391 on access to genetic resources’.⁹¹ She added:

When negotiations on access to genetic resources take place behind closed doors, in the absence of public debate or information, and in the context of opening the doors for monopoly patents - we call it biopiracy. The issue is not simply about IBEA's failure to negotiate legal access and benefit sharing, we are profoundly troubled by the potential of Venter's institute to allow for privatization of all microbial organisms of commercial interest found in one of the richest and most unique ecosystems of the planet.’ Although Venter promises that intellectual property on raw microbes and their gene sequences will not be sought, there is nothing to prevent monopoly patent claims on commercially useful results derived from collected diversity. The Institute's research is funded by the US government, so it clearly raises the issue of national sovereignty over biodiversity - a fundamental principle of the United Nations Convention on Biological Diversity, which the US government has failed to sign.⁹²

Acción Ecológica demanded that samples collected by Venter's institute not be used and be repatriated to Ecuador. They also demand that the government of Ecuador

⁸⁸ Thornstrom, C.G. (2005), ‘The Green Blindness: Microbial Sampling in the Galapagos – The Case of Craig Venter vs the Darwin Institute and the Lessons for the Trip to China by S/V. Gotheberg’. Unpublished manuscript.

⁸⁹ ETC Group (2004) ‘Rocking the Boat: J. Craig Venter's Microbial Collecting Expedition Under Fire in Latin America’, <http://www.etcgroup.org/en/materials/publications.html?id=91>, 22 July.

⁹⁰ Ibid.

⁹¹ ETC Group (2004) ‘Playing God in the Galapagos: J. Craig Venter, Master and Commander of Genomics, on Global Expedition to Collect Microbial Diversity for Engineering Life’, *Communique*, 84, March/ April.

⁹² Ibid.

make all documents public before signing any biodiversity agreements related to the Galapagos or other Ecuadorian territory.

C. Latin america

As part of the Sorcerer II Expedition, the Institute sought to collect marine water and other samples in the territorial waters in association with Dr. Valeria Souza from the Institute of Ecology from the National University of Mexico (UNAM) under her *Licencia de Colector Científico*.⁹³ The Institute maintained that this Scientific Collecting License constituted a permit under Article 87 of the *General Law for Ecological Balance and Environment Protection* 1988 (Mexico). The Institute recognised that this Article only allowed ‘collections made with purposes of basic science only, and not with purposes of developing biotechnological products of actual or potential commercial value nor with the intention of obtaining intellectual property rights protection for the sequences obtained, nor developments derived from them.’⁹⁴

Alejandro Nadal, coordinator of the Science and Technology Program of the Colegio de México, questioned whether the Sorcerer II Expedition’s bioprospecting in Mexico had state approval. He observed that UNAM lacked the authority to grant a permit to Venter to collect microbial diversity:

It is at least surprising that reference is made to UNAM having granted Venter’s researchers a permit for collecting since the coordinator responsible for research agreements at UNAM doesn’t know anything about it.⁹⁵

Nadal reflected that, in a previous dispute in 2001 over a National University of Mexico-Diversa bioprospecting project to collect micro-organisms, it became clear that UNAM did not have the legal authority to grant that type of permit: ‘The

⁹³ The J. Craig Venter Institute and the Institute of Ecology from the National University of Mexico (2004), ‘Statement of Understanding’, http://www.sorcerer2expedition.org/permits/Mexico_MOU.pdf

⁹⁴ Ibid.

authorities [PROFEPA] concluded that the contract was not legal and that a widespread public consultation about bioprospecting was needed in Mexico.⁹⁶

In the past, Costa Rica has had extensive experience of negotiating agreements in respect of access to genetic resources. Famously, in 1991, Merck signed a benefit-sharing agreement with the Instituto Nacional de Biodiversidad de Costa Rica to evaluate plant, insect, and environmental samples.⁹⁷ There is little public information about the dealings between Venter and the Costa Rica government over the Sorcerer II Expedition to the Cocos Islands. Silvia Rodriguez, from the Biodiversity Coordinating Network in Costa Rica, questioned whether the appropriate authorities had approved the Sorcerer II Expedition in Costa Rica:

There is no public information available in Costa Rica about this expedition. Even the National Commission for Biodiversity Management (CONAGBIO) is completely unaware of any agreement with IBEA and is ignoring that Venter may have collected in Costa Rica. Our Biodiversity Network, which includes farmers, indigenous peoples and others actors is represented at CONAGBIO and we have not received any information.⁹⁸

Rodriguez reflected: 'We thought the biodiversity access laws would control it, but obviously they are not working'.⁹⁹ She observed: 'Venter's expedition is especially alarming because of the potential misuses of information and resources extracted from Costa Rica'.¹⁰⁰ There has been much debate about the regulation of bioprospecting in Costa Rica in the past.¹⁰¹

⁹⁵ ETC Group (2004) 'Rocking the Boat: J. Craig Venter's Microbial Collecting Expedition Under Fire in Latin America', <http://www.etcgroup.org/en/materials/publications.html?id=91>, 22 July.

⁹⁶ Ibid.

⁹⁷ Zebich-Knos, M. (1997), 'Preserving Biodiversity in Costa Rica: The Case of the Merck-IBio Agreement', *The Journal of Environment & Development*, **6** (2), 180-186.

⁹⁸ ETC Group (2004) 'Rocking the Boat: J. Craig Venter's Microbial Collecting Expedition Under Fire in Latin America', <http://www.etcgroup.org/en/materials/publications.html?id=91>, 22 July.

⁹⁹ Ibid.

¹⁰⁰ Ibid.

¹⁰¹ Dalton, R. (2006), 'Biodiversity: Cashing in on the rich coast', *Nature*, **441**, 567-569, 1 June.

Chilean activist, Camila Montecinos, also expressed concerns about the memorandum of understanding between Chile and the Institute: ‘There is nothing in the MOU with Chile or the Galapagos to prevent monopoly patent claims on any commercially useful results derived from our collected diversity.’¹⁰²

Silvia Riberio of the ETC Group sought to publicise the complaints of civil society about the Sorcerer II Expedition: ‘We invite the Discovery Channel’s Quest TV program, which is partially funding Venter’s expedition, to document the civil society protests in Quito and in Brazil next year’.¹⁰³

D. French polynesia and the south pacific

Most Island states in the South Pacific only afford weak protection of intellectual property rights.¹⁰⁴ Furthermore, there have been concerns about the institutional capacity of South Pacific states to implement the *Rio Convention on Biological Diversity* 1992.

In French Polynesia, Venter sought permission from the French government to take marine samples during a visit to Vanuatu. However, the French Ministry of Foreign Affairs denied his application to conduct research in French Polynesia, because it wished to protect its ‘patrimony’ by restricting ‘extraction of these resources by foreign vessels.’¹⁰⁵ In response, Venter enlisted the French ambassador to the United States to lobby Paris on his behalf, and top French scientists were writing letters of

¹⁰² ETC Group (2004) ‘Rocking the Boat: J. Craig Venter's Microbial Collecting Expedition Under Fire in Latin America’, <http://www.etcgroup.org/en/materials/publications.html?id=91>, 22 July.

¹⁰³ Ibid.

¹⁰⁴ Forsyth M, (2003), ‘Cargo Cults And Intellectual Property In The South Pacific’, *Australian Intellectual Property Journal* **14**, 193-207; and Parry, B. (2002), ‘Cultures Of Knowledge: Investigating Intellectual Property Rights and Relations in the Pacific’, *Antipode*, **34**, 679-706.

¹⁰⁵ Shreeve, J. (2004), ‘Craig Venter’s Epic Voyage to Redefine the Origin of Species’, *Wired Magazine*, **12** (8), 107-113, 146-151.

protest to the ministry. The scientist ridiculed the claims of the French Government: 'It's French water, so I guess they're French microbes'.¹⁰⁶

As tensions escalated, the Port captain of the French Polynesian island of Hiva Oa in the Marquesas archipelago impounded the boat, the *Sorcerer II*. The United States State Department protested to the French Ministry of Foreign Affairs that such an act was a violation of international law. The *Sorcerer II* was allowed to proceed from the port on its journey, but with a warning not to attempt to take any samples.

In the end, there was an agreement reached between the acrimonious parties. Given this controversy, it is surprising that the final agreement negotiated between the Institute and French Polynesia is somewhat unguarded.¹⁰⁷ The preamble declared:

French Polynesia is rich in animal and plant species that are as yet little known and whose components may prove to possess advantageous biological activity. This natural bounty may represent a major asset for French Polynesia's economic development.¹⁰⁸

Section 1 provides that 'the goal of the present agreement is to define, in French Polynesia, the terms of sampling and collecting natural species, as well as those for the Institute's study of the samples' composition and microbial diversity.'¹⁰⁹ Section 4 demanded that 'the Institute agrees to adhere to all of the agreements, laws, and regulations applicable in French Polynesia, in particular those relating to biodiversity and protection of nature and species of animals and plants.'¹¹⁰ Section 5 provides that the Institute agrees to 'mention the Polynesian origin of these products' in publications and communications on the research of the *Sorcerer II* Expedition.¹¹¹ Section 5 contained an odd clause that 'no protection technique of the results

¹⁰⁶ Ibid.

¹⁰⁷ J. Craig Venter Institute and the Department of Culture, Higher Education, and Research, French Polynesia (2004), 'Agreement on Implementing the 'Study of Microbial Biodiversity In The South Pacific Region' Research Campaign Led by Mr. Craig Venter', http://www.sorcerer2expedition.org/permits/French_Polynesia_MOU_English.pdf

¹⁰⁸ Ibid.

¹⁰⁹ Ibid.

¹¹⁰ Ibid.

¹¹¹ Ibid.

considered to be used under the intellectual property shall be introduced prior to concluding an additional clause to the present agreement that defines each right of the parties.’¹¹² Such provisions seem to offer very weak protection for French Polynesia in terms of access to data, and controlling any resulting intellectual property.

A similar sketchy agreement was negotiated between the Institute and New Caledonia.¹¹³

The Institute also entered into a standard ‘Code of Ethics Agreement for Foreign Researchers Undertaking Researches within the Flora and Fauna of Vanuata’.¹¹⁴

Outlining the research proposal, the Institute affirmed:

We are requesting permission to undertake basic scientific research. The results of this research will be published in major scientific journals. All data will be released into a public database where they will be freely available to all. No patents or intellectual property rights will be sought on these data.¹¹⁵

The Institute promised to provide the Government of Vanuatu with a complete list of microbial species: ‘The results of this research in your waters will be useful as a baseline of information for local scientists as they design additional research to further understand marine ecology and for monitoring marine ecosystem health and change.’¹¹⁶

¹¹² Ibid.

¹¹³ J. Craig Venter Institute and the Government of New Caledonia (2004), ‘Convention Pour La Mise En (Euvre De La Campagne De Recherche ‘Etude de la Biodiversite Micorbienne dans le Pacifique Sud’ Menee Par L’ Institute For Biological Energy Alternatives’, http://www.sorcerer2expedition.org/permits/New_Caledonia_project_agreement.pdf

¹¹⁴ J. Craig Venter Institute and the Government of Vanuatu (2004), ‘Code of Ethics Agreement for Foreign Researchers Undertaking Researches within the Flora and Fauna of Vanuatu’, http://www.sorcerer2expedition.org/permits/Vanuatu_MOU.pdf, 16 April.

¹¹⁵ Ibid.

¹¹⁶ Ibid.

The Institute also entered into an agreement with the Republic of the Seychelles when it ventured from the Pacific Ocean to the Indian Ocean.¹¹⁷

Venter has scoffed at such accusations of biopiracy.¹¹⁸ Disavowing the premise of the *Rio Convention on Biological Diversity* 1992, he questioned whether any country could lay claim to national sovereignty over maritime genetic resources:

The biopiracy one is my favorite. We're sailing across the open ocean in international waters and there's this current moving across the Pacific at 1 knot. So there are microbes in that current that move from open ocean into the 200-mile limit of French Polynesia, and suddenly the French call that French genetic heritage. Right? And they want to own it and capitalize on it. It takes months of paperwork to take 200 liters of seawater now from the open ocean. Before we published our paper nobody cared, because nobody assumed anything was there. So I think it's quite comical that we're called pirates for describing the data and making it available for the world.¹¹⁹

Venter expresses the opinion that genetic resources should be viewed as common heritage, and available for anyone to research or exploit in the public domain. He seems sceptical of the international norm that genetic resources are subject to state sovereignty.

III. Master and commander: the Australian scheme for access to genetic resources

The Sorcerer II Expedition made a dramatic entrance into Australia. In a startling photo-opportunity, Venter steered his research yacht, Sorcerer II, under the Sydney

¹¹⁷ J. Craig Venter Institute and the Ministry of the Environment and Natural Resources, the Republic of the Seychelles (2005), 'Agreement for Non-Commercial Material Transfer and Carrying Out Research in the Seychelles', http://www.sorcerer2expedition.org/permits/Seychelles_MTA.pdf, 18 August.

¹¹⁸ A number of United States academics have expressed scepticism towards the concept of 'biopiracy'. See, for instance: Chen, J. (2006), 'There's No Such Thing as Biopiracy ... And It's a Good Thing Too', *McGeorge Law Review*, **37**, 1-35; and Ho, C. (2006), 'Biopiracy and Beyond: A Consideration of Socio-Cultural Conflicts with Global Patent Policies'. *University of Michigan Journal of Law Reform*, **39**, 433-542.

¹¹⁹ Stutz, B. (2006), 'Voyage of the Sorcerer', *Oearth*, **28** (2), p. 8.

Harbour Bridge in his quest to collect microbes from the world's waters.¹²⁰ The Commonwealth of Australia entered into a 'Biological Resources Agreement' with the Institute.

In November 2004, the Australian Commonwealth government signed an agreement with the Institute as part of the Sorcerer II Expedition. The parties to the Agreement express their commitment to the *Rio Convention on Biological Diversity* 1992 as a backdrop to providing the expedition with access to Australia's biological resources for a genomic survey that will eventually result in a 'freely-shared global environmental genomics database that can be used by scientists around the world for any purpose.'¹²¹ For the purpose of establishing the database, the research is non-commercial in so far as the Institute agreed not to patent the raw microbes it collects and sequences. However, the parties agreed that there may be other opportunities for commercialisation. As respected science journalist, Leigh Dayton observes, the Commonwealth's agreement with Venter may 'put Australia at the forefront of worldwide scientific and legal efforts to harness – safely and fairly – the genetic and biological potential of the planet's organisms, from micro-organisms to towering trees'.¹²² The Biological Resources Agreement between the Commonwealth of Australia and the Institute foreshadowed the development of the Federal access to genetic resources scheme, and the *Biodiscovery Act* 2004 (Qld).

A. The *Environment protection and biodiversity conservation act* 1999 (Cth)

The Australian Federal Government has been slow to implement its obligations under the *Rio Convention on Biological Diversity* 1992 with respect to access to genetic resources.

¹²⁰ Smith, D. (2004), 'Sailor scientist has designs on harbour's germs', *The Sydney Morning Herald*, 4 November.

¹²¹ Department of the Environment and Heritage (2004), 'Biological Resources Agreement Between the Commonwealth of Australia and the J. Craig Venter Institute', <http://www.environment.gov.au/biodiversity/publications/access/braa.html> and http://www.sorcerer2expedition.org/permits/Australia_MOU.pdf, 4 November.

¹²² Dayton, L. (2004), 'Sharing profits of research', *The Australian*, 4 November.

In 2000, John Voumard released the results of his public inquiry into access to biological resources in Commonwealth areas.¹²³

In 2001, the House of Representatives of the Australian Parliament emphasized the need to develop clear guidelines on access to genetic resources in order to encourage investment in biotechnology and bioprospecting in Australia. The Bailey Federal Parliamentary Report emphasizes the economic benefits that could arise from natural drug discovery:

The wide range of applications to which biotechnology can be put offers a great wealth of benefits which Australia must capture fully before others do so. Were Australia to fail in this respect, it would not only deny itself access to the increasing revenues that can be expected from bioprospecting and bioprocessing, but also to improvements to individual health and welfare and to the environment.¹²⁴

To achieve certainty for all stakeholders, a transparent and accountable regime should be established. There is a need for legislation; disclosure of all criteria against which access is granted; an integration of decision making into administrative review systems; and the public availability of information about the grant of access permits and benefit-sharing agreements.

In 2002, a Ministerial Council – an inter-governmental administrative body – agreed to the non-binding *Nationally Consistent Approach for Access to and Utilisation of Australia's Native Genetic and Biochemical Resources*.

In 2005, the Commonwealth Department of the Environment released regulations dealing with access to genetic resources under the *Environment Protection and*

¹²³ Voumard, John (2000), *Commonwealth Public Inquiry Into Access To Biological Resources In Commonwealth Areas*, Canberra: Environment Australia, <http://www.ea.gov.au/biodiversity/science/access/inquiry/index.html>

¹²⁴ House of Representatives Standing Committee on Primary Industries and Regional Services (2001), *Bioprospecting: Discoveries For The Future*, Australian Parliament, Canberra, <http://www.aph.gov.au/house/committee/primind/bioinq/report/contents.htm>, September.

Biodiversity Conservation Act 1999 (Cth).¹²⁵ Under the scheme, a party seeking access to biological resources in Commonwealth areas must apply for an access permit to be issued by the Minister. The Commonwealth Department of the Environment's role would be to assess the application, in consultation with the Commonwealth agency or landowner, and make a recommendation to the Minister whether the access permit should be granted or refused. While the assessment process is underway, the applicant would be required to negotiate a benefit-sharing contract covering commercial and other aspects of the agreement with the provider of the biological resources.

Taking its cue from the *Environment Protection and Biodiversity Conservation Act 1999* (Cth), 8A.01 of Federal Regulations lists the seven objectives of the scheme for the control of access to biological resources in Commonwealth areas. First, the regulations are designed to promote 'the conservation of biological resources in those Commonwealth areas, including the ecologically sustainable use of those biological resources.'¹²⁶ Second, the scheme is intended to ensure 'the equitable sharing of the benefits arising from the use of biological resources in those Commonwealth areas.'¹²⁷ Third, the regime is intended to recognize 'the special knowledge held by indigenous persons about biological resources.'¹²⁸ Fourth, the regulations are designed to establish 'an access regime designed to provide certainty, and minimise administrative cost, for people seeking access to biological resources.'¹²⁹ Fifth, the scheme is meant 'to ensure that the social, economic and environmental benefits arising from the use of biological resources in those Commonwealth areas accrue to

¹²⁵ *Environmental Protection and Biodiversity Conservation Amendment Regulations (No 2) 2005* (Cth), <http://www.ea.gov.au/epbc/about/amendments/biological.html>

¹²⁶ 8A.01 (a) of the *Environmental Protection and Biodiversity Conservation Amendment Regulations (No 2) 2005* (Cth).

