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THE "BALANCE SHEET" AND THE "SACRED BALANCE": VALUING THE KNOWLEDGE OF INDIGENOUS AND TRADITIONAL PEOPLES

BY

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Many of the areas of highest biological diversity on the planet are inhabited by indigenous and traditional peoples, providing what the Declaration of Belm calls an 'inextricable link' between biological and cultural diversity (Posey & Overal 1990). In fact, of the nine countries which together account for 60 percent of human languages, six of these 'centres of cultural diversity' are also 'megadiversity' countries with exceptional numbers of unique plant and animal species (Durning, 1992 : 6)

It is estimated that there are currently at least 300 million people worldwide who are indigenous. There are no reliable figures as to how many are "traditional" societies, but, excluding urban populations, it could be as high as 85% of the world's overall population. These diverse groups occupy a wide geographical range from the Polar regions to the deserts, savannas and forests of tropical zones (IUCN/UNEP/WWF 1991). According to UNESCO (1993), 4,000 to 5,000 of the 6,000 languages in the world are spoken by indigenous peoples, implying that indigenous groups still constitute most of the world's cultural diversity (also see Maffi, 1998).

The definition of "indigenous" is problematic in many parts of the world. Indigenous Peoples are defined by the Special Rapporteur of the UN Economic and Social Council Sub-Commission on Prevention of Discrimination and Protection of Minorities in the following manner:

Indigenous communities, peoples and nations are those which, having a historical continuity with pre-invasion and pre-colonial societies that have developed on their territories, consider themselves distinct from other sectors of the societies now prevailing in those territories, or parts of them. They form at present non-dominant sectors of society and are determined to preserve, develop and transmit to future generations their ancestral territories, and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their own cultural patterns, social institutions and legal systems. (UN ECOSOC 1986)

This historical continuity is characterised by:

- (a) occupation of ancestral lands, or at least of part of them;
- (b) common ancestry with the original occupants of these lands;
- (c) culture in general, or in specific manifestations (such as religion, living under a tribal system, membership of an Indigenous community, dress, means of livelihood, life-style, etc.);
- (d) language (whether used as the only language, as mother tongue, as the habitual means of communication at home or in the family, or as the main, preferred, habitual, general or normal language);
- (e) residence in certain parts of the country, or in certain regions of the world;
- (f) other relevant factors.

The International Labour Organisation (ILO) Convention 169 Concerning Indigenous Peoples in Independent Countries (1989), identifies Indigenous Peoples as:

(a) tribal peoples in countries whose social, cultural and economic conditions distinguish them from other sections of the national community, and whose status is regulated wholly or partially by their own customs or traditions or by special laws or regulations

(b) peoples in countries who are regarded by themselves or others as indigenous on account of their descent from the populations which inhabited the country, or a geographical region to which the country belongs, at the time of conquest or colonisation or the establishment of present state boundaries and who, irrespective of their legal status, retain, or wish to retain, some or all of their own social, economic, spiritual, cultural and political characteristics and institutions.

A fundamental principle established by ILO 169 is that: Self-identification as indigenous or tribal shall be regarded as a fundamental criterion for determining the groups to which the provisions of this convention apply.

This principle is upheld by all indigenous groups, who, as the Final Statement of the Consultation on Indigenous Peoples' Knowledge and Intellectual Property Rights, Suva, April 1995, says: We assert our inherent right to define who we are. We do not approve of any other definition.

Indigenous Peoples insist that they be recognized as 'peoples', not 'people'. The 's' distinction is very important, because it symbolizes not just the basic human rights to which all individuals are entitled, but also land, territorial and collective rights, subsumed under the right to self-determination. In contrast, the use of terms like 'people', 'populations' and 'minorities' implicitly denies self-determination (Posey 1996).

The term "traditional" is also problematic and, according to the Four Directions Council (1996) of Canada should not to be used to restrict local innovation and cultural change:

"What is 'traditional' about traditional knowledge is not its antiquity, but the way it is acquired and used. In other words, the social process of learning and sharing knowledge, which is unique to each Indigenous culture, lies at the very heart of its 'traditionality'. Much of this knowledge is actually quite new, but it has a social meaning, and legal character, entirely unlike other knowledge."

