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INDIGENOUS KNOWLEDGE *and the* CONVENTION *on* BIOLOGICAL DIVERSITY

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■ Abstract

Australia is rich in biological diversity and Indigenous Australians hold substantial knowledge about how to care for and utilise a diverse range of plants and other biological elements which occur here. Australia has a specific set of legal and policy obligations arising from its ratification of the Convention on Biological Diversity in 1993. This paper looks at some of the ethical, strategic, and practical issues for Indigenous peoples.

■ Introduction

The Convention on Biological Diversity (see CBD, 2008d) is an important international instrument for Indigenous people. The Convention sets out international standards and commitments by the parties relating to the conservation, sustainable use and equitable sharing of the world's biodiversity. While the parties to the Convention are all nation states, Indigenous peoples from Australia, the Pacific and other parts of the world have been active participants attempting to influence the work of the parties in the development of their procedural and substantive decisions. Indigenous peoples achieve this through individual participation and by participation as part of International Indigenous Forum on Biodiversity (IIFB). In addition, Indigenous Australians have made a significant contribution as part of their work in the Convention secretariat.

The IIFB has official advisory status at the meetings of the countries who are signatories to the Convention. These meetings are known as COPs (Conference of the Parties). As the main Indigenous organisation working with the parties to the Convention, the IIFB provides support to individual Indigenous participants and a structure for discussion, debate and strategic decision-making:

The IIFB is a collection of representatives from indigenous governments, indigenous non-governmental organizations and indigenous scholars and activists that organise around the Convention on Biological Diversity (CBD) and other important international environmental meetings to help coordinate indigenous strategies at these meetings, provide advice to the government parties, and influence the interpretations of government obligations to recognize and respect indigenous rights to the knowledge and resources (IIFB, 2004 – 2005, para. 1).

The Convention and many of the parties to the Convention recognise the importance of Indigenous people's knowledge in relation to biological diversity, and some of their work has been groundbreaking. But there are still tensions between Indigenous peoples and state parties, and the ways in which they interact within the context of the Convention. These tensions are particularly around the ways in which nation states

view the nature of Indigenous people's knowledge, and their rights and responsibilities in relation to it. To tease out some of these issues I'd like to begin by looking at the nature of Indigenous knowledge and its relevance to Indigenous people. Before I start, I want to note that the Convention uses the language of traditional knowledge, rather than Indigenous knowledge. There has been much discussion about the differences, but I will use the term Indigenous knowledge, except when referring specifically to the Convention's texts or work.

There are a number of definitions of Indigenous knowledge and a lot we can say about Indigenous knowledge, but I'd like to start with just two. The first is a definition – and I offer it here to show how broad I think Indigenous knowledge is.

Indigenous knowledge is a fundamental component of Indigenous peoples' heritage. For Indigenous people, heritage is nothing less than, "everything that defines our distinct identities as peoples" (Tauli-Corpuz, 2005, p. 4). The heritage of an Indigenous people is also a living one and includes items which may be created now and in the future based, on that heritage. According to Janke (1998, p.xvii),

Heritage consists of the intangible and tangible aspects of the whole body of cultural practices, resources and knowledge systems that have been developed, nurtured and refined (and continue to be developed, nurtured and refined) by Indigenous people and passed on by Indigenous people as part of expressing their cultural identity.

Heritage includes:

- Literary, performing and artistic works (including music, dance, song, ceremonies,
- symbols and designs, narratives and poetry)
- Languages
- Scientific, agricultural, technical and ecological knowledge (including cultigens,
- medicines and sustainable use of flora and fauna)
- Spiritual knowledge
- All items of moveable cultural property³⁶, including burial artefacts
- Indigenous ancestral remains
- Indigenous human genetic material (including DNA and tissues.)
- Cultural environment resources (including minerals and species)
- Immovable cultural property (including Indigenous sites of significance, sacred sites and burials)
- Documentation of Indigenous people's heritage in all forms of media (including

scientific, ethnographic research reports, papers and books, films, sound recordings) (Janke, 1998, p. xvii).