¹²⁷ 8A.01 (b) of the *Environmental Protection and Biodiversity Conservation Amendment Regulations (No 2) 2005* (Cth).

¹²⁸ 8A.01 (c) of the *Environmental Protection and Biodiversity Conservation Amendment Regulations (No 2) 2005* (Cth).

¹²⁹ 8A.01 (d) of the *Environmental Protection and Biodiversity Conservation Amendment Regulations (No 2) 2005* (Cth).

Australia'.¹³⁰ Sixth, the regime is designed to contribute to 'a nationally consistent approach to access to Australia's biological resources'.¹³¹

The Federal Regulations define 'access to biological resources' as meaning 'the taking of biological resources of native species for research and development on any genetic resources, or biochemical compounds, comprising or contained in the biological resources'.¹³² As illustrative examples, the Federal Regulations mention 'collecting living material or analysing and sampling stored material, for various purposes including taxonomic research, other research and potential commercial product development.'¹³³

Regulation 8A.04(1) identifies the access provider for each class of Commonwealth area and includes any native title holder for any area. The access provider is the party with whom an applicant must enter into a benefit-sharing agreement.¹³⁴

Regulation 8A.06 establishes that a permit is required for lawful access to biological resources in a Commonwealth area and provides a penalty for accessing biological resources without a permit. Failure to obtain a permit would result in a penalty of 50 penalty units.

The Federal Regulations create a two-tiered scheme – with separate requirements for commercial activities, and purely scientific work.

¹³⁰ 8A.01 (e) of the *Environmental Protection and Biodiversity Conservation Amendment Regulations (No 2) 2005* (Cth).

¹³¹ 8A.01 (f) of the *Environmental Protection and Biodiversity Conservation Amendment Regulations (No 2) 2005* (Cth).

¹³² 8A.03 of the *Environmental Protection and Biodiversity Conservation Amendment Regulations (No 2) 2005* (Cth).

¹³³ 8A.03 of the *Environmental Protection and Biodiversity Conservation Amendment Regulations (No 2) 2005* (Cth).

¹³⁴ Paragraph 8A.02(3)(a) makes it clear that the taking of biological resources by Indigenous people for a purpose not specified in regulation 8A.02(1) is not 'access to biological resources'. This addresses concerns that allowing access to biological resources might limit Indigenous people's existing uses of those resources.

A party who is seeking access to genetic resources in Commonwealth areas, and who intends to use the resources in commercial research, is required to do two things. Firstly, they must apply to the Department of the Environment for an access permit and pay the appropriate application fee. The application must include information about the biological resources to which the person seeks access; the location and the amount of biological resources that will be collected; the uses that the applicant intends to make of the biological resources; and the nature and extent of environmental impact. Secondly, a party seeking access to biological resources for use in commercial research is also required to enter into a benefit-sharing agreement with the relevant access provider. Regulation 8A.07 provides that ‘an applicant for a permit for access to biological resources for commercial purposes or potential commercial purposes in a Commonwealth area to which this Part applies must enter into a benefit-sharing agreement with each access provider for the resources.’

Regulation 8A.12 (1) deals with access to biological resources for non-commercial purposes. The provision provides that ‘an applicant for a permit for access to biological resources for non-commercial purposes in a Commonwealth area to which this Part applies must obtain the written permission of each access provider for the resources to: (a) enter the Commonwealth area; and (b) take samples from the biological resources of the area; and (c) remove samples from the area.’¹³⁵

Regulation 8A.15 provides that the Minister may consult with any Commonwealth Department, any Commonwealth agency or any other person in relation to application for a permit. If the application is for access to biological resources for commercial purposes, the Minister ‘must take into account the extent to which the requirements of regulation 8A.08 have been met by the benefit-sharing agreement’; and ‘must consider whether all the other requirements of Division 8A.2 have been met.’¹³⁶ The Minister must take into account other considerations in relation to purely scientific research: ‘If the application is for access to biological resources for non-commercial

¹³⁵ *Environmental Protection and Biodiversity Conservation Amendment Regulations (No 2) 2005 (Cth).*

¹³⁶ *Environmental Protection and Biodiversity Conservation Amendment Regulations (No 2) 2005 (Cth).*

purposes, the Minister must consider whether the requirements of Division 8A.3 have been met.¹³⁷

In some respects, this division between research and commercial purposes is an artificial one. As Henrietta Fourmile comments: ‘A number of submissions noted the need to distinguish between access to biological resources for ‘pure research’ (or ‘academic research’) purposes as distinct from research which has a commercial purpose in mind. In reality, however, the boundaries between the two are often blurred’.¹³⁸ The courts could struggle to make such fine distinctions.¹³⁹ It could be difficult to disentangle research from commerce in the field of bioprospecting, since public institutions undertake collection of genetic resources on behalf of commercial biotechnology companies and pharmaceutical drugs manufacturers.

The principle of benefit sharing involves the access to genetic resources and related knowledge in return for information, technology, and participation in research. Benefit-sharing can include both monetary and non-monetary benefits. Thus it can extend to an equitable share of the money, which flows from the commercialisation of research based on the access to genetic resources. The Kew Botanic Gardens Statement provides an indication of some non-commercial forms of benefit-sharing - such as the sharing of the research outcomes and knowledge, technology transfer, education and training.¹⁴⁰

¹³⁷ *Environmental Protection and Biodiversity Conservation Amendment Regulations (No 2) 2005 (Cth)*.

¹³⁸ Fourmile, Henrietta (2000), ‘Indigenous Interests in Biological Resources in Commonwealth Areas’ in Voumard John (2000), *Commonwealth Public Inquiry Into Access To Biological Resources In Commonwealth Areas*, Canberra: Environment Australia, p. 234, <http://www.ea.gov.au/biodiversity/science/access/inquiry/index.html>

¹³⁹ Witness, for instance, judicial interpretation in the field of patent law. In the case of *Madey v. Duke University* 307 F.3d 1351 (2002), the United States Court of Appeals for the Federal Circuit found that the educational institution Duke University could not rely upon the research exemption because the projects ‘further the institution’s business objectives, including educating and enlightening students and faculty’.

¹⁴⁰ Kew Royal Botanic Gardens (2001), *Principles on Access to Genetic Resources and Benefit-Sharing for Participating Institutions*, Royal Botanic Gardens, Kew, London. <http://www.rbgekew.org.uk/conservation/principles.html>

The remedies available for a breach of the access to genetic resources scheme are capped because of the reliance upon regulations, rather than legislation. Brad Sherman comments that the access to genetic resources scheme does not deal with the situation where biological material is passed to a third party in breach of contract, or where the biological material is obtained through biopiracy and then sold to a third party. He comments:

While these commercial practices may provide some protection against the misuse of genetic resources, they are not infallible. In part this is because while some companies may look at the origin of genetic material when they are undertaking their due diligence inquiries, it is not yet universal practice. These potential problems are exacerbated by the fact that it is possible to imagine the situation where a company makes a calculated decision to collect biological samples without an access permit. While the fine of A\$5,500 and the adverse publicity may provide some disincentive against this happening, a company may decide that is outweighed by the legal costs and by the moneys that they would have to pay under a benefit sharing agreement with the access provider.¹⁴¹

However, the Department of the Environment and Water is unable to impose greater penalties against individuals or companies who would flout this regime. Notably, the paltry maximum fine of A\$5,500 is unable to be raised any higher without legislative amendment.

The regime represents a bold attempt to satisfy Australia's obligations under the *Rio Convention on Biological Diversity* 1992. However, the legislation scheme does have a number of important limitations. First, the regime draws a false distinction between research and commerce in the field of natural drug discovery. Second, there is a danger that the requirement for informed consent might be diluted through the use of Ministerial discretion. Third, the available remedies in respect of breaches of the permit system are paltry. Fourth, the Federal scheme for access to genetic resources has been designed without proper consideration of its interaction with intellectual property regimes. Charles Lawson complains of 'the divorce between the perceived immediate needs of investment in biological resource-based product research and

¹⁴¹ Sherman B (2003) 'Regulating Access And Use Of Genetic Resources: Intellectual Property Law And Biodiscovery', *European Intellectual Property Review* **25** (7), 301-308.

development ahead of other policy imperatives such as the longer term goals and benefits of biological diversity conservation'.¹⁴² Fifth, the Federal regime pays inadequate attention to the traditional knowledge of native title holders.¹⁴³ Finally, there is a potential for conflict between the federal regulations and state schemes - such as that set up by the Queensland Government under the *Biodiscovery Act 2004* (Qld).

B. *Biodiscovery act 2004* (Qld)

Speaking of the *Biodiscovery Act 2004* (Qld), which came into force during his visit to the state, Venter said: 'It sounds very reasonable.'¹⁴⁴

The Queensland Government has been at the vanguard of policy development in relation to access to genetic resources, because of the high concentration of biodiscovery research organisations, co-operative research centres and companies within the state.¹⁴⁵

Queensland Premier Peter Beattie first announced the enactment of a *Biodiscovery Act 2004* (Qld) at BIO2003, a United States conference on biotechnology. The Premier has stressed the commercial benefits of bioprospecting for his state:

My Government's 'Smart State' fixation is simple. It means we have a planned multi-faceted strategy designed to make Queensland nothing less than the intellectual hub of the Asia-Pacific. Queensland has a competitive edge by enhancing the traditional with the

¹⁴² Lawson, C. (2006), 'Regulating Access to Biological Resources: The Market Failure for Biodiversity Conservation', Rimmer, M. (ed). *Patent Law and Biological Inventions, Law in Context*, **24** (1), 137-163, 153; see also Lawson C and C. Pickering (2002), 'Successfully Controlling Access Under the *Environment Protection and Biodiversity Conservation Act 1999* And Its Regulations Requires A Proper Assessment Of The Impact Of The *Patents Act 1990*', *Australian Intellectual Property Journal* **13** (3) 109-120.

¹⁴³ Rimmer, M. (2003), 'Blame It On Rio: Biodiscovery, Native Title, And Traditional Knowledge', *The Southern Cross University Law Review*, **7**, 1-49.

¹⁴⁴ Dayton, L. (2004), 'Sharing Profits of Research', *The Australian*, 4 November.

¹⁴⁵ Queensland Government (2002), *Queensland Biodiscovery Policy: Discussion Policy*, May.

technological. The Smart State initiative has contributed significantly to the repositioning of Queensland as a major player.

Queensland's biodiversity gives us a unique position in the world. Australia is one of only 12 'mega' bio-diverse countries in the world, and the only one with a developed economy and world-class scientific infrastructure. In Queensland, we have five of Australia's world heritage-listed sites; 17 of Australia's marine bioregions; and 19 of Australia's terrestrial bioregions.¹⁴⁶

The Premier emphasized that bioprospecting would not harm the environment: 'Biodiscovery is not a traditional extractive industry like logging - in most cases it's about taking a branch or leaf sample, so it's very environmentally sustainable'.¹⁴⁷ Beattie explained the rationale for the legislation: 'The Queensland Government is developing a framework to allow access to the State's native biological resources for research and commercialisation, because we believe it's a real future growth area for Australia.'¹⁴⁸

Section 3 (1) of the *Biodiscovery Act* (Qld) enumerates the four main purposes of the legislation. First, the instrument seeks 'to facilitate access by biodiscovery entities to minimal quantities of native biological resources on or in State land or Queensland waters ... for biodiscovery.'¹⁴⁹ Second, the legislation hopes 'to encourage the development, in the State, of value added biodiscovery'.¹⁵⁰ Third, the *Biodiscovery Act* (Qld) aspires 'to ensure the State, for the benefit of all persons in the State, obtains a fair and equitable share in the benefits of biodiscovery'.¹⁵¹ Finally, the legislation aims 'to ensure biodiscovery enhances knowledge of the State's biological diversity, promoting conservation and sustainable use of native biological resources.'¹⁵² The legislation was intended to help fulfil Australia's obligations under the *Rio Convention on Biological Diversity* 1994 to promote the conservation of biological

¹⁴⁶ Beattie, P. (2003), 'Beattie's Trade Goals for Queensland', *Business Asia*, http://findarticles.com/p/articles/mi_m0BJT/is_1_11/ai_98593069

¹⁴⁷ Ibid.

¹⁴⁸ Ibid.

¹⁴⁹ S 3 (1) (a) of the *Biodiscovery Act* 2004 (Qld).

¹⁵⁰ S 3 (1) (b) of the *Biodiscovery Act* 2004 (Qld).

¹⁵¹ S 3 (1) (c) of the *Biodiscovery Act* 2004 (Qld).

¹⁵² S 3 (1) (d) of the *Biodiscovery Act* 2004 (Qld).

diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising from the use of genetic resources.¹⁵³

The *Biodiscovery Act 2004* (Qld) establishes a single regime authorising collection of native biological resources; and makes it mandatory for commercial entities to enter into benefit sharing agreements with the State Government. The Minister for the Department of State Development of Industry may enter into a benefit-sharing agreement with a biodiscovery entity.¹⁵⁴ In return for the State authorising the entity to use native biological material for biodiscovery, the entity must in turn agree to provide benefits of biodiscovery to the State. The Schedule of the *Biodiscovery Act 2004* (Qld) defines the ‘benefits of biodiscovery’ as meaning ‘any economic, environmental or social benefits for the State’. Particular emphasis is placed upon investment in State-based biotechnology industries, State-based entities and research and development infrastructure in the State. Reference is also made to other industrial activities, such as technology transfer to State-based entities, the creation of employment in the State, the formation of collaborative agreements with State-based entities, the conduct of biodiscovery research involving field and clinical trials in the State, the undertaking of commercial production, processing or manufacturing of native biological material in the State; and the creation of alternative crops or industries in the State. The Schedule of the *Biodiscovery Act 2004* (Qld) makes clear that the legislation has an industry bias. The objective of promoting investment in State biotechnology is the primary aim of the legislation. By contrast, the conservation of environmental biodiversity, the encouragement of scientific research,

¹⁵³ S 4 of the *Biodiscovery Act 2004* (Qld).

¹⁵⁴ S 33 of the *Biodiscovery Act 2004* (Qld).

and the protection of traditional knowledge¹⁵⁵ are relegated to merely secondary goals.¹⁵⁶

The *Biodiscovery Act 2004* (Qld) has a much wider range of offences and penalties, than its federal counterpart. A person who takes native biological material for biodiscovery, without authorisation from the collection penalty, faces a maximum penalty of 2,000 penalty units.¹⁵⁷ Those who take endangered, rare or vulnerable wildlife, or protected animals, within the meaning of the *Nature Conservation Act 1992* (Qld) face penalties of up to 3,000 penalty units of 2 years imprisonment.¹⁵⁸ An applicant who provides false or misleading documents or information to the collective authority can be fined 100 penalty units, as can a person who contravenes a condition of the authority, or a condition of a benefit-sharing agreement.¹⁵⁹ The use of native biological material for biodiscovery without a benefit-sharing agreement faces a maximum penalty of either 5,000 penalty units or the full commercial value of any commercialisation of the material – whichever is greater.¹⁶⁰ However, such penalties do not apply to a person who uses the material for scientific classification, the verification of research results, or educational instruction. There are also some minor offences in relation to claims by persons about holding a collection authority, and providing information for immediate inspection.¹⁶¹

The other States and Territories have been slow to follow the lead of Queensland. As of 2007, only the Northern Territory had implemented a legislative regime, with the

¹⁵⁵ There was a great deal of dissatisfaction with the Biodiscovery Policy amongst Indigenous groups. In particular, there was concern that the legislation did not adequately deal with difficult questions about the interaction between contract law, native title and intellectual property rights. Instead the Queensland Government wanted to deal with such issues under the *Code of Ethical Practice for Biotechnology in Queensland*.

¹⁵⁶ Tooth G, (2001), 'Bioprospecting In Queensland: Oceans of Opportunity, Forests of Concern', Background Briefing, ABC Radio National, <http://www.abc.net.au/rn/talks/bbing/stories/s303991.htm> (27 May).

¹⁵⁷ S 50 of the *Biodiscovery Act 2004* (Qld).

¹⁵⁸ S 50 of the *Biodiscovery Act 2004* (Qld).

¹⁵⁹ S 51, 52, 53, 55, 56, 57 and 58 of the *Biodiscovery Act 2004* (Qld).

¹⁶⁰ S 54 of the *Biodiscovery Act 2004* (Qld).

¹⁶¹ S 59 and s 60 of the *Biodiscovery Act 2004* (Qld).

Biological Resources Act 2006 (NT).¹⁶² South Australia is currently preparing legislation, and Western Australia has announced its intention to draft legislation. The various Federal, State, and Territory schemes lack any uniformity or harmonisation. In a submission to the Ad Hoc Open-ended Working Group on Access and Benefit-sharing, the Australian Government candidly testifies: ‘Countries with federal structures of government such as Australia face very specific challenges when introducing national access laws.’¹⁶³ The lack of a common approach to the regulation of access to genetic resources may well generate problems in Australia.

C. Biological Resources Agreement

It is worth undertaking an analysis of the ‘Biological Resources Agreement’ between the Commonwealth of Australia and the Institute to assess the obligations and outcomes for each party.¹⁶⁴ A considered analysis of the Australian Agreement will be undertaken to explore if it is a model for other benefit-sharing and informed consent agreements as against a comparative analysis of agreements signed with other countries, research institutes and government bodies.

On the 4th November 2004, the Commonwealth of Australia led by the Department of the Environment and Heritage entered into a ‘Biological Resources Agreement’ with the Institute.¹⁶⁵ The agreement is a fine piece of work – offering a clear articulation of the aims and objectives of the respective parties; providing careful regulation of the conduct of the Sorcerer II expedition; and offering a blueprint for the subsequent federal regulations promulgated under the *Environment Protection and Biodiversity Conservation Act* 1999 (Cth).

¹⁶² *Biological Resources Act* 2006 (NT), http://www.austlii.edu.au/au/legis/nt/bill_es/brb2006220/es.html

¹⁶³ Government of Australia (2005), ‘Expert Workshop on Access to Genetic Resources and Benefit-Sharing’, 14 UNEP/CBD/WG-ABS/3/INF/1/Add, 25 January.

