

## INDIGENOUS PEOPLE, BIOTECHNOLOGY AND ETHICS<sup>1</sup>

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### Introduction

The biotechnology industry is currently considered an important growth industry in Australia today.<sup>2</sup> Initially, great expectations were held for the Australian biotechnology industry and while some of the gloss has gone for a number of reasons, the sector is still growing.<sup>3</sup>

This paper provides some introductory information on the industry and some issues for Indigenous Australians.

### What is biotechnology?

‘Biotechnology’ is the term applied to 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.

Biotechnology is not new. We are all familiar with biochemical techniques including the use of yeast to make bread rise, the introduction of bacteria into cheeses for particular effects, or into milk to produce yoghurts.

But while there are many familiar and straightforward biotech processes involved in much of what we consume and use everyday, biotechnology also refers to complex and controversial processes requiring the manipulation of the genetic material inherent in living organisms. One aspect of biotechnology relates to gene technologies which include techniques such as gene mapping, genetic modification, DNA sequencing, diagnostics and cloning. There is a well- developed global trade that transfers technologies, biological materials,

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<sup>1</sup> This paper was adapted by the author from a paper delivered at the International Society of Business Economics and Ethics Conference in Melbourne 2004 by Robynne Quiggin.

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<sup>2</sup> See for example: Lucy Beaumont “On the Verge of a Biotech Boom”, *The Age*, 6 June 2004 <<http://www.theage.com.au/articles/2004/06/05/1086377188259.html?from=storylhs#>> at 2 February 2005. This positive view of the industry is not unanimous. See n 3.

<sup>3</sup> Some sources say that investors are reluctant to invest in the biotechnology sector because it is so complex and they don’t understand it. Others say that when the technology sector declined, with the crashing of the dot com companies, investors were frightened off biotechnology as well. Still others suggest that the industry is in its infancy and will grow effectively, especially if it is supported. Some of these issues were canvassed in *Shares*, November 2001 and “Bioprospecting: Discoveries Changing the Future” *Report of the House of Representatives Standing Committee on Primary Industries and Regional Services*, August 2001.

and the products of biotechnology across the world. Determining the rights to own, control and profit from these raw materials, technologies and products is the subject of international and domestic law and policy.<sup>4</sup>

Australia's place in this international market is characterised by a number of features including:

1. Australia shares with developing countries a rich inventory of biological diversity and strong concerns about the risk of biological plunder where access and benefit sharing are not regulated by the state.
2. In common with developed countries Australia has established research and development institutions and intellectual property systems.
3. Within the Australian nation, Indigenous people occupy a space that reflects the international landscape. Indigenous peoples are rich in knowledge about Australia's biological diversity and, in general, are very poor in Indigenous controlled research and development capacity and intellectual property protection.

### **What are some of the distinguishing features of biotechnology?**

- **The industry**

The domestic and international biotechnology industry is characterised by intensive research and development. Medical device and drug development has been described as “one long chain of value-creation events.”<sup>5</sup> The chain includes fieldwork, research and development, patenting, manufacturing, licensing and distribution. Returns are not achieved without significant levels of investment. But substantial investment is no guarantee of returns. This is particularly true of the pharmaceutical industry. Drug development is a long and costly process, with high returns in some but definitely not all instances. This feature is often cited by industry in discussions about benefit sharing agreements. 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.

- **The terminology**

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<sup>4</sup> The regulation of biological resources by the states, territories and the Commonwealth is ongoing. Much of the legislation and regulation is aimed at ensuring government control of access to biological resources and a share in any benefits arising from research, development and commercialisation. International regulation is undertaken in accordance with the World Trade Organisation's TRIPS (Trade-Related Aspects of Intellectual Property Rights) Agreement, the Convention on Biological Diversity (CBD), and by international organisations such as the World Intellectual Property Organisation (WIPO) among others.

<sup>5</sup> David Blake, “Biotech Bargain” *Shares*, November 2001, 55.

Developments in the industry have given rise to biotechnology jargon. We now talk about bioprospecting, biodiscovery and biopiracy. What do these terms mean?