The other comment I would like to make on the nature of Indigenous knowledge is from the writings of Alexis Wright, 2007 winner of the Miles Franklin award for her book *Carpentaria*. She captured essential aspects of Indigenous knowledge when she said, "It is about Aboriginal sovereignty of mind ... The last frontier we are fighting for is having control of our own imagination and how we define our future" (cited in Wyndham, 2007, p. 10). The concept of Aboriginal sovereignty of mind resonates for me with the importance of supporting, maintaining and strengthening the cultural knowledge of Indigenous Australians in all its formulations, and for all its different purposes from the transmission of culture, formation of identity, caring for people and country, the most ordinary aspects of daily life, and the most extraordinary contributions to imagination and creativity.

In this article, I discuss the work of Indigenous people in relation to the Convention on Biological Diversity and the new frontiers that challenge us in the relation to use of Indigenous people's knowledge and resources. I will start with a bit of introductory information about the Convention and its relevance to our concerns today. When I first heard about the Convention on Biological Diversity, I assumed it was a document which dealt essentially with environmental issues. My assumption was that it was an international convention that requires countries who sign up, to protect the plants, animals, land air and water. I was partly right but the Convention has a number of other priorities. The Secretariat to the Convention describes it as follows:

At the 1992 Earth Summit in Rio de Janeiro, world leaders agreed on a comprehensive strategy for "sustainable development" -- meeting our needs while ensuring that we leave a healthy and viable world for future generations. One of the key agreements adopted at Rio was the Convention on Biological Diversity. This pact among the vast majority of the world's governments sets out commitments for maintaining the world's ecological underpinnings as we go about the business of economic development (CBD Secretariat, 2007, para. 6).

The governing body of the Convention is the Conference of the Parties (COP). The COP consists of all governments (190) that have ratified the treaty. The COP reviews progress under the Convention, identifies new priorities, and sets work plans for parties. The COP makes amendments to the Convention if required, creates expert advisory bodies, reviews

progress reports by member nations, and collaborates with other international organisations and agreements. Australia is a party to the Convention and having ratified it, Australia and the other nation states agree to undertake certain measures in their own countries to comply with the Decisions of the COP.

To gain a full understanding of the Convention we need to look at the Objectives. Under Article 1 of the Convention on Biological Diversity,

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 (CBD, 2008a, para. 1).

I think that most of us are unsurprised about the first two objects of the Convention, and we have a number of laws and policy which implement Australia's compliance with the Convention. These include the Environment Protection Biodiversity Conservation Act 1999 (Cth) – commonly referred to as the EPBC Act. The Act covers a wide range of issues such as inclusion in international and Commonwealth heritage listings, the regulation of threatened species, migratory species, marine species, wildlife conservation, the international movement of species for research, education and exhibition, conservation agreements and protected areas (Australian Government Department of Environment, Water, Heritage & the Arts, 2008).

The Convention also has a number of thematic and cross-cutting issues, which make up a substantial part of the work of the COP when it meets. There are seven thematic programs of works, and 17 crosscutting issues. The crosscutting issues, are, as the word implies, issues which cross the different themes. The one of most relevance to us today is traditional knowledge innovations and practices.

This cross cutting work is derived from the obligations set out in Article 8(j) of the Convention. Article 8(j) sits within Article 8 which deals with in situ conservation. In situ conservation is the conservation of animal and plant species in their natural environment and the Article requires that parties take certain actions such as the establishment of protected areas to conserve biological diversity, promote the protection of ecosystems, prevent alien species from threatening ecosystems and other measures. Article 8(j) states that:

Each Contracting Party shall, as far as possible and as appropriate:

Subject to its national legislation, 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 (CBD, 2008b, section j).

