

# MAORI, BIODIVERSITY AND INTERNATIONAL LAW.

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This paper has been written as part of the environment component of the FRST Research Programme on bi-cultural justice, which is overseen by Judge Mick Brown at Waikato University.

It is with the gratitude that I would like to acknowledge the very useful assistance of Dr. Claire Breen, who has turned this manuscript into something which appears to be both legible and meaningful. Thanks C.

## **Abstract.**

The solution to most environmental problems requires community participation. The levels and extent of this participation varies with the problem in question, which in turn, is influenced by both national concerns and international obligations. This context forms the basis for Maori involvement in the debate about biodiversity conservation and utilisation in New Zealand. This context may have distinct implications. The specific concern is that biodiversity must be utilised 'equitably.' However, exactly how to achieve this goal is not clear, as the mechanisms the laws point towards, are not necessarily in the interests of the communities they seek to serve.

## I. INTRODUCTION.

The aim of this paper is to provide an outline of one area of the largely ignored interrelationship between the areas of indigenous people,<sup>1</sup> Maori, and international law. Recently, these three areas have been drawn together as a result less, a number of well-trodden previous substantial examples may be referred to. The epitome of these examples is the debate concerning Farmers' rights (which are implicit within indigenous rights).<sub>2</sub> This is an issue which New Zealand may not necessarily be sympathetic to.<sub>3</sub> The idea of Farmers' rights arose in 1985 as the first of a number of counter-arguments to Northern pressure to recognise plant breeders rights as an "agreed interpretation" of the 1983 International Undertaking on Plant Genetic Resourct in national strategies. Such national strategies may include issues such as the determination of access to biodiversity and the manner in which its benefits may be shared. These strategies may also include questions of customary use, joint management and ownership. Due to limitations of space, I shall address these last three issues elsewhere. Accordingly, the scope of this opinion is one which is confined to an examination of the basis of the CBD, the effect of the CBD upon New Zealand's biodiversity, and the entanglement between the CBD and other related international objectives. The central focus of this paper lies, therefore, upon the fair and equitable sharing of the benefits of biodiversity and the manner in which this may be achieved. The impact of such issues upon Maori will be demonstrated at a number of junctures throughout this analysis.

This opinion does not claim to be definitive with regard to any one of the aforementioned issues. However, within the confines of this paper I hope to lay down some markers by which other scholars may begin to explore the developing nexus between the areas of international law and biodiversity. Such an exploration may prove to be vital in the future when the international context of the issue of biodiversity may drive considerations pertaining to the domestic agenda of how best to protect and utilise biodiversity.

## II. BIODIVERSITY AND INTERNATIONAL LAW.

### 1. A Question of Definitions

The definition of biological diversity ('biodiversity') is central to many of the debates in this area.<sup>3</sup> In terms of international law, the 1992 CBD has defined biodiversity as:

"the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of species."<sup>4</sup>

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<sup>1</sup> The Convention on Biological Diversity uses the softer term "indigenous and local communities" rather than indigenous people. Early negotiating sessions on the fifth revised draft of the Convention had incorporated this term into the text. By the seventh session this has been watered down to "indigenous populations." This was in turn expunged following a recommendation by a sub-working group on definitions and uses of terms. See UNEP/Bio Div./N7-INC.5/2, Appendix I, 38.

<sup>2</sup> Convention on Biological Diversity (UNEP/BioDiv/Conf 12) 31 ILM 954 (1992).

<sup>3</sup> For further consideration of this question from ecological and ethical perspectives see Gillespie, A. "Endangered Species, What They Are and the Vexing Question of Why to Protect Them." *Journal of International Wildlife Law and Policy* (forthcoming).

<sup>4</sup> CBD, supra note 2. Article 2. For a general discussion of the ecological issues surrounding this, see Gillespie: *ibid.*

Both the CBD and its operating Conference of the Parties (COP) have drawn a relatively strict line around the ambit of the diversity that is of concern to the Convention. For example, the suggestion that people are to be regarded as being part of the biodiversity that the CBD should be concerned with has been explicitly ruled out.<sup>5</sup> With regard to such a suggestion, it is proposed that the broad interpretations necessary to protect cultural diversity may fall more appropriately within the ambit of organisations such as the United Nations Educational, Scientific and Cultural Organisation (UNESCO) rather than the United Nations Environmental Programme (UNEP) which administers the CBD. As such, assertions such as the following made by Te Puni Kokiri may be misplaced. According to TPK:

“[B]iodiversity includes people, and because of this, cultural diversity is an integral part of it. Spirituality, is in turn, an integral part of cultural diversity and this needs to be recognised by decision makers when dealing with biodiversity issues.”<sup>6</sup>

The exclusion of people from any definition of biodiversity may seem particularly harsh as the conservation of biodiversity and the survival (physical and/or cultural) of the indigenous people who may live nearby<sup>7</sup> are often regarded as being indivisible.<sup>8</sup> Indeed, as the United Nations noted as early as 1991, indigenous people are at one and the same time “victims of environmental degradation and protectors of vulnerable ecosystems.”<sup>9</sup> Furthermore, the UNEP report on the Cultural and Spiritual Values of Biodiversity noted that:

“there was a direct relation between cultural diversity, linguistic diversity and biological diversity and that the quickening pace of loss of traditional knowledge was having a corresponding devastating impact on all biological diversity.”<sup>10</sup>

It is possible that some movement towards rectifying this problem has occurred by virtue of the CBD which has continued to maintain a direct linkage with cultural considerations. This link may be observed in the Convention’s call for the direct involvement of indigenous peoples in multiple biodiversity issues. It may also be seen more explicitly in the broad view that the Convention has adopted with regard to the link between indigenous peoples and biodiversity. For example, the preamble of the CBD recognised the “close and traditional dependence of many Indigenous and local communities embodying the traditional lifestyles on biological resources.”<sup>11</sup> The CBD continued with the suggestion that the signatories should “respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities

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<sup>5</sup> In 1995, at COP 2 it was affirmed that human genetic resources were *not* covered by the CBD.

<sup>6</sup> TPK, *Biodiversity and Maori* (1994) 7.

<sup>7</sup> Many of the areas richest in biological diversity are inhabited by indigenous peoples who attempt to manage, maintain and defend them. Burger, perhaps over-estimating, suggests that 85% of all known plant species are situated in the traditional homelands of indigenous peoples. See *The Gaia Atlas of First Peoples: A Future for the Indigenous World* (1990) 32.

<sup>8</sup> See Woodliffe, J., “Biodiversity and Indigenous Peoples” in Bowman, M. & Redgewell, C. (eds), *International Law and the Conservation of Biological Diversity* (1995) 255, 257-259.

<sup>9</sup> United Nations, *Human Rights and the Environment*. Preliminary Report submitted to the Sub-Commission on Prevention of Discrimination and Protection of Minorities (UN Doc. E/CN.4/Sub.2/1991/8 Paragraph 23).

<sup>10</sup> This was noted in the Workshop on Traditional Knowledge and Biological Diversity (TKBD) *Report of the Workshop* (UNEP/CBD/TKBD/1/3) (1997) 2.

<sup>11</sup> Preamble to CBD, *supra* note 2.

embodying traditional lifestyles.”<sup>12</sup> This stipulation to protect the “worldviews”<sup>13</sup> of indigenous peoples would appear to embrace the importance of cultural diversity within the CBD’s ambit. As such, the somewhat artificial separation of people from diversity would appear to have been severed.<sup>14</sup>

However, the exact question of the extent to which the CBD has been interested in this aspect of cultural diversity was cut short (and answered) by the caveat that such knowledge was *only* of interest if it was “relevant for the conservation and sustainable use of biological diversity.”<sup>15</sup> Of course, even with this limitation, the ambit may be wide and the dividing line difficult (if not impossible) to find.<sup>16</sup>

## 2. The 1992 Convention On Biological Diversity

The establishment of the CBD and the debate surrounding the Convention has been well documented elsewhere.<sup>17</sup> The most important concept to grasp from the vast amount of scholarship on this topic is that the CBD was marked by an unwieldy agenda and a conflict over the central objectives and priorities of the Treaty. Broadly speaking, the industrialised countries wanted a Convention on conservation which retained access to the raw biodiversity of other countries, whereas Southern countries desired a convention which involved considerations of development, sovereignty and equity. As a result, the final document and the declarations by the ensuing Conference of the Parties (COP) have tended to be a pastiche of vague commitments, ambiguous phrases, and some awkward compromises. Moreover, these declarations have been complicated by vague responsibilities,<sup>18</sup> lack of harmonised responses or best practices, weak or non-existent planning processes, inexperience and a capacity limitation among users, and “confusing property rights over genetic resources.”<sup>19</sup> This situation has resulted from a number of factors. Foremost amongst these is the multi-layered nature of the relationships and interests involved. Such relationships and interests arose from and continue to affect

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<sup>12</sup> Article 8(j). *Ibid.*

<sup>13</sup> TKBD, *Final Document of the Second International Indigenous Forum on Biodiversity*. (UNEP/CBD/TKBD/1/3 paragraph 108).

<sup>14</sup> There has often been a general failure of experts to recognise what is commonly regarded as “wilderness” which is in fact the product of co-evolutionary relationships between humans and nature. Ethnobotanical studies of plant use have revealed management practices where many of the species have been planted and transplanted. See Diamond, J., *Guns, Germs and Steel: The Fate of Human Societies* (1998) 85-92, 97-116, 143-147. In addition, ethnological studies have shown how fire, soil modification, selected cutting and planting have also actually modified landscapes. Such broad conceptions of the landscape may be broadly in comparison with UNESCO who coined the term “cultural landscapes” in 1972 to describe this phenomenon. Convention for the Protection of World Cultural and Natural Heritage 11 ILM 1358 (1972). However, the CBD does not seem to have taken this broader view into account.

<sup>15</sup> Article 8(j), *supra* note 2.

<sup>16</sup> The advocacy of the idea of the connection between ‘world-views, biodiversity, and indigenous peoples’ is now well utilised. For example, the Ministry of Maori Development suggested, in 1998, that “biodiversity as a concept is included in many of the world-views and attitudes to nature of many indigenous peoples, including Maori.” Ministry of Maori Development (MMD), *Maori and Biodiversity: A Background Paper for the Draft New Zealand Biodiversity Strategy* (1998) 1. The actual draft strategy was produced in late. See Department of Conservation (DoC), *New Zealand’s Biodiversity Strategy: Our Chance to Turn the Tide* (1998).

<sup>17</sup> See Bowman & Redgewell, *supra* note 8.

<sup>18</sup> Even with what should be axiomatic - the obligation to conserve biodiversity is subject to each country’s conditions and capabilities. Article 8 proclaims, somewhat weakly, that “[E]ach contracting Party, shall, as far as possible and as appropriate: (a) Establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity. (b) Develop, where necessary, guidelines for the selection, establishment and management of protected areas... .” Unfortunately, there are no targets, timetables or lists of any kinds. Attempts to get these in place have, to date, failed.

<sup>19</sup> IUCN, WWF, *Matters Related to Benefit Sharing* (1998) 2.

inter-governmental relationships, in addition to relationships between governments and indigenous peoples', as well as relationships between NGO's and commercial entities. Each of these groups have distinct, often opposing, interests in biodiversity.

### 3. Indigenous Peoples Within the CBD

There is a general movement within international environmental law and policy to involve indigenous peoples to a much greater degree than in the past.<sup>20</sup> Within the CBD there are specific sections which involve indigenous people. However, before going on to the specific provisions, it may be worthy to note that the involvement of indigenous people within the ongoing work of the CBD and its COPs has rapidly accelerated after a slow start. Indeed, at the first COP meeting in 1994, indigenous people's issues were only of preliminary significance with "more substantive debate" expected in time to come.<sup>21</sup> This debate did not eventuate at COP 2, but by COP 3, in 1997, such concerns were central to the CBD. At this meeting the need for "dialogue with representatives of indigenous and local communities embodying traditional lifestyles relevant to the ... [CBD]" was made.<sup>22</sup> This led to the call for a workshop<sup>23</sup> to examine a number of issues relating to the manner in which the CBD and indigenous concerns overlapped.<sup>24</sup>

Following the workshop, an open-ended working group was established at the fourth COP in 1998 to address the implementation of CBD concerns involving indigenous peoples.<sup>25</sup> At this meeting, in which New Zealand was closely involved,<sup>26</sup> it was hoped that the new working group would involve 'consultation', 'involvement' and 'inclusion' of representatives of indigenous peoples. This aim of this approach was to try to achieve "the widest participation possible by indigenous peoples and local communities in all the processes relating to the implementation of the CBD."<sup>27</sup> This enthusiastic call was probably in part a response to the debacle that eventuated at COP 4 when indigenous people were excluded from parts of the process.<sup>28</sup>

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<sup>20</sup> For example, Agenda 21 suggests that States should "establish arrangements to strengthen the active participation of indigenous peoples and their communities in the national formulation of policies, laws and programmes relating to resource management..." and "involve indigenous people and their communities at the national and local levels in resource management and conservation strategies..." Agenda 21 (UN Doc A/CONF/151/6/Rev.1) ILM (1992) 881 Ch 26

<sup>21</sup> Ministry of Foreign Affairs and Trade (MFAT), *Convention of Biological Diversity. Report of the First Meeting at the Bahamas, 28 November - 9 December, 1994* (1994) 17.

<sup>22</sup> COP 3, *Report of the Third Meeting of the Conference of the Parties to the Convention on Biological Diversity* (UNEP/CBD/COP/3/38 Article III/14) (1997). Paragraph 1 of decision III/14 also requested those parties that have not yet done so to develop national legislation and corresponding strategies for the implementation of Article 8(j) in consultation with representatives of their indigenous and local communities.

<sup>23</sup> MFAT, *Report of the Third Meeting at Buenos Aires, from 9-14 November, 1997* (1997) 5. This move was supported by New Zealand.

<sup>24</sup> In paragraph 7 of Decision III/14, Implementation of Article 8(j), the Conference of the Parties decided that an inter-sessional process should be established to advance further work on the implementation of Article 8(j) and related provisions with a view to producing a report for consideration at the fourth meeting of the COP. Background documents on the inter-linkage between 8(j) and other sections (6,7, 10(c) (customary use), 17(2) (exchange of indigenous and traditional knowledge), 18 (4)(the development and use of indigenous and traditional technologies) within the CBD by the Secretariat were prepared in relation to this issue.

<sup>25</sup> COP 4, *Report of the Fourth Meeting of the Conference of the Parties to the Convention on Biological Diversity* (UNEP/CBD/COP/4/27 Decision IV/9) (1998).

<sup>26</sup> "[N]ew Zealand worked closely with the indigenous peoples forum (which met prior to and during the first week of COP4) and Maori participants to ensure that our position on Article 8(j) was understood." MFAT, *Report of the Fourth Meeting at Bratislava, 1-15 May 1998* (1998) 3.

<sup>27</sup> COP 4, supra note 25, Paragraph 127.