¹⁶⁴ Department of the Environment and Heritage (2004) ‘Biological Resources Agreement Between the Commonwealth of Australia and the J. Craig Venter Institute’, <http://www.environment.gov.au/biodiversity/publications/access/braa.html> and http://www.sorcerer2expedition.org/permits/Australia_MOU.pdf, 4 November.

¹⁶⁵ Ibid.

The recitals note that ‘Australia possesses megabiodiversity within its jurisdiction, and seeks to facilitate access to biological resources for research and development activities’.¹⁶⁶ In particular, it acknowledges that Australia has embraced the *Rio Convention on Biological Diversity* 1992, and the *Bonn Guidelines on Access to Genetic Resources and Benefit-Sharing* 2002. The recitals observe of the Sorcerer II Expedition:

The Collaborator is undertaking a global sampling expedition to survey microorganisms that live in the oceans, and in some places soils, to better understand overall species diversity, discover and characterize new bacterial and viral species, evaluate the ecological roles that dominant (but generally unculturable) microbes play in the ecosystem, and establish a freely shared, global environmental genomics database that can be used by scientists around the world for any purpose.¹⁶⁷

The recitals conclude: ‘Wishing to become a contributor to the multi-national genomics database and obtain the benefits of access to genomics data from Australia as well as other nations around the world, Australia has agreed to the Collaborator having access to biological resources from Australia’s jurisdiction and this agreement sets out the terms that the parties agree are to apply to the taking and use of the biological resources by the Collaborator.’¹⁶⁸

The agreement has some very ingenious provisions dealing with the use of the materials and results. Under clause 4.1, ‘the Collaborator must only use the Materials and Results: (a) for the Approved Research; (b) in accordance with the Access Proposal (including working and collaborating with Australian scientists), and must not make Derivatives from the Materials.’¹⁶⁹ Under clause 4.4, ‘the Collaborator must not, without the prior written permission of Australia: (a) sell, loan, or otherwise provide the Materials or the Results to any third party; (b) use the Materials or the Results for any purpose other than the Approved Research; or (c) use or store the Materials in any location other than in the laboratory of the Lead Investigator and

¹⁶⁶ Ibid.

¹⁶⁷ Ibid.

¹⁶⁸ Ibid.

¹⁶⁹ Ibid.

under his or her direct supervision'.¹⁷⁰ This clause ensures that third parties cannot engage in conduct outside the purview of the agreement. Under clause 4.6, 'the Collaborator warrants that the Approved Research is non-commercial and that the Collaborator, and to the best of the Collaborator's knowledge no associated entity of the Collaborator, or any entity that carries on or proposes to carry on any business with Collaborator, holds any option, licence or other rights to the use or commercialisation of the Materials or the Results, or Intellectual Property arising from the Approved Research.'¹⁷¹

Under the cunning clause 4.7, 'the Collaborator must ensure that its use of the Materials complies with all relevant laws, codes of practice and ethical principles.'¹⁷² Under this broad clause, the Sorcerer II Expedition would have to comply with all laws, codes of practice, and ethical principles dealing with access to genetic resources. Thus the Institute would have to undertake to abide by federal laws, such as the *Environment Protection and Biodiversity Conservation Act 1999* (Cth), the *Great Barrier Reef Marine Park Act 1975* (Cth), and the *Fisheries Management Act 1991* (Cth). Furthermore, the Sorcerer II Expedition would also have to abide by state laws, such as the *Biodiscovery Act 2004* (Qld), and accompanying ethical codes of conduct.

The agreement has extensive provisions on the ownership of the materials and intellectual property rights. Under clause 5.1, 'all property rights in and in relation to the Materials and the Results, including Intellectual Property arising (directly or indirectly) from the Collaborator's use of the Materials or the Results vests, or will vest, in Australia.'¹⁷³ Furthermore, under clause 5.2, 'all Intellectual Property rights arising from use of the Materials, the Results or any Derivative other than for the Approved Research, or from any other breach of this agreement by the Recipient, will vest in Australia.'¹⁷⁴ Under clause 5.3, 'Australia grants the Collaborator a non-exclusive licence to use the Materials and the Results for the purpose of the Approved

¹⁷⁰ Ibid.

¹⁷¹ Ibid.

¹⁷² Ibid.

¹⁷³ Ibid.

¹⁷⁴ Ibid.

Research, and in particular to publish data'.¹⁷⁵ Under clause 5.4, 'Nothing in this agreement, or the use of the Materials by the Collaborator, will give the Collaborator any property rights in and in relation to the Materials or the Results, including Intellectual Property arising (directly or indirectly) from the Collaborator's use of the Materials.'¹⁷⁶ Under clause 5.6, 'If the Collaborator wishes to commercialise or have commercialised any Results or Intellectual Property arising from its use of the Materials, including intellectual property protection, it must first enter into an appropriate agreement with Australia with the understanding that Australia agrees to negotiate non-exclusively in good faith with a view to concluding such an agreement on terms acceptable to the parties.'¹⁷⁷ Under clause 5.7, 'The Collaborator will use reasonable effort to notify Australia as soon as possible of any inquiries for commercial purposes received from a third party regarding rights in, or use, copying, or distribution of Results published or publicly disclosed in accordance with this Agreement.'¹⁷⁸ The clauses serve to ensure that the Sorcerer II Expedition cannot seek to exploit the research or any derivative products without the prior approval of Australia.

The agreement also has comprehensive provisions on publications and reporting. Under clause 6.1, 'the Collaborator must not publish or publicly disclose details of the Materials or the Results without the prior written approval of Australia.'¹⁷⁹ Under clause 6.2, 'The Collaborator will publish or publicly disclose genomic sequence data, including a limited and reasonable description, of the Materials consistent with generally accepted database curation standards in accordance with the Publication Requirements specified in the Schedule.'¹⁸⁰ Under clause 6.3, 'the Collaborator may at the time of publication or public disclosure under clause 6.2 publish an article relating to the Approved Research in an appropriate magazine or journal or other publication.'¹⁸¹ Clause 6.4 provides for attribution of the geographical origin of the

¹⁷⁵ Ibid.

¹⁷⁶ Ibid.

¹⁷⁷ Ibid.

¹⁷⁸ Ibid.

¹⁷⁹ Ibid.

¹⁸⁰ Ibid.

¹⁸¹ Ibid.

source of the material, ‘the Collaborator agrees to acknowledge, Australia as the source country and that the Materials were obtained in accordance the laws and requirements of Australia, the role of Australian scientists, in any publication arising out of the Collaborator’s use of the Materials and, where any significant advice or recommendations have been provided by an Australian scientist, the Collaborator agrees to acknowledge the authorship of that person.’¹⁸² Further clauses provide that the Institute is to keep the Australian Government informed of the progress of the research of the Sorcerer II Expedition. Such provisions allay whatever concerns there might be that the Sorcerer II Expedition might seek to maintain proprietary copyright ownership of the environmental genomics database.

There are further provisions dealing with the commercial exploitation of the materials and published data. Clause 9.1 reinforces the sovereignty of Australia over its genetic resources, acknowledging that ‘Nothing in this Agreement prevents Australia from exploiting the Materials, the Results or any other modifications or Derivatives, distributing the Materials, or any other modification or derivatives to any third party, including both profit and non-profit organisations.’¹⁸³ Clause 9.2 stresses that ‘nothing in this Agreement is intended to prevent any person or entity (including Australia and the Collaborator) freely using all data published or made publicly available under clauses 6.2 and 6.3 for any purpose, including for research and development.’¹⁸⁴ Finally, Clause 9.3 stresses that ‘any use of such data for commercial purposes will be subject to Australia’s rights under clauses 5.1 and 5.2 of this Agreement.’¹⁸⁵

The Department of the Environment and Heritage hailed the agreement as a significant achievement in its 2004-2005 annual report.¹⁸⁶ The agreement is far superior to the preceding memoranda of understanding that were entered into by the Institute and other jurisdictions.

¹⁸² Ibid.

¹⁸³ Ibid.

¹⁸⁴ Ibid.

¹⁸⁵ Ibid.

¹⁸⁶ Department of the Environment and Heritage (2005). *Annual Report 2004-05*, <http://www.deh.gov.au/about/publications/annual-report/04-05/outcome-1-biodiversity.html>

The Sorcerer II Expedition has been working with teams of researchers from Australian universities and research institutions. The Institute worked with Professor Tony Haymet at CSIRO Marine Research, Ian Poiner at the Australian Institute of Marine Research, John Mattick at the University of Queensland, Staffan Kjelleberg from the Center of Marine Biofouling and Bio-Innovation at the University of New South Wales and researchers from the University of Melbourne. The Sorcerer II scientists also hope to work with local researchers in Western Australia.

A number of research agreements were also entered into between the Institute, and Australian research bodies. The Australian Institute of Marine Science (AIMS)¹⁸⁷ held talks with Venter about establishing a research collaboration focused on Queensland's marine estate.¹⁸⁸ Marine Biotechnology Group leader Dr Chris Battershill observed:

Learning more about the dominant players in the marine community, what they are, and what they do is a very exciting prospect. We're particularly interested in the marine bacteria and microorganisms of the Great Barrier Reef and figuring out the role newly discovered genes play in making the reef ecosystem function.¹⁸⁹

Dr Battershill said AIMS was well placed to contribute to Venter's global program, and probe the planktonic realm of the Great Barrier Reef in the long-term to determine what drives its health.

Conclusion

The Sorcerer II Expedition resented having to deal with questions of access to genetic resources under the *Rio Convention on Biological Diversity* 1992. Venter remarked at a public lecture at the University of Cape Town, 'If Darwin were alive today, he

¹⁸⁷ The Australian Institute of Marine Science has been a pioneer in developing benefit-sharing agreements dealing with access to genetic resources: <http://www.aims.gov.au/>

¹⁸⁸ The Australian Institute of Marine Science (2004), 'Global Ocean Gene Catalogue to Offer Insight into Great Barrier Reef', Australian Associated Press Media Net Press Release, 10 November.

¹⁸⁹ Ibid.

would not have been able to have done his research.’¹⁹⁰ He was bemused that the Sorcerer II Expedition was criticised for engaging in ‘biopiracy’, in spite of its policy of putting its data in the public domain, and refraining from seeking intellectual property rights in respect of the research:

The irony is I got falsely accused of not putting the human genome in the public domain, and now we're accused of putting information in the public domain against the wishes of various governments, he says. When people think someone else owns (information), they are all for public release. When they think they own it, they have a very different view.¹⁹¹

With a touch of self-pity, Venter lamented: ‘My greatest success is that I managed to get hated by both worlds’.¹⁹² He was puzzled by the criticism that he had received: ‘I’m getting attacked for putting data in the public domain.’¹⁹³

However, the large-scale bioprospecting project of the Sorcerer II Expedition highlighted the need for better global, national, and local regulation of access to genetic resources. There is a need for a global bio-collecting society to help regulate access to genetic resources under the *Rio Convention on Biological Diversity* 1992.¹⁹⁴ At the time of the Sorcerer II Expedition, many of the nation states had not yet implemented the *Rio Convention on Biological Diversity* 1992. Bermuda, for instance, had no scheme for access to genetic resources. South Pacific countries had not implemented a regime for benefit-sharing. Ecuador did have a biodiscovery regime; but it is questionable whether its processes were followed. In Australia, the *Biodiscovery Act* 2004 (Qld) had barely been implemented; and the Biological Resources Agreement was negotiated prior to the establishment of the Federal access

¹⁹⁰ Venter, J.C. (2005), ‘A History of Genomics: From Human to the Environment’, Vice-Chancellor’s Open Lecture, University of Cape Town, November. www.venterinstitute.com

¹⁹¹ Kahn, T. (2005), ‘Maverick biologist follows in the footsteps of Darwin’, Business Day, South Africa, 14 November, 4.

¹⁹² Shreeve, J. (2004), ‘Craig Venter’s Epic Voyage to Redefine the Origin of Species’, *Wired Magazine*, **12** (8), 107-113, 146-151.

¹⁹³ Ibid.

¹⁹⁴ Drahos P, (2000) ‘Indigenous Knowledge, Intellectual Property And Biopiracy: Is A Global Bio-Collecting Society The Answer?’, *European Intellectual Property Review*, **22** (6), 245-250.

to genetic resources scheme. Furthermore, many of the memoranda of understanding entered into the Institute were lacking. Some benefit-sharing agreements seemed to be entered into with research institutions, rather than the proper state authorities. The memoranda of understanding with countries in Latin America and the South Pacific were somewhat poorly drafted. The Biological Resources Agreement formed between the Commonwealth of Australia and the Institute was, by far, the most rigorous benefit-sharing agreement.

In March 2005, the Institute launched the related Air Genome Project to better understand the diversity of microbes in urban air. Venter observed of the initiative:

We are beginning to inventory and better understand the vast legion of unseen microorganisms that live in our oceans and soil through our global sampling expedition and now we are extending this process of discovery to the air environment. Many bacteria and viruses in the air elicit destructive immune responses in some patients and we would like to explore these genes of interest to human health. We will identify airborne bacteria and viruses and sequence their genomes to better understand the diversity of life in the air we breathe.¹⁹⁵

The Air Genome Project will seek to characterize the genomic spectrum of microorganisms in the air, including the genes that control them. The Institute hopes that the data arising from the research will provide an insight into ecology and biodiversity, and of important stressors to human health.

Furthermore, the Institute is planning to set up a new spin-off company, Synthetic Genetics, in the new future to explore the potential of synthetic biology.¹⁹⁶ In November 2002, Venter and Nobel Laureate Hamilton Smith received a US\$3 million grant from the US Energy Department to create a new, 'minimalist' life form in the laboratory - a single-celled, partially human-made organism. The Institute has been hard at work in the field of synthetic biology:

¹⁹⁵ J. Craig Venter Institute (2005), 'Venter Institute Studies Microbes Living In Air: Air Genome Project to Sample Air Using Whole Genome Shotgun Sequencing', PR Newswire, 7 March.

¹⁹⁶ Rosenwald, M. (2006), 'J. Craig Venter's Next Little Thing: The Man Who Mapped the Human Genome has a New Focus - Using Microbes to Create Alternative Fuels, *The Washington Post*, 27 February.

Fast becoming one of the hottest new fields of biology, synthetic biology has the potential to impact all areas of society. One of the tenets of chemistry states that to prove true understanding of a structure one must be able to synthesize it. The team at the Venter Institute is concentrating on new methodologies to synthesize large segments of DNA to eventually enable the construction of whole artificial chromosomes. This is the next logical step in genome biology as it is the only way to better understand the minimal component of cellular life and understand the evolution of life.¹⁹⁷

Such a research agenda has already caused consternation amongst anti-biotechnology groups. The ETC Group observed that ‘Venter's work poses ethical and environmental concerns about the use of biodiversity to build new life forms from scratch.’¹⁹⁸ The organisation alleges that Venter will use the research to create new life forms: ‘The extraordinary appeal of solving the world's energy problems by harnessing new, engineered life forms, tends to eclipse the very real concerns about potential negative consequences.’¹⁹⁹ The organisation suggested that ‘Intellectual property claims on human-made life also pose concerns about *ordre public*.’²⁰⁰

¹⁹⁷ J. Craig Venter Institute, the Synthetic Biology Group, <http://www.venterininstitute.org/research/> For a discussion of intellectual property issues raised by synthetic biology, see Rai, A. and J. Boyle (2007), ‘Synthetic Biology: Caught Between Property Rights, the Public Domain and the Commons’, *The Public Library of Science Biology*, **5** (3), 389-393.

¹⁹⁸ ETC Group (2004), ‘Playing God in the Galapagos: J. Craig Venter, Master and Commander of Genomics, on Global Expedition to Collect Microbial Diversity for Engineering Life’, *Communique*, **84**, March/ April.

¹⁹⁹ Ibid.

²⁰⁰ Ibid.

LEGAL PROTECTION OF INDIGENOUS TRADITIONAL KNOWLEDGE AND CULTURAL EXPRESSION

Blame it on Rio: Biodiscovery, Native Title, and Traditional Knowledge

Dr Matthew Rimmer*

*This article examines the legal responses to protect traditional knowledge of biodiversity in the wake of the Rio Convention on Biological Diversity. It considers the relative merits of the interlocking regimes of contract law, environmental law, intellectual property law, and native title law. Part 1 considers the natural drug discovery industry in Australia. In particular, it looks at the operations of Amrad, Astra Zeneca R & D, and the Australian Institute of Marine Science. This section examines the key features of the draft regulations proposed under the Environment Protection and Biodiversity Conservation Act 1999 (Cth) - model contracts, informed consent, benefit-sharing, and ministerial discretion. The use of Indigenous Land Use Agreements in the context of access to genetic resources is also explored. Part 2 considers the role played by native title law in dealing with tangible and intangible property interests. The High Court decision in *Western Australia v Ward* considers the relationship between native title rights and cultural knowledge. The Federal Court case of *Neowarra v Western Australia* provides an intriguing gloss on this High Court decision. Part 3 looks at whether traditional knowledge of biodiversity can be protected under intellectual property law. It focuses upon reforms such as Senator Aden Ridgeway's proposed amendments to the Plant Breeder's*

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Rights Act 1994 (*Cth*), and the push to make disclosure of origin a requirement of patent law.

Introduction

The 1993 *Rio Convention on Biological Diversity* has encouraged the fair and equitable sharing of benefits arising from access to genetic resources, particularly in relation to traditional knowledge.¹ One of the objectives of the Convention, as set out in its Article 1, is the “fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding”. A framework for the implementation of this objective of the Convention with regard to access to genetic resources is provided in Article 15 of the Convention. In addition, Article 8 (j) requires states to “preserve and maintain knowledge, innovations and practices of [I]ndigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and to promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of benefits arising from the utilization of such knowledge, innovations and practices”. There has been much interest in the implementation of the *Rio Convention on Biological Diversity* in a number of jurisdictions and regions - including New Zealand,² the Arafura sea,³ the South Pacific,⁴ India,⁵ Canada,⁶ the United States,⁷ South America,⁸ and Antarctica.⁹

¹ International lawyers have considered the interpretation of the Rio Convention on Biological Diversity, and its relationship with other international treaties: Kate KT and Laird S, *The Commercial Use Of Biodiversity: Access To Genetic Resources And Benefit-Sharing*, Earthscan, London, 1999; Taubman A, “Compunctious Visitings Of Nature: Access To Genetic Resources”, ACIPA Seminar Series, Canberra, October 2001; and Evans G, “Integrating Intellectual Property Rights And Human Rights: The Case Of Plant Genetic Resources”, Activating Human Rights And Diversity Conference, Southern Cross University, Byron Bay, 3 July 2003.