In its earliest meetings, the parties to the Convention determined that there would be a distinct program of work dedicated to the knowledge, innovations and practices of Indigenous people, and that work is undertaken by the Ad Hoc Open-ended Working Group on Article 8(j) and Related Provisions. An example of the work of the Working Group is the development and adoption by the parties in 2004 of the *Akwe: Kon Voluntary Guidelines for the Conduct of Cultural, Environmental and Social Impact Assessments Regarding Developments Proposed to Take Place, or Which Are Likely to Impact on Sacred Sites, and on Land and Waters Traditionally Occupied or Used By Indigenous and Local Communities* (Secretariat of the Convention on Biological Diversity, 2004). In Decision VII/16 the Conference of the Parties encouraged each government to initiate a legal and institutional review of matters related to cultural, environmental and social impact assessment, with a view to exploring options for incorporation of these guidelines into their national legislation, policies and procedures. (CBD, 2004)

During 2006-2008 the Article 8(j) Working Group's programme of work has included development of technical guidelines for documenting traditional knowledge, research into Indigenous communities vulnerable to the impacts of climate change, developing indicators for the retention of traditional knowledge, developing methods and measures to address the underlying causes of the loss of traditional knowledge and other activities. It is clear however, from looking more closely at the elements of the Article that it is qualified by the language "subject to national legislation" – ostensibly dependent on the goodwill of each nation state.

It is also clear from a review of the component parts of Article 8j that its intention is respect, preservation and maintenance, in part, for the purpose of promotion of "wider application with approval and involvement" of the knowledge holders and encouragement of "the equitable sharing of the benefits arising from the utilisation of such knowledge innovations and practices" (CBD, 2008b, section j). It is here that we encounter text which is symptomatic of one of the most difficult issues for Indigenous knowledge holders when it comes to legal protections at the national and

international level. The text is open to interpretation as to the way its component parts might be prioritised. In relation to respect, preservation and maintenance, the Working Group is currently undertaking extensive research work to understand the threats to traditional knowledge, and the ways it can be protected by calling for case studies and information. Serious issues have arisen for Indigenous people in relation to the second and third components – “promote their wider application with the approval and involvement of the holders of knowledge” and “encourage the equitable sharing of the benefits arising”. These issues have often arisen in the context of research, development and commercialisation conducted by universities, government and corporations.

The complexities associated with the commercial use of Indigenous knowledge is a kind of thematic issue (to use the words of the Convention) underlying much of the debate among Indigenous people around the Convention on Biological Diversity, the current work of the World Intellectual Property Organisation and the intellectual property system generally. Indigenous people have had a number of responses to the issue of the commercialisation of Indigenous knowledge. One perspective regards all commercial uses of Indigenous knowledge as fundamentally flawed. This perspective holds that because knowledge has come from the Dreaming, passed down by ancestors, it cannot be sold. Knowledge is seen here as one of the last frontiers of a positive and distinct cultural identity. If we provide our knowledge for commercial gain we are betraying this basic cultural premise. This perspective is often reinforced by reports of disrespectful and dishonest practices, power imbalances which work against the Indigenous knowledge holders, and sharp commercial and legal practices.

Another perspective takes the view that not all Indigenous knowledge has the same qualities, noting that Indigenous people have always engaged in trade and believing that some knowledge can be shared, and that where it is shared, those who provide it should be acknowledged and remunerated. Engagement should be fair and Indigenous people should have meaningful participation on terms that they are satisfied with, including satisfactory remuneration. Common to both perspectives is a concern for the impact of disclosure of knowledge, and that disclosure may undermine the cultural distinctiveness of Indigenous Australians. Knowledge is seen by some as one of the last frontiers of a positive and distinct cultural identity.

The tension between these two positions raises serious issues for Indigenous participants in international fora when trying to reach consensus about how to deal with proposals put by governments. Central to the differences between the two positions is the nature of the existing systems for the commercialisation of Indigenous knowledge. Opportunities for commercialisation have tended

to have some seriously unattractive features, largely because they provide for so little control by, and returns to the Indigenous people involved. Further, the procedural framework of research, development and commercialisation can be problematic.

For example, use of Indigenous knowledge, plants or animals is understood within a framework of access and benefit-sharing, commonly known as “ABS”. To unpack ABS a little, it generally refers to a process whereby samples of biological material are accessed on land, sea or fresh water, collected and researched. The research process generally requires laboratory testing of samples. The location of these samples, methods of collection, clues as to their qualities and potential uses may all be informed by the knowledge of Indigenous people, either through consultations, or by research into documentary collections of Indigenous knowledge. If a potentially commercially successful element is identified, product development is explored and pursued. The product may also be patented, and monopoly rights to exploit the product are obtained and asserted. The product is generally then sold and the profits are shared according to contracts previously executed by parties such as the research institution, corporate investors and government. Recognition of the contribution of Indigenous knowledge and equitable sharing of the benefits has been a rare occurrence.