<sup>28</sup> This was despite the fact that "a most regrettable misunderstanding" had occurred at COP4 and indigenous communities gained the impression that they had been "unable to speak" and then withdrew

### III. THE BIODIVERSITY OF NEW ZEALAND

#### 1. New Zealand

New Zealand is situated in the south-west Pacific ocean. It consists of two main islands, the North and the South, along with numerous smaller islands. Together, they make up a total land area of 270,500 square kilometres. With regard to New Zealand as a whole, it has been suggested that the biodiversity which has evolved here is the closest that scientists will get to studying life on another planet.<sup>29</sup> This is not surprising given the long period of isolation experienced by New Zealand from continental landmasses, its remoteness from other continents, the limited large-scale recolonisation by other groups after the global extinction and collapse of 65 million years ago, as well as the submergence of up to four-fifths of New Zealand between 30-60 million years ago.<sup>30</sup> This unique land mass was a mammal-free forested raft of birds, reptiles (including dinosaurs), frogs and invertebrates. On this raft evolution took an eccentric course, leading to an unusually high percentage of endemic species which were not found anywhere else in the world.<sup>31</sup>

The forests of New Zealand are most like the Mesozoic forests of Gondwanaland, and the oldest life in these forests which is moss dates back to this distant epoch. Within this setting there evolved a truly bewildering collection of biodiversity. For example, New Zealand boasts the heaviest insect (the giant *weta-punga* which translates from Maori as the 'god of ugly things') on the planet; and perhaps the missing link between modern and primitive spiders; snails which have a life-span of up to 55 years (and which may grow as long as a human forearm); whilst New Zealand's reptilian lizards number more per-thousand hectares than any other temperate country.<sup>32</sup> In addition, New Zealand is home to the world's only flightless parrot; another bird with nostrils at the end of its beak (the kiwi) while in its waters the world's smallest marine dolphin (Hector's) evolved.<sup>33</sup>

Left to itself, New Zealand's bird-dominated world would have continued to depart from the evolutionary mainstream. However, its long isolation also meant that the species which evolved were extremely vulnerable to new changes. This was especially so with the changes brought about by the arrival of humans who came to settle on what was one of the last large land masses on the earth to be colonised. From the time of the arrival of the first humans anthropogenic changes have been greater than

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from the process: *ibid*, paragraph 133. This was largely as a result of the actions of Brazil, which "firmly believes that, since this is an intergovernmental convention, and aware of the fact that ultimate responsibility for implementing our decisions relies on our governments... decision making - which includes the negotiation process - should be reserved to Parties or potential parties," *ibid*, paragraph 139. Since New Zealand was chairing the Working Group in which this happened "[N]ew Zealand was seen to be relatively impartial," *ibid*, 10.

<sup>29</sup> See Diamond, J., "New Zealand as an Archipelago: An International Perspective" in DoC (ed), *Ecological Restoration of New Zealand's Islands* (1990) 3-8.

<sup>30</sup> See Cooper, R.A. & Milliner, P.R., "The New Zealand Biota: Historical Background and New Research" (1993) 8 *Trends in Ecology and Evolution* 429.

<sup>31</sup> Both species of New Zealand bat are endemic, as are all four frogs, all 60 reptiles, more than 90% of insects and a similar proportion of marine molluscs, about 80% of all vascular plants and a quarter of all bird species. In contrast, the United Kingdom has only one endemic animal, and one plant species.

<sup>32</sup> Daugherty, C.H. et al., "Taxonomic and Conservation Review of the NZ Herpetofauna" 21 *NZ Journal of Zoology* 317.

<sup>33</sup> See Ministry for the Environment (MfE), *The State of New Zealand's Environment 1997* (1997) Ch 9; DoC, *New Zealand's Biodiversity Strategy: Our Chance to Turn the Tide* (1998) 1-4.

any brought about by natural processes over the previous three millennia. Although humanity arrived in two distinct waves, they both utilised similar methods of destruction. Human predation, habitat destruction, and non-endemic pests<sup>34</sup> and weeds arrived with the Maori,<sup>35</sup> and later with the Pakeha.<sup>36</sup> Together, these two ethnicities wreaked a cumulative impact upon the indigenous biodiversity,<sup>37</sup> which may be one of the worst anthropogenic extinction records for the planet.<sup>38</sup> New Zealand is only now beginning to think about counter-acting this trend with meaningful measures.<sup>39</sup>

In terms of being *threatened* with extinction, by 1999, about 1,000 of New Zealand's *known*<sup>40</sup> taxa were considered to be at risk (about 800 species and 200 subspecies).<sup>41</sup> Of the 29 known species of freshwater fish (with a possible 5 or 6 remaining unidentified), one is extinct and 10 are threatened. Of the 1,000 species of marine fish (with a possible further 200 remaining unidentified) which have been identified, at least 18% of the endemic (11% of the total) are threatened.<sup>42</sup> Of the surviving species, 74% are threatened.<sup>43</sup> These figures apply predominantly to the 'higher' species (300 threatened plants, 500 animals and 200 threatened fungi).<sup>44</sup> Within these large numbers, 'conservation priority' has been applied to all of New Zealand's endemic frogs and mammals. It has also been applied to more than three-quarters of the endemic birds, more than a third of the reptiles and freshwater fish, and most of the giant land snails and giant wetas.

In terms of actual species becoming extinct, in the last 700-800 years since humans and their accompanying pests have been present, 32% of indigenous and freshwater birds, 18% of sea birds, and 3 of 7 species of frogs have all been lost. Moreover, at least 1 fish, 1 bat, perhaps 3 reptiles, and possibly 11 plants have been rendered extinct.<sup>45</sup>

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<sup>34</sup> The Maori introduced a rat, kiore, and a dog, kuri. Pakeha introduced the possum, deer, pig, and many more other species.

<sup>35</sup> See McGlone, M.S. "The Polynesian Settlement of New Zealand in Relation to Environmental and Biotic Changes" 12 *New Zealand Journal of Ecology* (Supplement) (1989) 115, 125.

<sup>36</sup> As Charles Darwin suggested "[T]he endemic productions of New Zealand, for instance, are perfect one compared to another, but they are now rapidly yielding before the advancing legions of plants and animals introduced from Europe." Darwin, C., *The Origin of Species* (1859, 1958 ed) 187.

<sup>37</sup> At least three quarters of New Zealand's original habitat on land have been significantly disturbed by the activities of people. Accordingly, 63% of the habitat has been converted into farms, settlements and roads. In contrast, the extent of habitat loss world-wide stands at just over 50%. The Ministry of Forestry suggests that whereas Maori reduced the forests from about 75% of the land area at human arrival to about 53% by 1840, this was taken to a lower 23% by 1990 - following the arrival of the Pakeha. See Ministry of Forestry (MoF), *A Forest Policy for New Zealand: A Public Discussion Document* (1990) 6.

<sup>38</sup> Simpson suggested that, in terms of the Pakeha impact on biodiversity in New Zealand, "[I]n purely numerical terms the loss of forest and extinction of species is probably about the same as Maori impacts." See Simpson, P., "The Consequences of Human Settlement" in Simpson, P. & McFadgen, B. (eds), *Biodiversity: Papers from a Seminar Series on Biodiversity* (1996) 56,60.

<sup>39</sup> Although some species have made a comeback from the brink of extinction, overall, the depletion is ongoing.

<sup>40</sup> It is important to note that vast gaps exist within the knowledge base of exactly what New Zealand does possess in terms of species diversity, and how much of this has been recognised as "threatened." Most of New Zealand's fungi and invertebrate animals are still unidentified, the true number of threatened species may be several times higher than the above figures. MfE, supra note 33, 9:21

<sup>41</sup> Although the demand for native timber, particularly rimu, kauri, and kahikatea, and the conversion of the land to pasture, have reduced the original forest cover from about 85% to about 23%, none of New Zealand's unique timber producing trees have been reduced to threatened status.

<sup>42</sup> See DoC, *A Draft Status List for New Zealand's Marine Flora and Fauna* (1994) 8-10.

<sup>43</sup> MfE, supra note 33, 9:116.

<sup>44</sup> DoC, *Setting Priorities for the Conservation of New Zealand's Threatened Plants and Animals* (2nd ed, 1994) 4.

<sup>45</sup> MfE, supra note 33, 4.

## 2. New Zealand and the International Exchange of Biodiversity

Despite the large amount of indigenous biodiversity within New Zealand and the overt benefits that this has generated, New Zealand remains highly dependant on access to exotic genetic diversity from overseas. This is not surprising, as apart from marine fish and invertebrates, nearly all of New Zealand's economically important species (including pests and weeds) have been introduced from other countries. Indeed, almost all of New Zealand's land-based production derives from less than 50 animal and plant species which are exotic.<sup>46</sup>

This reliance upon exotic biodiversity is not merely historical. In order to maintain the genetic diversity of domesticated and cultivated species, breeds, and varieties, as well as expanding into new forms of commercially valuable genetic diversity, New Zealand needs to have appropriate access to such diversity wherever it occurs world-wide.<sup>47</sup> Accordingly, New Zealand needs to "maintain access" and to "participate in international frameworks" relating to access to genetic resources.<sup>48</sup> Such access has had benefits in areas which have been both cultural and commercial in nature.<sup>49</sup> With such benefits it is not surprising that New Zealand "generally experiences good international co-operation in plant genetic resources matters."<sup>50</sup> Furthermore, "[T]here is mainly free flow of materials between overseas genebanks and New Zealand."<sup>51</sup>

To support this flow of material, New Zealand has been active international citizen in this area. It is a member of the Food and Agricultural Organisation (FAO) International Commission on Plant Genetic Resources. It is also a signatory to the International Convention on the Protection of New Varieties of Plants,<sup>52</sup> as well as being a signatory to the International Undertaking on Plant Genetic Resources.<sup>53</sup> As a signatory to this Undertaking, New Zealand has agreed to maintain important genetic

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<sup>46</sup> This exotic biodiversity consists of 33 mammals, 33 birds, 1 lizard, 3 frogs, 20 freshwater fish, perhaps 1,000 invertebrates, about 100 parasitic protozoans, and perhaps 6,000 plants. Of these, about 25 animals and 120 plants are commercially farmed or cultivated.

<sup>47</sup> For example, New Zealand has an international reputation for developing successful new export crops such as with apples and kiwifruit. Genebanks provide the raw starting material for these programmes of plant improvement. See FAO, *New Zealand. Country Report to the FAO International Technical Conference on Plant Genetic Resources: Leipzig* (1996) 31.

<sup>48</sup> MMD, *supra* note 16, 62.

<sup>49</sup> For example, the Maori kumera would have been lost were it not for the pioneering work of the DSIR in the 1950's and 1960's which assembled a collection of 617 kumera varieties from around the world. In 1963, when the collection became too large for the DSIR to maintain, Dr Yen arranged for its safekeeping in three gene banks in Japan. In 1988, 9 kumera varieties were brought back to NZ, of which 4 have now been identified as pre-European. These are now cultivated by several Maori groups. See Mfe, *supra* note 33, 9:61.

<sup>50</sup> New Zealand generally relies upon multilateral agreements. However, where New Zealand has concerns about access to varieties of a single species, bilateral understandings with specific countries (such as Argentina and Bolivia) regarding the exchange of genetic material have been reached. See FAO, *supra* note 47, 47.

<sup>51</sup> *Ibid.* 45. The exception to this is the Biosecurity Act. R.S. Vol. 38. 138. Under the terms of this Act, access to genetic material from outside New Zealand is subject to domestic biosecurity (quarantine) legislation and policies

<sup>52</sup> See WIPO, *The International Union for the Protection of New Varieties and the Basic Principles of the International Convention for the Protection of New Varieties of Plants* (WIPO/ACAD/E/94/26).

<sup>53</sup> The importance of this has been noted with the recognition that New Zealand needs to "continue to participate in negotiating of the International Undertaking on Plant Genetic Resources, and participate in relevant future multi-lateral or bilateral agreements for access to genetic resources for food and agriculture." MMD, *supra* note 16, 62.

material from plants and share them internationally.<sup>54</sup> Of late, these obligations has been increased with the CBD which requires its signatories to:

“facilitate access to [its own] genetic resources for environmentally sound purposes by other Convention parties, subject to its own sovereignty rights.”<sup>55</sup>

### 3. The New Zealand Collection

The New Zealand government has been active in plant research and the storage of genetic materials since at least 1928. The genetic material held in New Zealand may be clearly divided between exotic and indigenous. In terms of exotic, New Zealand holds some significant collections of introduced genetic material.<sup>56</sup> Collections of forage plants (i.e. typically grasses and clover);<sup>57</sup> forest trees;<sup>58</sup> as well as the collections of apple, apricot, sweet potato, hops, Asian pears and kiwifruit are well recognised as being valuable international collections.<sup>59</sup> Likewise, the New Zealand collection of pepinos is unique, but unlike the other previously noted ‘unique’ collections of the exotic genetic diversity that New Zealand holds, at present there is no active programme of research in relation to these and other ex-situ species. This lack of research is due to the government’s policy on science whereby only support is given to that which is “of critical importance, and where research results can most readily be exploited.”<sup>60</sup> Accordingly, unless genetic material from exotic biodiversity can show itself to be of “significant national importance” (in terms of economic or environmental concerns) it is not earmarked for direct utilisation or conservation.<sup>61</sup>

With regard to ex-situ storage of indigenous plant seeds and vegetative material in gene banks, very little has been secured. This is partly a reflection of the technical difficulty of storing the seeds of some indigenous species, as well as a lack of knowledge about how best to store such seeds. Moreover, that which has been assembled in ex-situ collections is typically incomplete and lacking in analysis and documentation.<sup>62</sup> As such, most of New Zealand’s indigenous biodiversity is held in-situ on *public* land from which it receives multiple forms of legal protection. Conversely, “much indigenous biodiversity on *private* land is unprotected.”<sup>63</sup>

However, some extensive collections of indigenous biodiversity are held by the government. For example, Landcare Research holds an extensive flax collection.<sup>64</sup> Access to this and similar materials and information held by Landcare (or comparable public institutions) is not free in all cases. Although, the flax collection is available free to private and local government users for cultural purposes on request, it is not available

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<sup>54</sup> There is no comparable agreement relating to animals.

<sup>55</sup> Article 15 of the CBD.

<sup>56</sup> New Zealand also holds some collections of wild population strains of introduced species, such as deer, trout or salmon which are now threatened or extinct in their country of origin.

<sup>57</sup> This is maintained at AgResearch’s Margot Forde Centre in Palmerston North. This collection holds over 60,000 seed samples, representing over 1,500 species and 58 plant families. This Centre is recognised as a resource for agriculture in temperate regions all over the planet.

<sup>58</sup> Aside from the obvious native forests, New Zealand holds “unique,” “highly” and “very significant” collections of *pinus radiata*, *pinus muricata* and *pseudotsuga menziesii*.

<sup>59</sup> FAO, *supra* note 47, 52-61.

<sup>60</sup> *Ibid*, 31.

<sup>61</sup> *Ibid*, 38.

<sup>62</sup> *Ibid*, 16, 61.

<sup>63</sup> *Ibid*, 61.

<sup>64</sup> *Ibid*, 16.

for commercial purposes. Also, as far as possible, when it is proposed that indigenous material may leave the country, there is consultation with Maori. Availability of other materials which Landcare Research holds, such as ornamental manuka and cabbage tree varieties for ornamental purposes is dealt with commercially. Landcare Research has Plant Varieties Rights on many of these plants and is developing a policy whereby revenue obtained from native plants in this way would be earmarked for investment in areas of research of concern to Maori.<sup>65</sup>

#### 4. Identification And Monitoring

Article 7 of the CBD relates to the ordering and use of information on biological diversity. It requires the parties to the Convention to identify those components of biological diversity which are important for its conservation and sustainable use; monitor those components; identify what may have significant detrimental impacts upon such components; and maintain and organise data derived from such identification and monitoring. The central importance of the implementation of Article 7 has recently been highlighted by virtue of the huge gaps in the global taxonomy inventory.<sup>66</sup> The “urgency” of the situation has resulted in the Global Taxonomy Initiative.<sup>67</sup>

The problem of the lack of knowledge in terms of inventories of biological diversity is one which is both global and local. Globally, it is suggested that there are perhaps 30 million species upon the planet. Between 1.4 and 1.9 million of these species have been scientifically identified. The latest estimate of the number of species currently identified is 1.75 million.<sup>68</sup> Within New Zealand, of an estimated 80,000 or more native animals, fungi and plants, only about 30,000 have been formally described, named and classified by taxonomists.<sup>69</sup> Such “lack of information makes many decisions about managing biodiversity uncertain.”<sup>70</sup>

Once the question of inventories moves into the arena of ‘lesser’ species, classification of even the most basic issues - like whether such species are endangered or not - becomes much more difficult as so little is known about them. For example, with regard to invertebrate animals, although 21,000 (mainly insects) have been described, the figure is expected to reach as high as 50,000.<sup>71</sup> In relation to vascular plants, despite the fact that New Zealand has a relatively small number of indigenous flowering plants and vertebrate animals by tropical or continental standards,<sup>72</sup> the level of endemism of these plants is very high.<sup>73</sup> At least 2,287 species of such plants have

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<sup>65</sup> Ibid, 17.

<sup>66</sup> See Decision III/10 of the third COP.

<sup>67</sup> COP 4, supra note 25, Decision IV:1 (d).

<sup>68</sup> See Gillespie, supra note 3.