Traditional livelihood systems, therefore, are constantly adapting to changing social, economic, and environmental conditions. They are dynamic, but no matter the changes embrace principles of sustainability (Bierhorst, 1994; Callicott, 1989; Johannes & Ruddle, 1993 Clarkson et al, 1992; Posey and Dutfield 1997). These principles cannot be regarded as universal, but generally emphasize the following values:

- cooperation;
- family bonding and cross-generational communication, including links with ancestors;
- concern for the well-being of future generations;
- local-scale, self-sufficiency, and reliance on locally available natural resources;
- rights to lands, territories and resources which tend to be collective and inalienable rather than individual and alienable;
- restraint in resource exploitation and respect for nature, especially for sacred sites.

## THE SACRED BALANCE

Although conservation and management practices are highly pragmatic, indigenous and traditional peoples generally view this knowledge as emanating from a spiritual base. All Creation is sacred, and the sacred and secular are inseparable. Spirituality is the highest form of consciousness, and spiritual consciousness is the highest form of awareness. In this sense, a dimension of traditional knowledge is not local knowledge, but knowledge of the universal as expressed in the local. In indigenous and local cultures, experts exist who are peculiarly aware of Nature's organizing principles, sometimes described as entities, spirits, or natural law. Thus, knowledge of the environment depends not only on the relationship between humans and Nature, but also between the visible world and the invisible spirit world. According to Opoku (1978), the distinctive feature of traditional African religion is that it is:

"A way of life, [with] the purpose of... order[ing] our relationship with our fellow men and with our environment, both spiritual and physical. At the root of it is a quest for harmony between man, the spirit world, nature, and society. Thus, the unseen is as much a part of reality as that which is seen--the spiritual is as much a part of reality as the material. In fact, there is a complementary relationship between the two, with the spiritual being more powerful than the material. The community is of the dead as well as the living. And in nature, behind visible objects lie essences, or powers, which constitute the true nature of those objects."

Indigenous and traditional peoples frequently view themselves as guardians and stewards of nature. Harmony and equilibrium among components of the Cosmos are central concepts in most cosmologies. Agriculture, for example, can provide 'balance for well-being' through relationships not only among people, but also nature and deities. In this concept, the blessing of a new field represents not mere spectacle, but an inseparable part of life where the highest value is harmony with the Earth. Most traditions recognize linkages between health, diet, properties of different foods and medicinal plants, and horticultural/natural resource management practices -- all within a highly articulated cosmological/social context (e.g., Hugh-Jones, 1998).

Local knowledge embraces information about location, movements, and other factors explaining spatial patterns and timing in the ecosystem, including sequences of events, cycles, and trends. Direct links with the land are fundamental and obligations to maintain those connections form the core of individual and group identity. Chief Oren Lyons (1998) also emphasizes how these relationships and obligations are not to some external objects that possess life, but rather to kin and relatives. Biodiversity for his Haudenosaunee people are family and "all our relations".

Suzuki (1998) calls the links between life, land, and society the "Sacred Balance". Science with its quantum mechanics methods, he says, can never address the universe as a whole. And it certainly can never adequately describe the holism of Indigenous knowledge and belief.

In fact, science is far behind in the environmental movement. It still sees nature as objects ("components" of biodiversity is the term used in the Convention on Biological Diversity) for human use and exploitation. Technology has used the banner of scientific "objectivity" to mask the moral and ethical issues that emerge from such a functionalist, anthropocentric philosophy. Strathern (1996) makes this clear when discussing the ethical dilemmas raised (or avoided) when human embryos are "decontextualized" as human beings to become "objects" of scientific research.

Science and technology seldom embrace the values of local knowledge and traditions, and very rarely employ the language of rights and local control over access to resources. Meanwhile, economists would have us believe that markets provide "level playing fields" that do not moralize globalization and, therefore, work more efficiently to advance the causes of environmental conservation.

With such philosophies and policies, there can be little surprise that indigenous, traditional and local communities are hostile to the rhetoric of "partnerships" and "sustainable development"•indeed, to the very tenets of "biodiversity" and "conservation". The dominant scientific and economic forces assume that traditional communities must change to meet "modern" standards, but indigenous and traditional peoples feel the opposite must occur: science and industry must begin to respect local diversity and the "Sacred Balance".