Bioprospecting is commonly understood to mean the 'search for valuable chemical compounds and genetic materials from plants, animals and micro-organisms.'<sup>6</sup> This search is generally carried out as fieldwork, collecting samples from land and sea. Biodiscovery is 'the extraction and testing of molecules for biological activity, identification of compounds with promise for further development, and research on the molecular basis of the biological activity.'<sup>7</sup>

The term biopiracy has developed a number of meanings depending on the user and the user's view about the privatisation of the elements of the natural world. For instance the Commonwealth government report *Access to Biological Resources in Commonwealth Areas*<sup>8</sup> describes biopiracy as the unlawful taking of resources out of the country.<sup>9</sup> The 'piracy' aspect in this definition refers to the dispossession of nation states of their resources and the potential to capitalise on them.

To many non-government organisations (NGOs) and some Indigenous groups, biopiracy may refer to processes that comply with the laws of nation states. The ETC Group, uses the term biopiracy to refer to 'the privatisation of genetic resources (including those derived from plants, animals, micro-organisms, and humans) from those peoples who hold, maintain, embody, develop, breed or otherwise create, foster or nurture those resources.'<sup>10</sup> The privatisation occurs through the pursuit of intellectual property rights over the resources:

... asserted to gain monopoly control over genetic resources that were formerly in the control of farmers and Indigenous Peoples and traditional communities. The resulting privatization of biological resources and related knowledge through intellectual property regimes is biopiracy, even though this process may be legal according to national law and though it may conform to a signed Bioprospecting agreement," and even if it includes a so-called "benefit-sharing agreement."<sup>11</sup>

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<sup>6</sup> Parliament of the Commonwealth of Australia, *Bioprospecting: Discoveries changing the future*, August 2001, Canberra, xxii.

<sup>7</sup> Ibid, xxi.

<sup>8</sup> John Voumard, *Access to Biological Resources in Commonwealth Areas*, July 2000.

<sup>9</sup> Ibid, 11.

<sup>10</sup> ETC Group Communique #83, January, February 2004, page 2. 'ETC group is dedicated to the conservation and sustainable advancement of cultural and ecological diversity and human rights. To this end, ETC group supports socially responsible developments of technologies useful to the poor and marginalized and it addresses international governance issues and corporate power... ETC group's strength is in the research and analysis of technological information (particularly but not exclusively plant genetic resources, biotechnologies, and [in general] biological diversity), and in the development of strategic options related to the socioeconomic ramifications of new technologies.'

See <<http://www.etcgroup.org/about.asp>>

<sup>11</sup> Ibid.

- **The intellectual property system**

A few points need to be made in relation to the intellectual property system, the biotechnology industry and the implications for Indigenous peoples.

Much of the commercial gains derived from the biotechnology industry are made through successful patent applications. A patent is a right granted for any device, substance, method or process that is new, inventive and useful. 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.<sup>12</sup>

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.

This is important for Indigenous Knowledge holders. Where a patent is sought over a product or process that has been used by Indigenous peoples for generations, evidence of this use, can be employed to challenge the patent application. One example of a patent that was successfully opposed occurred in relation to the well-known Indian spice turmeric.

Turmeric had been used in India for centuries for wound healing. In 1995 a patent was granted in the United States on the ‘Use of Turmeric in Wound Healing’.<sup>13</sup> 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. Media coverage of the patent generated debate and the Centre for Scientific and Industrial Research (CSIR), an autonomous institution of the Government of India, decided to file for re-examination of the patent at the United States Patent and Trademark Office (USPTO).