² Young S, “The Patentability Of Maori Traditional Medicine And The Morality Exclusion In The Patents Act 1953” (2001) 32 *Victoria University Of Wellington Law Review* 255; and Austin G, “Re-Treating Intellectual Property Law: The WAI 262 Proceeding And The Heuristics Of Intellectual Property Law” (2003) 11 (2) *Cardozo Journal Of International And Comparative Law* 333.

³ Wasson M, “Indigenous Fishers’ Intellectual Property Rights: The Commercialisation of Knowledge as a Socio-environmental Benefit?” *Human*

The *Rio Convention on Biological Diversity* has encouraged the Federal Government of Australia to develop a national scheme to regulate access to genetic resources. Environment Australia commissioned South Australian lawyer, John Voumard, to conduct a Commonwealth public inquiry into *Access to Biological Resources in Commonwealth Areas*, and the report was released in July 2000.¹⁰ The front cover illustration of the report features Bruce Woodley and Johnny Parker, Aboriginal Park Rangers, showing a native nicotine plant. The terms of reference directed the Inquiry to “focus on the equitable sharing of benefits arising from the utilisation of traditional knowledge, innovation, and practices”. Voumard emphasized the concerns of traditional owners in his final report:

I have listened carefully to the concerns of traditional owners in Commonwealth areas, particularly about the misuse of their knowledge of biodiversity. This issue has also been the subject of many submissions and representations. This Inquiry has sought to come to terms with the limitations of the existing legal

Geography, Seminar Program, Research School of Pacific and Asian Studies, 24 June 2002.

- 4 Parry B, “Cultures Of Knowledge: Investigating Intellectual Property Rights And Relations In The Pacific” (2002) 34 (4) *Antipode* 679; and Forsyth M, “Cargo Cults And Intellectual Property In The South Pacific” (2003) 14 *Australian Intellectual Property Journal* 193.
- 5 Shiva V, *Biopiracy: The Plunder Of Nature And Knowledge*, Research Foundation for Science, Technology and Ecology, New Delhi, 1998.
- 6 Battiste M and Henderson JY, *Protecting Indigenous Knowledge And Heritage: A Global Challenge*, Purich Publishing Ltd, Saskatoon, 2000; and Gervais D, “Spiritual But Not Intellectual? The Protection Of Sacred Intangible Traditional Knowledge” (2003) 11 (2) *Cardozo Journal of International And Comparative Law* 467.
- 7 Ziff B and Rao P (ed), *Borrowed Power: Essays On Cultural Appropriation*, Rutgers University Press, Brunswick, 1997; and Brown M, *Who Owns Native Culture?* Harvard University Press, Cambridge (Mass), 2003.
- 8 Coughlin M, “Using the Merck-INBio Agreement to Clarify the Convention on Biological Diversity” (1993) 31 *Columbia Journal of Transnational Law* 337; and McManis C, “Intellectual Property, Genetic Resources And Traditional Knowledge Protection: Thinking Globally, Acting Locally” (2003) 11 (2) *Cardozo Journal Of International And Comparative Law* 547.
- 9 Jabour-Green J and Nicol D, “Bioprospecting In Areas Outside National Jurisdiction: Antarctica And The Southern Ocean” (2003) 4 (1) *Melbourne Journal Of International Law* 76.
- 10 Voumard J, *Commonwealth Public Inquiry Into Access To Biological Resources In Commonwealth Areas*, Environment Australia, Canberra, 2000, <http://www.ea.gov.au/biodiversity/science/access/inquiry/index.html>

system in protecting and valuing this knowledge. I believe the best protection presently available for the rights of Indigenous peoples to their biological resources and their intellectual property can be achieved through inclusion of appropriate contractual terms. The solutions the Inquiry recommends are practical and, most importantly I believe, empowering for Indigenous communities which have leased their land to the Commonwealth.¹¹

Voumard proposed the development of administrative regulations under *Environment Protection and Biodiversity Conservation Act 1999* (Cth) to govern access to genetic resources in Commonwealth areas. The scheme is intended to serve a number of policy objectives, including conservation of the environment, recognition of traditional knowledge, and commercialisation of biological resources.

A number of Indigenous leaders have taken a keen interest in access to genetic resources. Most notably, Henrietta Fourmile has played a key role in the debate over intellectual property and access to genetic resources in Australia.¹² She has also worked with the United Nations Secretariat of the *Convention on Biological Diversity* in Montreal, where she was responsible for the implementation of Article 8 (j) of the Convention and related provisions relevant to traditional knowledge. There has also been insightful analysis by commentators - such as Terri Janke,¹³ Michael Davis,¹⁴ Marcia Langton,¹⁵ Mick Dodson,¹⁶ and David Epworth,¹⁷ to name but a few.

¹¹ Voumard J, note 10, p 6.

¹² Fourmile H, "Protecting Indigenous Property Rights in Biodiversity", Sultan R (ed) in *Ecopolitics IX: Perspectives On Indigenous Peoples' Management of Environmental Resources*. Northern Land Council, Darwin, 1995; Fourmile H, "Respecting Our Knowledge: National research Institutions And Their Obligations To Indigenous And Local Communities Under Article 8 (J) and Related Provisions Of The Convention On Biological Diversity" (2000) 1 *Humanities Research* 41; and Fourmile H, "Developing A Regime To Protect Indigenous Traditional Biodiversity Related Knowledge" (2000) 1 (1) *Balay: Culture, Law And Colonialism* <http://www.law.murdoch.edu.au/balay/v1n1/fourmile.shtml>

¹³ Janke T, *Our Culture, Our Future: Indigenous Cultural And Intellectual Property Rights*. Australian Institute Of Aboriginal And Torres Strait Islander Studies, Canberra, 1999, <http://www.icip.lawnet.com.au/>; Mellor D and Janke T, *Valuing Art, Respecting Culture: Protocols For Working With The Australian Indigenous Visual Arts And Craft Sector*, National Association for the Visual Arts, Sydney, 2001; and Janke T, *Minding Culture: Case-Studies on Intellectual Property and*

The reference group for the public inquiry included Henrietta Fourmile. She was commissioned to synthesize the submissions in relation to Indigenous interests in biological resources in Commonwealth areas.¹⁸ The inquiry received fifteen submissions from organisations and individuals with a particular interest in Indigenous issues. Fourmile put forward in her report the most substantive model to protect traditional knowledge. She argued that the access to genetic resources scheme must protect the interests of traditional owners on their lands, biological resources, and associated traditional knowledge. Any access procedure should, in her view, contain requirements that would make the approval of access conditional upon receipt of prior informed consent from the traditional owners and knowledge holders. There was also a need for the Commonwealth to develop an approach to benefit-sharing that recognised the role of Indigenous peoples.

The House of Representatives Standing Committee on Primary Industries and Regional Services considered the recommendations of the Voumard Report in its inquiry, *Bioprospecting: Discoveries For The Future*, in September 2001.¹⁹ The accent of this inquiry was upon

Traditional Cultural Expressions, World Intellectual Property Organization, Geneva, 2002,
<http://www.wipo.int/tk/en/studies/cultural/minding-culture/index.html>

- 14 Davis M, "Indigenous Rights In Traditional Knowledge And Biological Diversity: Approaches To Protection" (1999) 4 (4) *Australian Indigenous Law Reporter* 9; and Davis M, *Protecting Culture: Indigenous Cultural And Intellectual Property Rights In The Far North Queensland Wet Tropics*, A Report To The Aboriginal And Torres Strait Islander Commission Cairns And District Regional Council, August 2002.
- 15 Langton M, "Art, Wilderness And Terra Nullius", 9th Ecopolitics Conference: Perspectives on Indigenous Peoples Management Of Environmental Resources, 1996, pp 11-24.
- 16 Dodson M, "Indigenous Peoples, Social Justice And Rights To The Environment", 9th Ecopolitics Conference: Perspectives on Indigenous Peoples Management Of Environmental Resources, 1996, pp 25-29.
- 17 Epworth D, "Draft Statement Of Principles Regarding Biophysical Research in the Aboriginal Lands, Islands, And Waters Of The Cape York Peninsula", <http://www.balkanu.com.au/business/policy-dev/draftstatement.htm>
- 18 Fourmile H, "Indigenous Interest In Biological Resources In Commonwealth Areas: A Synthesis Of Submissions and Related Information", Appendix 10 in Voumard J, *Commonwealth Public Inquiry Into Access To Biological Resources In Commonwealth Areas*, Environment Australia, Canberra, 2000,
<http://www.ea.gov.au/biodiversity/science/access/inquiry/index.html>
- 19 House of Representatives Standing Committee on Primary Industries and Regional Services, *Bioprospecting: Discoveries For The Future*, Australian Parliament,

boosting the development of high technology industries in regional Australia based on bioprospecting. The Committee was uncertain as to the significance of traditional knowledge in the process of biodiscovery: “While several submissions to the inquiry called for rewards to flow to indigenous groups from biodiscoveries that rise from traditional knowledge, others were interested only in collecting species from traditional land.”²⁰ The Committee was also unsure as to the extent to which “biopiracy” was a problem in Australia:

There has been some criticism and dispute in the past about the unacknowledged use of traditional knowledge in Australia.... The committee gained the impression that most bioprospectors place relatively little, if any, reliance on indigenous knowledge. This appeared to be in part the result of difficulties in benefit sharing and the lack of IP protection for traditional knowledge.²¹

Nonetheless, the Committee affirmed the recommendations of the Voumard report that regulations under the act should provide for contracts in respect of use of Indigenous genetic resources. Such agreements should include the key elements of prior informed consent, mutually agreed terms, and adequate benefit sharing agreements. The Committee hoped that such arrangements would help resolve some of the complex matters that needed to be addressed in ensuring Indigenous interests were not compromised by individual agreements with entrepreneurs.

This article provides a critique of the legislative scheme put forward by the Federal Government to regulate access to biological resources in Commonwealth areas. It argues that the draft regulations put forward under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) will be insufficient to protect Indigenous cultural and traditional knowledge relating to biodiversity. The regime will certainly facilitate commercial negotiations over genetic resources. However, the scheme fails to provide adequate sanctions with respect to acts of

Canberra, September 2001,
<http://www.aph.gov.au/house/committee/primind/bioinq/report/contents.htm>

20 House of Representatives Standing Committee on Primary Industries and Regional Services, note 19, p 43.

21 House of Representatives Standing Committee on Primary Industries and Regional Services, note 19, p 44.

biopiracy. This paper is concerned that the access to genetic resources scheme only recognises that native title holders can control physical access to native title law. There is no recognition that native title holders might also enjoy intellectual property rights with respect to traditional knowledge. This article also contends that the access to genetic resources scheme could be strengthened by amendments to a number of regimes of intellectual property. The holders of plant breeder's rights and patents should be required to provide proof of the origin of biological resources, and evidence that they have entered into a benefit-sharing agreement with an access provider.

This article examines the legal responses to protect traditional knowledge of biodiversity in the wake of the *Rio Convention on Biological Diversity*. It considers the relative merits of the interlocking regimes of contract law, environmental law, native title law, and intellectual property law. This article offers a critical analysis of recent developments in access to genetic resources in Australia. Part One provides an overview of the natural drug discovery industry in Australia. It provides three case studies - dealing with Amrad, Astra Zeneca R & D, and the Australian Institute of Marine Science. It examines the draft regulations proposed under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth). It evaluates the components of the scheme - model contracts, informed consent, benefit-sharing, and ministerial discretion. The use of Indigenous Land Use Agreements in the context of access to genetic resources is also explored. Part Two considers the role played by *Native Title Act 1993* (Cth) in dealing with tangible and intangible property interests. The High Court decision in *Western Australia v Ward* is a telling case study as it featured debate over the relationship between native title rights and cultural knowledge.²² The Federal Court decision in *Neowarra v Western Australia* provides a new perspective on the native title and the protection of cultural knowledge.²³ Part Three evaluates whether traditional knowledge of biodiversity can be protected under intellectual property law. It focuses upon reforms such as Senator Aden Ridgeway's proposed amendments to the *Plant Breeder's Rights Act 1994* (Cth), and the push to make disclosure of origin a requirement of the *Patents Act 1990* (Cth). Such local developments may help provide guidance to other international

²² *Western Australia v Ward* (2002) 191 ALR 1.

²³ *Neowarra v Western Australia* [2003] FCA 1402.

countries as to the implementation of the *Rio Convention on Biological Diversity*.

PART ONE

Bioprospecting: Discoveries for the Future

There have been a number of controversies in recent years over bioprospecting in respect of Indigenous lands and traditional knowledge.

A company called Cerylid Biosciences Ltd., which was formerly known as Amrad Discovery Technologies and Ex-Genix, has a collection of agreements that give it exclusive access to a significant proportion of Australia's genetic resources. It has contracts with the Victorian Department of Conservation and Natural Resources, and Melbourne's Royal Botanic Gardens. It also has agreements with the Northern Territory's Parks and Wildlife Commission, and the Tasmanian Herbarium. There have been concerns about the activities of Amrad Discovery Technologies in relation to Indigenous knowledge.

Infamously, there was a dispute over the exploitation of the Smokebush plant, which grows in the coastal areas between Geraldton and Esperance in Western Australia.²⁴ The National Cancer Council identified Smokebush as being a potential drug candidate in respect of AIDS. In the 1990s, Amrad, a Victorian biotechnology company, paid \$1.5 million to the Western Australian Government to secure access to Smokebush and related species. Indigenous people were concerned that they had not received any acknowledgment, financial or otherwise, for their role in having first discovered the healing properties of Smokebush. As Gerald Tooth opines, "It's unlikely that Aboriginal people will ever receive a benefit from their knowledge of natural medicines. While that ancient community information is of great value

²⁴ Gray S, "Vampires Round The Campfire: Indigenous Intellectual Property Rights And Patent Laws" (1997) 22 (2) *Alternative Law Journal* 60; Blakeney M, "Bioprospecting And The Protection Of Traditional Medical Knowledge" (1997) 19 (6) *European Intellectual Property Review* 298-303; and Janke T, note 13, 1999.

to those hunting for new drugs in the environment, it is rendered worthless by our intellectual property laws.”²⁵

Other controversies over bioprospecting have been less clear-cut. In 1993 AstraZeneca entered into a joint venture with Griffith University to screen Queensland biota for bioactive compounds. Subsequent contracts were negotiated with the Queensland Herbarium, and the Queensland Museum, for the collection and supply of plant and animal species. However, some Aboriginal groups were concerned that Astra Zeneca R & D appeared to have unfettered access to the environment through these arrangements. David Epworth of the Balkanu Aboriginal Development Corporation on Cape York, maintained that bioprospectors and the Queensland Herbarium had failed to gain permission from traditional owners to engage in the collection of genetic resources on native title land.²⁶ Manager Gordon Guymer said the Herbarium had done extensive “vegetation mapping” on Cape York, but as far as he knew they had not been collecting on any Aboriginal land. He said that they would certainly get in contact with the relevant people before engaging in bioprospecting.

In response, Astra Zeneca R & D sought to develop a formal relationship with Aboriginal communities.²⁷ In particular, it entered into a benefit-sharing agreement with an Indigenous community in respect of access to genetic resources.²⁸ Professor Ron Quinn of Astra Zeneca R & D comments:

If there is a traditional knowledge, then that’s a specific knowledge, if you like. Now that may be against a specific disease, or it might be something else. In a biotechnology area it might be some other use of the material. But it’s much more focused, so the arrangement here is that the traditional knowledge actually raises the value, so in particular we’ve entered into a benefit sharing agreement with an indigenous

25 Tooth G, “Bioprospecting In Queensland: Oceans Of Opportunity, Forests Of Concern”, Background Briefing, ABC Radio National, Sunday 27 May 2001, <http://www.abc.net.au/rn/talks/bbing/stories/s303991.htm>

26 Tooth G, note 25.

27 Watson, I. “Plundering The Plants”, Background Briefing, ABC Radio National, Sunday 13 October 2002, <http://www.abc.net.au/rn/talks/bbing/stories/s701553.htm>

28 Watson I, note 27.

community on a 50-50 basis. So that whatever we receive, we split between Griffith University and the community. Because they bring specific knowledge about, well in this case, disease.

The difficulty for us is that an extract has got a thousand compounds in it; we have to be able to go through and sift out the one that is useful. To do that, we have to have an assay system established in the laboratory. The real difficulty of dealing with traditional knowledge is to be able to take that information and find the target that allows you to set up the assay, and if we can't set up a suitable assay, no matter how good the knowledge is, we can't actually work with the project. So that's a limitation that exists there.²⁹

Professor Ron Quinn maintains that traditional knowledge offers potential economic outcomes to Indigenous communities around Queensland: "I think that if you can translate the knowledge and find the scientific basis, there's a potential to get a commercial outcome out of it."³⁰ He stresses that the research organisation respects the principles of the *Rio Convention on Biological Diversity*, and would enter into a benefit-sharing agreement with an Indigenous community, if it wanted to collect genetic resources from Indigenous land.

Bioprospecting can also take place in relation to the marine environment. The Commonwealth Government established the Australian Institute of Marine Science in 1972 to generate the knowledge needed for the sustainable use and protection of the marine environment through innovative, world-class scientific and technological research.³¹ For over a decade, the Australian Institute of Marine Science research activities have included biodiscovery and bioprospecting research. The organisation hopes to discover biologically active molecules that can be developed as drugs, industrial herbicides or other products by an industrial partner. The Institute seeks to understand the ecological roles that biologically active molecules play in their source organisms. It also hopes to support sustainable development of new product leads.

²⁹ Watson I, note 27.

³⁰ Watson I, note 27.

³¹ Voumard J, note 10, pp 95-97.

The Australian Institute of Marine Science has developed a standardised formula and ratio as the basis for benefit-sharing agreements. The Institute summarised its approach:

By defining a broad array of benefits that are available for sharing, the AIMS approach formally acknowledges all benefits of biodiscovery research including some that, to date, have been overlooked by many resource stakeholders. When seen in the context of the total benefits package, purely monetary returns such as potential royalties take on minor importance.³²

The Institute will provide non-monetary benefits prior to the emergence of a lead. The benefits will comprise documentation of biodiversity, including lodgement of taxonomic vouchers in relevant museums, description of new species and provision of data to aid research management. It will also involve opportunities for scientists to be involved in collection expeditions and other collaborations, which provide the development of intellectual property in respect of commercial discoveries. The Institute will provide monetary benefits once a lead has emerged. The actual percentage of monetary benefits will reflect the contributions to the discovery and the development of the lead. This model has been applied in relation to the joint project between the Australian Institute of Marine Science and the Australian National University - the Arafura-Timor Research Facility.³³ This project will involve close collaboration with the Northern Land Council.