<sup>69</sup> Most of the non-described species are fungi and invertebrate animals, particularly nematode worms and insects. Several hundred plants are also non-described. Unfortunately, a declining budget for DOC has made taxonomic research one of lesser importance within their budget. See Halloy, S., “The Status of New Zealand’s Biodiversity Research and Resources: How Much Do We Know ?” 25 *Journal of the Royal Society of New Zealand* (1995) 55-80. See also Atkinson, I., “Biodiversity: What It Is, and Why It Is Important” in McFadgen, B. & Simpson, P. (eds), supra note 38, 7, 10-12. For a useful specific example of this problem, see Daugherty, C.H. et al., “Neglected Taxonomy and Continuing Extinctions of Tuatara” 347 *Nature* (1990) 177-179.

<sup>70</sup> MfE, supra note 33, 7. For example, it was asserted in the same report that “our current state of knowledge of marine life and how marine ecosystems work is not adequate to know whether we are sustainably managing New Zealand’s marine biodiversity,” *ibid*, at 49.

<sup>71</sup> See Emberson, R., *The Size and Shape of New Zealand Insect Fauna*. (Symposium Paper) (1995).

<sup>72</sup> See OECD, *Environmental Review of New Zealand* (1996) 39-42.

<sup>73</sup> New Zealand’s plant life is 80% endemic. See generally Wilson, G. & Cann, R., *Threatened Plants of New Zealand*. (1989). The OECD Environmental Review of New Zealand. (1996), placed the figure of

been formally described and named. It is possible that the number of these species may exceed 2,700.

With regard to fungi, of an estimated 20,000 species in New Zealand, only about 4,500 are known and least 5% of these species are threatened.<sup>74</sup> Of the non-vascular plants, New Zealand has a greater variety of mosses and liverworts than many comparable countries. Of this grouping, of which 1,070 have been identified, at least 8% (85 species) are threatened. In terms of bacteria, 300 species types have been described, although up to 80,000 species of symbiotic bacteria may exist. Few taxonomists have even cautioned a guess as to the conservation status of such bacteria.<sup>75</sup> The number of known protozoa is roughly 2,600 although the real figure may be as high as 7-8,000. Certain groupings within this taxon, such as macro-algae (seaweeds) are relatively well documented at around 1,000 species, with a huge 40% claiming endemic status.<sup>76</sup>

#### **IV. MAORI INVOLVEMENT IN THE NEW ZEALAND BIODIVERSITY STRATEGY**

##### **1. Maori and Biodiversity in New Zealand**

Over the last 25 years, Maori concerns have become increasingly prominent within environmental issues in New Zealand. Broadly speaking, the primary environmental legislation - the 1987 Conservation Act and the 1991 Resource Management Act - requires the Crown to “give effect”<sup>77</sup> to and “take into account”<sup>78</sup> of the principles of the Treaty of Waitangi.

The exact implications of the Treaty of Waitangi with regard to biodiversity are currently the subject of a claim before the Waitangi Tribunal (Wai 262).<sup>79</sup> Although this claim is one which is multi-faceted - the specific consideration of the ownership of the indigenous flora and fauna - it may have profound implications in this debate.<sup>80</sup> However, it is not the intention of this paper to examine the issue of the possible outright ownership of the indigenous flora and fauna of New Zealand by Iwi. Rather, it is analyse a number of other issues that arise from the CBD and their implications.

Since the early 1990's, New Zealand has been trying to generate a particular biodiversity strategy. Within this strategy, it has long been recognised that Maori are to have a special role. Such a conclusion should not be surprising as biodiversity is often

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New Zealand's endemic plant life at 76%. 41. The New Zealand Country Report put the figure at 85%. FAO, supra note 47, 14.

<sup>74</sup> Buchanan, P. & Beever, R., “The Fungi-Red Data List in Preparation” 7 *Threatened Plants News* (1995) 2-3.

<sup>75</sup> Holmes, B., “Life Unlimited” 8 *New Scientist* (1996) 149-157.

<sup>76</sup> See DoC, *A Draft Status List for New Zealand's Marine Flora and Fauna* (1994) 8-9.

<sup>77</sup> S. 4 of the Conservation Act. R.S. Vol. 36. 6.

<sup>78</sup> The Resource Management Act. R.S. Vol. 32. 131.

<sup>79</sup> The Statement of Claim for Wai 262 suggests that the claim is specific to the “protection, control, conservation, management, treatment, propagation, sale, dispersal, utilisation, and restriction on the use and transmission of the knowledge of New Zealand's indigenous flora and fauna and the genetic resources contained therein.”

<sup>80</sup> As the Draft Strategy on Biodiversity noted “[T]he specific interests and rights of Maori as Treaty partners in relation to indigenous genetic resources - including the issues reflected in .... Wai 262... need to be addressed in the development of policy.” MMD, supra note 16, at 61.

an important part of the lives of many Maori.<sup>81</sup> As well as being traditional users of biological resources, Maori have direct interests in forestry, fisheries, aquaculture, and ecotourism, all of which are based on biodiversity. Maori are also actively involved in many aspects of biodiversity management, including conservation (with specific regard to kaitiakitangi)<sup>82</sup> and customary as well as commercial use.

Exactly how these relationships were to be achieved was influenced from an early stage by the adoption of the CBD. New Zealand, which ratified the CBD on September 16, 1993 soon began to develop national policies to help implement the Conventions obligations. One of the first of these was the Environment 2010 strategy in 1995 which suggested that it was a “priority” to achieve “a broad consensus of public and iwi support, understanding, awareness and involvement in biological diversity conservation.”<sup>83</sup> The New Zealand National Report to the CBD added to this, with its expressed hope of “increas[ing] Maori involvement in biodiversity management, continu[ing] to settle Treaty claims, [and] develop[ing] programmes to increase Maori involvement and expertise.”<sup>84</sup> The 1998 Draft Biodiversity Strategy reiterated that:

“the co-operation and action of communities (including iwi and hapu....) are critical to the conservation and sustainable management of biodiversity and need to be encouraged and supported by central and local government.”<sup>85</sup>

Given the above recognition that Maori have central role to play in the conservation of biodiversity, it is useful to ask what this role may entail. However, this question is so broad - even in the domestic arena - that it may result in endless debate. Accordingly, in order to set down some parameters to this debate, I have selected some of the relevant sections of the CBD to which New Zealand is already committed, to provide a focus to any possible obligations upon Maori which may ensue.<sup>86</sup>

## 2 Indigenous Knowledge of Biodiversity

Given the incomplete knowledge of most of the taxonomies of many of the world’s genetic traits, indigenous knowledge may be highly useful. Moreover, given its “dynamic nature”<sup>87</sup> it is not surprising that the indigenous knowledge of biodiversity is now recognised within the CBD as an “invaluable contribution” to the identification and monitoring systems required by Article 7.<sup>88</sup> This approach is also in accordance with

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<sup>81</sup> The MMD asserted that Maori have interests in “every facet of biodiversity.” MMD, *Background Paper*, ibid, 6.

<sup>82</sup> For a discussion of this area, see Gillespie, A., “Environmental Politics in New Zealand/Aotearoa: Clashes and Commonality Between Maori and Environmentalists” 54(1) *New Zealand Geographer* (1998) 19-25.

<sup>83</sup> MfE, *Environment 2010 Strategy: A Statement of the Government’s Strategy on the Environment* (1995) 35. An earlier New Zealand position on the CBD (which did not recognise Maori interests) can be found in MFAT, *International Environmental Issues: A New Zealand Perspective* (1994) 34-35.

<sup>84</sup> MFAT, *National Report to the Convention on Biological Diversity: New Zealand* (1997) 8.

<sup>85</sup> DoC, supra note 16, 24. This approach was earlier suggested in DoC, *Kaupapa Atawhai Strategy* (1997) 12-15.

<sup>86</sup> The need to adhere to the spirit of relevant international conventions has been well emphasised. See *Van Gorkom v AG* [1977] NZLR 535, 543; *Tavita v Minister of Immigration* [1994] 2 NZLR 257.

<sup>87</sup> COP 3, supra note 22, Article III/14; COP 4, supra note 25, Decision IV/9.

<sup>88</sup> TKBD, *Elaboration of Key Terms. Traditional Knowledge and Biological Diversity*, (UNEP/CBD/TKBD/1/2) (1997) paragraph 12. As COP 4 noted “traditional knowledge could play a valuable role.” COP 4, *Implementation of Article 8(j) and Related Provisions* (UNEP/CBD/COP/4/10) (1998) 8.

Article 8(j) which calls upon signatories to “respect, preserve and maintain knowledge” of indigenous communities relevant to the goals of the CBD.

Respect has increasingly been shown with regard to indigenous knowledge which has been accredited a status equal to that shown to scientific knowledge.<sup>89</sup> This approach was recognised at the third (and later the fourth)<sup>90</sup> Conference of the Parties which suggested that traditional knowledge should be given the same respect as any other form of knowledge in the implementation of the Convention.<sup>91</sup> The Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) had earlier recognised this approach with their suggestion that:

“traditional taxonomic systems offer a valuable perspective on biological diversity and should be part of the total taxonomic knowledge... traditional knowledge could play a valuable role in the development of indicators, as well as in monitoring and assessment.”<sup>92</sup>

This conclusion appears to be very similar to that reached by the Ministry of Maori Development which suggested that “the relatively recent scientific concept of genetic diversity is mirrored in Maori practice [which is] several hundred years old.” The example they proffered was that of the “propagating, owning and protecting of harakeke... .”<sup>93</sup> As regards this one resource, whereas scientists have distinguished two species of flax, Maori have recognised and named up to 200 different types of harakeke based on their leaf and fibre content.<sup>94</sup> However, the exact intricacies of the Maori knowledge of *all* the indigenous biodiversity of New Zealand may be the source of some debate.<sup>95</sup>

### 3. In-situ Conservation and Indigenous Peoples

Article 8 contains the main set of the Convention’s obligations to conserve biodiversity. The CBD recognises in situ-conservation as the primary approach for biological diversity. From this article comes the most forthright connection with indigenous peoples. As such, Section (j) of Article 8 states that:

“[S]ubject to its national legislation, [signatories shall] respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant to 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

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<sup>89</sup> TKBD, *ibid*, paragraph 83. See also Johnson, M., *Lore: Capturing Traditional Ecological Knowledge* (1992) 4.

<sup>90</sup> “[T]raditional knowledge should be given the same respect as any other form of knowledge in the implementation of the Convention.” CBD, *supra*, note 25, Decision IV/9.

<sup>91</sup> COP 3, *supra* note 22, Article III/14.

<sup>92</sup> Paragraph 8 of Recommendation II/2, concerning agenda item 3:4, *Practical Approaches for Capacity Building for Taxonomy*.

<sup>93</sup> MMD, *supra* note 16, 3.

<sup>94</sup> *Ibid*. 59. The Ministry of Maori Development suggested that “there are 70 words in Maori for describing different varieties, each exhibiting distinctive qualities.” *Ibid*. 3. For further discussion in this area, see MRST, *The Relationship Between Maturanga Maori and Mainstream Science* (1997).

<sup>95</sup> For example, the Maori knowledge of species of which they had no use for may have been minimal. See MfE, *supra* note 33, 9:109; Cooper, D. & Cambie, G., *The Economic Value of New Zealand’s Biodiversity* (1991) 87.

equitable sharing of the benefits arising from the utilisation of such knowledge, innovations and practices.”<sup>96</sup>

This broad section, which is of increasing focus within the CBD<sup>97</sup> has been warmly received both nationally and internationally.<sup>98</sup> Nationally, it has been suggested that this section is “parallel with the aspirations of tanga whenua. Te tino rangatiratanga is the tangata whenua statement that iwi, hapu, and whanau groups all have the authority to manage land, culture, and knowledge as kaitiaki.”<sup>99</sup> Internationally, this section has been recognised by some as “the most forceful provision in an internationally legally binding instrument for safeguarding indigenous peoples rights.”<sup>100</sup> Given the vast importance of this section, it is necessary to break down and examine some of the key aspects.

#### (a) *Sovereignty*

The CBD consolidates the role of government in protecting and maintaining resources and reaffirms that states have sovereign rights over their own biological resources.<sup>101</sup> Despite propounding that biological resources are a “common concern” of all humanity, such resources were recognised as being squarely within the control of sovereign bodies. As such, the overt caveat - that all of the following discussions are subject to national legislation should be borne in mind.<sup>102</sup>

#### (b) *Approval and Involvement*

Biodiversity prospectors search the world for genetic and biochemical resources that have commercial value. This is of particular interest to the pharmaceutical, biotechnological, and agricultural industries.<sup>103</sup> New Zealand is rich in genetic resources which have the potential to be developed into commercial products, and “an increasing amount of bioprospecting by both New Zealand and overseas companies is occurring.”<sup>104</sup>

Under the CBD, Article 8(j) requires that the wider application of traditional knowledge be “with the approval and involvement of the holders of such knowledge, innovations and practice.”<sup>105</sup> This provision has parallel links with the stipulations of

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<sup>96</sup> CBD, supra note 2, Article 8(j).

<sup>97</sup> At COP III, Decision III/14 requested that the Parties should develop national legislation and corresponding strategies for the implementation of Article 8(j).

<sup>98</sup> CBD, supra note 88, 7.

<sup>99</sup> TPK, supra note 6, 9.

<sup>100</sup> TKBD, supra note 10, 13. For a general discussion on this matter see, Sutherland, J., “Indigenous Peoples: Emerging New Legal Standards for Comprehensive Rights” 27(1) *Environmental Law and Policy* (1997). 13.

<sup>101</sup> The sovereign rights of States over their natural resources is referred to in the preamble and twice in the main text. Article 3 reproduces verbatim Principle 21 of the Stockholm Declaration, recognising that States have the sovereign right to exploit their own resources pursuant to their own environmental policies. This has been explicitly repeated elsewhere. See for example, the 1996 *Andean Pact on Common Access to Genetic Resources*, Article 6. The Andean Pact on Common Access to Genetic Resources is reprinted at the site for Traditional Resource Rights. <<http://users.ox.ac.uk/~wgtrr/>>

<sup>102</sup> As such, it has been suggested that “the Convention ultimately stands or falls on this issue.” CBD, supra note 88, 3. Within the New Zealand context, the overlap of the Treaty of Waitangi and the Government’s obligations under this should be noted.

<sup>103</sup> See Reid, W.V., et al., *Biodiversity Prospecting: Using Genetic Resources for Sustainable Development*. (1993).

<sup>104</sup> MMD, supra note 16, 58.

<sup>105</sup> CBD, supra note 2.

“prior informed consent”<sup>106</sup> and “mutually agreed terms”<sup>107</sup> which are also mentioned in the Convention. Such considerations, which are also active in other areas of international law dealing with indigenous peoples,<sup>108</sup> “underwrite virtually all transactions necessary for the Convention [on Biodiversity].”<sup>109</sup> The importance of approval, consent or agreement of indigenous peoples when dealing with biodiversity within their control was forcefully reiterated with the Final Statement from the United Nations Development Programme (UNDP) Consultation process with indigenous people and biodiversity,<sup>110</sup> and the 1993 Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous Peoples. It was emphasised at Mataatua that:

“[C]ompanies, institutions both governmental and private must not undertake experiments or commercialisation of any biogenetic resources without the consent of the appropriate indigenous peoples.”<sup>111</sup>

The Secretariat has read the importance of agreement, consent or approval as “strongly suggest[ing] that negotiated agreements will be the primary vehicle for obtaining access to genetic resources and for sharing the resulting benefits.”<sup>112</sup> Where these requirements are not fulfilled it has been argued, even by some of the more mainstream NGO’s, that a prohibition on the export of biological or other material for research, conservation, commercial or industrial application should be applied.<sup>113</sup>

There are many forms that the requirement for prior informed consent, agreement or approval may take. A number of international fora have called for “a multilateral arrangement as opposed to bilateral arrangements.”<sup>114</sup> These demands have been made independently of the draft codes offered by some interested international bodies, such as the Food and Agricultural Organisation (FAO).<sup>115</sup> However, to date, the mechanisms remain primarily regional,<sup>116</sup> national or local in character.<sup>117</sup> For example, the 1995 Executive Order from the Philippines stipulates that:

“[P]rospecting of biological and genetic material shall be allowed with the ancestral lands and domains of indigenous communities only with the prior informed consent of such communities, obtained in accordance with the customary laws of the concerned community.”<sup>118</sup>

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<sup>106</sup> Article 15(5).