In order to show that it was not new or inventive:

... it was necessary to find adequate evidence in the form of printed and published information that would establish that the manner of use of turmeric as in the claimed invention, was known before the patent was claimed and, therefore, the patent was invalid. Despite the fact that the use of turmeric was widely known among Indian householders, finding published information on the use of turmeric powder through oral as well as topical route for wound healing was a difficult task. Fortunately, after an extensive search, 32 references were located, some of which were more than 100 years old, and in the languages of 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 of

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<sup>12</sup> Adapted from IP Australia’s website at

<[http://www.ipaustralia.gov.au/patents/what\\_index.shtml](http://www.ipaustralia.gov.au/patents/what_index.shtml)>

<sup>13</sup> Patent 5,401,504. Adapted from R.V. Anuradha, “Biopiracy and Traditional Knowledge” published in *The Hindu*, 20 May 2001

<<http://www.hinduonnet.com/folio/fo0105/01050380.htm>> at 7 February 2005.

healing wounds.<sup>14</sup>

In another example, a patent was granted in the United States over a variety of the ayahuasca vine, used for many purposes by Indigenous peoples in the Amazon including diagnosing illness, healing illness and for a number of purposes related to ceremonial and spiritual obligations. Under patent laws in the United States, 'plant patents may be granted to anyone who invents or discovers and asexually reproduces any distinct and new variety of plant.'<sup>15</sup>

The patent application was initially accepted. A number of Indigenous organisations and their legal representatives<sup>16</sup> then filed a successful petition requesting the PTO cancel the patent. But the PTO rescinded its decision to reject the patent in 2001 and granted the patent to the applicant.

Indigenous people of the Amazon were aggrieved to find that exclusive ownership rights had been granted over a plant, and that the evidence of the long-standing prior use of the plant was not considered sufficient to reject the patent.

### **What are the ethical issues?**

Gene technology raises many important ethical questions. These questions arise because of the tensions between the desire to ensure that society avails itself of every possible benefit, and concerns to protect society and future generations from harms.

Finding answers to these questions is complicated by the fact that the information upon which we might wish to base our decisions is unavailable. Scientists, ethicists and policy makers cannot fully inform us of all the possible benefits and harms because they have not been determined. Further, when we review the available knowledge, we are required to consider possibilities of great benefits which cannot be achieved in any other way that we now know, and possibilities of enormous harm which we have no way of correcting, and the extent of which may be beyond our worst imaginings.

We are asked to weigh the benefits of the possibility saving life and ensuring quality of life against the possibilities of unknown and permanent damage to the elements and fabric of life.

Defenders of biotechnological advances say – we are creating cures for diseases, and thereby alleviating suffering.<sup>17</sup> We are creating organisms that are

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<sup>14</sup> This example adapted from R.V. Anuradha, 'Biopiracy and Traditional Knowledge' published in *The Hindu*, 20 May 2001, accessed at <http://www.hinduonnet.com/folio/fo0105/01050380.htm> at 7 February 2005.

<sup>15</sup> United States Patent and Trade Mark Office  
<<http://www.uspto.gov/web/offices/pac/doc/general/#patent>> at 10 April 2005.

<sup>16</sup> The Coordinating Body of Indigenous Organisations of the Amazon Basin (COICA), the Amazon Alliance for Indigenous and Traditional Peoples of the Amazon Basin and the Centre for International Environmental Law (CIEL)

<sup>17</sup> For example, Biotechnology Australia state: 'Scientists can now locate and study the genes that cause genetic diseases, or those making some individuals prone to cardiovascular disease, degenerative brain disorders like Alzheimer's disease and motor neuron disease, certain forms

better adapted to difficult environmental conditions.<sup>18</sup> We are creating new organisms that can do things like clean up oil spills and thereby improve our environment.<sup>19</sup>

Some incredible possibilities are mooted, for example: The Guardian<sup>20</sup> announced in 2004 that human trial of vaccines produced by genetically modified plants may begin within five years. The proposal is to grow fields of crops that have been genetically modified to produce vaccines and other pharmaceuticals to treat HIV, rabies, diabetes and TB.

Field trials of medicine-producing crops may begin in 2006, with trials on humans beginning three years later. There are many who would praise such a potential public health development and any scientific method that might bypass the monopolies of drug companies.