These case studies illustrate the legal problems that are involved with access to genetic resources. There has been much conflict and misunderstanding between the stakeholders because of a lack of certainty about the rights and responsibilities of the parties involved in natural drug discovery. Indigenous people have desired legal protection; researchers and scientists looked for guidance as to their legal responsibilities; green groups sought to conserve the environment; and biotechnology companies and pharmaceutical drugs companies have wanted commercial certainty. The disputes over genetic resources have been complicated by the overlapping layers of

32 Australian Institute for Marine Science. "Submission Number 50" in Voumard J, note 10, p 247.

33 Wasson M, note 3.

legal regulation - including contract law, environmental law, native title law, and intellectual property law. As a result, the parties are in desperate need of a legislative scheme to provide a framework for negotiations over access to genetic resources.

Environment Protection and Biodiversity Conservation Act

The *Environment Protection and Biodiversity Conservation Act 1999* (Cth) puts into law many of Australia's obligations under international environment-related treaties. A requirement to respect traditional knowledge stems from Commonwealth obligations under the *Rio Convention on Biological Diversity*. Article 8 (j) of the Convention recognises that Indigenous people should be involved in approving the use and application of their traditional knowledge and should share equitably in benefits from its application.

Environment Australia has released draft regulations dealing with access to genetic resources under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).³⁴ Under the proposed scheme, a party seeking access to biological resources in Commonwealth areas must apply for an access permit to be issued by the Minister. Environment Australia's role would be to assess the application, in consultation with the relevant Commonwealth agency or landowner, and make a recommendation to the Minister whether the access permit should be granted or refused. While the assessment process is underway, the applicant would be required to negotiate a benefit-sharing contract covering commercial and other aspects of the agreement with the provider of the biological resources.

The regime represents a bold attempt to satisfy Australia's obligations under the *Rio Convention on Biological Diversity*. However, the legislation scheme does have a number of important limitations. First, the regime draws a false distinction between research and commerce in the field of natural drug discovery. Second, there is a danger that the requirement for informed consent might be diluted. Third, there is an ongoing debate about the value of Indigenous Land Use Agreements, which seek to share benefits over the exploitation of natural resources.

³⁴ *Draft Environment Protection and Biodiversity Conservation Amendment Regulations 2001*,
<http://www.ea.gov.au/epbc/about/amendments/biological.html>

Finally, there is a potential for conflict between the federal regulations and state schemes - such as that set up by the Queensland Government under the Biodiscovery Bill 2003 (Qld).

Access To Genetic Resources

Regulation 8A.05 establishes that a permit is required for lawful access to biological resources in a Commonwealth area and provides a penalty for accessing biological resources without a permit. Regulation 8A.03(1) identifies the access provider for each class of Commonwealth area and includes any native title holder for any area. The access provider is the party with whom an applicant must enter into a benefit-sharing agreement.³⁵

The Commonwealth scheme imposes less onerous requirements on applicants who intend to use the genetic resources in non-commercial, as distinct from commercial, scientific research. A party who is seeking access to genetic resources in Commonwealth areas, and who intends to use the resources in commercial scientific research, is required to do two things. First, under 17.02 (2) (g) of the regulations, they must apply to Environment Australia for an access permit and pay the appropriate application fee. The application must include information about the biological resources to which the person seeks access; the location and the amount of biological resources that will be collected; the uses that the applicant intends to make of the biological resources; and the nature and extent of environmental impact. Secondly, a party seeking access to biological resources for use in commercial research is also required to enter into a benefit-sharing agreement with the relevant access provider (or providers).

A party seeking access to biological resources in Commonwealth areas for use in non-commercial research must apply to Environment Australia for an access permit. Following this, an applicant who intends to use the genetic resources in non-commercial scientific research is also required to provide Environment Australia with evidence that they have the permission of the access provider to obtain the samples sought. They must have provided the access provider with

³⁵ Paragraph 8A.02(3)(a) makes it clear that the taking of biological resources by Indigenous people for a purpose not specified in regulation 8A.02(1) is not "access to biological resources". This addresses concerns that allowing access to biological resources might limit Indigenous people's existing uses of those resources.

an undertaking to share the outcomes of the research or to publish the results of the research. The applicant must have also undertaken to offer a voucher specimen of each species collected to an appropriate taxonomic institution, and negotiated a commercial benefit-sharing agreement in the event that the applicant commercialises the research.

In some respects, this division between research and commercial purposes is an artificial one. As Henrietta Fourmile comments: “A number of submissions noted the need to distinguish between access to biological resources for ‘pure research’ (or ‘academic research’) purposes as distinct from research which has a commercial purpose in mind. In reality, however, the boundaries between the two are often blurred.”³⁶ The courts could struggle to make such fine distinctions.³⁷ It could be difficult to disentangle research from commerce in the field of bioprospecting, since public institutions undertake collection of genetic resources on behalf of commercial biotechnology companies and pharmaceutical drugs manufacturers.

Informed Consent

Regulation 8A.09(1) requires that where the access provider is the owner of Indigenous people’s land or holds native title, the access provider must have given prior informed consent to the benefit-sharing agreement. Regulation 8A.09(2) identifies the factors the Minister must take into account in considering whether informed consent has been given. These involve the provision of information, the negotiation process, the amount of time involved (including for consultation), the views of representative bodies and the provision of independent legal advice.

Approval connotes the elements of consent, permission and authorisation before traditional Indigenous knowledge or resources are used. For consent, permission and authorisation to be genuine, there is a clear need for Indigenous people to have access to all the information about the proposed use of their traditional knowledge. They must be

³⁶ Fourmile H, note 18, p 234.

³⁷ Witness, for instance, judicial interpretation in the field of patent law. In the case of *Madey v Duke University* (2002) 307 F.3d 1351, the United States Court of Appeals found that the educational institution Duke University could not rely upon the research exemption because the projects “further the institution’s business objectives, including educating and enlightening students and faculty.”

able to play an active part in the planning process of projects involving the use of the traditional knowledge or resources.

The requirement for prior informed consent means that Indigenous communities will be able to exercise a right of veto in relation to access to genetic resources located on native title land. This reflects the recommendation of the Voumard report that decisions by Indigenous communities to deny access to bioprospectors should not be reviewable, ensuring that access could be refused where the access seeker was undervaluing Indigenous resources and knowledge.³⁸

The right to control of access to genetic resources is a necessary feature of the regime. There are dangers involved if the notion of informed consent is diluted to a mere right of negotiation or consultation. Indigenous people would then be dependent upon the benevolence of the government of the day to protect their interests. The regulations would have little legitimacy unless informed consent is enshrined under the legislation. The regime would otherwise be open to allegations that the system is merely facilitating biopiracy. It would not be worth embarking upon such a scheme if it failed to resolve the central concern about the unauthorised exploitation of genetic resources.

Benefit-Sharing And Indigenous Land Use Agreements

Draft regulation 8A.03 defines the benefit sharing arrangements: “The benefit-sharing agreement must provide for reasonable benefit-sharing arrangements, including protection for, recognition of and valuing of any indigenous knowledge given by the access provider.”

The principle of benefit sharing involves the access to genetic resources and related knowledge in return for information, technology, and participation in research. Benefit-sharing can include both monetary and non-monetary benefits. Thus it can extend to an equitable share of the money, which flows from the commercialisation of research based on the access to genetic resources. The Kew Botanic Gardens Statement provides an indication of some non-commercial forms of benefit-sharing - such as the sharing of the research

³⁸ As summarised in House of Representatives Standing Committee on Primary Industries and Regional Services, note 19, p 43.

outcomes and knowledge, technology transfer, education and training.³⁹

Draft Regulation 8A.01 (3) provides that “an agreement may be both a benefit-sharing agreement, if it complies with these Regulations, and an indigenous land use agreement within the meaning of the *Native Title Act 1993* (Cth).”

Under the *Native Title Act 1993* (Cth), Indigenous people and other persons, organisations or governments, may enter Indigenous Land Use Agreements.⁴⁰ These may be developed in the course of, or independently of, an application for a determination of native title. These agreements can deal with a range of issues in relation to access to, and use of, land and waters in a given area, including extraction and use of natural resources. Mining agreements probably most closely parallel the bioprospecting situation because there is essentially a two-phase process of exploration followed by potential commercialisation. Indigenous Land Use Agreements are also commonly negotiated in relation to pastoral use, fishing, marine use, conservation and reserve management. Parties to the agreement can request the Native Title Registrar to register the agreement on the Register of Indigenous Land Use Agreements. Upon registration an agreement takes effect as a contract between the parties. Therefore, even if a native title application has not been filed or finalised, parties are able to reach agreements about access to land and use of resources derived from that land, including biological resources. Local, state, territory and Commonwealth governments may be party to an Indigenous Land Use Agreement.

Indigenous Land Use Agreements have a number of potential benefits for prospective bioprospectors and for Indigenous communities. They

³⁹ Kew Royal Botanic Gardens, *Principles on Access to Genetic Resources and Benefit-Sharing for Participating Institutions*, Royal Botanic Gardens, Kew, London, 2001, <http://www.rbgekew.org.uk/conservation/principles.html>

⁴⁰ Neate G, *Getting on with Business: Indigenous Land Use Agreements*, Paper presented at the Australian Mining and Petroleum Law Association, 23rd Annual Conference, Sydney 28-30 July 1999; Padgett A, *Native Title and Associated Resource Use Issues: Australia*, Paper presented at the Australian Agricultural and Resource Economics Society 43rd Annual Conference, Christchurch, New Zealand, January 20-22, 1999.

can be useful in the resolution of conflicts over natural resources.⁴¹ Michael Davis argued:

Regional agreements provide significant opportunities for the development of partnerships between [I]ndigenous peoples, governments, corporations, companies and other organisations and bodies. In formulating such partnerships, there could be opportunities to develop specific approaches to recognising and protecting indigenous rights in traditional knowledge, natural and cultural resources, and land and environmental planning, management and control. These approaches potentially provide opportunities for indigenous peoples to introduce into the negotiations and planning their own concepts, based on customary laws, codes of ethics and notions of sustainability and responsibility for looking after their country and its resources.⁴²

Native title representative bodies provide a definite stakeholder with whom research institutions and biotechnology companies can deal. They also help to resolve demarcation and boundary disputes over competing claims to genetic resources. Indigenous Land Use Agreements offer the potential for certainty, flexibility, and convenience. They allow quite complex mechanisms of discussion and compensation in respect of access to land and use of resources.⁴³ Although not acting as a substitute for native title determination, Indigenous Land Use Agreements can be reached against the background of disputed claims, thus removing a delay to agreement. They bind future native title claimants and holders, including descendants.

However, there has also been concerted criticism of Indigenous Land Use Agreements. Marcia Langton was concerned that Indigenous Land Use Agreements would be vulnerable to unscrupulous developers who persuaded native title holders to enter agreements

⁴¹ Foley T, "Negotiating Resource Agreements: Lessons From ILUAs" (2002) 19 (4) *Environmental And Planning Law Journal* 267.

⁴² Davis M, note 14, 1999, p 9.

⁴³ Note that there is legislative provision for an expedited negotiation process for mining exploration on the basis of its likely low impact on the environment, significant sites and community life. It is possible that such a legislative provision could be extended to bioprospecting.

contrary to their best interests.⁴⁴ At a conference “Native Title Forum 2001: Negotiating Country”, Wade and Lombardi⁴⁵ and Ferris⁴⁶ discussed the experiences of the non native title party, which can be used to assist any party with negotiation. There was a general warning against overestimating the efficacy of Indigenous Land Use Agreements. A further criticism is that there could also be difficulties in enforcing Indigenous Land Use Agreements.⁴⁷ The Federal Government continues to monitor and review Indigenous Land Use Agreements in the context of the administration of native title law.⁴⁸

Assessment by the Minister

Regulation 8A.12 (1)(a) enables the Minister to consult Commonwealth bodies in relation to a permit application or benefit-sharing agreement. Regulation 8A.12(1)(b) requires the Minister to take into account any model benefit-sharing agreement and any variations from it.

Regulation 8A.12(1)(c) sets out the elements of informed consent to be considered by the Minister in considering whether or not informed consent was given by an Indigenous owner of biological resources. These elements involve the adequacy of information provided by the applicant, the conduct of negotiations, the time provided for consideration of the permit application and for consultation, representation and availability of independent legal advice.

Regulation 8A.12(2) allows the Minister to be satisfied that informed consent has been given by any affected native title holders if there is a registered Indigenous land use agreement reflecting their agreement.

44 Langton M, “Address to Wik Summit”, *The Wik Summit Papers*, Cape York Land Council, Cairns, 1997, p 94.

45 Wade R and Lombardi L, “Indigenous Land Use Agreements: their Role and Scope”, paper presented at Native Title Forum 2001: Negotiating Country, 1-3 August 2001.

46 Ferris J, “Indigenous Land Use Agreements: The Track Record”, paper presented at Native Title Forum 2001: Negotiating Country, Brisbane, 1-3 August 2001.

47 Dorsett S and Godden L, “Enforceability of Indigenous Land Use Agreements” (2000) 2 (1) *Land, Rights, Laws: Issues of Native Title* 1-11.

48 Parliamentary Joint Committee on Native Title and the Aboriginal and Torres Strait Islander Land Fund, *Nineteenth Report: Second Interim Report for the s.206(d) Inquiry - Indigenous Land Use Agreements*, September 2001, URL: http://www.aph.gov.au/senate/committee/ntlf_ctte/report_19/report/index.htm

There could be concern about the extent to which the scheme depends upon ministerial discretion. There could be problems if a particular Minister lacked vigilance in enforcing the access regime. It is worth remembering the problems associated with the *Aboriginal and Torres Strait Islander Heritage Protection Act 1984* (Cth) in the Hindmarsh Island case, in which the relevant Minister was willing to pass special retrospective legislation to abrogate the operation of cultural heritage laws in a particularly sensitive area.⁴⁹ There is a danger that the Federal Government could override the access to genetic resources scheme in particular cases in order to permit greater exploitation of natural resources by bioprospecting companies.

Remedies

The remedies available for a breach of the access to genetic resources scheme are capped because of the reliance upon regulations, rather than legislative reform. Brad Sherman comments that the access to genetic resources scheme does not deal with the situation where biological material is passed to a third party in breach of contract, or where the biological material is obtained through biopiracy and then sold to a third party. He comments:

While these commercial practices may provide some protection against the misuse of genetic resources, they are not infallible. In part this is because while some companies may look at the origin of genetic material when they are undertaking their due diligence inquiries, it is not yet universal practice. These potential problems are exacerbated by the fact that it is possible to imagine the situation where a company makes a calculated decision to collect biological samples without an access permit. While the fine of A\$5,500 and the adverse publicity may provide some disincentive against this happening, a company may decide that is outweighed by the legal costs and by the moneys that they would have to pay under a benefit sharing agreement with the access provider.⁵⁰

⁴⁹ *Hindmarsh Island Bridge Act 1997* (Cth); *Kartinyeri v The Commonwealth of Australia* (1998) 195 CLR 337; and Bell D, *Ngarrindjeri Wurruwarrin: A World That Is, Was, And Will Be*. Spinifex Press, Melbourne, 1998.

⁵⁰ Sherman B, "Regulating Access And Use Of Genetic Resources: Intellectual Property Law And Biodiscovery" (2003) 25 (7) *European Intellectual Property Review* 301-308.

However, Environment Australia is unable to impose greater penalties against individuals or companies who would flout this regime. Notably, the maximum fine of A\$5,500 is unable to be raised any higher without legislative amendment.

Nationally Consistent Scheme

Moreover, the scope of the federal regulations is necessarily limited by jurisdiction. As a result of the division of constitutional powers under the federal system in Australia, the Federal Government will need State Governments to pass complementary legislation. The Queensland Government has been at the vanguard of this policy development, because of the high concentration of biodiscovery research organisations, co-operative research centres and companies within the state.⁵¹ State Premier Peter Beattie announced the proposed enactment of the Biodiscovery Bill 1999 (Qld) at BIO2003, a United States conference on biotechnology.⁵² The Premier stressed the commercial benefits of bioprospecting for his state:

This Bill is an Australian first and shows Queensland is a leader in safe and sustainable biotechnology. Biodiscovery is about collecting and analysing small samples of native biological material - such as a leaf - to identify compounds that may be used to develop new drugs and products. It's environmentally-friendly, and offers big returns in terms of new jobs and training opportunities, more R&D and significant investment.⁵³

The fact-pack accompanying the draft legislation boasts: "Queensland has gone further than any other Australian jurisdiction to ensure benefits arising from biodiscovery flow on to traditional knowledge holders."⁵⁴ However, there was a great deal of dissatisfaction with the

⁵¹ Queensland Government, *Queensland Biodiscovery Policy: Discussion Policy*, May 2002.

⁵² Biodiscovery Bill 1999 (Qld),
<http://www.iie.qld.gov.au/biotechnology/biodiscovery.asp>

⁵³ Beattie P, "Biodiscovery To Deliver Smart State Dividends To Taxpayers", Press Release, Queensland Government, 23 June 2003,
<http://statements.cabinet.qld.gov.au/portfolio-display/tmp/1056346430.html>

⁵⁴ Biodiscovery Bill 1999 (Qld),
<http://www.iie.qld.gov.au/biotechnology/biodiscovery.asp>

Biodiscovery Policy amongst Indigenous groups.⁵⁵ In particular, there was concern that the legislation did not adequately deal with difficult questions about the interaction between contract law, native title and intellectual property rights.⁵⁶ Instead the Queensland Government wanted to deal with such issues under the *Code of Ethical Practice for Biotechnology in Queensland*. There is the potential for conflict between the state legislation and the federal regulations.