Past international experience of this process is littered with examples where access to biological material and Indigenous knowledge occurred without the “Prior Informed Consent” of Indigenous people, where there was little or no consultation about the ways in which research and development was conducted, and where there was no proper benefit sharing.

Argumedo describes the flaws in this process and its failure to deliver equitable results to Indigenous peoples like this:

Contractual benefit sharing is like waking up in the middle of the night to find your house being robbed. On the way out the door, the thieves tell you not to worry because they promise to give you a share of whatever profit they make selling what used to belong to you (cited in Ribeiro, 2005, p. 37).

The interest in the genetic resources and the technologies required to use them, which is clear from the third objective of the Convention is a comparatively recent event – although the use of products made by the chemical manipulation of living organisms is not new at all. If you have had a beer or eaten a piece of bread recently, you have eaten food which is manipulated by the addition of a fungus namely, yeast. If you have had a citrus flavoured soft drink or confectionary, the “tangy flavouring agent ... is produced by a fungus grown in a glucose-rich medium

in huge fermentation vessels” (CSIRO, 2007, para. 1) and if you popped a vitamin B complex this morning to deal with the stress of a busy life, chances are the Vitamin B12 was “produced in high-yielding cultures of bacteria” (CSIRO, 2007, para. 3).

But while there are many straightforward biotech processes involved in much of what we consume and use, there are now more complex and controversial biotech processes requiring the manipulation of the genetic material inherent in living organisms. Gene technology includes gene mapping, genetic modification, DNA sequencing, diagnostics and cloning (Queensland Government, n.d.). These developments affect the natural world we live in, the food we eat, and the way it is traded around the world. The driving force for these changes is the biotechnology industry.

“Biotechnology” is a broad term for a wide range of technologies which use living organisms, biochemistries or synthetic DNA to make or modify products, improve plants or animals, or develop micro-organisms for special uses. Biotechnologies have a wide range of applications in medicine, agriculture and food production, horticulture, industry and the environment” (Queensland Government, n.d, p. 1.).

The biotech industry has certainly come up with some apparently useful answers to specific problems. For example, some genetically engineered bacteria are used to produce a reliable supply of insulin for use by diabetics, while other GMOs are used to clean up oil spills. And we are told that the use of seed, genetically modified to resist diseases will help reduce the use of harmful pesticides (Centre for International Environmental Law, 2003).

The legal and commercial arrangements for access to genetic resources which may provide the source of the next discovery, and the allocation of the profits made from those genetic resources – often referred to as benefit sharing – has created a new frontier for global trade. It has been characterised by a north/south divide at the international level, due in the main part to the features of the industry.

The biotechnology industry frequently has a number of requirements for its successful operation:

- Biological resources which might include plant specimens, human or animal cells, tissue and blood to name a few;
- The industry also needs research and development capacity. This includes access to technological processes, equipment and know-how;
- A strong intellectual property system which allows companies who invent a new product to apply for a patent over it, and thereby secure their monopoly rights to exploit the invention.

The north/south divide occurs because biological resources tend to be more plentiful in the southern hemisphere, but research and development capacity

and intellectual property systems tend to be stronger in the northern hemisphere. To add one more dimension to this split, the north/south divide also represents a developed/developing world divide. So, to put it back into the model of access and benefit sharing – the developed, predominantly northern States, want access to the developing, predominantly southern State’s biological resources – while the southern States want to ensure that they are well placed to share in any benefits that might come from this work.

Australia has occupied an interesting position in this landscape. In common with developing countries, Australia is rich in biological diversity and vulnerable to biological plunder. In common with developed countries, Australia has a reasonably well developed research and development (R & D) and intellectual property (IP) systems. And within Australia, sit Indigenous people, rich in knowledge about Australia’s biological diversity but very poor in R & D resources, and limited IP protection.

Great expectations were held for the Australian biotechnology industry, and while some of the gloss has gone, the sector is still growing and has recently been described as a maturing, less risky industry for investors (Moore, 2007). For Indigenous people, the growth of the biotech industry meant a renewed interest by companies and governments in their knowledge about the properties of plants, both terrestrial and marine because that knowledge may expedite research and the potential for development of new products.