Others say, that gene technologies such as genetic modification are unnatural, with unknown, largely unpredictable and potentially dire consequences. Where unwanted consequences can be predicted, some of the groups who are supposed to be the beneficiaries of gene technologies strongly oppose it. For instance, there is substantial evidence that genetically modified seeds cannot be contained within a particular crop area. Farmers who fear the contamination of their crops from genetically modified seeds carried by the wind or birds and spilled seeds from trucks join together to oppose crop trials.<sup>21</sup>

The production of transgenic plants and animals holds new ethical dilemmas for consumers. Transgenic plants and animals are produced when

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of cancer, diabetes and other auto-immune disorders like rheumatoid arthritis and lupus.'

<sup>18</sup> Biotechnology Australia states: 'Many farmers in the US and Australia now grow transgenic cotton varieties that carry inbuilt protection against major pests like *Helicoverpa* caterpillars. They contain a gene (the Bt gene) that makes a natural insecticide targeting the leaf-chewing larvae of certain species of moth. As a result Australian cotton farmers have been able to reduce their use of synthetic pesticides by 50 per cent where the GM cotton Ingard® is used. A new variety, Bollgard II®, commercially available in 2003 has shown a 75 per cent pesticide reduction in trials.' However, 'Larvae of the ladybird beetle, which attack leaf-chewing and sap-sucking insect pests, can be killed by eating caterpillars that have ingested a lethal dose of the toxin. And caterpillars of the migratory monarch butterfly could be killed if, in the act of eating their favourite plant, milkweed, they accidentally ingest wind-blown pollen from maize crops protected by the Bt gene.'

<<http://www.csiro.au/pubgenesite/debate.htm>> at 11 April 2005

<sup>19</sup> Biotechnology Australia, Student Worksheet, *Oil Eating Bacteria*, Some strains of bacteria found in soil use oil as a nutrient. It is thought that these could be adapted to clean up oil spills.

<[http://www.biotechnology.gov.au/biotechnologyOnline/PDF/enviro/WS\\_2.3.4.1.pdf](http://www.biotechnology.gov.au/biotechnologyOnline/PDF/enviro/WS_2.3.4.1.pdf)>

<sup>20</sup> Ian Sample, 'Medicinal Crops Coming Soon', 13 July 2004, *The Guardian* <[http://www.guardian.co.uk/uk\\_news/story/0,3604,1259785,00.html](http://www.guardian.co.uk/uk_news/story/0,3604,1259785,00.html)>. Sample states: 'Scientists have long known that Genetic Modification technology can be used to trick a plant's molecular machinery into making a range of medically useful compounds. Instead of using expensive pharmaceutical factories, advocates envisage fields of GM crops being harvested to reap new medicines cheaply, a process known as "pharming".'

<sup>21</sup> The Network of Concerned Farmers is one such group. They are a national Australian network of conventional and organic farmers who are concerned about the economic, environmental and social impacts of genetically modified crops. <<http://www.non-gm-farmers.com/index.asp>>



genes from one species are moved into another, for example, spider genes have been introduced into goats to produce milk which contains a specific protein which can be modified for the production of new silk like materials.<sup>22</sup> For some people, this level of interference in naturally occurring organisms is ethically unsound. For others, where religious observances require avoidance of specific food substances, ensuring that foods are completely free of any other genetic material is problematic. Even if the animal is not the result of any genetic modification, it may be harder to ascertain the status of the feed the animal has consumed. Vegetarians face similar issues.

The inventory of uncertainties is complicated by the speed at which the technological advancements are moving. His Royal Highness the Prince of Wales put it well when he stated recently:

... 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.<sup>23</sup>

As recipients of the potential risks and benefits Indigenous people ask the same ethical questions as the rest of the community. This position is distinguished in part by the special position of health disadvantage of Indigenous Australians, who, it could be argued have much to gain from possible medical advances. Another distinguishing factor is the extent to which Indigenous people have already been subjected to research and data collection. On one view, Indigenous people are in great need of the assistance promised by biotechnology. Alternatively, there are stronger arguments for ensuring Indigenous peoples are not exposed to unethical research practices and further health risks from new substances.

But there are additional issues for Indigenous people.

### **What are the ethical issues for Indigenous Australians?**

To understand the ethical issues for Indigenous Australians it is necessary to understand something of the nature of the relationship between Indigenous Australians and biotechnology.