PART TWO

Skeletal principles: Native Title and cultural knowledge

The *Native Title Act 1993* (Cth) is relevant to the access regime laid down by the regulations under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) in a number of ways. First, Indigenous people will be able to control access to the biological resources attached to land and water, in which there has been a successful native title determination.⁵⁷ Second, Indigenous people can take advantage of the system of Indigenous Land Use Agreements.⁵⁸ Finally, the system of future acts is addressed in the access regime.⁵⁹

A number of academics - including Kamal Puri,⁶⁰ Stephen Gray,⁶¹ and Shelley Wright⁶² - have explored whether legislative or judicial

⁵⁵ Watson I, note 27.

⁵⁶ Clause 22 applies where a native title determination has been made and that determination recognises the right of exclusive possession (basically a legal power to restrict access by others) of the native title holders. Sub-clause 22(2) provides that where such a determination has been made existing Biodiscovery Collection Authorities in relation to that land are cancelled. Sub-clause 22(3) provides that in such circumstances the EPA chief executive must advise the BCA holder in writing that the relevant BCA has been cancelled including the date of the determination. Sub-clause 22(3) provides that no compensation is payable to a BCA holder if such a determination is made.

⁵⁷ Regulation 8A.03 of *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

⁵⁸ Regulation 8A.06 (3) of *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

⁵⁹ Regulation 17.03B of *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

⁶⁰ Puri K, "Copyright Protection For Australian Aborigines In Light Of Mabo", in Stephenson M and Ratnapala S (ed), *Mabo: A Judicial Revolution*, University of Queensland Press, St Lucia, 1993, p 157.

recognition of Indigenous laws can usefully be extrapolated beyond the context of native title and land rights to inform an understanding of Indigenous rights in intellectual property. Such proposals have been taken up in a number of policy documents developed by writers such as Henrietta Fourmile,⁶³ Terri Janke⁶⁴, Doreen Mellor,⁶⁵ and Michael Davis.⁶⁶ Terri Janke advised: “Support should be given for native title actions which test and expand the meaning of native title rights and interests to other areas of Indigenous cultural heritage including stories, biodiversity knowledge and cultural objects”.⁶⁷

In the case of *Yanner v Eaton*, the importance of the recognition of the spiritual as well as the secular aspects of native title was emphasised by the majority: “And an important aspect of the socially constituted fact of native title rights and interests that is recognised by the common law is the spiritual, cultural and social connection with the land.”⁶⁸

In *Yarmirr v The Northern Territory of Australia*, the Croker Island case, Justice Olney elaborates upon the claimed right to safeguard cultural knowledge - the right to receive, possess and safeguard the cultural and religious knowledge associated with the estate and the right and duty to pass it on to the younger generation.⁶⁹ However, in the High Court, the majority judgment of Chief Justice Gleeson and Justices Gaudron, Gummow and Hayne noted in parenthesis that there was no discussion about whether native title might give effect a right of access to ‘protect’ places or safeguard knowledge.⁷⁰ Therefore there was no definitive judgment as to whether native title would include cultural knowledge.

61 Gray S, “Wheeling, Dealing And Deconstruction: Aboriginal Art And The Land Post-Mabo”, (1993) 3 (63) *Aboriginal Land Bulletin* 10.

62 Wright S, “Submission To *The Stopping The Rip-Offs Inquiry*”, January 1995, p 7.

63 Fourmile H, note 18, pp 216-218.

64 Janke T, note 13, 1999.

65 Mellor D and Janke T, note 13.

66 Davis M, note 14, 2002.

67 Janke T, note 13, 1999.

68 *Yanner v Eaton* (1999) 166 ALR 25 at 270.

69 *Yarmirr v The Northern Territory of Australia* (1998) 82 FCR 533.

70 *Commonwealth v Yarmirr* (2001) 184 ALR 113.

Western Australia v Ward

The High Court case of *Western Australia v Ward* related to the native title claim by the Miriuwung-Gajerrong peoples.⁷¹ It primarily considered the nature and principles of extinguishment of native title.⁷² The High Court also considered, in passing, the important issue of whether there was a connection between native title rights and cultural knowledge.⁷³ The key provision under scrutiny was s 223 (1) of the *Native Title Act 1993* (Cth), which defines the expression “native title” and “native title rights and interests” as meaning “the communal, group or individual rights and interests of Aboriginal peoples or Torres Strait Islanders in relation to land or waters”. First, the High Court reviewed the precedent of *Bulun Bulun v R & T Textiles*.⁷⁴ They considered whether the recognition of native title rights as including cultural knowledge would fracture a “skeletal principle” of the common law. Second, the High Court considered the nature and scope of cultural knowledge. Third, one of the judges considered whether express or implied constitutional guarantees might intervene to provide protection for cultural knowledge.

The Majority Decision

The majority of the High Court doubted that “a right to maintain, protect and prevent the misuse of cultural knowledge is a right in relation to land of the kind that can be the subject of a determination of native title.”⁷⁵ It refused to provide *sui generis* protection for “cultural knowledge” because the limits and boundaries of such subject matter has been ill-defined:

⁷¹ *Western Australia v Ward*, note 22.

⁷² Such issues are considered elsewhere: Strelein L, “*Western Australia v Ward* on Behalf Of Miriuwung Gajerrong: Summary of Judgment” (2002) 2 (17) *Land, Rights, Laws: Issues Of Native Title*; Clarke J, “Recent Native Title Decisions In The High Court”, *Australian Policy Online*, 12 August 2002, <http://law.anu.edu.au/CIPL/Publications/Clarke.pdf>; and Dodson M, “Native Title on the Precipice: The Implications of the High Court’s Judgment on the *Ward* Case”, ANU Institute for Indigenous Australia, 17 October 2002, <http://ni.anu.edu.au/docs/dodson.pdf>

⁷³ For a discussion of these issues in the Federal Court in the *Ward* case, see Malcolm R and Meyers G, “Native Title Rights And The Protection Of Indigenous Cultural Knowledge” (2002) 50 *Intellectual Property Forum* 12-25.

⁷⁴ *Bulun Bulun and Milpurrurru v R & T Textiles Pty Ltd* (1998) 41 IPR 513.

⁷⁵ *Western Australia v Ward*, note 22, p 31.

The first difficulty in the path of that submission is the imprecision of the term “cultural knowledge” and the apparent lack of any specific content given it by factual findings made at trial. In submissions, reference was made to such matters as the inappropriate viewing, hearing or reproduction of secret ceremonies, artworks, song cycles and sacred narratives. To some degree, for example respecting access to sites where artworks on rock are located, or ceremonies are performed, the traditional laws and customs which are manifested at these sites answer the requirement of connection with the land found in para (b) of the definition in s 223 (1) of the *Native Title Act* 1993 (Cth). However, it is apparent that what is asserted goes beyond that to something approaching an incorporeal right akin to a new species of intellectual property to be recognised by the common law under para (c) of s 223 (1). The “recognition” of this right would extend beyond denial or control of access to land held under native title. It would, so it appears, involve, for example, the restraint of visual or auditory reproductions of what was to be found there or took place there, or elsewhere.⁷⁶

The lack of clarity was partly the fault of the advocates. Mr Bennett for the Commonwealth was absolutely opposed to native title being interpreted to include intangible interests. He did not explore what scope of protection should be offered to cultural knowledge, if it was recognised under native title law. Mr Basten for the Indigenous appellants submitted that native title did include the protection of cultural knowledge. However, he did not clarify the scope of the protection circumscribed by cultural knowledge.

In the joint majority judgment, Chief Justice Gleeson, and Justices Gaudron, Gummow and Hayne dismissed the argument that native title rights were linked to cultural knowledge rights. These judges supported the remarks of Justice von Doussa:

It is here that the second and fatal difficulty appears.

In *Bulun Bulun v R & T Textiles Pty Ltd*, von Doussa J observed that a fundamental principle of the Australian legal system was that the ownership of land and ownership of artistic works are

⁷⁶ *Western Australia v Ward*, note 22, p 31.

separate statutory and common law institutions. That is the case, but the essential point for present purposes is the requirement of “connection” in para(b) of the definition in s 223 (1) of native title and native title rights and interests. The scope of the right for which recognition by the common law is sought here goes beyond the content of the definition in s 223 (1).

That is not to say that in other respects the general law and statute do not afford protection in various respects to matters of cultural knowledge of Aboriginal peoples or Torres Strait Islanders. Decided cases apply in this field the law respecting confidential information, copyright, and fiduciary duties. Provision respecting moral rights is now made by Pt IX (s 189 - s 195AZO) of the *Copyright Act 1968* (Cth).⁷⁷

The judges assert that Federal Court precedents demonstrate that current intellectual property laws provide sufficient protection of Indigenous cultural property. In *Milpurrurru And Others v Indofurn Pty Ltd And Others*, Justice von Doussa made a collective award to the artists rather than individual awards so that the artists could distribute it according to their custom.⁷⁸ In *Bulun Bulun v R & T Textiles Pty*, Justice von Doussa was willing to find that the relationship between Bulun Bulun and the Ganalbingu people gave rise to fiduciary obligations.⁷⁹ He concluded that “if the copyright owner of an artistic work which embodies ritual knowledge of an Aboriginal clan is being used inappropriately, and the copyright owner fails or refuses to take appropriate action to enforce the copyright, the Australian legal system will permit remedial action through the courts by the clan.”⁸⁰ The judges also insist that the *Copyright Amendment (Moral Rights) Act 2000* (Cth) may offer some protection of Indigenous cultural property. However the effect of those new provisions will be limited, until the Federal Parliament passes proposed amendments for the recognition of Indigenous communal ownership of moral rights.⁸¹

⁷⁷ *Western Australia v Ward*, note 22, pp 31-32.

⁷⁸ *Milpurrurru v Indofurn Pty Ltd* (1994) 30 IPR 209.

⁷⁹ *Bulun Bulun and Milpurrurru v R & T Textiles Pty Ltd*, note 74.

⁸⁰ *Bulun Bulun and Milpurrurru v R & T Textiles Pty Ltd*, note 74.

⁸¹ Copyright Amendment (Indigenous Communal Moral Rights) Bill 2003 (Cth).

The joint majority judgment noted that s 223 (1) (b) of the *Native Title Act 1993* (Cth) required consideration of whether, by the traditional laws acknowledged and the traditional customs observed by the peoples concerned, they have a “connection” with the land or waters. However, it found it unnecessary to form a conclusion as to whether there could be shown a spiritual connection to the land: “We, therefore, need express no view, in these matters, on what is the nature of the ‘connection’ that must be shown to exist. In particular, we need express no view on when a ‘spiritual connection’ with the land (an expression often used in the Western Australian submissions and apparently intended as meaning any form of asserted connection without evidence of continuing use or physical presence) will suffice.”⁸²

Justice Callinan argued that the *Native Title Act 1993* (Cth) does not extend to cultural knowledge or reverence for land:

The existence of that cultural significance does not mean that the bare knowledge and reverence of themselves can constitute a native title right or interest in relation to land within the meaning of the Act. Physical presence is essential. The Full Court was therefore correct to hold that any rights to maintain, protect and prevent the misuse of cultural knowledge could not be the subject of the determination of native title.⁸³

His Honour adds that the decisions in *Mabo [No 2]*⁸⁴ and *Wik*,⁸⁵ and their statutory manifestations in the *Native Title Act 1993* (Cth) do not address a claim to equate cultural knowledge or reverence with some form of proprietary interest in land. Justice McHugh concurred with this judgment.⁸⁶

In this decision, the majority of the High Court is unduly suspicious of *sui generis* protection of traditional knowledge. In the past, the courts and policy-makers have been willing to accommodate certain valuable and lucrative subject matter within the scope of intellectual property, even though it might be ephemeral or unstable. For instance,

⁸² *Western Australia v Ward*, note 22, p 184.

⁸³ *Western Australia v Ward*, note 22, p 184.

⁸⁴ *Mabo v Queensland* (1992) 175 CLR 1.

⁸⁵ *The Wik Peoples v Queensland* (1996) 187 CLR 1.

⁸⁶ *Western Australia v Ward*, note 22.

sui generis protection has been granted to circuit layouts and plant breeder's rights. However, other areas - such as scientific discoveries - were denied special protection on the grounds that the subject matter was formless and nebulous.⁸⁷ Similarly, traditional knowledge has been refused *sui generis* protection because the limits and boundaries of such subject matter have been ill defined. The desire for intellectual property to be fixed in a stable form is a longstanding anxiety.

As a result of this angst, the majority of the High Court read down the scope of the *Native Title Act 1993* (Cth), so that it does not encompass cultural knowledge. Native title lawyer Jennifer Clarke comments upon the limitations of this approach:

Paradoxically, Australian law may still refuse to 'recognise' some Indigenous land traditions as native title. This is because the cultural categories which underlie Australian law are intolerant of different ways of classifying the world... The common law of property is all about possession and use of land, and the 'recognition' principles insist that Aboriginal concepts of land ownership which differ from this 'pragmatic' model are unenforceable. Thus, for example, native title claimants have been unable to convince the courts to recognise as native title their traditional rights to control the painting of land-related motifs. To Australian law, these are issues for the law of intellectual property - which in Aboriginal terms also deals with them unsatisfactorily.⁸⁸

The majority argued that native title rights were limited to tangible property, and did not extend to intangible property because of a cultural materialism and a legal pragmatism. Arguably, there is a need to take a more expansive view of the relationship between native title rights, customary law and spiritual custodianship.

⁸⁷ For a discussion of the unsuccessful attempt by the League of Nations to provide *sui generis* protection for scientific discoveries, see Merges R, "Property Rights Theory And The Commons: The Case Of Scientific Research", in Paul E, Miller F and Paul J (ed), *Scientific Innovation, Philosophy And Public Policy*. Cambridge: Cambridge University Press, 1996.

⁸⁸ Clarke J, note 72.

Justice Kirby's dissent

In his dissenting judgment, Justice Kirby questions whether there is sufficient protection for traditional knowledge under existing regimes of intellectual property:

The joint reasons describe the right claimed as “akin to a new species of intellectual property”. They state that the general law or statute law may provide avenues for its protection. That may be so. However, it must also be accepted that the established laws of intellectual property are ill-equipped to provide full protection of the kind sought in this case. The Preamble to the *Native Title Act 1993 (Cth)* expressly states that the Act aims to supplement the rights available under the general law.⁸⁹

He illustrates his point with the example of *Yumbulul v Reserve Bank of Australia* in which the Federal Court of Australia refused to support a copyright infringement action by an artist in respect of Morning Star funeral poles being used in the bicentennial ten-dollar note released by the Reserve Bank.⁹⁰

Justice Kirby seeks to rebut the comments of Justice von Doussa that recognition of native title rights analogous to intellectual property rights would fracture a so-called “skeletal principle” of the common law of Australia, by contravening the “inseparable nature of ownership in land and ownership in artistic works” and that therefore such recognition would be contrary to s 223 (1) (c) of the *Native Title Act*. His Honour notes that the assertion of such a “skeletal principle” in that case was obiter dictum. Justice Kirby offers the critique:

An application of Brennan J's statement regarding “skeletal principles” should consider his Honour's reasoning in its entirety. Skeletal principles are not immutable. When they offend values of justice and human rights, they can no longer command “unquestioning adherence”. A balancing exercise must be undertaken to determine whether, if the rule were overturned, the disturbance “would be disproportionate to the benefit flowing from the overturning”.⁹¹

89 *Western Australia v Ward*, note 22, pp 162-163.

90 *Yumbulul v Reserve Bank of Australia* (1991) 21 IPR 481 at 484, 490.

91 *Western Australia v Ward*, note 22, p 163.

Justice Kirby also notes his previous consideration of the “skeletal principle” enunciated by Justice Brennan in *Mabo [No 2]*.⁹² In *The Commonwealth v Yarmirr*, his Honour acknowledged the importance of s 223 (1) (c) of the *Native Title Act 1993* (Cth) in ensuring that rights and interests repugnant to, or destructive of, basic legal principles of Australian law would not be recognised.⁹³ Justice Kirby acknowledged that the protection of some aspects of cultural knowledge might have such a consequence. However, in his view, such repugnancy has not been demonstrated in the facts of the appeals.

A number of academics have also cautioned that the doctrine of “skeletal principles” should be applied with care and circumspection. Stephen Gray observed:

Brennan J in *Mabo* itself did not set down any guidelines for determining when recognition of a particular law or custom would facture a ‘skeletal principle’. von Doussa J in *Bulun Bulun*, however, suggested that the principle that ownership of land and ownership of art are separate ‘may well’ be characterised as ‘skeletal’. There is as yet little guidance on the apparently new jurisprudential distinction between ‘skeletal’ and ‘non-skeletal’ principles of the common law.⁹⁴

He believed that the ownership of land and the ownership of art should be able to co-exist, in light of international norms, and social and political practices. Similarly, Kristin Howden concluded that “comprehensive consideration of Justice Brennan’s ‘skeletal principle’ test, in fact confirms the need to recognise a native title right to protect traditional knowledge”.⁹⁵ Others remain concerned that the very notion of “skeletal principles” is nothing more than an intellectual fiction or construct. In the manner of Stanley Fish, Andrew Kenyon quipped: “There’s no such thing as a skeletal principle, and it’s a good thing too.”⁹⁶

⁹² *Mabo v Queensland* (1992) 175 CLR 1.

⁹³ *Commonwealth v Yarmirr*, note 70.

⁹⁴ Gray S, “Peeking into Pandora’s Box: Common Law Recognition Of Native Title To Aboriginal Art” (2000) 9 (2) *Griffith Law Review* 227 at 240.

⁹⁵ Howden K, “Indigenous Traditional Knowledge And Native Title” (2001) 24 (1) *The University of New South Wales Law Journal* 60.

⁹⁶ Kenyon A, “The Artist Fiduciary - Australian Aboriginal Art and Copyright” (1999) 10 *Entertainment Law Review* 42-49.

In his dissent, Justice Kirby recognises that it is difficult to define a native title right to maintain, protect and prevent the misuse of cultural knowledge of the native title holders: “The right to protect cultural knowledge was not well defined in submissions before this Court.”⁹⁷ Nonetheless, Justice Kirby believes that it is possible to define the scope of cultural knowledge. His Honour elaborates:

It has been accepted that the connection between Aboriginal Australians and ‘country’ is inherently spiritual and that the cultural knowledge belonging to Aboriginal people is, by indigenous accounts, inextricably linked with their land and waters, that is, with their ‘country’. In evidence, the Ningarmara appellants described the ‘land-relatedness’ of their spiritual beliefs and cultural narratives. Dreaming Beings located at certain sites, for example, are narrated in song cycles, dance rituals and body designs. If this cultural knowledge, as exhibited in ceremony, performance, artistic creation and narrative, is inherently related to the land according to Aboriginal beliefs, it follows logically that the right to protect such knowledge is therefore related to the land for the purposes of the *Native Title Act* 1993 (Cth).⁹⁸

Justice Kirby maintains that such rights include many elements, such as “restricting access to certain sites or ceremonies and restricting the reproduction of artwork or other images”.⁹⁹ A travelling exhibition called *Native Title Business* illustrates that paintings are often used as evidence to document and secure native title.¹⁰⁰ The inextricable link between culture and place is readily apparent in works of art - such as the Ngurrara canvas painted by a group of twenty-two Kimberley artists to demonstrate their 1996 native title claim to an area of the Great Sandy Desert.¹⁰¹

⁹⁷ *Western Australia v Ward*, note 22, p 160.