One well known example from southern Africa is that of the Hoodia cactus, a food source used by the San people of the southern area of Africa. The Hoodia cactus has appetite suppressant qualities, which were known to the San, as they used it to allow their men to hunt across vast areas without the need for food, water or sleep. Research and development by the South African Council for Scientific Industrial Research (CSIR) led to identification of the active appetite suppressant component of the cactus, and a patent was granted over the component (van Heerden et al., 2007). The CSIR then licensed the use of the patented material to pharmaceutical companies, who intended pursuing development of appetite suppressant drugs for sale in the west. At the celebration of the deal, the South African government official acknowledged the contribution of the San to identifying the characteristic of the cactus, but lamented that the San were no longer in existence.

The San protested loudly at this attitude to their very existence let alone respect for their rights. As the “access” part of the process had already been concluded, they began to negotiate a share of the benefits. The first round of negotiations resulted in the signing of a memorandum of understanding between the CSIR and the South African San Council in March 2002. In this memorandum the CSIR acknowledges the San’s

prior intellectual property rights to the Hoodia as an appetite suppressant. The CSIR has subsequently agreed to pay the San 8% of all milestone payments it receives from its licensee, and 6% of all royalties that the CSIR itself receives once the drug is commercially available. Further:

In February 2006, WIMSA signed a Joint Venture Hoodia Growing Agreement with the South African Hoodia Growers (Pty) Ltd, which aims to give the San a 6% share in raw Hoodia grown for the fresh Hoodia food or dietary supplement markets. (Working Group of Indigenous Minorities in South Africa, 2006, Hoodia section, para. 5)

So, the San have now managed to assert their rights in both the access and benefit aspects of the process.

This brings us to another characteristic of the biotechnology industry namely, the manner in which returns from the processes of field work, research and development are negotiated. Bioprospecting, research, patenting, manufacturing, licensing and distribution are not achieved without a large investment and a large investment is no guarantee of returns. This is particularly true of the pharmaceutical industry. Drug development is a long and costly process with phenomenal returns in some but definitely not all instances. This feature of drug development is often cited by industry when discussing benefit sharing agreements in the early stages of development. Companies argue that their offers to third parties who contribute to the process along the way, of comparatively small shares in potential benefits, are justified because the company bears the risk of a potentially fruitless venture. It is also an argument raised when successful research leads to a patentable invention. Patent ownership tends to be limited to the parties who have contributed the funds to the research and development, and Indigenous people's contribution generally goes unrecognised when it comes to applying for the monopoly to exploit the invention granted by a patent.

Without labouring the details of the intellectual property system, a few points need to be made to understand the implications for Indigenous peoples. As referred to above, much of the commercial gain is made through successful patent applications. IP Australia (2007) determines that a "patent is a right granted for any device, substance, method or process which is new, inventive and useful" (para. 1). Patents are both the incentive mechanism and protective device used to ensure inventors a benefit from their investment. A patent gives the owner the exclusive right to commercially exploit the invention for the life of the patent (IP Australia, 2007).

A successful patent application requires, in part, that the invention must be "a manner of new manufacture" which is both novel and inventive. These conditions

are measured in part by comparison to the existing knowledge base or prior art base. Products and processes generally cannot meet the requirements of novelty and inventiveness if they can be shown to be part of existing knowledge (IP Australia, 2007). This is important for Indigenous knowledge holders. Where a patent is sought over a product or process which has been used by Indigenous peoples for generations, evidence of this use, can be employed to challenge the patent application.

To stop for a moment, and take a wider view, it is important to ask: "Are there broader issues for the wider community from the growth of the biotechnology industry?" The answer is yes. The developments in genetic engineering and technological advances have raised many difficult questions, the answers to which have far-reaching consequences. These questions centre on the desire to ensure that society can avail itself of the benefits of discoveries and be protected from the harms. Some of the most difficult ethical dilemmas arise from fact that we cannot yet, and do not fully understand the extent of "benefits" and "harms". Further, what we do know requires us to consider extremes on the scale of benefits and extremes on the scale of harm.