The first point to make is 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 the following represents a generalised perspective.

In general, the relationship between Indigenous peoples and biotechnology arises out of four characteristics of Indigenous culture:

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<sup>22</sup> Nexia Biotechnologies, Nexia Company History, <[http://nexiabiochem.com/en/02\\_corp/02.php](http://nexiabiochem.com/en/02_corp/02.php)>

<sup>23</sup> HRH the Prince of Wales, "Menace in the minutiae: New Nanotechnology has potential dangers as well as benefits", *Independent on Sunday (UK)*, 2004, Independent Digital (UK) Ltd, <<http://argument.independent.co.uk/commentators/story.jsp?story=539977>>

1. For Indigenous peoples, expressions of relationships to the components of life are framed in terms of a 'total environment' rather than compartmentalising the components of life such as DNA, genes, chromosomes and cells. This is not to say that there is no management of individual species but it is rarely understood in isolation from the people, land, water, other species, ancestors, the knowledge and knowledge systems relating to the 'total environment'. For instance, The Julayinbul Statement on Intellectual Property Rights states:

On November 27, 1991, at Jingarra, in the north-eastern coastal region of Australia, it was agreed and declared that:

Indigenous Peoples and Nations share a unique spiritual and cultural relationship with Mother Earth that recognises the interdependence of the total environment and is governed by the natural laws that determine our perception of intellectual property.

Inherent in these laws and integral to that relationship is the right of Indigenous Peoples and Indigenous Nations to continue to live within and protect, care for, and control the use of that environment and their knowledge.

2. Indigenous people are holders of 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, movements of animal species and the functions of species like the role of termites in the creation of didjeridus. 'It is estimated that indigenous peoples across Australia used some 10,000 native plant species for food (Fourmile-Marrie 1999).'<sup>24</sup> The extent of knowledge about harvesting, preparation, nutritional values, and tending crops to ensure ongoing supplies for these species is profound.
3. Indigenous peoples have ties to specific areas of land in which particular species may breed, live, traverse, grow or have been introduced. This is relevant to bioprospectors for two reasons. Firstly, 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 express this as follows:

In Australia, indigenous 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

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<sup>24</sup> Marcia Langton and Zane Ma Rhea, *Traditional Lifestyles and Biodiversity Use; Regional Report: Australia, Asia and the Middle East, Composite Report on the Status and Trends Regarding the Knowledge, Innovations and Practices of Indigenous and Local Communities Relevant to the Conservation and Sustainable Use of Biodiversity*. Prepared for the Secretariat of the Convention on Biological Diversity by Marcia Langton and Zane Ma Rhea with Margaret Ayre and Juanita Pope, 2003, page 27.



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.<sup>25</sup>

4. The knowledge held by Indigenous people is frequently held in a particular culturally determined way. Use of knowledge is often determined by customary laws. For instance, there may be rules applying to who can hold information, when and with whom it might be shared.
5. In 2003 Kanaka Maoli (Indigenous Hawai'ian people) met at the Ka'Aha pno – Native Hawaiin Intellectual Property Rights Conference. Their statement from the Conference included the following excerpt:

In Hawai'i, bioprospecting and biotechnology institutions and industries are imposing western view intellectual property rights over our traditional, cultural land-based resources. This activity converts our collective cultural property into individualised property for purchase, sale and development. The biogenetic materials of our people, taken for medical research for breast cancer and other diseases attributable to western impact, have been obtained through misrepresentation and without the free, prior, informed consent of our people. We view these activities as biopiracy and condemn these acts as biocolonialism.<sup>26</sup>

### **How are these ethical issues expressed?**

In addition to the ethical concerns about safety, and the integrity of the natural world, Indigenous Australians face specific concerns in relation to the biotechnology industry. These manifest in a number of circumstances. There are some instances where Indigenous Australians seek partnerships for research and development of plant species. More commonly, bioprospecting is initiated and progressed under the sole control of research institutions or companies. Some of the problematic issues that arise can be summarised as:

- Tensions arising from the two world views; that is, scientific/compartmentalised perspectives and Indigenous perspectives;
- Tension arising from the creation of intellectual property rights owned by individuals or companies, and the operation of customary law to guide custodianship and transmission of Indigenous Knowledge;
- Recognition of Indigenous authority over land, waters, species and minerals; and
- The operation of commercial imperatives associated with the

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<sup>25</sup> Ibid, 15.