<sup>107</sup> As set out in CBD, supra note 2, Articles 16.3 & 15.4. The latter prescribes “[A]ccess, where granted, shall be on mutually agreed terms and subject to the provisions of this Article.”

<sup>108</sup> The importance of consultation and participation is also strongly recognised within the 1989 *International Labour Organisation Convention on Indigenous Peoples*. See Article 6. This is reprinted in 28 ILM 1382 (1989).

<sup>109</sup> Traditional Knowledge, supra note 88, paragraph 103.

<sup>110</sup> See the *Final Statement from the UNDP Consultation on Indigenous Peoples and Indigenous Knowledge and Intellectual Property Rights* (1995).

<sup>111</sup> *Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous Peoples Recommendation 2:10* (1993). This is reprinted in TPK, supra note 6, Appendix 1.

<sup>112</sup> SBSTTA, “Knowledge, Innovations and Practices of Indigenous and Local Communities” in *Subsidiary Body on Scientific, Technical and Technological Advice* (UNEP/CBD/SBSTTA/2/7) (1996), paragraph 100.

<sup>113</sup> IUCN, WWF, supra note 19,4-5.

<sup>114</sup> *Sub-Regional Preparatory Meeting of the International Technical Conference on Plant Genetic Resources for South/South East Asia and the Pacific*, Recommendation 2 (1995).

<sup>115</sup> The FAO *Draft International Code of Conduct for Plant Germplasm Collecting and Transfer* may be particularly useful. This can be found in the *Report of the Commission on Plant Genetic Resources* (CPGR/93/REP/Annex 1) (1993). Discussion on the document is to be found in paragraphs 55-70.

<sup>116</sup> *Andean Pact*, supra note 101, Article 26.

<sup>117</sup> Traditional Knowledge. (1997), supra note 88, paragraphs 107-113.

<sup>118</sup> *Republic of the Philippines Executive Order No. 247*. Traditional Resource Rights site, supra note 101.

In Costa Rica, (in theory) statements of prior informed consent must be present alongside any applications for IP rights. Such consent *may* include that of indigenous authorities in cases where bioprospecting takes place on their lands. In a distinct improvement on earlier arrangements,<sup>119</sup> indigenous communities and peoples may now be entitled to refuse access to their resources and knowledge.<sup>120</sup> Informed consent is also an essential ingredient with the Inuit Tapirisat of Canada within the regime that they have set up to secure the respect of “the privacy, cultures, traditions and rights of aboriginal people.”<sup>121</sup>

In New Zealand, in spite of some controls under the 1934 Native Plants Protection Act<sup>122</sup> and the 1953 Wildlife Act,<sup>123</sup> the approach to managing bioprospecting is ad-hoc. The Department of Conservation administers about 30% of New Zealand’s land mass,<sup>124</sup> over 1,000 threatened species and a suite of Acts.<sup>125</sup> Within this realm, DoC has responsibility for access to the Crown land that it administers, and for granting others possession of indigenous plant and animal material from that land.

On private land, authority over protection, access to and possession of indigenous plant materials, as well as to most insects and micro-organisms, lies with the landowners. However, all indigenous mammals, birds and reptiles and some insects are protected under the Wildlife Act, irrespective of where they are found.<sup>126</sup> This means that access to, but not possession of, these species can be granted by the private landowner. Within these constraints, private landowners are free to negotiate whatever terms they consider appropriate with bioprospectors. In addition, there are no statutory requirements for bioprospectors to share technology or information with New Zealand.<sup>127</sup>

With regard to marine resources, the Ministry of Fisheries (MoF), under the Fisheries Act 1996, is responsible for marine matters, including fisheries. However, “there appears to be no clear allocation of responsibility for the control of possession of freshwater animals and plants which are not a fishery.”<sup>128</sup>

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<sup>119</sup> The commonly suggested flagship of biodiversity management - between INBio, which maintains close links to the Costa Rican government, was given rights to commercialise biogenic resource for Merck Pharmaceuticals. The agreement entitled them to collect samples on national lands, including those of eight indigenous peoples. None of the tribes were ever consulted about the collections, and nor was any one of them named as a beneficiary in the original agreement between Merck and INBio in 1991. For a discussion of this, see Posey, D.A., “Indigenous Rights to Biodiversity.’ 38:8 *Environment* (1996) 7, 9.

<sup>120</sup> See Dutfield, G., *The Costa Rica Biodiversity Law: A Brief Summary* (1998). Traditional Resource rights site, supra note 101.

<sup>121</sup> Posey gives the example of the Kuna and Inuit Tapirisat. Posey, supra note 119, 7, 41. Specifically, see the Inuit Tapirisat of Canada, *ibid*, paragraph 9.

<sup>122</sup> Plant Protection Act 1934, section 4(2) of which permits the limited taking of protected native plants. The act prohibits the taking of “significant” quantities of most native plants without landowner permission. On public land, that permission must come from government or local authorities. Exceptions are made for medicinal, research or horticultural plant uses and for certain plants (such as kanuka, manuka, bracken and nettles) and related species (i.e. it did not apply to mosses, lichens or algae).

<sup>123</sup> Act Wildlife 1953. R.S. Vol. 36.

<sup>124</sup> DoC controls 4.9 million hectares of native forest compared to about 1.3 million hectares in private ownership.

<sup>125</sup> Such as the Conservation Act 1987, National Parks Act 1980, Reserves Act 1977, Native Plants Act 1934, and the 1978 Marine Mammals Act.

<sup>126</sup> However, it has been suggested that “much indigenous biodiversity on private land is unprotected.” See FAO, supra note 47 61.

<sup>127</sup> MfE, “Bioprospecting” *A Draft Paper for the Biodiversity Strategy* (1997) 7.

<sup>128</sup> *Ibid*, 8.

The MoF considers applications for bioprospecting of marine resources under the special permit system that exists for the taking of marine resources for non-commercial, scientific or research purposes. In contrast, however, DoC currently considers that it is inappropriate for it to issue any permits for bioprospecting until the Government has established a policy regarding the access to, and possession of, biological materials for bioprospecting purposes, in addition to the capture and distribution of benefits from bioprospecting.<sup>129</sup> The above-mentioned concerns are regarded as being central to WAI 262.

With regard to Maori concerns, the ad-hoc nature of the current bio-prospecting regime is particularly unfortunate as:

“[M]any Iwi would like more control over customary plant use in their areas, particularly where non-iwi permission and bioprospectors are also seeking permission to harvest them.”<sup>130</sup>

Moreover, it was noted within the Draft Biodiversity Strategy that traditional knowledge (mātauranga) should be recognised<sup>131</sup> and utilised (and respected)<sup>132</sup> only with the “consent”<sup>133</sup> of the holders of such knowledge.

Despite this desire, a new regime which would seek to integrate many of these over-lapping areas remains to be put in place. As such, the situation remains one of “piecemeal approaches to managing bioprospecting [which] are no longer adequate in the face of increasing commercial activity.”<sup>134</sup>

## V. BIODIVERSITY, EQUITY, AND MAORI

### 1. Biodiversity in New Zealand

Prior to any discussion concerning the objective of the equitable sharing of the benefits derived from biodiversity for indigenous peoples, it is first necessary to form and understanding of the background which led to the establishment of this objective. In essence, this setting pertains to the economic value of biodiversity, and the unequal sharing of such benefits in the past.

Biodiversity may be valuable for many reasons. These may range from ethical, cultural, ecological, or economic justifications.<sup>135</sup> For the purpose of this opinion, the focus is primarily upon its economic value as such values form the fulcrum upon which the CBD has operated.

Globally, the economic value of biodiversity is staggering.<sup>136</sup> In New Zealand, it was suggested in 1997 that the annual value provided by indigenous biodiversity could be more than twice that of the gross domestic product.<sup>137</sup> An earlier paper, in 1994,

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<sup>129</sup> Ibid.

<sup>130</sup> MfE, supra, note 33, 9:62.

<sup>131</sup> MfE, supra note 127, 6-7.

<sup>132</sup> Ibid, 7.

<sup>133</sup> MMD, supra note 16, 63. MfE, supra, note 127, 7.

<sup>134</sup> MMD, ibid, 61.

<sup>135</sup> I have addressed this issue in full in Gillespie, A., supra note 3.

<sup>136</sup> Ibid.

<sup>137</sup> See Patterson, M. & Cole, A., *The Valuation of New Zealand's Biodiversity*. This paper was presented to the Australia & New Zealand Society for Ecological Economics Conference in Melbourne (1997).

placed the annual value of biodiversity on land at \$229 billion (just below 3 times the GDP) with \$46 billion coming from the land, and a further \$183 billion coming from the ecosystem services from the ocean.<sup>138</sup> The manner how these figures have been arrived at is a matter of ingenuity and debate. Typically, the values have been ascertained by costing the services or products that may be derived from everything in nature (and these are usually seen as economically free) from complete ecosystems through to discreet species which may produce an overtly recognisable products or outcomes.<sup>139</sup> Despite the persuasive logic of such economic analysis, the typical focus upon the economic value of biodiversity recognises only the direct benefits that may flow from biodiversity.<sup>140</sup> It is with this caveat in mind, that the following discussion of the utilisation of biodiversity within New Zealand proceeds.

The direct utilisation of New Zealand's biodiversity by humans has had extensive human history. The second wave of immigrants to arrive, just like the first wave, were quick to realise the potential of New Zealand's biodiversity. For example, in 1769-1770, during Captain James Cook's first visit to New Zealand, Mr. Joseph Banks listed around 15 useful plants in his journal.<sup>141</sup> By 1780, the first seed collections, representing at least 47 species from New Zealand had reached England.<sup>142</sup> By 1792 active in-situ utilisation by the Europeans of New Zealand biodiversity began with the first sealing gang to arrive in Dusky Sound.<sup>143</sup> Within three years, the first cargoes of spars were leaving the country, and the export trade in native timber was fully active by 1820.<sup>144</sup> The active export of native plants began in 1844.<sup>145</sup> However, aside from a few select tree species<sup>146</sup> and a few other adaptive processes which were often borrowed from the Maori, there was little else in New Zealand's biodiversity which was deemed to be of economic value.<sup>147</sup>

## 2. Maori and Bioersivity in New Zealand

The above trades were clearly built upon the realisation that the biodiversity of New Zealand had much to offer, and could be utilised in many way. This was also apparent to the first wave of immigrants, the Maori, whose utilisation of the indigenous biodiversity was both varied and ingenious. This was perhaps necessary, as the Polynesian ancestors of Maori who arrived in New Zealand were greatly dependent (although not totally)<sup>148</sup> on New Zealand's indigenous biological resources for their survival.<sup>149</sup>

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<sup>138</sup> These figures have been noted in New Zealand's Biodiversity Strategy. MMD, supra note 16, 3.

<sup>139</sup> For a full discussion of the economic value of biodiversity, see Gillespie, A., *International Environmental Ethics* (1997), Ch 3.

<sup>140</sup> As opposed to the indirect values, or the other direct values of option and bequest. See Gillespie, *ibid*.

<sup>141</sup> See Hooker, J. (ed), *The Journal of the Right Honourable Sir Joseph Banks During Captain Cook's First Voyage in H.M.S Endeavour* (1896).

<sup>142</sup> See Cooper & Cambie, supra note 95, 24-35.

<sup>143</sup> By 1825, the New Zealand seal population had declined to such an extent that the sealers had to obtain flax to fill their vessels.

<sup>144</sup> See Fleet, H., *New Zealand's Forests* (1990) 17.

<sup>145</sup> Although an earlier attempt was made in 1791 by Joseph Banks. To this day, New Zealand shrubs and popular garden plants remain highly prized abroad. See Brooker, S.G. et al., *New Zealand Medicinal Plants* (1987) 9-11.

<sup>146</sup> For example, Kauri, rimu, totara, kahikatea, matai, and puriri.

<sup>147</sup> Other extract from New Zealand biodiversity deemed to be of economic value were indigenous barks used for tanning processes, various dyes which were extracted from plants, and insecticides derived from the oil of the manuka and kauri gum. See Cooper & Cambie, supra note 95, 133-138, 144-145.

<sup>148</sup> Five exotic species were introduced by the early Maori settlers. These were aute or paper mulberry (*Broussonetia papyrifera*) which was cultivated for bark cloth; hue or bottlegourd (*Lagenaria vulgaris*)

Several aspects of this usage and these species, some of which are now threatened,<sup>150</sup> remain a vibrant part of the many aspects of Maori cultural life. For example, trees were important for multiple uses from canoes, buildings and fortifications through to carving.<sup>151</sup> Other plants were used to make dyes, rope, fishing lines and nets, bird snares, cloaks and blankets. Rushes, supplejack and nikau leaves were used for thatching. Perhaps the best example of Maori biodiversity utilisation and knowledge may be seen with regard to Harakeke or New Zealand flax which remains one of New Zealand's most widely used native plants. Wild varieties were grown, harvested, and traded by both Pakeha and Maori (including in pre-European times) to produce a wide range of products.<sup>152</sup> Such products included clothing, kete (baskets), mats, fishing equipment, rope, and later paper. In addition, the sap of harakeke was used to treat constipation and wounds, and its nectar was used to sweeten the diet of fern root.<sup>153</sup>

The main drawback of the indigenous flora was its food value. Although some 300 New Zealand plants are edible, most are poor sources of sustenance because their roots and berries are too small or unpalatable to provide large amounts of carbohydrates.<sup>154</sup> Accordingly, Maori relied upon five imported tropical plants for carbohydrates: kumera, taro, uwhi (yams), hue (bottlegourds), and a cultivated species of cabbage tree.<sup>155</sup> In spite of such limitations, a sizeable amount of food and beverages (from coffee derived from the ground seeds of karamu through to the thirst quenching seaweed karengo used in the Middle East in WWII by the Maori Battalion) has successfully been extracted from the indigenous biodiversity by Maori and Pakeha alike.<sup>156</sup> An internationally successful example of New Zealand's edible biodiversity is New Zealand spinach, which remains popular in European and American vegetable gardens.

Prior to European contact, the medicinal usage of New Zealand's biodiversity by Maori society, like the rest of Polynesia, was apparently poorly developed. The reason for this appears to have been based in the belief that disease was linked to spiritual

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which provided food and water containers; and the staple food plants kumera, (*Ipomoea vulgaris*) taro, (*Colocasia esculenta*) and uwhi or yam (*Dioscorea sativa*). See MfE, supra note 33, 9:60.

<sup>149</sup> The Ministry of Maori Development suggested that Maori were "totally reliant on New Zealand's biological resources for their survival." MMD, supra note 16, 4. This assertion seems to overlook the fact that the first people to arrive in New Zealand brought with them biodiversity from elsewhere, which was clearly utilised to supplement existing biodiversity. However, certain Iwi, such as the Tuhoe people, appear to have had a greater dependence on the indigenous flora than other Iwi due to the unsuitability of their environment for kumera cultivation. See Best, E., 35 *Trans. N.Z. Inst.* (1903) 45.

<sup>150</sup> The Department of Conservation lists 18 culturally important plants that have become rare, at least some areas (although several are still common nationally). See DoC, *Setting Priorities for the Conservation of New Zealand's Threatened Plants and Animals*, (2nd ed, 1994).

<sup>151</sup> The trees that were of particular importance were kauri, matai, totara, rimu, manuka, kanuka, maire, mapou, tawa, pukatea, and ake. For a discussion of their uses, see Wallace, R.T. "A Preliminary Study of Wood Types Used in pre-European Maori Wooden Artefacts" in Sutton, D.G. (ed), *Saying So Doesn't Make it So: Papers in Honour of B. Foss Leach* (1989) 222-232.

<sup>152</sup> On the question of the pre-European trade in biodiversity, see Davidson, J., 91 *Journal of the Polynesian Society* (1983) 291. See also Buck, P. 54 *Trans. N.Z. Institute* (1923) 705.

<sup>153</sup> See Douglas, T., *Maori Use of Traditional Resources: Harakeke*. (Report prepared for the Ministry of the Environment (1993). See also Cooper & Cambie, supra note 95, 79-87. For the debate over the medicinal benefits, see pages 122-124.