Defenders of biotechnological advances say "we are creating cures for diseases, and thereby alleviating suffering"; "we are creating organisms that are better adapted to difficult environmental conditions" and "we are creating new organisms that can do things like clean up oil spills and thereby improve our environment". Some incredible possibilities are mooted, including edible vaccines in the form of genetically modified plants which will immunise the consumer against Hepatitis B for example. Field trials of medicine-producing crops, genetically modified to produce vaccines and other pharmaceuticals to treat HIV, rabies, diabetes and TB were to begin in 2006, with trials on humans by 2009 (Sample, 2004).

Others say that gene technologies such as genetic modification are unnatural, with unknown and largely unpredictable consequences. And where unwanted consequences can be predicted, such as the spread of genetically modified seeds by wind and birds, unlikely coalitions such as the Network of Concerned Farmers (2008) including both organic and conventional farmers work together to oppose GM crop trials at least until further safeguards are introduced.

The inventory of uncertainties is complicated by the speed at which the technological advancements are moving. I think His Royal Highness the Prince of Wales put it well when he stated, "how will we ensure that the risk assessment keeps pace with commercial development. It may not be easy to steer between a Luddite reaction and a capitulation to the brave new technological world, especially when money, jobs and business are at risk" (HRH the Prince of Wales, 2004, para. 6).

As recipients of the potential risks and benefits, Indigenous people ask the same ethical questions as the rest of the community but with a particular edge of urgency in view of an abysmally poor standard of health and as potential beneficiaries of medical innovations, but also in view of the ways in which their knowledge, land, plants and resources are utilised by biotechnology industry players. It is important to note here that there are many different Aboriginal and Torres Strait Islander nations within the Australian nation with a diversity of languages, cultural practices and traditions, so to some extent I am generalising about past and present practices.

The relationship between Indigenous peoples and biotechnology arises out of three characteristics of Indigenous culture. Firstly, many Indigenous peoples have a particular relationship to particular species. A species of plant or animal may hold significance for individuals, clans or larger groups, which may derive from their ancestors. Secondly, as we are well aware, many Indigenous people hold important knowledge in relation to elements of the natural world. This can include information about medical uses of plants, pesticides for plants, agricultural information, knowledge of the seasons, the weather, the movements of animal species and the importance of species like termites in the creation of didgeridus. Indigenous people also hold important knowledge about foods. Henrietta Marrie notes, “[i]t is estimated that indigenous [sic] peoples across Australia used some 10,000 native plant species for food” (cited in Langton et al., 2003, p. 27). The extent of knowledge about harvesting, preparation, nutritional values, and tending crops to ensure ongoing supplies for these species is profound.

Thirdly, Indigenous peoples have ties to specific areas of land or water in which particular species may breed, live, traverse, grow or have been introduced. This is relevant to bio-prospectors who conduct surveys of land for species with commercial potential, for two reasons. First, access to land for collection of samples may require permission from Indigenous people if the land is held pursuant to a successful land claim, native title claim, purchase or lease. Secondly, the links to land are generally accompanied by knowledge of the biological diversity and sustainable land management practices for the area. Langton and Ma Rhea (2003, p. 15) express this as follows:

In Australia, indigenous [sic] people have proprietary, social, cultural and economic interests in a proportion of the Australian terrestrial and marine environments. For example, around 15 per cent of the Australian landmass is held by Indigenous peoples under a variety of land tenures. The maintenance of biological diversity on lands and waters over which Aboriginal and Torres Strait Islander peoples have title or in

which they have an interest is a cornerstone of the wellbeing, identity, cultural heritage and economy of Aboriginal and Torres Strait Islander communities. Although Aboriginal and Torres Strait Islander peoples may be willing to share some of their cultural knowledge, aspects of that knowledge may be privileged and may not be available to the public domain.

Further, the knowledge of Indigenous people is held in a culturally determined way, based on a different rationale to the monopoly rights rationale of the intellectual property system and mechanisms such as patents. How does this all relate to the Convention on Biological Diversity? It is relative to the third objective in Article 1 of the Convention on Biological Diversity:

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 (CBD, 2008a, para. 1).