<sup>26</sup> Preamble to the Kauoha Declaration, Palapala Kulike O Ka 'Aha Pono, Paoakalani Declaration, Waikiki, O'ahu, Hawai'I, October 3-5, 2003

biotechnology industry, whereby scientific developments are driven by market forces and opportunities.

Indigenous Australians approach the biotechnology industry in diverse ways. There are those who believe that the best outcomes are to be achieved by strong opposition to commercialisation, and especially to any use of Indigenous Knowledge or biological resources for genetic research or development.

Kent Nnadozie explains this position in relation to African society: He says:

... 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. Accordingly, the notion that one can exercise ownership over life or life forms is one of the major controversies of TRIPs from the African perspective. 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.<sup>27</sup>

Some Indigenous Australians feel that, in certain circumstances, 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'.<sup>28</sup>

And other Indigenous Australians believe that commercial exploitation is inevitable, and Indigenous people should seek to benefit from their contribution to the process.

So the first layer of ethical consideration for Indigenous people in relation to biotechnology is whether to engage, oppose, or some combination of both based on social, economic and cultural determinants.

The second layer of ethical concern occurs in relation to research. This manifests where bioprospecting or research is conducted, either without the consent of Indigenous people or in a manner that is disrespectful or detrimental to them.

This may occur in a number of ways:

1. Indigenous Knowledge may be used without consent or acknowledgement;
2. Customary practices are often not observed. In one instance this resulted in the publication of confidential information that had been disclosed by members of the Pitjantjatjara people to an anthropologist named

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<sup>27</sup> Kent Nnadozie, *Integrating African Perspectives and Priorities into Genetic Resource Regulation: A Resource Guide for Policymakers*, page 8.

<sup>28</sup> Marcia Langton, and Zane Ma Rhea, above n 24, 27.

Mountford. When Mountford published the information, the Pitjantjatjara 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.'<sup>29</sup> Breach of confidence laws were used successfully to stop dissemination of confidential information. This occurred in the case of *Foster v Mountford* (1997) 14 ALR 71.

3. People may consent to a project or use of their material because they have not been 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. The principle of Free Prior Informed Consent may not have been followed.
4. Indigenous Knowledge may be used without any sharing of benefits.
5. Intellectual property rights may have been acquired without consultation or reference to Indigenous Knowledge holders.

### **What are the most important standards for Indigenous people?**

The relevant ethical standards sought by Indigenous peoples in relation to the biotechnology can be summed up by the right to self determination. The practical expression of that right is the right to be informed, the right to 'have a say in matters affecting one's interest', to be heard, to have one's views implemented, and the right to 'say no'.

### **Free prior informed consent**

The principle of free prior informed consent is an internationally recognised human right.

It has found particular application where Indigenous peoples are to be relocated from one area to another, and where proposals for development impact on the land, water, resources, economies and culture of Indigenous peoples.<sup>30</sup>

In relation to biotechnology, the principle of free prior informed consent has an important role in the Convention on Biological Diversity.

The Objectives of the Convention set out in Article 1 include:

1. The conservation of biological diversity;
2. The sustainable use of its components; and

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<sup>29</sup> Terri Janke, *Our Culture, Our Future*, Michael Frankel and Company and Terri Janke, 1998, Sydney.

<sup>30</sup> Fergus Mackay, *FPIC in International and Domestic Law*, Presentation for World Bank Executive Directors, 14 June 2004. For example, 'in 1998, the EU Council of Ministers adopted a Resolution entitled, *Indigenous peoples within the framework of development cooperation of the Community and member States*, which provides that "indigenous people have the right to choose their own development paths, which includes the right to object to projects, in particular in their traditional areas." This was affirmed in 2002 by the European Commission, which stated that the EU interprets this language to be the equivalent of FPIC.'