⁹⁸ *Western Australia v Ward*, note 22, pp 161-162.

⁹⁹ *Western Australia v Ward*, note 22, p 160.

¹⁰⁰ Winter J, *Native Title Business: Contemporary Indigenous Art, a Travelling Exhibition*, Keeaira Press, Southport, 2002.

¹⁰¹ Dick T, “The Old Fella’s Still Got It, But Little Shorty Packs A Punch”, *The Sydney Morning Herald*, 31 July 2003, <http://www.smh.com.au/articles/2003/07/31/1059480481916.html>

Citing an article by Chief Justice Black of the Federal Court,¹⁰² Justice Kirby discusses the need to protect the secrecy of cultural knowledge - no doubt recalling the problems experienced in the Hindmarsh Island case.¹⁰³ His Honour nonetheless believes that the legal system can accommodate such concerns: “If the *Native Title Act* 1993 (Cth) protects the right and interest in question, procedures of the courts and other decision-makers could facilitate means of proof and challenge that involved the minimum intrusion upon secrecy where this is itself part of the cultural knowledge that is afforded statutory protection.”¹⁰⁴

Curiously, Justice Kirby also explores the possibility that cultural knowledge may be protected under s 116 of the *Constitution* (Cth),¹⁰⁵ which provides: “The Commonwealth shall not make any law for establishing any religion, or for imposing any religious observance, or for prohibiting the free exercise of any religion.” He has previously expressed the view that intellectual property powers should be subject to certain constitutionally guaranteed freedoms.¹⁰⁶ Justice Kirby believes that s 116 of the *Constitution* (Cth) has the potential to provide protection for the right to cultural knowledge insofar as it based upon the spirituality of Australia’s Indigenous people.¹⁰⁷ His Honour was inspired by an academic article by Grutzner entitled “Invalidating Provisions of the *Native Title Act* 1993 (Cth) on Religious Grounds”.¹⁰⁸ However, the High Court has only been willing to read and interpret s 116 of the *Constitution* (Cth) in a narrow and pedantic fashion.¹⁰⁹ The constitutional guarantee has never had the same scope as its United States counterpart. Indeed the

¹⁰² Black CJ, “Developments In Practice And Procedure In Native Title Cases” (2002) 13 *Public Law Review* 16.

¹⁰³ *Chapman v Luminis Pty Ltd* (No 5) [2001] FCA 1106; and Bell D, note 49.

¹⁰⁴ *Western Australia v Ward*, note 22, p 161.

¹⁰⁵ *Western Australia v Ward*, note 22, p 164.

¹⁰⁶ *Grain Pool of Western Australia v Commonwealth* (2000) 46 IPR 515.

¹⁰⁷ *Western Australia v Ward*, note 22, p 160.

¹⁰⁸ Grutzner H, “Invalidating Provisions of the Native Title Act 1993 (Cth) on Religious Grounds: s 116 of the Constitution and the Freedom to Exercise Indigenous Spiritual Beliefs”, in Boge CJ (ed), *Justice for All? Native Title in the Australian Legal System*, Lawyer Books, Brisbane, 2001, p 85.

¹⁰⁹ *Krygger v Williams* (1912) 15 CLR 366; *Adelaide Company of Jehovah’s Witnesses Incorporated v Commonwealth* (1943) 67 CLR 116; *Church of the New Faith v Commissioner of Pay-Roll Tax (Vic)* (1983) 154 CLR 120; and *Kruger v the Commonwealth* (1997) 190 CLR 1.

High Court has never upheld a claim based on s 116 of the Constitution. Most notably, in *Kruger v the Commonwealth*, the majority of the High Court rejected the argument that the removal of Aboriginal children from their families was constitutionally invalid because it prohibited the free exercise of Aboriginal religion.¹¹⁰ Given this background, it is not surprising that the possibility of s 116 of the *Constitution* (Cth) has not been raised in the context of native title.

The judgment of Justice Kirby is a principled, honourable dissent. It provides an intelligent account of the relationship between native title and intellectual property. Justice Kirby has a flashing intuition or insight here that much of Indigenous cultural knowledge is sacred in its nature, and by extension within the scope of s 116 of the *Constitution* (Cth). Unfortunately, his Honour does not follow through the implications of this reasoning, and consider how exactly this express constitutional guarantee might provide protection for traditional knowledge in the factual circumstances of this case. Nonetheless, the judgment of Justice Kirby has much to commend. It will undoubtedly be an influential dissenting judgment.

Neowarra v Western Australia

The recent Federal Court decision of *Neowarra v Western Australia* concerned a native title claim in respect of the land and waters in the northwest of the Kimberley in Western Australia.¹¹¹ In his decision, Justice Sundberg relied in part upon cultural knowledge to establish the native title rights of the community. As a journalist observed: “The wandjina, a mouthless, spaceman-like creation figure that featured in the Olympic Games opening ceremony, has helped convince a judge to give a group of Aborigines native title rights in an area of the Kimberley.”¹¹² The case certainly provided an intriguing gloss on the High Court ruling on native title rights and cultural knowledge in *Western Australia v Ward*.¹¹³

¹¹⁰ *Kruger v the Commonwealth* (1997) 190 CLR 1.

¹¹¹ *Neowarra v Western Australia*, note 23.

¹¹² Jopson D, “Wandjina Triumphs In Native Title Case”, *The Sydney Morning Herald*, 9 December 2003, <http://www.smh.com.au/articles/2003/12/08/1070732146760.html>

¹¹³ *Western Australia v Ward*, note 22.

As part of their claim, the Wanjinna-Wungurr community sought the recognition of a right to use, maintain, protect, and prevent the misuse of cultural knowledge of common law holders. The community also claimed possession of painted images on rock surfaces within the claim area, in particular in relation to Wanjinna and Gwion images. Paddy Neowarra, a member of the community, provided evidence as to his responsibilities under law and custom as to repainting Wanjinna's:

We just got to come along and renew him again when he falling to - when everything and paint coming off. That's our law and that's how we keep it. And that's what was given to us from the old people. You've got to take care of it and look after it and always remember that.¹¹⁴

Professor Valda Blundell - the author of *The Art Of Country*¹¹⁵ - also gave evidence about the significance to the claimant group of Wanjinna's on canvas. She spoke of "a shared cultural geography, a culture-scape that was marked and named during the Lalai/Lalan (the Dreaming) by the activities of the Wanjinna and their associated spiritual beings".¹¹⁶ There was concern about unauthorised and unsupervised persons, such as tourist operators, damaging Wanjinna or Wungurr places.

Justice Sundberg considered the decision of the High Court in *Western Australia v Ward* that native title rights did not extend to cultural knowledge:

As I understand the joint judgment, the claim to reinstate par 3(j) in the determination was ultimately rejected on the ground that there could be no recognition of the right claimed under s 223(1)(c) because it would be a new species of intellectual property right which could not be recognised for want of a connection with land. The examples given of what might fall within the right were the restraint of visual or auditory reproductions of what was to be found at Aboriginal sites or took place there or elsewhere.¹¹⁷

¹¹⁴ *Neowarra v Western Australia* [2003] FCA 1402 at 277.

¹¹⁵ Blundell V, "The Art Of Country: Aesthetics, Place And Aboriginal Identity In Northwest Australia", Land, Place, Culture And Identity Conference, University Of Western Australia, 2000, p 30.

¹¹⁶ *Neowarra v Western Australia*, note 23, p 90.

¹¹⁷ *Neowarra v Western Australia*, note 23, p 486.

In light of the High Court decision, the Wanjina-Wungurr community did not press this claim. However, they did seek recognition of the right “to prevent the disclosure otherwise than in accordance with traditional laws and customs [of] tenets of spiritual beliefs and practices (including songs, narratives, rituals and ceremonies) which relate to areas of land or waters, or places on the land or waters”.¹¹⁸ However, Justice Sundberg held that the reformulation of the right to cultural knowledge suffered the same “fatal difficulty” adverted to by the High Court: “It will still involve the ‘restraint of visual or auditory reproductions of what was found [on the land] or took place there.’”¹¹⁹

However, Justice Sundberg also considered whether the community could claim possession of painted images on rock surfaces within the claim area, including the Wanjina images and Gwion images. His Honour held:

In my view claimants with a traditional right to freshen or repaint a particular painting site may have access to pastoral land in order to exercise that right. Neither the access nor the freshening or repainting is inconsistent, since it amounts to a right of exclusive possession of the site. The same will apply to the right to make decisions about the images if it is asserted as an exclusive right.¹²⁰

Justice Sundberg recognises that the community has a right to access land in order to repaint and freshen up images. Such native title rights are much weaker than intellectual property rights, which would provide exclusive rights of possession in respect of intangible property. Nonetheless, the case represents a significant advancement upon existing jurisprudence. Arguably, the judgment demonstrates the need for a wider judicial revolution, so that native title law provides full recognition of the rights of Indigenous communities regarding cultural knowledge.

¹¹⁸ *Neowarra v Western Australia*, note 23, p 487.

¹¹⁹ *Neowarra v Western Australia*, note 23, p 487.

¹²⁰ *Neowarra v Western Australia*, note 23, p 491.

PART THREE

Traditional Knowledge: Patent Law and Plant Breeder's Rights

The draft *Environment Protection and Biodiversity Conservation Act 1999* (Cth) regulations do not alter any existing property rights or intellectual property rights for any parties. Thus plant breeder's rights and patent rights are not affected at the level of ownership or validity or exploitation. The Bailey Parliamentary Report observed:

Australia's IP regime does not currently protect traditional knowledge. Nor do the IP regimes of foreign countries. They fail to recognise collective rights and provide protection for only limited periods of time. Furthermore, traditional knowledge would not generally be regarded as patentable because it lacks the requisite newness. What may therefore be needed is a new category of rights that protects traditional knowledge from unauthorised use, recognises its origin, and provides just compensation. *Sui generis* methods of IP protection, such as those used for plant varieties, have been recommended in this context, for example, in an ATSIC commissioned report on indigenous cultural and IP.¹²¹

There have been a number of domestic reports that have sought to find ways of protecting traditional knowledge through legislative amendments, or the development of a *sui generis* system of protection.¹²² There have also been a number of international efforts to protect traditional knowledge. The World Intellectual Property Organization mooted the development of a convention to protect "folklore" in the 1970s. However, this nomenclature was considered to be inappropriate and patronising. Building upon international developments, the *Our Culture, Our Future* report written by Terri Janke emphasised the need to recognise "Indigenous cultural heritage".¹²³ The World Intellectual Property Organization has

¹²¹ House of Representatives Standing Committee on Primary Industries and Regional Services, note 19, p 46.

¹²² Attorney General's Department. *Stopping The Rip-Offs: Intellectual Property Protection For Aboriginal And Torres Strait Islander Peoples*. October 1994; Janke T, note 13, 1999; and Fourmile H, note 18.

¹²³ Janke T, note 13, 1999.

recently undertaken a fact-finding mission into “traditional knowledge”, and explored the development of *sui generis* legislation to protect traditional knowledge.¹²⁴ However, the Australian Government has not yet passed legislation to specifically protect traditional knowledge. This has been the cause of some disappointment amongst Indigenous people who have been lobbying for the protection of traditional knowledge for some time. Nonetheless, there remains much interest in the use of intellectual property to regulate access to genetic resources and traditional knowledge.¹²⁵

Confidential Information

In *Western Australia v Ward*, there was a discussion of the use of trade secrets law to protect the confidential information of Indigenous knowledge.¹²⁶ Trade secrets law may be a way for Indigenous people to safeguard traditional knowledge. It would allow individuals to keep sensitive information out of the public domain, and control its transfer within a particular community.

In *Foster v Mountford*, the Supreme Court of the Northern Territory considered whether Mountford, an anthropologist, had breached a duty of confidential information in publishing a book called *Nomads of the Australian Desert*.¹²⁷ It found that there was a breach of confidence on the part of defendant because information of a deep religious and cultural significance to the Aboriginal group was depicted in the book. Similar findings were made in *Pitjantjatjara Council Inc and Peter Nguaningu v Lowe and Bender*, an action related to lantern slides,

¹²⁴ World Intellectual Property Organization, “Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore”, Fact-Finding Missions, 1998-1999, <http://www.wipo.int/globalissues/tk/report/final/index.html>; and Taubman A, note 1.

¹²⁵ Stoianoff N, “Access To Australia’s Biological Resources And Technology Transfer” (1998) 20 (8) *European Intellectual Property Review* 298-305; Drahos P, “Indigenous Knowledge, Intellectual Property And Biopiracy: Is A Global Bio-Collecting Society The Answer?” (2000) 22 (6) *European Intellectual Property Review* 245-250; Dutfield G, *Intellectual Property Rights And The Life Science Industries: A Twentieth Century History*, Ashgate, Aldershot, 2003; Lawson C and Pickering C, “Successfully Controlling Access Under the *Environment Protection and Biodiversity Conservation Act 1999* And Its Regulations Requires A Proper Assessment Of The Impact Of The *Patents Act 1990*” (2002) 13 (3) *Australian Intellectual Property Journal* 109.

¹²⁶ *Western Australia v Ward*, note 22.

¹²⁷ *Foster v Mountford* (1976) 14 ALR 71.

which were taken by Mountford of sacred material belonging to the Pitjantjatjara people.¹²⁸

Confidential information and trade secrets may be of relevance to plant varieties. In *Franklin v Giddins*, the Queensland Supreme Court dealt with the application of confidential information and trade secrets law to plant breeding.¹²⁹ The plaintiffs conducted an orchard where they grew “Franklin Early White” nectarines, which were highly successful from a commercial point of view. The male defendant stole budwood cuttings from the plaintiffs’ orchard and by carrying out the necessary grafting process commenced to grow Franklin Early White nectarines, in competition with the plaintiffs. The female defendant subsequently learnt that the nectarine trees being grow in their orchard were the produce of the stolen budwood.

Justice Dunn held that the male defendant had acted unconscionably and stolen a trade secret in contravention of the plaintiffs’ rights. In the circumstances, the plaintiffs were entitled to equitable relief against him independently of any contractual relationship. Justice Dunn found that it would be unconscionable for the female defendant to derive any benefit from the trees, and that she also infringed the plaintiff’s rights, and was subject to the equitable jurisdiction of the court. His Honour ordered that the defendants deliver up to the plaintiffs for destruction the productive budwood.

Such precedents have a particular relevance in relation to traditional knowledge about biological resources. Bioprospectors would have to negotiate with Indigenous people to gain access to confidential information. They would be unable to collect, catalogue, and classify genetic resources in an unfettered fashion.

¹²⁸ *Pitjantjatjara Council Inc and Peter Nguningu v Lowe and Bender* (unreported, SCVic, 1796/82, 26 March 1982).

¹²⁹ *Franklin v Giddins* (1978) Qd R 72.

Plant Breeder's Rights

There was initially legislative debate about whether the *Plant Breeder's Rights Act 1994* (Cth) would be in conflict with the *Native Title Act 1993* (Cth) and the *Racial Discrimination Act 1975* (Cth).¹³⁰

The Australian Conservation Foundation, and a legal advisor to the Cape York Land Council, Matthew Baird, argued that the *Plant Breeder's Rights Act 1994* (Cth) had the potential to extinguish native title rights of Indigenous Australians which are protected under the *Native Title Act 1993* (Cth), and the *Racial Discrimination Act 1975* (Cth).¹³¹ He maintained that the Bill and the 1991 UPOV Convention may be inconsistent with a number of obligations under the *Rio Convention on Biodiversity* relating to Indigenous people, as well as the *Draft Declaration on the Rights of Indigenous People*.

However, the Attorney-General's Department provided advice that the *Plant Breeder's Rights Act 1994* (Cth) did not have the potential to extinguish or affect native title rights.¹³² First, it thought it unlikely that rights to genetic plant material would arise in customary Indigenous laws. Secondly, it doubted whether the *Native Title Act 1993* (Cth) would include plant genetic resources. Thirdly, assuming Indigenous rights to genetic plant material existed and were covered by *Native Title Act 1993* (Cth), the development and registration of a new plant variety from genetic material owned by native title holders, would not be an act affecting native title and would, therefore, not be regulated by the *Native Title Act 1993* (Cth).

The debate over plant breeder's rights and traditional knowledge re-emerged in parliamentary debate over the Plant Breeder's Rights Amendment Bill 2002 (Cth) introduced by the Federal Government to clarify the rights of plant breeders in respect of equitable remuneration.

The Australian Democrats were concerned that the plant breeder's rights scheme failed to provide any rights for Aboriginal communities - even if a plant was originally discovered on their land. They proposed a number of substantive amendments to the Plant Breeder's

¹³⁰ Senate Standing Committee On Rural And Regional Affairs. *Plant Breeder's Rights Bill*. Canberra: Australian Government Publishing Service, May 1994.

¹³¹ Senate Standing Committee On Rural And Regional Affairs, note 130, pp 387-388.

¹³² Senate Standing Committee On Rural And Regional Affairs, note 130,

Rights Bill 2002 (Cth). In particular, Senator John Cherry and Senator Aden Ridgeway moved to entrench the rights of Indigenous Australians to benefits flowing from native plants under the plant breeder's rights scheme:

While Indigenous communities are not the only group affected by this act, their rights and their traditional relationship with the land are being widely ignored in this legislation. The Democrats are proposing amendments that will reduce the chances of biopiracy from Indigenous land and increase the capacity of the Indigenous community to object when biopiracy is occurring. We will also be moving to add Indigenous representation to the advisory committee that provides expert advice to the minister. Currently, Indigenous and conservation interests are not represented on the committee at all. While encouraging innovation and new commercial varieties is fully supported by the Democrats, legislation that gives rights to one group by denying others is not acceptable.¹³³

The Australian Democrats stressed that the amendments were essential to prevent the plant breeder's rights scheme from being jeopardised by major problems with biopiracy. They also introduced other amendments to ensure that the approval process deals with economic, as well as environmental and scientific concerns especially in relation to genetically modified plants. A possible inspiration for such a legislative plan would be the *Plant Variety Protection and Farmers' Rights Act 2001* passed by the Indian Parliament.¹³⁴

In his second reading speech, Senator John Cherry expressed a particular concern about the biopiracy of traditional knowledge.¹³⁵ Relying heavily upon the work of the Canadian based Rural

¹³³ Cherry J, "Plant Breeder's Rights Amendment Bill 2002: Second Reading Speech", Senate Hansard, 21 October 2002, p 5553.