Specifically it relates to the international regulation of the global market in genetic resources. As part of meeting the third Objective of Article 1, the Parties to the Convention have begun negotiating the establishment of an international regime for the trade in genetic resources. The work is being undertaken by the Ad-Hoc Open-ended Working Group on Access and Benefit Sharing often referred to as the ABS Working Group (CBD, 2008e). One of the main purposes of this system will be to ensure that States are not missing out on benefits that may be generated from products derived from their genetic resources accessed within their jurisdiction. Those of you who can recall the smokebush example, will recall that one of the main issues that came out of that, was that the Western Australian government increased its legislative control over the plant species, so companies could not come into the State and remove samples for testing in other location – in that case it was referring to companies from the United States of America (Janke, 1998, pp. 24-25).

In this context of technological, economic and legal complexity, it is not surprising that the issue of commercial exploitation of Indigenous knowledge has become troublesome for many Indigenous people. As I mentioned above there are those who believe that the best outcomes are to be achieved by strong opposition to commercialisation, and especially to patenting of life forms and any related use of Indigenous knowledge. Kent Nnadozie explains this position in relation to some African people:

Spirituality is an integral aspect of the relationships between people, earth, and nature and the

defining linkage among them. Deeply rooted in this concept is the belief that humanity is part of nature and cannot, therefore, own it or any part of it. The profound respect for the sacredness of life is core to all known African traditions and customs. As a result, the concept of ownership as understood in the contemporary Western sense is alien to African communities ... This belief is at the heart of the strong opposition of the African Group to the patenting of life or life-forms as according to traditional views they cannot be "owned" or otherwise be susceptible to individual control to the exclusion of others (Nnadozie, 2003, p. 10).

Alternately, some Indigenous people feel that where commercialisation is possible it ought to be pursued. For instance, "the nascent native wild food, pharmaceutical, personal health care, cosmetic and plant nursery industries may enable economic returns appealing to small communities with few other economic opportunities" (Langton et al., 2003, p. 27). Among these examples, some ventures may choose to pursue applications for intellectual property rights such as patents and plant breeders' rights, but for many the commercial reality is that it is not worth the expense because of the uncertainties: whether the venture can be firmly established, whether it will be financially successful, and whether it has a real chance in the competition against which it needs to assert exclusive rights. This is relevant to all Indigenous people when considering the nature of commercial applications of Indigenous knowledge and relevant cultural sensitivities.

In addition to the circumstances considered so far, there is the scenario commonly faced by many Indigenous Australians from the time of settlement, where commercial exploitation, whether by farmers, miners, or researchers and bioprospectors is inevitable, and Indigenous people have to consider the bare reality of extracting any possible benefit from an unstoppable process. It is important to distinguish here between projects or commercial ventures which do not require assertion of monopoly rights over materials, and which are controlled by Indigenous people from the large scale, investment intensive, risk intensive, monopoly rights based approaches of the broader biotechnology industry.

An example of uses of Indigenous knowledge which does not require the assertion of legal monopolies is the contribution of Indigenous people to land management practices which provide enormous benefits to both Indigenous and non-Indigenous people. Clearly, there will be a mixture of responses because there are many different proposals for use of Indigenous knowledge – some involving information which is already in the public domain, or where there is real partnership for Indigenous participants, such as land management practices.

In the future, Indigenous people need binding assurances from anyone seeking to engage in bioprospecting or research and development, that their land, resources and knowledge will not be treated in a manner which is disrespectful or detrimental to them. A lack of respectful engagement has caused harm, in instances, where:

1. The use of Indigenous knowledge has been used without informed consent;
2. There is failure to observe customary practices such as in the case of *Foster v Mountford* (1997) 14 ALR 71 (Janke, 1998, p. 73). Confidential information was disclosed to an anthropologist named Dr Mountford by Pitantjatjara men. When Mountford proposed publication of the information, the Pitantjatjara men became very concerned that the "continued publication of the book could cause serious disruption to their culture and society should the book come into the hands of the uninitiated" (Janke, 1998, p. 73). Breach of confidence laws were used successfully to stop dissemination of confidential information.
3. People consent to a project or use of their material without being sufficiently informed about the project. In the case of genetic technology, or the use of genetic material it is difficult to give people definitive information because it may not be fully known to scientists or researchers.
4. Indigenous knowledge was used without any sharing of benefits.
5. Intellectual property rights were acquired without consultation or reference to Indigenous knowledge holders. An example of this practice occurred in relation to the well known spice Turmeric. Turmeric had been used in India for centuries for wound healing. In 1995 a patent was granted in the United States. The invention claimed under the patent was the use of turmeric at the site of an injury and/or its oral intake to promote the healing of a wound. After an extensive search for information predating the patent application, 32 references were located in Sanskrit, Urdu and Hindi. The USPTO revoked the patent, stating that the claims made in the patent were obvious and anticipated, and agreeing that the use of turmeric was an old art applied in the healing of wounds (see Anuradha, 2001).

How can the problems highlighted in these examples be prevented? To return to the quote by Alexis Wright, how can we use our imagination to define our future in this difficult landscape? It is not popular in some places at the moment – but a rights-based approach is probably the only workable solution. The application of the internationally recognised principle of Free Prior Informed Consent is essential (Tamang, 2005). The right to be fully informed prior to any project, the

right to “have a say”, to be heard, to have one’s views implemented, the right to “say no” and for that “no” to be respected must be enforceable. While the principle of Prior Informed Consent does exist within the context of the Convention in relation to genetic resources, it is restricted in its application as a principle to be respected between nation states. We can see that from subsection 3 of Article 15 (CBD, 2008c, para 3). And where it is applied to Indigenous people, it is subject to national legislation.

The Bonn Guidelines (UNEP, 2002), which were adopted by the parties to the Convention to assist in the development of access and benefit sharing strategies, do provide guidance when developing legislative, administrative or policy measures, and negotiating contractual agreements. The Guidelines set out a number of suggestions for incorporating the interests of Indigenous peoples:

That contracting parties take care to ensure that commercialisation should not prevent traditional use of genetic resources (UNEP, 2002, para. 16(a)(iii));

That contracting parties establish mechanisms to ensure their decisions are made available to the relevant indigenous and local communities (UNEP, 2002, para. 16(a)(vi));

Contracting Parties are encouraged to take measures to disclose the country of origins of the genetic resources and of the origin of traditional knowledge, innovations and practices of indigenous and local communities in applications for intellectual property rights (UNEP, 2002, para. 16(d)(ii)); and

In relation to free Prior Informed Consent, Contracting Parties are required to seek the prior informed consent of indigenous and local communities where traditional knowledge is associated with the genetic resources accessed in certain circumstances. These circumstances are where it is required by national access policies, and subject to domestic laws (UNEP, 2002, para. 31).

Indigenous people have criticised the Guidelines for failing to go far enough, for too few rights for Indigenous people, and for too few protections. The good news is that the parties to the Convention agreed that elements of the international regime should be developed and implemented in accordance with Article 8(j) of the Convention, and the regime is still under construction so there are still opportunities for improvement.

Some of the work by Indigenous people at the Conference of the Parties has focused on making

the ABS regime subject to human rights principles. This would open the door to rights such as effective participation, non-discrimination, respect for gender equity, respect for culture and language among other rights. Human rights principles, while not always specifically capturing the true nature of Indigenous cultures, often provide the best internationally recognised mechanism for groups to take control of their own affairs and make their own decisions based on the particular circumstances.

■ Conclusion

There are clearly complex ethical questions with far-reaching consequences facing both Indigenous and non-Indigenous people in Australia, and across the world. And while Indigenous people’s share the common role as knowledge holders and customary custodians, there really is no “one size fits all” solution for Indigenous Australians or Indigenous peoples around the world. That is the value of human rights principles – they set a broad framework for conduct, within which the diverse cultures and circumstances of Indigenous peoples can find expression and recognition, and different and appropriate choices can be made by Indigenous people, for Indigenous people. The commercial imperative that drives much of the work of the Convention on Biological Diversity provides both opportunities and difficulties for Indigenous knowledge holders. It is fair to say that against, and sometimes with, some of the world’s trickiest bureaucrats, Indigenous people are still chipping away at the local and international level to ensure a better deal for Indigenous knowledge holders’ rights in this forum.

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