3. 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.

The Convention sets out obligations in relation to the utilisation of biological resources. The old view that plants, animals, and micro-organisms are a common heritage which can be taken and developed without reference to the country of origin is replaced in Article 15 with recognition of the sovereign rights of Contracting Parties to the Convention over their natural resources. Access to genetic resources shall be subject to prior informed consent of the Contracting Party providing such resources. (Article 15 Access to Genetic Resources sub paragraphs (1) and (5)).

In order to facilitate Article 1 and Article 15, 180 Contracting Parties have adopted the Bonn Guidelines.<sup>31</sup> The Guidelines are intended to assuage concerns of developing countries, which hold most of the world's biodiversity, that they can participate in exploitation of their genetic resources within a framework that provides fair and equitable benefit sharing with the developing countries and the companies domiciled with them. For developing countries, the Guidelines provide a framework to harmonise the steps for access and benefit sharing of genetic resources in an international regime.

The Guidelines are intended to assist in the development of access and benefit sharing strategies, 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.

It is suggested:

- That contracting parties take care to ensure that commercialisation should not prevent traditional use of genetic resources (para 16(a)(iii));
- That contracting parties establish mechanisms to ensure their decisions are made available to the relevant Indigenous and local communities (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 (para 16(c)(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

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<sup>31</sup> Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of Benefits Arising out of their Utilization, Secretariat of the Convention on Biological Diversity, 2002.

circumstances are where it is required by national access policies, and subject to domestic laws.

Para 31 states:

Respecting established legal rights of indigenous and local communities associated with the genetic resources being accessed or where traditional knowledge associated with these genetic resources is being accessed, the prior informed consent of indigenous and local communities and the approval and involvement of the holders of traditional knowledge, innovations and practices should be obtained, in accordance with their traditional practices, national access policies and subject to domestic laws.

While welcoming some aspects of the Bonn Guidelines, Indigenous people have criticised the Guidelines for failing to go far enough, for too few rights for Indigenous people, and for too few protections.

### **Implementation of these standards**

There are two aspects to the impact of the Convention on Biological Diversity on the rights of Indigenous Australians. Firstly, the Convention on Biological Diversity sets internationally agreed standards for Contracting Parties in relation to respect for Indigenous people's Traditional Knowledge and innovations. Secondly, many of these standards are couched within the terms 'subject to domestic law'. The limits of Indigenous people's rights under the Convention are set by the domestic laws of each Contracting Party.

Australia has sought to meet many of its obligations under the Convention by incorporating them into domestic law.

One of these has been to devise laws in relation to access to biological resources on Commonwealth lands. This process was begun with the Inquiry conducted by John Voumard.<sup>32</sup> Mr Voumard was advised by a reference group including Indigenous biodiversity expert Henrietta Marrie.<sup>33</sup> The *Voumard Report* sets out a scheme that could be implemented through regulations under s 301 of the *Environment Protection and Biodiversity Conservation Act 1999* to provide for the control of access to biological resources in Commonwealth areas.<sup>34</sup>

The regulations are part of the Commonwealth Government's *Nationally Consistent Approach for Access to and the Utilization of Australia's Native Genetic and Biochemical Resources*.

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. The Department of the Environment and Heritage will assess the application and make a recommendation to the Minister. Where the application is for commercial use, the applicant will be required to negotiate a

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<sup>32</sup> John Voumard, *Access to Biological Resources in Commonwealth Areas*, July 2000, vii.

<sup>33</sup> Formerly Henrietta Fourmile.

<sup>34</sup> It is anticipated that the *Environment Protection and Biological Conservation Amendment Regulations 2001* will commence in mid 2005.

benefit-sharing contract covering commercial and other aspects of the agreement with the provider of the biological resources during the period of assessment by the department. Providers include Indigenous landowners.

The Minister is required to consider a number of factors in deciding whether or not to issue the permit.