<sup>154</sup> See Crowe, A., *Native Edible Plants of New Zealand* (1990) 12. Cooper & Cambie, *ibid.* 98-115, 140-141.

<sup>155</sup> See Cooper & Cambie, *ibid.* 98-113.

<sup>156</sup> For a discussion of the similar uses of seaweed see Chapman, V.J., *Seaweeds and Their Uses*. (1980)

causes.<sup>157</sup> External plant treatments were confined to visible ailments and injuries and included leaf wrappings, ointments and poultices (to reduce bleeding, pain and inflammation); fern ashes (to treat burns); and scented steam baths. The few plant remedies that were swallowed, seem to have been for constipation, dysentery, or possibly to induce vomiting.<sup>158</sup> However, after the arrival of Europeans, the experimentation with indigenous flora for medicinal purposes grew at a rapid pace.

By 1820, Maori experimentation with herbal remedies was well underway. By 1900, more than 100 native plants were in medicinal usage, and by 1999, the number was more than 200. Traditionally, the results of such experimentation were not always beneficial, as herbal remedies sometimes became infused with various forms of ritual or faith healing.<sup>159</sup> Given such contexts, and a general failure to secure objective scientific verification of many of the remedies offered, it has been contended that most of these plants, from a pharmacological viewpoint “could at best have no great medicinal value.”<sup>160</sup>

This problem is in part a reflection of the fact that, of the natural products from any indigenous flora, it is the alkaloids which provide the bulk of constituents that exhibit authenticated medicinal properties. Unfortunately, in keeping with the flora of other temperate regions, New Zealand is not rich in these families.<sup>161</sup> Nevertheless, some families with these characteristics do exist in New Zealand and they have been the object of some attention,<sup>162</sup> although most of this has been by overseas interests.<sup>163</sup> Great attention has focused upon the use of the *Hebe* species, particularly koromiko which is a well known and authenticated remedy for dysentery. This is the only native plant to have received such recognition in British medicine.<sup>164</sup>

**dance with the customary laws of the concerned community.**

Republic of the Philippines Executive Order No. 247. Trade and Intellectual Property Rights, s. 101.

In Costa Rica, (in theory) statements of prior informed consent must be present alongside any applications for IP rights of New Zealand’s commercially valuable species have probably not yet been discovered.

<sup>157</sup> Accordingly, as Elsdon Best suggested the “[M]aori of old relied principally upon his priest when attacked by sickness, ... the priests did not deal in simples or herbal remedies... .” See Best, E., 13 *J. Polynesian Society* (1905) 213.

<sup>158</sup> See Brooker, supra note 145, 14-19.

<sup>159</sup> Accordingly, the government sought to stop this with the Tohunga Suppression Act of 1907. For a discussion of this controversial piece of legislation, see Walker, R., *Struggle Without End* (1990) 174, 181.

<sup>160</sup> Brooker, supra note 145, 7. See Health Research Council of New Zealand, “Recording Maori Healing Practices” 10 *HRC Newsletter* (1994) 6-7. DoC, supra note 33, 9:62.

<sup>161</sup> See Cooper & Cambie, supra note 95, 141-143.

<sup>162</sup> Notably the poroporo, mairehau and the pukatea. See Cooper & Cambie, *ibid*, 121-128, 165-174. Pukatea may be of particular interest, as Maori used to chew the leaves for pain relief, and for various other ailments such as syphilis. The bark has been shown to contain a series of alkaloids, the major one which is pukateine. Pukateine bears some resemblance to morphine, but does not produce the same side effects. See Cambie, R.C., *J. Roy. Soc. NZ* (1976) 6: 307.

<sup>163</sup> See Cooper & Cambie, supra note 95, 171.

<sup>164</sup> The value of the plant has been traced to its anti-peristaltic action. For a discussion of this plant of which “so little work has been carried out on,” see Cooper & Cambie, *ibid*, 118.

<sup>165</sup> DoC, supra note 33, 9:22. It was only in 1988 that the chemistry division of the DSIR began to survey the native plants of New Zealand for their pharmacologically active compounds.

This expectation has been demonstrated by recent attraction to what were once standard bathroom items in New Zealand households - dead sponges. Today, these sponges are of interest to drug companies prospecting for potentially useful biochemical compounds. In New Zealand at least 350 types of sponges have been identified, and a further 120 types remain as unexamined specimens. One of these species of sponge, belonging to the genus of *Lissendoryx*, was discovered a few years ago by scientists on rocky outcrops at depths of 100-300 metres on the edge of the Kaikoura canyon off the South Island's east coast. This species, nicknamed "yellow slimy" was found to produce a cancer-fighting substance. Yellow slimy is one of the more than 1,500 species that scientists have been investigating for more than a decade in the search for potentially useful drugs.<sup>166</sup>

A final example of the discovery of viable biodiversity in strange places relates to certain soft mosses. In earlier times, such substances had been used by Maori women for their fragrances, for diapers, and to make a soft bed for babies.<sup>167</sup> In recent times, focus upon the potential of the specific moss *Sphagnum cristatum*, which evolved in the rain-soaked forests of the South Island's West Coast and Southland, began to change. This occurred as it became apparent that this particular type of moss has antibacterial properties, as well as the ability to absorb and retain up to 20 times its own weight in water. This moss has also proven to be an ideal growing medium, especially for orchards. Accordingly, harvesting this species has become an enormously profitable export industry, generating 180 full time jobs and \$18 million per year in exports.<sup>168</sup>

#### 4. The Call for Equity

##### (a) *Biopiracy and Moratoria*

In spite of the vast economic sums generated from biodiversity, it has been a common complaint that much of the wealth that has been generated does not return to the communities where either the material or the base knowledge for the valuable contributions originated.<sup>169</sup> For example, one report has estimated that the developing world would gain \$5.4 billion per year if multinational food, seed, and pharmaceutical firms paid royalties for local knowledge and plant varieties.<sup>170</sup> Within this rubric, terms like "piracy" and "robbery" have emerged. Such concerns have also been raised within the context of New Zealand amidst suggestions that "certain regions have been 'robbed' of resources by others, and Maori have benefited little...".<sup>171</sup> More specifically, it has been asserted that:

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<sup>166</sup> "Sponge Aquaculture for Drug Production" *NIWA News* (1996) 5-6. DoC, supra note 33, 9:33.

<sup>167</sup> See Cooper & Cambie, supra note 95, 201-203.

<sup>168</sup> See Tilling, A. (1995). 'Spaghnum Moss: Issues Associated With the Sustainable Development of a Non-Timber Forest Product in NZ.' 39(4) *NZ Forestry*. 30-34. Orchard, M. (1994). 'Spaghnum Moss-Green Gold.' 39(2). *NZ Forestry* 31-32.

<sup>169</sup> See Shiva, V., *Biopiracy: The Plunder of Nature and Knowledge* (1998). For a discussion of this within the context of the CBD, see Gillespie, A., "Common Property, Private Property and Equity: The Clash of Values within International Environmental Policy and the Quest to Preserve Biodiversity" 12(6) *Environmental and Planning Law Journal* (1995). 373-388.

<sup>170</sup> See UNDP, *Conserving Indigenous Knowledge: Integrating Two Systems of Innovation* (1994) 3.

<sup>171</sup> See Simpson, P. & McFadgen, B., supra note 38, 3. Even where this has not been asserted, it remains a distinct concern that it may happen in the future. MoC, *Patenting of Biotechnological Inventions: A Ministry of Commerce Paper on Issues for Discussion with Maori* (1999) 12. MoC, *Intellectual Property Law Reform Bill: Maori Consultation Paper* (1994) 16. TPK, *Maori Genetic, Cultural and Intellectual Property Rights* (1994) 4.

“[T]he benefit from the commercialisation of indigenous knowledge seldom accrues to the original discoverers. Several of New Zealand’s native plants have been subjected to modern research for decades. One example is the koromiko species, and little if any benefit has been returned to Maori. In future, research that is based on the traditional knowledge about the benefits of a particular animal or plant, should be acknowledged and rewarded.”<sup>172</sup>

Against such a background, it is not surprising that calls for moratoria on the co-operation of indigenous people with bioprospecting have been raised. Such calls appeared *outside*<sup>173</sup> of the CBD and in the 1993 Mataatua Declaration.<sup>174</sup> They were reiterated with the Final Statement from the UNDP Consultation on Indigenous Peoples and Indigenous Knowledge in 1995.<sup>175</sup> Such calls also appeared in a de-facto sense with the 1996 Andean Pact,<sup>176</sup> and once again in the 1997 CBD working group on Indigenous Biodiversity. The concern raised by these calls led to the suggestion that it was necessary to:

“[E]ffect a moratorium on all bioprospecting and/or collection of biological materials in the territories of Indigenous Peoples and protected areas and patenting based on this collections until acceptable sui-generis systems are established.”<sup>177</sup>

#### (b) *Searching for Equity*

In a partial response to the above concerns, the CBD has attempted to circumvent such problems in the *future*<sup>178</sup> with the promise of the equitable sharing of the benefits (including with indigenous peoples as well as others) derived from biodiversity. The link with equity and indigenous peoples in this area was first advanced in the 1980’s.<sup>179</sup>

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<sup>172</sup> TPK, *ibid*, 11.

<sup>173</sup> The closest a moratorium appears to have got within the CBD was at the 1995 COP. There the call for a moratorium until questions relating to access on mutually agreed terms and prior informed consent, failed to receive support by the G77 as a group. Nevertheless, the Secretary was instructed to “elaborate the survey of measures taken by Governments to implement Article 15.” See COP 2, *Report of the Second Meeting of the Conference of the Parties to the Convention on Biological Diversity* (UNEP/CBD/COP/2/19 Decision II/11) (1995).

<sup>174</sup> “[A] moratorium on any further commercialisation of indigenous medicinal plants... must be declared until indigenous communities have developed appropriate protection mechanisms.” Mataatua Declaration, *supra* note 111, Recommendation 2:8.

<sup>175</sup> Final Statement from the UNDP Consultation on Indigenous Peoples and Indigenous Knowledge and Intellectual Property Rights, *supra* note 110, paragraph 2.

<sup>176</sup> See Complementary Measures, the Second Point, Andean Pact, *supra* note 101.

<sup>177</sup> TKBD, *supra* note 13, paragraphs 105 and 192.

<sup>178</sup> Collections of biodiversity made *before* the CBD cover at least 85% of all known material. However, Article 15: 3 intended to exclude from the remit of its provisions on access and benefit sharing, those genetic resources acquired before the Convention entered into force. Thus ex-situ collections acquired before the Convention came into force fall outside these provisions. This is despite the fact that a number of indigenous communities want access to these, and the repatriation of the materials therein. For a discussion of this, see TKBD, *supra* note 88, paragraphs 33 and 34. Elsewhere, this concern has been linked to the registering of knowledge as well as the repatriation of material held in all ex-situ collections. TKBD, *ibid*, paragraphs 192.

<sup>179</sup> The Declaration of Belem had called for the establishment of “procedures... to compensate native peoples for the utilisation of their knowledge and their biological resources.” First International Conference of Ethnobiology: The Declaration of Belem, *supra* note 101, paragraph 4,.

By 1992, this ideal was entrenched in numerous sections throughout the CBD.<sup>180</sup> Accordingly, in addition to Section 8(j) of the Convention, which is concerned with this issue, Article 15(7) is also very direct in its requirement that parties:

“take legislative, administrative or policy measures with the aim of sharing in a fair and equitable way the results of research and development and the benefits arising from commercial and other utilisation of genetic resources with the Contracting Party providing such resources.”<sup>181</sup>

Such articles mark an historic commitment by the Contracting Parties of the Convention, as well as the Parties to other similar documents,<sup>182</sup> to direct benefit flows from the utilisation of genetic resources back to the countries providing them. However, the exact manner in which a ‘fair and equitable’ sharing of the results may be achieved is a matter of intense debate. In realisation of this difficulty, COP 3 urged governments to provide information on “ways by which access and benefit sharing measures and guidelines, including related institutional arrangements are developed and implemented.”<sup>183</sup> COP 4 built upon this momentum with the longterm hope of establishing guidelines, benchmarks and criteria in this area.<sup>184</sup> It is hoped that this will be established by a:

“regionally based panel of experts appointed by governments, composed of representatives from the private and the public sectors as well as representatives of indigenous and local communities... to draw upon all relevant sources... in the development of basic concepts and to explore all options for access and benefit sharing on mutually agreed terms.”<sup>185</sup>

Unfortunately, New Zealand was “unable to be involved in these difficult negotiations” at the fourth COP.<sup>186</sup> Nevertheless, New Zealand appears to be committed

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<sup>180</sup> CBD, supra note 2, refers specifically to benefit and their fair and equitable sharing in a number of articles, including the participation of providers in the scientific process (15:6); access to and transfer of technology (16:3); Article 17 (2) provides that:

“[S]uch exchange of information shall include exchange of results of technical, scientific and socio-economic research, as well as... indigenous and traditional knowledge as such and in combination with the technologies referred to in Article 16(1).”

Furthermore, equitable sharing may well involve technology transfer. TKBD, supra note 88, paragraphs 21-25. As such, Article 18(4) may be interpreted as requiring technology co-operation to be encouraged and developed through national legislation and governmental policies in order to develop and use technologies that will help attain the objectives of the Convention. Technology co-operation applies to all types of technologies, including biotechnology. Participation in the research project is provided for in Article 19(1); priority access to the results achieved in Article 19(2); and equitable sharing is stipulated in Article 8(j).

<sup>181</sup> CBD, supra note 2.

<sup>182</sup> For example, with the Andean Pact, supra note 101, it was suggested that an “integral part” of this shall include “the fair and equitable distribution of the benefits arising” must be included: Articles 34 and 35. Likewise, the 1995 *Sub-Regional Preparatory Meeting of the International Technical Conference on Plant Genetic Resources for South/South East Asia and the Pacific* recommended a “compensation mechanism” that was “fair, equitable and transparent,” supra note 114, Recommendation 2.

<sup>183</sup> COP 3, supra note 22, Decision III/15.

<sup>184</sup> TKBD, supra note 13, paragraphs 169-176.

<sup>185</sup> COP 4, supra note 25, Decision IV/8.

<sup>186</sup> MFAT, supra note 26, 10.

to this principle both internally and externally. Accordingly, in relation to external considerations, New Zealand has pledged to:

“recognise the sovereign rights of States over their natural resources, and take into account the interests of indigenous and local communities with respect to the identification of, access to, and commercial benefits from these resources.”<sup>187</sup>

In terms of domestic policy, the Draft Biodiversity Strategy has sought to “include arrangements for sharing benefits from the use of genetic resources.”<sup>188</sup> Within this rubric it has been deemed necessary to “take into account Maori interest in these resources.”<sup>189</sup> The Draft Strategy continues with the suggestion that ‘Maori interest’ would be any interest in relation to traditional knowledge. Such knowledge would be only utilised with the “consent” of the holders of such knowledge who would “share in any subsequent benefits.”<sup>190</sup>

## VI. MECHANISMS FOR EQUITY IN BIODIVERSITY

### 1. Intellectual Property

The exact manner in which a fair and equitable sharing of the benefits would be achieved, while simultaneously encouraging incentive measures to conserve and sustain biodiversity<sup>191</sup> in this area, is an issue of labyrinthine proportions. At the centre of this labyrinth is the debate concerning property, and specifically, intellectual property (IP).

Property rights clarify the rights that various parties have in relation to components of biodiversity, the obligations that accompany these rights, and the measures that are in place to guarantee these rights and which ensure that these obligations are met. Rights and duties, if appropriately designed and enforced, may provide effective incentives for people to conserve biodiversity and to use components of biodiversity in a sustainable and equitable manner. Equally, rights and duties may provide effective disincentives for people to act in ways contrary to the conservation and sustainable use of biodiversity. With these considerations in mind, it is now appropriate to turn to a discussion of IP.

IP has been described as “the output of human intellectual endeavour and the goodwill and reputation which is created in names, marks, get up and even products.”<sup>192</sup> The IP paradigm is generally regarded as being different to cultural property. The latter tends to incorporate physical evidence of a certain stage of a culture’s development, such as works of art or archaeological and historical evidence.<sup>193</sup>

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<sup>187</sup> MMD, supra note 16, 60.