¹³⁴ Adcock M, "Farmers' Right Or Privilege?" (2001/2002) 3 *Bio-Science Law Review* 93; and Sahai, S. "India's Plant Variety Protection And Farmers' Rights Legislation" in Drahos P and Mayne R (ed), *Global Intellectual Property Rights: Knowledge, Access And Development*, Palgrave Macmillan, New York, 2002, pp 214-224.

¹³⁵ Cherry J, note 133, p 5553.

Advancement Foundation International,¹³⁶ the Australian Democrats alleged that there were 149 documented cases in Australia of established plant varieties being wrongly registered as new varieties. This included plants brought to Australia from neighbouring countries such as Papua New Guinea, and plants traditionally used by Aboriginal communities. The Australian Democrats noted that Australia was presented with the Captain Hook Award, bestowed on the country with the worst record in the world in the area of biopiracy.¹³⁷

Although rhetorically powerful in their criticisms, the Rural Advancement Foundation International is a rather unreliable source of information. The study conducted by the group does not display a particularly good understanding of the plant breeder's system that exists in Australia. An alternative explanation could be provided of the controversy. A business manager, Vince Logan, comments that the filing of the plant breeder's rights applications was not the result of some conspiracy.¹³⁸ Rather, the problem arose as a result of a lack of communication between researchers and seed banks. As soon as the issue was identified, the applications were withdrawn. The Plant Breeder's Rights Office subsequently tightened its administrative practice in dealing with such established plant varieties.

The legislative amendments sought to define "traditional knowledge, innovations and practices" and "traditional landrace varieties". Proposed Subsection 3(1) defined "traditional knowledge, innovations and practices" as meaning "knowledge and those innovations and practices that have been and continue to be developed and practiced by indigenous peoples in accordance with their traditions and customs." Proposed section 42 (4) provided: "If a plant variety is a traditional landrace plant variety or a variety which is essentially derived from such landrace plant variety, PBR must not be granted to that variety." Proposed section 42 (4A) defined "traditional landrace variety" as a

¹³⁶ Rural Advancement Foundation International and Australian Heritage Seeds Curators Association, "Plant Breeder's Wrongs: An Inquiry Into The Potential for Plant Piracy Through International Intellectual Property Conventions", 26 August 1998, http://www.etcgroup.org/documents/occ_plant.pdf

¹³⁷ Rural Advancement Foundation International, "Captain Hook Awards For Outstanding Achievements in Biopiracy", 11 May 2000.

¹³⁸ Logan V, "Confessions of a Biopirate and Other Tales on the Commercialisation of Agriculture Research", Intellectual Property And Agriculture Symposium, Canberra, 18 September 2003.

“variety developed over millennia by selecting favourable characteristics within a cultivated crop species, or a variety that is the outcome of indigenous peoples’ traditional and customary innovations and practices”. Alternatively, it may also be known as a “traditional variety”, “local variety” or “farmers’ variety”.

Proposed section 42 (5) provided that plant breeder’s rights must not be granted to a variety which is discovered on Crown lands, national parks, world heritage sites, and native title lands. Senator John Cherry explained the intent of the amendment:

Amendment (13) amends section 42 of the act. It ensures that plant varieties derived from varieties that have developed over millennia by selective breeding or by way of traditional knowledge and innovation cannot be granted a PBR. The exception is when Indigenous communities give informed consent and are guaranteed to benefit from a PBR. The amendment also ensures that plants discovered on public or Aboriginal lands, regardless of the degree of selective breeding that takes place, cannot be granted a PBR. The purpose behind this amendment is to ensure that the plant varieties discovered on public or Aboriginal lands remain in the hands of the community where they were found. Currently, there is no provision for Aboriginal communities, for instance, to exercise any rights over new plant varieties when the original variety was found on Aboriginal land.¹³⁹

Proposed section 42 (5) does provide an exception “where it can be shown to be the subject of rights and interests by [I]ndigenous peoples, including customary and other forms of ownership unless: (i) the prior informed consent of the holders of such knowledge, innovations and practices has been sought and received; and (ii) equitable sharing of the benefits arising from the utilisation of such knowledge, innovations and practices has been agreed to amongst the parties.” In other words, it seeks to dovetail in with the access to genetic resources scheme being set up by the Commonwealth.

Liberal Senator Judith Troeth, the Parliamentary Secretary to the Minister for Agriculture, Fisheries and Forestry, explained that the Coalition Government would not support the amendments proposed

¹³⁹ Cherry S, note 133, p 6548.

by the Democrats. In particular, she objected the amendment relating to landrace varieties:

I will also respond to amendment (R13) and point out again, at the risk of labouring the point, that plant breeders rights is non-discriminatory and protects the interests of Indigenous and non-Indigenous plant breeders alike. These proposals would be a disincentive to all Australians, including Indigenous breeders and communities, to develop new varieties from germplasm found in certain locations. Landrace varieties are already ineligible for PBR registration under the Australian act and under UPOV. Plant breeders rights only apply to new varieties that are distinguishable from existing varieties of common knowledge.¹⁴⁰

Australian Labour Party Senator Kerry O'Brien also rejected the amendments proposed by the Democrats in respect of the Plant Breeder's Rights Amendment Bill 2002 (Cth).¹⁴¹ He also stressed that plant breeder's rights would not vest in landrace varieties, because they would be considered to be common knowledge. In particular, he thought that environmental laws would be more appropriate to deal with issues concerning environmental risks than the intellectual property legislation.

The Liberal Party, the National Party, and the Australian Labour Party passed the technical amendments that were contained in the original bill - relating to equitable remuneration, and the administration of the plant breeder's rights scheme. The concerns expressed by the Australian Democrats about landrace varieties were not incorporated into the final *Plant Breeder's Rights Amendment Act 2002* (Cth).

Patent Law

In its submissions to the Bailey Parliamentary Inquiry, IP Australia observed that it was exploring the use of existing patent systems as a

¹⁴⁰ Troeth J, "Plant Breeder's Rights Amendment Bill 2002: In Committee", Senate Hansard, 18 November 2002, p 6628.

¹⁴¹ O'Brien K, "Plant Breeder's Rights Amendment Bill 2002: In Committee", Senate Hansard, 18 November 2002, p 6628.

defensive means of protecting traditional knowledge.¹⁴² It hoped that the development of databases and registers of traditional knowledge would create a field of prior art to challenge patents and educate patent examiners.¹⁴³ Canadian academic Rosemary Coombe, though, has been sceptical of such strategies:

Another initiative being made to improve the current system is the creation of traditional knowledge databases and community registers of traditional knowledge. These initiatives are somewhat controversial and certainly not all [I]ndigenous peoples, traditional healers, or rural communities support them. Certainly they may be inappropriate for knowledge considered to be sacred and knowledge held and transmitted primarily through ritual means (although maintenance of conditions of confidentiality may obviate some of these concerns). Only knowledge, innovations, and practices that communities do not wish to commercialize should be put in publicly available databases.¹⁴⁴

Rosemary Coombe concludes: “At the end of the day, however, the documentation of traditional knowledge will not return any income to peoples.”¹⁴⁵ There is therefore a need to explore strategies that will ensure that Indigenous communities are able to share in the benefits flowing from the exploitation of intellectual property.

Similarly, Pires de Carvalho of the World Intellectual Property Organization¹⁴⁶ argues that Indigenous people can apply for patent protection over traditional knowledge. However, it is unrealistic to expect that Indigenous knowledge holders will be able to use the patent system in a strategic fashion. Henrietta Fourmile comments that

¹⁴² IP Australia, “Supplementary submission no. 39”, to the House of Representatives Standing Committee on Primary Industries and Regional Services, note 19.

¹⁴³ IP Australia had hired Michael Davis as a consultant to report on intellectual property and traditional knowledge. Davis M, note 14, 1999, pp 1- 32.

¹⁴⁴ Coombe R, “The Recognition of Indigenous Peoples’ and Community Traditional Knowledge in International Law” (2001) 14 *St. Thomas Law Review* 275.

¹⁴⁵ Coombe R, note 144.

¹⁴⁶ de Carvalho P, “From the Shaman’s Hut to the Patent Office: How Long and Winding is the Road?” (1999) 41 *Review of the Brazilian Association of Intellectual Property* 3.

the cost of the system would be beyond the resources of most Indigenous communities:

While this is an option few Indigenous groups anywhere have tried, it is also relevant to point out that the costs of applying for and defending a patent are way beyond the means of most communities. For example, to obtain patent protection for an invention in an appropriate range of countries can cost as much as US\$100,000 - 200,000 (A\$150,000 - 300,000), and up to double that per litigation to protect the patent from illegal use or challenge. While this might represent small change for a major biotechnology corporation, and is no doubt factored into their overall research and development and operational budgets, fees like this represent insurmountable obstacles for Indigenous traditional knowledge holders in Australia.¹⁴⁷

It would be very difficult to establish patent infringement where traditional knowledge is far removed from the end product of natural drug discovery - a chemically synthesized pharmaceutical drug.

A more radical requirement would be to require fundamental reforms to patent legislation. John Voumard recommended that “IP Australia consider amending patent law to require proof of source and, where appropriate, prior informed consent, as a prerequisite for granting a patent”.¹⁴⁸

Brad Sherman argues that the access to genetic resources scheme fails to deal with biopiracy by third parties: “The scheme has the potential to encourage good practice, but will not prevent biopiracy – where plants have been collected, chemicals patented and land owners not compensated.”¹⁴⁹ He argues that patent law could be a regulatory mechanism to improve the access to genetic resources scheme:

People see patent law as a tool for economic ends, such as to encourage investment in innovation. But it is possible to use the system to achieve other objectives, such as access to medicine,

¹⁴⁷ Fourmile H, note 18, p 222.

¹⁴⁸ Voumard J, note 10, p 88.

¹⁴⁹ Salleh A, “Loopholes In New Biopiracy Laws - Says Expert”, ABC Science Online, Friday 8 November 2002, http://www.abc.net.au/science/news/enviro/EnviroRepublish_721515.htm

protection of the environment and acknowledgment of [I]ndigenous knowledge.¹⁵⁰

Brad Sherman argues that compliance with the permit system should be made a condition for patenting biotechnological inventions.¹⁵¹ He recommends that a patent based on biological resources should only be granted on the condition that a benefit-sharing agreement has been reached with the landholder. “This would complement and strengthen the public good intention of the new laws. If people were serious about protecting [I]ndigenous knowledge from exploitation, this is a really easy way to do it.”¹⁵² Brad Sherman also develops a fallback option, in which disclosure would be voluntary.¹⁵³ He draws on the European Council Directive 98/44, which recommends that patent applicants should disclose the geographical origin of the biological material on which their inventions are based.

One option would be to enshrine the principle of the disclosure of the geographical origin of genetic resources in the *Patent Co-Operation Treaty* (PCT). Switzerland has put forward a proposal in relation to the declaration of the source of genetic resources and traditional knowledge in patent applications.¹⁵⁴ They suggest that the PCT Regulations should be amended to permit nations to amend their patent laws to require the lodgement of declarations of the source of genetic resources in patent applications:

Switzerland proposes to explicitly enable the national patent legislation to require the declaration of the source of genetic resources and traditional knowledge in patent applications. More specifically, Switzerland proposes to amend the Regulations under the Patent Cooperation Treaty (PCT) to explicitly enable the Contracting Parties of the PCT to require patent applicants, upon or after entry of the international application into the national phase of the PCT procedure, to

¹⁵⁰ Salleh A, note 149.

¹⁵¹ Sherman B, note 50.

¹⁵² Salleh A, note 149.

¹⁵³ Sherman B, note 50.

¹⁵⁴ World Intellectual Property Organization. “Proposals By Switzerland Regarding The Declaration Of The Source Of Genetic Resources And Traditional Knowledge In Patent Applications”, Working Group On Reform Of The Patent Cooperation Treaty, Fourth Session, Geneva, 19-23 May 2003.

declare the source of genetic resources and/or traditional knowledge, if an invention is directly based on such resource or knowledge. Furthermore, Switzerland proposes to afford applicants the possibility of satisfying this requirement at the time of filing an international patent application or later during the international phase. In case an international patent application does not contain the required declaration, national law may foresee that in the national phase the application is not processed any further until the patent applicant has furnished the required declaration.¹⁵⁵

In the view of Switzerland, the proposed amendments to the PCT-Regulations would “present one simple and practical solution to the issues arising in the context of access to genetic resources and traditional knowledge and the fair and equitable sharing of the benefits arising out of their utilization”.¹⁵⁶ They are confident that “these amendments could be introduced in a timely manner and would not require extensive changes to the provisions of relevant international agreements”.¹⁵⁷

It is striking that Switzerland, of all countries, should put forward such a proposal, given its long history of supporting the domestic interests of Swiss pharmaceutical drug manufacturers. However, Switzerland declared:

With regard to the underlying issues, Switzerland holds the view that a fair and balanced approach must be taken: on one hand, Switzerland supports the effective protection of biotechnological innovations through intellectual property rights, in particular patents. On the other hand, a fair and balanced approach necessitates effective, efficient, practical and timely solutions to the issues arising in the context of access to genetic resources and traditional knowledge and the fair and equitable sharing of the benefits arising out of their utilization.¹⁵⁸

¹⁵⁵ World Intellectual Property Organization, note 154.

¹⁵⁶ World Intellectual Property Organization, note 154.

¹⁵⁷ World Intellectual Property Organization, note 154.

¹⁵⁸ World Intellectual Property Organization, note 154.

The Swiss Government believed that this option would be preferable to the various other approaches that are currently being discussed at the international level - such as the negotiation of a protocol under the *Rio Convention on Biological Diversity*. It would appear that the country intends to implement domestic legislation to realise its proposal. The proposal has been lauded for being an “elegant” solution.¹⁵⁹ However, the Swiss Government has been unsuccessful in its attempts to garner support for this proposal at an international level.

Conclusion

The Australian Federal Government has an unrivalled opportunity to provide a blueprint for the implementation of the *Rio Convention on Biological Diversity*. It therefore needs to introduce the proposed access to genetic resources scheme without further delay or postponement. There is a call for a co-ordinated governmental response in this field. Michael Davis makes the pertinent comment:

The development and introduction of effective reforms requires an active and committed approach throughout the entire machinery of government. A proliferation of committees, working parties and other bodies within the government bureaucracy may be an impediment to effective reforms. Conversely, with commitment and resources, these bodies can provide the impetus and the momentum necessary for meaningful and long-term change.¹⁶⁰

The Commonwealth scheme should respect the need to preserve and maintain traditional knowledge. Indigenous people and communities must retain a right of veto in respect of access to genetic resources. A number of compromises must be reviewed. The distinction between bioprospecting for research purposes and commercial motives will be difficult to sustain. The requirement of prior informed consent is vulnerable to ministerial discretion. The remedies available in respect of biopiracy are meagre. The jurisdiction of the Commonwealth scheme is also necessarily limited. There is a need for a nationally

¹⁵⁹ Burton G, “Introducing The New Swiss Proposals”, Correspondence, 7 May 2003.

¹⁶⁰ Davis M, “Indigenous Peoples and Intellectual Property Rights”, Australian Parliamentary Library, Research Paper 20, 1996-1997.

consistent scheme for access to genetic resources to be established. It is imperative that the integrity of the scheme is preserved, and the spirit of the *Rio Convention on Biological Diversity* be respected.

The proposed Commonwealth scheme does recognise the rights of native title holders in respect of physical access to land. However, it fails to acknowledge that native title holders might have additional rights to protect cultural knowledge. In the case of *Western Australia v Ward*, the High Court explored the possibility of using native title as a means of providing protection for providing protection for traditional biodiversity-related knowledge.¹⁶¹ The majority of the High Court denied that native title rights included cultural knowledge on the grounds that it would violate “skeletal principles” of the Australian legal system. They also maintained that it was impossible to delimit the boundaries of cultural knowledge. Justice Kirby dissented, holding that native title must necessarily include traditional knowledge, because of the intimate connection between land and culture. His Honour argued that the idea of “skeletal principles” was a judicial fiction. Justice Kirby emphasised that customary law would help define the scope of cultural knowledge. His Honour also stressed the importance of human rights and international law - especially the importance of the right to freedom of religious expression. This enlightened dissent should encourage further law reform in this particular field. The decision in *Neowarra v Western Australia* suggests that native title law does have a role to play in the protection of cultural knowledge.¹⁶² There is a need for the judiciary to develop native title law, so that it recognises the connection between land and traditional knowledge.

The access to genetic resources scheme fails at present to recognise communal ownership of traditional knowledge of biological resources. Henrietta Fourmile notes the inherent limitations of the access to genetic resources scheme: “While the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) addresses the important provisions contained in Articles 8 (j), 10 (c) and 18.4 of the *Convention on Biological Diversity*, it falls short of providing intellectual property-style protection for communally-held traditional knowledge.”¹⁶³ The access to genetic resources scheme could be enhanced by a number of reforms to existing regimes of intellectual

¹⁶¹ *Western Australia v Ward*, note 22.

¹⁶² *Neowarra v Western Australia*, note 23.

¹⁶³ Fourmile H, note 18, p 224.

property law. Trade secrets law could be used to protect confidential information about traditional medicines and knowledge. The *Plant Breeder's Rights Act 1994* (Cth) could be amended to ensure that traditional landrace varieties could not be exploited without the prior informed consent of the holders of such knowledge, and the equitable sharing of benefits. The *Patents Act 1990* (Cth) could be amended so that proof of source and prior informed consent was a prerequisite for the granting of a patent. The *Patent Co-Operation Treaty* regulations could also require the declaration of the source of genetic resources and traditional knowledge in patent applications. Such reforms may provide greater impetus for drafting comprehensive *sui generis* legislation to protect traditional knowledge in Australia.