- Environmental impact;
- The ecological sustainability and consistency with conservation of biodiversity;
- Submission by interested parties;
- The terms of the benefit sharing contract including;
- Prior informed consent of Indigenous owners;
- Mutually agreed terms; and
- Adequate benefit sharing arrangements, including protection for and valuing of Indigenous Knowledge and if practicable, that some benefit would be used for biological diversity.

The taking of biological resources by Indigenous people is not part of the regulations, and the taking of human remains is clearly excluded from the meaning of biological resources.

The proposed scheme has some excellent features, particularly in relation to prior informed consent. It also includes some of the well-established potentially problematic processes for Indigenous people like the reliance on Ministerial discretion.

Another area of concern for Indigenous people is the extent to which state and territory governments will mirror the strengths and weakness of the Commonwealth's regime. Many concerns have been raised about the Queensland government's approach to Indigenous people's rights in the *Code of Ethical Practice for Biotechnology in Queensland*<sup>35</sup>. For example, while the Code promises the negotiation of reasonable benefit sharing agreements where Indigenous Australian's Traditional Knowledge is used,<sup>36</sup> there is no right of veto for access.

In conclusion, ethical engagement of the biotechnology industry with Indigenous peoples requires:

- Implementation of the principle of free prior informed consent where Indigenous Knowledge is sought or used, whether the relevant Indigenous Knowledge holders are legally recognised land holders or not;
- Implementation of the principles of free prior informed consent where Indigenous people have links to the relevant land or species whether they are legally recognised land holders or not; and
- Strengthening the principle of self-determination at the domestic and

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<sup>35</sup> The legislation for access to biological resources.

<sup>36</sup> Code of Ethical Practice for Biotechnology in Queensland, page 9.



international levels.

Finally, the Precautionary Principle, enunciated in the Rio Declaration on Environment and Development,<sup>37</sup> and imported into the Preamble of the Cartagena Protocol on Biosafety offers an important warning against following the momentum of science and commercial exploitation of knowledge into developments that may cause serious harm. Intended to provide a safeguard against over-zealous exploitation of scientific developments that place our environment at risk, it states:

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

In a more comprehensive explanation of the principle the 1998 Wingspread Conference of scientists, academics and activists unanimously supported the following enunciation of the principle:

The release and use of toxic substances, the exploitation of resources, and physical alterations of the environment have had substantial unintended consequences affecting human health and the environment. Some of these concerns are high rates of learning deficiencies, asthma, cancer, birth defects and species extinctions; along with global climate change, stratospheric ozone depletion and worldwide contamination with toxic substances and nuclear materials.

We believe existing environmental regulations and other decisions, particularly those based on risk assessment, have failed to protect adequately human health and the environment - the larger system of which humans are but a part.

We believe there is compelling evidence that damage to humans and the worldwide environment is of such magnitude and seriousness that new principles for conducting human activities are necessary.

While we realize that human activities may involve hazards, people must proceed more carefully than has been the case in recent history. Corporations, government entities, organizations, communities, scientists and other individuals must adopt a precautionary approach to all human endeavours.

Therefore, it is necessary to implement the Precautionary Principle: When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.

In this context the proponent of an activity, rather than the public, should bear the burden of proof.

The process of applying the Precautionary Principle must be open, informed and democratic and must include potentially affected parties. It must also involve an

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<sup>37</sup> Principle 15 of the *Rio Declaration*

examination of the full range of alternatives, including no action.<sup>38</sup>

Indigenous Australians require further information, time and forums for discussion of the scientific, ethical and legal issues raised by biotechnology, especially the issues of Indigenous Knowledge and of gene technology. We continue to hope that the commercial imperative, which drives scientific research and development will not completely outstrip our right to make free and informed decisions, and for Indigenous and non-Indigenous peoples to weigh the ethical issues raised by the biotechnology industry.

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<sup>38</sup> The Wingspread Conference Statement 1998 developed by consensus by 32 conference participants included treaty negotiators, activists, scholars and scientists from the United States, Canada and Europe. see <http://www.sehn.org/wing.html> at 6 August 2005