<sup>188</sup> Ibid, 61

<sup>189</sup> Ibid.

<sup>190</sup> Ibid, 63.

<sup>191</sup> Article 11 of the CBD requires signatories to develop ‘economically and socially sound measures that act as incentives for the conservation and sustainable use of the components of biological diversity.’ Such measures are regarded as being important for the maintenance of traditional knowledge and should be tailored to suit the social, cultural and environmental contexts of each community. See UNEO, supra note 88, paragraph 11. However, as the ensuing discussion illustrates, the exact nature of these goals may prove to be problematic.

<sup>192</sup> Brown, D. & Grant, H., *The Law of Intellectual Property in New Zealand* (1989) 1.

<sup>193</sup> For the protection of cultural property, see UNESCO, Convention on the Means of Prohibiting and Preventing the Illicit Import, Export and Transfer of Ownership of Cultural Property 10 ILM 289 (1971); The Antiquities Act 1975. R.S. Vol. 26. 31. It is useful to note that this distinction is a matter of

An IP right bestows on its holder the right to exclude others from commercial exploitation during the term of the right. This prohibition is premised on the idea that economic development and the well-being of society will be advanced if incentives are given for the kinds of invention and creativity that result in new products, processes and services.<sup>194</sup> This allows creators to secure a return on their investment in original creative activity.

The recognition and protection of this idea predates the twentieth century. As far back as 1883, there has been a steady progression in the international cover of this type of property.<sup>195</sup> The most recent addition to this has been the Trade Related Aspects of IP Rights (TRIPS) Agreement which came into force in 1995, and which contains certain minimum standards of protection for conventional IP rights.<sup>196</sup> This protection has been assisted by the fact that signatories to this agreement, which is intricately connected to the global free-trade regime administered by the World Trade Organisation, must protect and enforce the conventional IP rights of all signatories. The 1961 Convention for the Protection of New Varieties of Plants (abbreviated to the French acronym UPOV) is one agreement in particular which operates within this framework and which affects the biodiversity debate. This agreement was drafted to protect the economic interests of plant breeders who breed, discover, or develop new crop varieties. To be eligible under the Convention's 1991 revised guidelines, a plant

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contention. For example, the Principles and Guidelines for the Protection of the Heritage of Indigenous People, elaborated by the Sub-Commission on the Elimination of Discrimination and Protection of Minorities, are based on a holistic definition of what constitutes indigenous heritage. According to these Principles:

“[it] is comprised of all objects, sites and knowledge the nature or use of which has been transmitted from generation to generation, and which is regarded as pertaining to a particular people or its territory. The heritage of an indigenous people also includes objects, knowledge and literary or artistic works which may be created in the future based upon its heritage.”

This Sub-Commission's report contains in its Annex “Principles and Guidelines for the Protection of the Heritage of Indigenous Peoples.” Paragraph 6 of the Principles, and 12, 36, 41, 56, and 58 of the Guidelines are of particular interest (E/CN.4/Sub.2/1995/26). In a similar vein, within New Zealand, it has been noted that “[M]aori and other indigenous peoples have indicated that they do not draw this distinction between cultural and intellectual property and that they take a more holistic approach to the issue.” MoC, *supra* note 171, 5.

<sup>194</sup> The Patent system is a means of promoting innovation. Patents provide for an exclusive property right in exchange for disclosure of the information. There are other mechanisms for capturing the benefits of innovative activity, for instance, maintaining secrecy in relation to an invention. The most appropriate strategy for a firm to adopt will depend on the nature of the product, and the characteristics of the relevant industry. Analysis suggests that patent protection is most likely to be chosen where production of the invention requires specific assets, where the invention is easily copied, where the frequency of transactions with individual consumers is low, and where there is a considerable investment in research and development. Patenting of Biotechnological Inventions. MoC, *supra* note 171, 4.

<sup>195</sup> 1883 Paris Convention for the Protection of Industrial Property (WIPO-CE1P1/IP/SB/93/2). This requires that states which are parties to the Convention must grant to nationals of other states, the same level of protection with respect to patents, trade marks, and designs that are enjoyed by their own nationals. The 1883 Convention was followed by the 1886 Berne Convention for the Protection of Literary and Artistic Works (WIPO/IP/SUV/93/4(a)). These Conventions, like those that came after them were administered by an organisation related to the United Nations, the World Intellectual Property Organisation. (WIPO). For a discussion of this organisation and these conventions see, WIPO *Introduction to Intellectual Property, Theory and Practice* (1998).

<sup>196</sup> WIPO, International Union for the Protection of New Varieties of Plants and the Basic Principles of the International Convention for the Protection of New Varieties of Plants (WIPO/ACAD/E/94/26)

variety must be “distinct, stable, uniform and novel.”<sup>197</sup> For something to be distinct as regards these guidelines it cannot be “a matter of common knowledge.”<sup>198</sup>

## 2. Intellectual Property and The CBD

Despite this somewhat ‘upbeat’ picture, IP has been the subject of a deeply acrimonious debate within the CBD.<sup>199</sup> This debate has arisen from the fact that the CBD has struck an uneasy compromise between Northern and Southern views. On the one hand, it has sought to find a fair and equitable means of distribution of the benefits of biodiversity. On the other, it has committed the parties to co-operate with each other in order to ensure that patents and other IP rights “subject to national legislation and international law... are supportive of and do not run counter to [the CBD’s] objectives.”<sup>200</sup> As to whether this aim can be achieved or not is a matter of contention as “shortcomings of existing systems” of IP have long been noted within the CBD discussions.<sup>201</sup> Specific reviews have concluded that:

“[there are] no international legal instruments or standards which adequately recognise indigenous and local communities’ rights over their knowledge, innovations or practices....”<sup>202</sup>

This lack of protection may have direct “implications for the implementation of the Convention and achievement of its objectives under Article 8(j).”<sup>203</sup>

This realisation has been central to the CBD since its inception. It appeared forcefully at the first COP in 1994 when the G-77 immediately called for a review of the impact of the agreement on the implementation of the CBD.<sup>204</sup> This drive continued at the second COP in 1995, when the G-77 pushed for the consideration of:

“options for sui generis intellectual or other property rights systems and for patent applications to include indication of their origin or source of knowledge and genetic material.”<sup>205</sup>

Although this proposal was not adopted, a compromise decision, adopted in 1995 and again in 1997 called upon Secretariat to co-ordinate efforts with the Secretariat of the World Trade Organisation (WTO). Conversely, the World Intellectual Property Organisation (WIPO) has identified one of its goals as working with developing countries in helping them develop their intellectual property laws. Their

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<sup>197</sup> For a useful discussion of this see WIPO, *ibid*, Ch 27.

<sup>198</sup> *Ibid*.

<sup>199</sup> Raustiala, K. “The Future of the Convention on Biological Diversity” 38(4) *Environment* (1996) 17, 38.

<sup>200</sup> Article 16.

<sup>201</sup> CBD, *supra* note 88, 6.

<sup>202</sup> COP 3, Knowledge, Innovations and Practices of Indigenous and Local Communities: Implementation of Article 8(j) (UNEP/CBD/COP/3/19) (1997). This statement was largely a reiteration of an earlier note by the Secretariat on this issue. See UNEP/CBD/IC/2/14.

<sup>203</sup> COP 4, *supra* note 25, Decision IV/9.

<sup>204</sup> The quote continues with the claim that “current systems of IP rights alone are not sufficient to ensure that benefits flow back to indigenous and local communities.” MFAT, *supra* note 21, 18. The specific decision is recorded in Decision I/9 (UNEP/CBD/COP/1/17)

<sup>205</sup> Paragraph 107. The more radical suggestion by India that patent law be changed, and patent applications on genetic material be rejected which were not accompanied by certification from source countries that the material was acquired on mutually agreed terms, was not supported. This was noted in MFAT, *The Convention on Biological Diversity: Report of the Second Meeting at Jakarta, Indonesia, 6-17 November, 1995* (1995) 9.

1998/99 “Global Intellectual Property Issues” was/ is to include biodiversity related issues, and has already begun to examine initiatives for the protection of the rights of holders of traditional knowledge, indigenous peoples and local communities. This type of emphasis was welcomed by the CBD, which appears to be trying to foster a solid working relationship with WIPO.<sup>206</sup> In addition to drafting a number of background papers relating to “the impact of IP rights... biodiversity and the equitable sharing of benefits.”<sup>207</sup> Such a liaison was specifically to include “the relationship ... with traditional knowledge and practices of indigenous communities.”<sup>208</sup> Moreover, the Secretariat was required:

“to consult with all stakeholders, in particular the private sector and indigenous and local communities, in order to gain understanding of the needs of those groups whose participation will be required for co-operative agreements to be meaningful and effective.”<sup>209</sup> For example, with the Andean Pact, supra note 101, it was suggested that an “integral part” of this shall include “the fair and equitable distribution of the benefits arising” must be included: Articles 34 and 35. Likewise, the 1995 Sub-Regional Preparatory Meeting of the International Technical Conference on Plant Genetic Resources for South/South East Asia and the Pacific recommended a “compensation mechanism”

It was suggested that such studies could also:

“consider the development of IP rights such as a sui generis systems/approaches, or alternative forms of protection that could promote achievement of the Convention’s objectives, consistent with the Parties international obligations.”<sup>213</sup>

This decision, according to the NZ delegation report, did “not challenge existing IP rights systems.”<sup>214</sup> Rather, it was seen as an “information gathering” exercise, involving the examination of sui generis approaches or alternative forms of protection.<sup>215</sup> At COP 4, again according to the New Zealand delegation report,:

“[I]P rights emerged as one of the most difficult and persistent issues across three areas: article 8(j), access and benefit sharing and the relationship of the CBD with other international instruments. A north-south divergence of view was evident with OECD countries united in the view that work on IPRs must be conducted within the WTO and WIPO... .”<sup>216</sup>

Ultimately, instead of reviewing the area of conflict between the aims of the CBD and those of the WTO & WIPO, a “compromise text” was drafted which invited

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<sup>206</sup> MFAT, supra note 26, Decision IV/9. Paragraphs 15-17. For the WIPO Roundtable on Intellectual Property and Indigenous Peoples, see WIPO/INDIP/RT/98/4A (1998).

<sup>207</sup> CBD, supra note 173, Decision II/12.

<sup>208</sup> Ibid.

<sup>209</sup> Ibid.

<sup>210</sup> COP 3, supra note 22, Decision III/17.

<sup>211</sup> MFAT, supra note 26, 9-10.

<sup>212</sup> COP 3, supra note 22, Decision III/17.

<sup>213</sup> Ibid.

<sup>214</sup> Ibid.

<sup>215</sup> MFAT, supra note 23, 6.

<sup>216</sup> MFAT, supra note 26, 2.

the WTO to take onboard integration of biological diversity concerns and the protection of biodiversity.<sup>217</sup> The New Zealand response to this was that the delegation was:

“encouraged by the greater emphasis on co-operation and mutually beneficial linkages. The WTO remains a concern for non-member countries. NGOs and indigenous peoples will come under increasing pressure to realise mutually supportive trade and environmental outcomes.”<sup>218</sup>

### 3. Intellectual Property in New Zealand

New Zealand is a party to a number of international treaties and conventions which impose requirements on New Zealand in regard to patent law.<sup>219</sup> It is also a strong advocate of free trade, which is closely connected to this area. In terms of domestic policy, New Zealand’s approach to IP is largely in accordance with international objectives. However, parts of domestic policy, such as the 1953 Patents Act,<sup>220</sup> are currently under review in order to more fully to achieve this goal. Likewise, New Zealand is a signatory to UPOV and is currently amending its domestically comparable legislation in order to be able to accede to the Revision.<sup>221</sup> In so doing, “[T]hese reforms have brought into focus concerns about the protection of traditional Maori intellectual and cultural property and indigenous genetic material.”<sup>222</sup> The emergence of such concerns should not be regarded as surprising as New Zealand legislation with regard this matter had failed to consider concerns about equitable sharing, cultural concerns, or conservation, simply because it was never the intention to address these concerns in this setting.

Under the Patents Act 1953, any living thing (which is industrially applicable, novel, and involves an inventive step),<sup>223</sup> apart from a human being, can be considered for grant of a patent.<sup>224</sup> However, only life forms that qualify as “inventions” under the Patent Act may be granted patents. In order for a patent to be granted, an invention must be “new,”<sup>225</sup> industrially applicable, and involve an inventive step, that would not be obvious to anyone else skilled in that area. Patents cannot be granted for substances derived from life forms “when found in nature.”<sup>226</sup> However, the “active ingredients” of native plants and animals, such as enzymes and genes or the processes for isolating those inventions, may be granted under the Plant Variety Act 1987.<sup>227</sup>

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<sup>217</sup> Ibid. 5. It would appear that WIPO believes that technical advice, human resource development, and other forms of assistance “would help [indigenous] communities to derive greater tangible benefits from the existing intellectual property system.” TKBD, supra note 10, 18, paragraph 62.

<sup>218</sup> MFAT, supra note 26, 6.

<sup>219</sup> In particular the WTO-TRIPS agreement and the WIPO Paris Agreement.

<sup>220</sup> Patents Act 1953. R.S. Vol. 37. 1.

<sup>221</sup> MoC, supra note 171, 38-47.

<sup>222</sup> TPK, supra note 6. 15. MMD, supra note 16, 61.

<sup>223</sup> Conversely, inventions which can be used as foods or medicines, and which are merely mixtures of known ingredients, may not be patented.

<sup>224</sup> Although there are no specific provisions on this, the Intellectual Property Office has a practice of refusing patents for humans. Similar restrictions exist within Australia, the United States and Europe. For a general discussion of ethical concerns within scientific realms, see Gillespie, A. “The Moral Compass: Animals, Ethics and Science” *Journal of International Wildlife Law and Policy* (forthcoming).

<sup>225</sup> Likewise, the Designs Act protects ‘novel’ aspects of industrial designs. The Copyright Act (1962) covers ‘original’ creative works, and the Plant Variety Act protects ‘new varieties.’

<sup>226</sup> Patents Act, supra note 220, ss 9-13.

<sup>227</sup> Plant Variety Act. (1987). No.5. 19. See s.10.

Under the terms of the Plant Variety Act, rights may be granted only in respect of varieties which are new, distinct, homogenous, and stable. Existing indigenous plants (such as pohutukawa or koromiko) cannot be claimed through a plant variety right. However, with newly created varieties, the holder of the right has exclusive protection to produce for sale and to sell reproductive material of the variety, to propagate for commercial production, licence others to sell or reproduce, charge royalties for all uses of the product, and bring civil actions against those who infringe on their rights. In New Zealand, this approach has been positively received because it “provide[s] incentives to the breeders” as they can recoup upon their investment, and it also “allow[s] New Zealand access to overseas bred varieties” which would not otherwise be released here without their PVR’s being recognised.<sup>228</sup>

#### 4. Maori and Intellectual Property

With regard to Maori concerns, two points have been raised. The first is that the PVR Act does not affect the rights of Maori (or any other person) to use native flora in a traditional manner<sup>229</sup> or to adapt indigenous flora in new ways. Rather, it only relates to newly created varieties developed by other parties.<sup>230</sup>

Accordingly, it has been suggested that Maori could benefit, if they so wished, from patenting improvements or new elements of traditional products and practices, where these improvements would satisfy the criteria of the legal requirements for IP rights.<sup>231</sup> Broadly speaking, this suggestion has been (in part) favourably received by some groups for two reasons. The first reason is that it has been claimed that IP was/is now often recognised as being a part of indigenous rights generally. This claim has arisen both in terms of international policy,<sup>232</sup> and of domestic policy - with the suggestion that IPRs were guaranteed within the protection of their taonga (treasure) by the Crown with the Treaty of Waitangi.

The second reason, which stems from the first and which may be regarded as a type of evidence of the claim that IP is important to Maori is that they may have already had a distinct and unique form of IP<sup>233</sup> (“matauranga Maori”). This body of knowledge which has a long and continuing history within Maoridom,<sup>234</sup> especially in regard to issues concerning biodiversity,<sup>235</sup> may be of direct social and financial benefit to Maori.<sup>236</sup>

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<sup>228</sup> FAO, supra note 47, 44.

<sup>229</sup> MoC, supra note 171, 12. MoC, supra 171, 10.

<sup>230</sup> Ibid.

<sup>231</sup> See, TPK, supra note 171.

<sup>232</sup> For example, although the IPRs of indigenous peoples are not dealt with in the ILO Convention (169) on Indigenous Peoples, other documents within the international arena do deal with this issue. For example, the UN Draft Declaration on the Rights of Indigenous Peoples proclaimed that “indigenous peoples are entitled to the recognition of the full ownership, control and protection of their cultural and intellectual property.” 34 ILM 541 Article 29 (1995).

<sup>233</sup> Much Matauranga Maori “is considered intellectual property and is closely guarded by individuals own within whanau, hapu or iwi.” MMD, supra note 16, 13.

<sup>234</sup> The Ministry of Maori Development suggested that, with regards to environmental management, “[M]atauranga Maori was regularly and rigorously examined, comparted and protected by protocols. Thus, education, a critical academic tradition and intellectual property rights were familiar to Maori.” MMD, ibid, 4. For a more detailed discussion of this, see Durie, M., *Matauranga Maori: Iwi and the Crown*. (1996).

<sup>235</sup> Traditional Maori knowledge, or matauranga Maori, about New Zealand’s biodiversity is an important source of knowledge, but is currently under-used and vulnerable to loss and erosion. Its recognition, use, and protection is central to Maori participation in biodiversity management.

<sup>236</sup> TPK, supra note 171, 2, 4.

## 5. The Indigenous Reaction To Intellectual Property

### (a) *The International Reaction*

Since 1992, a number of conferences of indigenous peoples have reiterated a similar theme - that IP regimes may not be in their interest. Indeed, there have been a number of allegations that IPRs are a type of “imperialism”<sup>237</sup> or “a new form of colonisation,”<sup>238</sup> which are closely tied into “indigenous knowledge piracy.”<sup>239</sup> The IPR system may even be “racist, in that it belittles and minimises the value of our knowledge systems.”<sup>240</sup> A typical declaration continuing in this vein came from Bellagio, in 1993, when it was stated that:

“[I]ntellectual property laws have profound effects on issues as disparate as scientific and artistic progress... all too often those laws are constructed without taking such effects into account, constructed around a paradigm that is selectively blind to the scientific and artistic contributions of many of the world’s cultures... many of these problems are built into the basic structure and assumptions of Intellectual property. Contemporary intellectual law is constructed around the notion of the author, the individual, solitary and original creator, and it is for this that its protections are reserved. Those who do not fit this model – custodians of tribal culture and medical knowledge, collectives practising traditional artistic or musical forms, or peasant cultivators of valuable seed varieties – and denied IP protection... increasingly traditional knowledge... flow out of their countries of origin, unprotected by Intellectual property...”<sup>241</sup>

### (b) *Maori Concerns with Intellectual Property*

Similar concerns have arisen in New Zealand, where, since the early 1990’s, Maori have become increasingly concerned about IP laws. The concern has not been so much with contemporary Maori intellectual and cultural property which is “adequate,”<sup>242</sup> but with traditional Maori knowledge.<sup>243</sup> Within this realm, the fear that “inadequate protection for Maori cultural and Intellectual property” has been well recognised.<sup>244</sup> In fact, a 1999 Ministry of Commerce Focus Group noted that:

“the protection available to Maori cultural and Intellectual property is limited because it often falls outside the protection provided under the conventional system of IP rights. Some protection is provided under modern legislation, but a lot of Maori cultural and IP is not protected.”<sup>245</sup>

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<sup>237</sup> UNDP, supra note 110.

<sup>238</sup> Ibid.

<sup>239</sup> UNDP Consultation on the Protection and Conservation of Indigenous Knowledge. This is reprinted at the site for Traditional Resource Rights. <<http://users.ox.ac.uk/~wgtrr/>>

<sup>240</sup> The UNDP Consultation on Indigenous Peoples and Indigenous Knowledge and Intellectual Property Rights: The Coica Statement (Bolivia) (1994). Paragraph 8. This is reprinted at the site for Traditional Resource Rights, *ibid*.

<sup>241</sup> Conference on Cultural Agency: The Bellagio Declaration (1993). This is reprinted at the site for Traditional Resource Rights, *ibid*. See also UNDP, supra note 239, paragraph II.

<sup>242</sup> TPK, supra note 171, 4.

<sup>243</sup> Ibid.

<sup>244</sup> Ibid.

<sup>245</sup> See Maori Trade Marks Focus Group, *Maori and Trade Marks: A Discussion Paper* (1997) 16. Because of this problem, the Ministry of Commerce and the Ministry of Maori Affairs have undertaken some work on the protection of Maori intellectual and cultural property.

Specifically, there is no mechanism by which owners of traditional knowledge relating to biological material, who wish to exercise control over the use of that knowledge or who wish to share in the benefits arising from such use, can do so. Indeed, there is not even recognition by the legal system that they are owners of that knowledge. Arguably, this is due to the fact that:

“[T]he statutory Intellectual property rights system... was never intended to provide, rights for the owners of traditional knowledge that contributes to the derivation of an invention.”<sup>246</sup>

The difficulties alluded to in this comment may be regarded as being six-fold.

The first problem is that many Maori consider some of the current areas that are protected under IP regimes as being unethical due to their impact upon cultural values.<sup>247</sup> This difficulty arises most especially with regard to the tinkering with, and then patenting of life.<sup>248</sup> Although ‘moral exceptions’ already exist under the current IPR regime, the extent to which these exceptions may be utilised is questionable.<sup>249</sup>

The second concern is one which is largely political in nature. In other words, much of the current discussion may be usurped by the current debate on the ownership of indigenous flora and fauna within New Zealand. For example, the Ngati Porou claimants before the Waitangi Tribunal 262 have asserted their pre-emptive right:

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<sup>246</sup> MfE, supra note 124, 11.

<sup>247</sup> TPK, supra note 171, 4. MMD, supra note 16, 13. TPK, supra note 6, 11. MoC, supra note 171, 7-8. NZPA, “Cultural Values At Risk in Gene Changes” *New Zealand Herald* 26 August 26 (1999).

<sup>248</sup> Ethical concerns with regard to IPR are by no means unique to Maori. For a recent examination of this problem generally, see Bently, L., *Intellectual Property and Ethics* (1998). The specific concern for Maori in this area is due to their customs and traditions that regulate the relationships between life and all other things. Iwi have tribal perspectives on these matters. Broadly speaking, according to Maori beliefs, all life forms - animate and inanimate - have divine origins as they all have a genealogy which may be traced back to the Gods, the source of their life and being. Each life form, including each person, is therefore imbued with its own Mauri and each makes a substantial contribution to the Cosmos and all things that live within. This Mauri and the life forms are linked together, including humanity, by whakapapa, (genealogy) through mutual descent. With regard to biodiversity, similar inter-relationships are based on an understanding of the mauri of forests, lakes, rivers and so on. Moreover, elements of the environment, such as cold, heat, wind, rain and soil types, as well as plants and animals are all believed to be related to each other by whakapapa, as if they were species. As the Mauri of all living things is connected by these kinship ties, acts that change or degrade the essence of one life form have an impact on all other life forms. Genes are a part of the whakapapa relationship. Hence:

“to alter the genes or genetic material is to alter the blood of the ancestors, altering the whakapapa relationship by introducing ‘new blood’ that may impact on the other rights that are passed down, rights of authority, status and control.”

See The Patenting of Lifeforms Focus Group For the Ministry of Commerce, *Maori and the Patenting of Life* (1999) 8. See also MoC, supra note 171, 12.

<sup>249</sup> Section 17 of the Patents Act provides a general exclusion from the patentability for inventions, the use of which is contrary to morality. This contrary to morality exception is in practice of limited use, and has not been the subject of any Court decisions. It has been suggested that “it seems unlikely that this provision could be effectively used to meet Maori concerns.” MoC, *ibid*, 14. The Ministry of Commerce has proposed that there should be no exclusions from patentability on grounds of being contrary to morality. The reason for this is that the Ministry considers that it is not appropriate for the Commissioner of Patents to be deciding what is moral and what is not. MoC, supra note 171, 16. Admittedly, patent law may not be the best way to control ‘socially undesirable inventions.’ Even if certain inventions are excluded from patentability, individuals will not be prevented from using those types of inventions, they will just be unable to patent them. As such, ‘socially undesirable’ inventions would best be controlled by laws that examine their use and/or development. MoC, supra note 171, 12.

“to develop or limit the development of processes such as genetic technology, genetic manipulation, bio-prospecting and bio-technology as those practices impact on indigenous flora and fauna and their ecosystems.”<sup>250</sup>

The third problem is that IP laws generally require individual or joint authorship to be clearly established before protection can be given. However, it can be difficult to determine who originally created Maori traditional knowledge as it may have developed over generations and may be collectively owned.<sup>251</sup> This difficulty may well form “the main technical barrier to the protection of Maori knowledge.”<sup>252</sup>

A fourth difficulty is that Maori knowledge, processes and products are typically considered to be part of an existing body of knowledge and practice and are not, therefore, “new” in terms of the novelty criteria of the Patents Act.<sup>253</sup>

The consideration of the length of time that IP is to apply forms the focus of the fifth concern. As it stands, IPRs generally only last for a limited period of time.<sup>254</sup> This is because it is believed that it is in the public’s interest to limit monopolies.<sup>255</sup> Therefore, if Maori made some of their secrets subject to IPRs, the result would probably be that they would be agreeing to make that information known to the general public<sup>256</sup> when their IPRs would expire. The utilisation of this information would then be freely available to anyone.<sup>257</sup>

The sixth concern relates to the problem that IPR is typically connected to ideas of processes which have a monetary value, or fit within what may be called a more commercial application.<sup>258</sup> However, such traditional knowledge, due to the fact that it may not be assigned financial aspects<sup>259</sup> or may not fit within the current rubric of what may be protected within the ambit of IPRs.

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<sup>250</sup> This paragraph is from the Ngati Porou/ Ngati Kahungunu Submission on the Draft New Zealand Biodiversity Strategy (1999) 3.1.3. (c). See also paragraphs 8.8.0-8.8.4.

<sup>251</sup> MoC, supra note 171, 9. TPK, supra note 171, 2. Maori and Trade Marks, supra note 245, 11.

<sup>252</sup> Te Puni Kokiri. (1994). Ibid. 4.

<sup>253</sup> See Patenting of Lifeforms Focus Group, supra note 248, 9. MoC, supra note 171, 12. TPK, supra note 171, 16.

<sup>254</sup> Whereas a patent lasts for 20 years, an industrial design lasts for 15 (under the Designs Act 1953); new varieties of plants for 20-23 years, depending on whether it was a woody or non-woody plant under the 1987 Plant Variety Act; and the Copyright Act which gives protection for the life of the author plus fifty years.

<sup>255</sup> It is contended that if monopoly rights endure beyond a certain period of time they may restrict innovation instead of promoting it. TPK, supra note 171, 9.

<sup>256</sup> It is perhaps possible that some Maori inventions could be commercially exploited while keeping the details of those inventions secret (as for example, the formula of Coca Cola was kept secret for many years). Details of such inventions could be protected by the law as “confidential information.” (eg. trade secrets). Moreover, Maori who do not wish their traditional knowledge to be commercially exploited could possibly take steps to keep that knowledge secret. The law relating to “confidential information” may provide some protection for this concern. TPK, supra note 171, 16, 18. Posey, supra note 119, 7, 37-38.

<sup>257</sup> The problem is that many Maori have indicated that they want the term of protection given to their cultural and intellectual property to be enduring. Maori and Trade Marks, supra note 245, 11

<sup>258</sup> See footnotes 247-249.

<sup>259</sup> TPK, supra note 6, 2, 15. TPK, supra note 171, 11. Patenting of Lifeforms Focus Group, supra note 248, 9.

## VII. Alternative Options To Achieve Fair And Equitable Sharing Within The CBD

### 1. Sui Generis Systems

The aim of the preceding sections has been to demonstrate that there is a central problem relating to the question of biodiversity. The problem is that, in spite of the fact that there is a mandate to seek the fair and equitable sharing of the benefits of biodiversity, the principle instrument of protection in this area – intellectual property rights – may not be the most suitable mechanism to achieve this goal. Accordingly, it is necessary to examine other options. Such options may include small changes to the current IPR system, the creation of new forms of rights, sui generis systems,<sup>260</sup> or “special”<sup>261</sup> arrangements such as traditional resource rights, or collective rights. These or other approaches which may provide more appropriate mechanisms to ensure both the redistribution of benefits to the community in addition to supporting the conservation of biological diversity need to be explored.<sup>262</sup>

### 2. Traditional Resource Rights

Traditional Resource Rights (TRR) have emerged as a unifying concept that has often reflected the views and concerns of indigenous communities.<sup>263</sup> TRRs have brought together principles of ‘bundles of rights’ that have been widely discussed in international documents and fora. This integrated rights approach has attempted to offer mechanisms for creating synergies between the CBD and other international agreements and conventions.

TRRs typically include laws and aspirations relating to human rights, land and territorial rights, religious rights, development rights, cultural property, collective rights, farmers rights, neighbouring rights, and cultural heritage. These rights also typically include issues such as prior informed consent, contracts and covenants, customary law and practice, folk lore and cultural landscapes, and rights of privacy.<sup>264</sup> Clearly, such a wide range of issues goes far beyond other sui generis models in that TRRs seek to protect not only knowledge relating to biological resources but they also seek to reassert indigenous peoples right to self-determination and to safeguard their culture in the broadest sense.<sup>265</sup>

This very broad-brushed approach has already been recognised in a number of instances. For example, the 1997 Indigenous Forum on Biodiversity was of the opinion that a failure existed with regard to the lack of recognition of the:

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<sup>260</sup> One particular consideration that has received considerable attention within the CBD are sui generis systems, which may be described as systems which are already unique in themselves, have an established record in international law (at least 19 countries have enacted a sui-generis system of IPR for the integrated circuits (or ‘semi-conductor’ chips) industry) and the possibility of their utilisation exists within the TRIPS agreement. Article 27(3)(b) of TRIPS states that “[M]embers shall provide for the protection of plant varieties either by patents or an effective sui generis system or any combination thereof.”

<sup>261</sup> See for example, the 1993 UN Draft Declaration on the Rights of Indigenous Peoples, supra note 232, Article 29.

<sup>262</sup> SBSTTA, supra note 112. TKBD, supra note 10, 6. TKBD, supra note 13, paragraph 104. TKBD, supra note 88, paragraph 9.

<sup>263</sup> See Duffield, G., “The Public and Private Domains: Intellectual Property Rights in Traditional Ecological Knowledge” *Oxford Electronic Journal of Intellectual Property Rights* (1999).

<sup>264</sup> TKBD, supra note 88, paragraph 46.

<sup>265</sup> See IUCN, WWF, supra note 19, 1-2. UNEP, ibid, paragraph 92.

“relationship between the lands and territories of indigenous peoples, and their knowledge and biological diversity.”<sup>266</sup>

Additional concerns relating to ‘self-determination,’ ‘autonomy’ and the repatriation of lands and territories’ were recorded.<sup>267</sup> This approach was also noted at COP 4.<sup>268</sup> However, the extent to which indigenous peoples may become “integrally involved,”<sup>269</sup> be allowed “self-management,”<sup>270</sup> or be made “equal partners”<sup>271</sup> is likely to be perceived as an unpalatable labyrinth to many of the signatories of the CBD. Indeed, not only have ideas such as farmer’s rights and collective rights (which fall within the ambit of TRR) already been rejected, it is believed that broader objectives such as self-determination “go beyond the scope of the Convention.”<sup>272</sup> Indeed, many of the central ideas of TRR which may be derived from the ILO Convention on Indigenous Peoples,<sup>273</sup> and, consequently, they may become a matter of consideration for the CBD. However, such consideration may be limited as many signatories to the CBD have neither ratified, nor have they any intention to ratify the ILO Convention.<sup>274</sup>

### 3. Collective Rights

In a number of fora, a focus upon collective responses has emerged the aim of which has been to reduce the force of IPRs. Such an approach has already emerged with regard to (artistic) folk lore,<sup>275</sup> and it may possibly be appearing in relation to traditional forest-based knowledge,<sup>276</sup> as well as the issues of farmers’ rights and biodiversity.

With regard to biodiversity in India, for example, some local communities have developed community registers which document all the known plant and animal species in an area and details their use as a means of securing control over their traditional ecological knowledge. Members of the community can exercise practical control by unilaterally refusing access to the register or by setting out conditions under which access is allowed.<sup>277</sup> Likewise, in Costa Rica, as part of the establishment of a sui

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<sup>266</sup> TKBD, supra note 13, paragraph 84.

<sup>267</sup> Ibid, paragraphs 102 & 157.

<sup>268</sup> TKBD, supra note 88, 3.

<sup>269</sup> Ibid, paragraph 32.

<sup>270</sup> Ibid, paragraph 84.

<sup>271</sup> Ibid, paragraph 32.

<sup>272</sup> COP 3, supra note 22, Article III/14.

<sup>273</sup> See for examples, Articles 2; 4 ; 13; & 15.

<sup>274</sup> For a discussion on this failure, see Stuyt, A., “The UN Year of Indigenous Peoples.” 40 *Netherlands International Law Review* (1993) 449.

<sup>275</sup> The WIPO Model Provisions for National Laws on the Protection of Expressions of Folklore Against Illicit Exploitation and Other Prejudicial Actions are based on a definition of folklore which confines its expression to artistic forms. Nevertheless, this model offers some unique aspects. For example, communities (rather than specific individuals) may be legally registered innovators. Community innovations are not necessarily fixed and finalised, but may be ongoing and/or evolutionary and may still be protected. Finally, communities retain exclusive monopoly controls over their folklore innovations, for as long as the community continues to innovate. However, the Model does not offer any obvious means of safeguarding community innovations - a practical problem which plagues all efforts to utilise the existing IPR system. For a discussion of this, see D’Amato, A., *International Intellectual Property Law* (1998) 91-94.

<sup>276</sup> TFRK is made up of the following linked features within a holistic setting: information about the components of the landscape, rules for using them sustainably, relationships amongst their users, and technologies for using them to meet the subsistence, health, trade, and ritual needs of the people. Intergovernmental Panel on Forests, *Traditional Forest Related Knowledge* (E/CN.17/1997/12) (1997). See also SBSTTA, supra note 112, 6. For the outcome of this area “of interest to New Zealand, ” see FAO, supra note 47, 46.

<sup>277</sup> Posey, supra note 119, 41.

generis system involving community intellectual rights, a registry is being compiled which comprises the intellectual rights that communities may (on a free and voluntary basis) wish to register with a specific Commission. The existence of such rights and documented claims places the Commission under an obligation to oppose the granting of IPR protection which may be requested for the same element of knowledge.<sup>278</sup>

The extent to which such collective responses will be able to operate in the international arena is a matter of speculation. Nevertheless, a number of well-trodden previous substantial examples may be referred to. The epitome of these examples is the debate concerning Farmers' rights (which are implicit within indigenous rights).<sup>279</sup> This is an issue which New Zealand may not necessarily be sympathetic to.<sup>280</sup>

The idea of Farmers' rights arose in 1985 as the first of a number of counter-arguments to Northern pressure to recognise plant breeders rights as an "agreed interpretation" of the 1983 International Undertaking on Plant Genetic Resources. This interpretation was:

"based on universally accepted principle that plant genetic resources are a heritage of mankind and consequently should be available without restriction."<sup>281</sup>

The 1983 Undertaking focused upon raw or wild genetic resources. As such, it was without prejudice to protection through IP of 'new' varieties of plant genetic resources. In 1989, arising from the Agreed Interpretation of the International Undertaking, it was recognised that:

"[P]lant Breeders' Rights, as provided for under the International Convention for the Protection of New Varieties of Plants are not incompatible with the International Undertaking."<sup>282</sup>

However, the following statement was added:

"[S]tates adhering to the Undertaking recognise the enormous contribution that farmers of all regions have made to the conservation and development of plant genetic resources, which constitute the basis of plant production throughout the world, and which form the basis of farmers' rights."<sup>283</sup>

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<sup>278</sup> See Dutfield, *supra* note 120.

<sup>279</sup> Although farmers' rights, like indigenous rights in this area, revolve around a collective viewpoint, indigenous rights have typically been viewed as being wider and more embracing as they cover more areas. As such, indigenous rights are often seen to be incorporating farmers' rights.

<sup>280</sup> One example of this lack of sympathy may be seen with regard to farm-saved seed. Farmers who purchased a protected variety of plant, and save the seed for replanting the following year were traditionally seen as exempt from infringing upon the IPR's of the inventor of the seed. However, Article 14 of the UPOV, in which this right has been enshrined, has been the focus of distinct international political debate. It was proposed by the Ministry of Commerce that this exception would not be accepted within New Zealand, as such an approach was excluded from the New Zealand PVR Act with regard to vegetatively propagated fruit and ornamental varieties. As such, "there seems little logical justification why agricultural and vegetable breeders should not have equivalent rights to those enjoyed by their counterparts in the fruit and ornamental sectors." MoC, *supra* note 171, 46

<sup>281</sup> Article 1. This is from Resolution 8/83 of the Twenty-Second Session of the FAO Conference. Rome, 5-23 November 1983.

<sup>282</sup> Agreed Interpretation of the International Undertaking. Twenty-Fifth Session of the FAO Conference. Rome, 11-29 November. 1989.

<sup>283</sup> *Ibid.*

The FAO subsequently passed a declaration on Farmers' Rights.<sup>284</sup> This was reiterated in 1991,<sup>285</sup> as well as in some regional documents.<sup>286</sup> The importance of farmers' contributions was also acknowledged in Agenda 21,<sup>287</sup> as well as by the CBD.<sup>288</sup> The expanding recognition of such rights has been driving a wedge between the idea of free common property of farmers and the protected IP of the biotechnology industry. As such, farmers' rights form a counterpart to and challenge to breeders' rights. This is achieved through recognition, protection, and the compensation of traditional farmers for their contributions to improving plant varieties specifically, and world agriculture in general. It was hoped that this recognition would change the current structure of IPR which ignores the slow and incremental improvements wrought by farmers and favours the more identifiable (and sometimes derivative) advances made by large transnational seed firms.

In 1993, the FAO decided that farmers' rights needed to be expanded and/or redefined in order to harmonise them with the terms of the CBD<sup>289</sup> within which they were beginning to cause distinct friction.<sup>290</sup> This process culminated in the Leipzig meeting in 1996, and the Peoples' Plan of Action on Agriculture, Food Security, and Farmers' Rights. The plan called for the systems to protect collective rights over IPR. The protection of such rights would have been against the greater multinational interests in the control of the genetic material of agriculture.<sup>291</sup> It was hoped that a legally binding Undertaking on Plant Genetic Resources could be adopted that may possibly become part of the CBD. However, this was *not* adopted at the conference. Indeed, although the Leipzig Declaration: "acknowledge[d] the role played by generations of men and women farmers and plant breeders, and by indigenous and local communities,"<sup>292</sup> it still stressed that signatories should recognise and act in manner consistent with the adequate and effective protection of IP rights."<sup>293</sup>

In the end it to left for the Commission on Genetic Resources for Food and Agriculture to:

"identify, increase and share fairly and equitably the benefits derived from the conservation and sustainable use of plant genetic resources."<sup>294</sup>

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<sup>284</sup> "[I]n the history of mankind, unnumbered generations of farmers have conserved, improved and made available plant genetic resources... the farmers, especially those in developing countries should benefit fully from the improved and increased use of the natural resources they have preserved... Farmers rights are vested in the international community... for the purpose of ensuring full benefits to farmers, and supporting the continuation of their contributions." Resolution 5/89. Twenty-fifth Session of the FAO Conference. Rome, 11-29 November 1989.

<sup>285</sup> Resolution 3/91. Twenty-sixth Session of the FAO Conference. Rome, 9-27 November. 1991.

<sup>286</sup> The importance of Farmers' rights were reiterated at the 1995 Sub-Regional Preparatory Meeting of the International Technical Conference on Plant Genetic Resources for South/South East Asia and the Pacific (but did not include New Zealand). Supra note 114. See Paragraph 31 (g) and 32 (1)(e).

<sup>287</sup> Chapter 32 of Agenda 21, supra note 20.

<sup>288</sup> For a discussion of this within the CBD, see IUCN, A Guide to the Convention on Biological Diversity (1994) 49, 78-79, 141.

<sup>289</sup> TKBD, supra note 88, paragraph 33.

<sup>290</sup> MFAT, supra note 23, 6.

<sup>291</sup> Rural Advancement Foundation International, *The Leipzig Process: Food Security, Diversity and Dignity in the Nineties* (1996).

<sup>292</sup> International Technical Conference on Plant Genetic Resources, *Leipzig Declaration on Conservation and Sustainable Utilisation of Plant Genetic Resources for Food and Agriculture* (1996) Paragraph 7.

<sup>293</sup> Ibid.

<sup>294</sup> Ibid, paragraph 9.

The success of the negotiations which are underway in this Commission in their attempt to develop schemes for benefit sharing that would respect farmers' rights remains elusive.

#### 4. Contractual Rights

Assuming ownership issues are resolved, contractual methods to capture benefits for indigenous and local communities have been widely advocated as the most cost-effective approach to ensure the equitable sharing of benefits mandated by Article 8(j).<sup>295</sup> This method of involvement of the local indigenous communities and the search for economically valuable biodiversity has been implemented in Costa Rica, Brazil, Columbia, Cameroon, the Philippines, Fiji and the United States.<sup>296</sup>

Those who advocate the contractual approach to this issue suggest that most societies are familiar with this approach, it needs only minimal governmental involvement and the contracts can be flexible. Such contracts may provide the benefits of up-front payments, training, technology transfer, royalties and other financial and non-monetary forms of benefit sharing. Direct financial returns may come from payments relating to access and the obtaining of samples (or continuing supplies) of biological material, and payments that are a share of the revenue from any successful developments based on the biological material.

Unfortunately, this system has proved far from ideal as some of the distinct vagaries of the free market system<sup>297</sup> have hindered this area. Specific other concerns have been the involvement of parties who do not have a direct interest in the issues, or conversely, the exclusion of those who do. A failure to stipulate the full range of benefit sharing options, or for the recipients to fully utilise the bargaining opportunities available to them are also cause for consideration.<sup>298</sup> With such considerations, it is not surprising that CBD secretariat has concluded that:

“[R]eliance on the goodwill of these companies and institutions is unlikely to be sufficient to implement relevant provisions of the Convention. Positive action by Governments is apt to be necessary.”<sup>299</sup>

This call has resulted in some ‘positive action’ in the form of some declarations, regional and national responses that have come to develop set contracts specifying everything from the possible number of samples to be taken, through to the mandatory payments of royalties.<sup>300</sup> Exactly how palatable such an approach may prove in an era of

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<sup>295</sup> For a useful analysis of the Merck agreement, see Coughlin, M., “Using the Merck-INBio Agreement to Clarify the Convention on Biological Diversity” 31 *Columbia Journal of Transnational Law* (1993) 337. See also Walden, I., “Preserving Biodiversity: The Role of Property Rights” in Swanson, T. (ed), *Intellectual Property Rights and Biodiversity Conservation* (1997) 177-197.

<sup>296</sup> For a full evaluation of each of these contracts, see the Biodiversity Action Network, *Access to Genetic Resources: An Evaluation of the Development and Implementation of Recent Regulations and Access Agreements* (1999).

<sup>297</sup> The system may be limited due to the tight circle drawn around the signatories, high transaction costs, unfamiliarity of some indigenous communities with national legal systems, the disparity in bargaining powers and a general lack of resources to hire the best legal expertise.

<sup>298</sup> See Biodiversity Action Network, supra note 296, Executive Summary.

<sup>299</sup> COP, supra note 202.

<sup>300</sup> Republic of the Philippines Executive Order No. 247. This is available at the Traditional Resources site, supra note 101, ss 3-6. The desire to make royalties “mandatory” was also noted in the 1992 Manila Declaration, Paragraph 13, *ibid*.

increasingly unrestrained market activity is likely to be the source of much ideological banter.

## **VIII. Conclusion**

It is becoming increasingly realised that the solution to most environmental problems requires community participation. The levels and extent of this participation varies with the problem in question. For example, with some international environment concerns, such as the build-up of intergenerational toxic substances in his or her body, the available responses of the citizen are very limited. Conversely, in relation to other international problems, such as the conservation of biodiversity, the citizen may actively engage as an environmental steward. As such, the individual may be placed at the centre of a global concern which may operate at a radically decentralised local level.

Where it is open to communities to become directly involved in the protection of the environment, a further level of complication may arise with the increasing complex and inter-cultural needs of modern society. These needs may alter the appropriate mechanisms required to respond to a particular problem that such communities may face. Furthermore, these mechanisms be influenced by multiple national concerns and international obligations.

This theoretical and factual situation forms the basis for Maori involvement in the debate about biodiversity. This situation also forms the basis of New Zealand's response to the issue of biodiversity at the international level whilst bearing in mind its own national obligations and goals.

Globally and nationally, the exponential decline of biodiversity is of great concern. Accordingly, both national and international efforts have been launched to combat this problem. With regard to the issue of the decline in biodiversity, it is the global approach which provides strong indicators as to how the local level should respond. This approach may have vast implications because international law may have one of the most direct international mandates as yet agreed upon by the global community with regard to the decline of biodiversity.

The 1992 Convention on Biological Diversity, which New Zealand adopted in 1993, expressly recognises the direct role that indigenous communities should play both in the protection of biodiversity and the utilisation of its benefits. The overall theme of the Convention focuses primarily upon the protection of biodiversity - as opposed to the broader concern of the protection of culture generally. As such, the Convention directs that a system be established by which indigenous communities benefit from biodiversity. This biodiversity may be either that which is in their physical possession, or it may be their knowledge of some aspect of biodiversity from which someone else, typically a scientist, may extract a useful derivative from.

New Zealand has a long history of extracting very useful benefits from biodiversity. These have been by both cultures, in direct and indirect ways. It is likely that these benefits will continue long into the future, especially given that most of New Zealand's biodiversity remains both unknown and unexamined. Moreover, New Zealand has a strong interest in continuing these advances, and remaining strongly linked to the international exchange system through which biodiversity flow.

The exact manner in which these benefits are to be shared opens up a large second debate. Although the Convention directs that those who contribute in some way to their discovery should also share in the benefits of their discovery, the exact manner in which this may be achieved is a more difficult question. The Convention on Biological Diversity strongly suggests, and the international community would seem to support this suggestion, that intellectual property regimes are the best way in which such equitable sharing may be achieved. With regard to the issue of biodiversity and Maori, this approach may infer that Maori knowledge of the biodiversity in question should be subject to legal protection. Unfortunately, such an approach may be hampered by the existing international and national intellectual property regime which would appear to be incompatible with the protection of traditional forms of indigenous knowledge. Such incompatibility arises from the fact that traditional knowledge of ecology may encompass ethical, inter-generational, communally and commonly held elements - all of which are excluded from current intellectual property ideals.

The outcome is that of a large paradox. On the one hand, the directive to share the benefits from biodiversity with the indigenous communities from which they may originate is both direct and forthright. On the other, the method by which the Convention implies that this may best be achieved - intellectual property - may not be a suitable mechanism to achieve these goals.

The possible alternatives to this system are either common property regimes, such as those of farmers' rights. Under such a regime, the property in question is owned by the community, as opposed to an individual. However, the common property regime conflicts with current international economic philosophy and orthodoxy. A second alternative is the contractual approach which has strong advocates, as well as a series of applications involving indigenous communities and either the physical biodiversity in their possession, or their knowledge relating to it. Unfortunately, despite the theoretical attractiveness of this model, it also presents a number of difficulties. These include questions of who should be involved in these contracts, and the exact types and amounts of benefits that should be negotiated.

Accordingly, the debate surrounding the relationship between Maori and biodiversity, and the manner in which this relationship may be reconciled with both national and international demands is multifaceted. The sharing of the benefits from what belongs to Maori is one issue. The manner in which this may be done, in a situation in which both the contractual market and its intellectual property sidekick dominate, is another. Nevertheless, rightly or wrongly, it is this question which provides the paradigm within which the next level of this internationally driven and contextual debate may have to be entertained.