## DEALING WITH THE PROBLEMS

It is obvious that not all human impact on the environment is positive. Indeed, the massive, unprecedented destruction of entire environmental systems, extinctions of species, and pollution of waters and the atmosphere is due to the greed of human societies out of control. Population growth, over-consumption, wastefulness, and just plain arrogance can all be named as reasons for this situation. And although most of this rampant devastation results from industrialized societies competing for global markets, an increasing number of indigenous, peasant and local communities are abandoning sustainable traditions in order to adopt destructive activities.

Some scientists express skepticism that the subsistence and resource management practices of traditional peoples are--and never have been--guided by a "conservation ethic" (e.g., Hames 1991; Kalland 1994a). Some argue that mass extinctions of North American megafauna during the Pleistocene era were not caused by climate changes, but by reckless over-hunting by humans colonizing the continent from Siberia (Martin 1984). Likewise, the extinction of wildlife on such islands and archipelagos as New Zealand, Madagascar and Australia have been blamed upon the ancestors of today's traditional peoples (Martin and Klein 1984; Diamond 1994, 1997; Flannery 1996). Yet, many megafauna species persisted in Africa and Eurasia despite human habitation (Flannery 1996; Diamond 1997); East Africa, where *Homo sapiens* evolved, has retained many of its original megafauna species up to the present day.

Ellen (1986) notes that small scale and isolated traditional societies are most often regarded as being oriented towards conservation. He argues that it is because these societies are small that they impact minimally on the environment. Thus, dependence upon a broad spectrum of useful species is a rational subsistence strategy, but not a conscious means to protect species for future generations. Redford and Stearman (1993) are also skeptical that traditional peoples are natural conservationists. They feel it is inappropriate to generalize about traditional communities and make broadly applicable assertions about their environmental values (Stearman 1992). Furthermore, present-day traditional societies are to a large extent part of the global economy and have lost many of their traditional cultural values. It is therefore, unfair to expect traditional peoples to continue using traditional, low-impact subsistence technologies and strategies (Redford 1991; Kalland 1994b).

Nonetheless, many anthropologists defend the idea that indigenous and traditional peoples have a profound awareness of conservation (e.g. Bodley 1976; Martin 1978; Clad 1984; Posey, 1997; Reichel-Dolmatoff 1976). And most everyone agrees that local communities are more likely to employ environmentally sustainable practices when they enjoy territorial security and local autonomy, (Gadgil and Berkes 1991; Bierhorst 1994; Kalland 1994a; Redford and Stearman 1993; Alcorn 1994; Posey and Dutfield 1997).

It is to no one's benefit to romanticize about indigenous and traditional peoples--even those groups that do still live close to the Earth. For it is just as easy for us to find unsustainable practices within their societies as it is for us to have invented the "ecologically noble savage" who lives in "harmony and balance with nature". All human societies--even the most traditional--are enmeshed in change, and always have been. Human evolution is about adaptation and change, and as cultures and environmental conditions adapt to different conditions, there will inevitably be practices and customs that become unadaptive and must be modified to fit the new ambience.

Indigenous Peoples themselves reject an "ecologically noble savage" approach that romanticizes their relationship with nature. Two Native American scientists (Pierotti and Wildcat, 1998) warn that:

"Those wanting to embrace the comfortable and romantic image of the Rousseauian "noble savage" will be disappointed. Living with nature has little to do with the often voiced "love of nature," "closeness to nature," or desire "to commune with nature" one hears today. Living with nature is very different than "conservation" of nature. Those who wish to "conserve" nature still feel that they are in control of nature, and that nature should be conserved only insofar as it benefits humans, either economically or spiritually. It is crucial to realize that nature exists on its own terms, and that non-humans have their own reasons for existence, independent of human interpretation (see below, and Taylor 1992). Those that desire to dance with wolves, must first learn to live with wolves."

Pierotti and Wildcat (ibid) also point out that the concepts of biodiversity and conservation are not indigenous, and, indeed, are alien to Indigenous Peoples. This does NOT mean they do not respect and foster living things, but rather that nature is an extension of society. Thus, biodiversity is not an object to be conserved. It is an integral part of human existence, in which utilization is part of the celebration of life.

Finn Lynge (In Gollhofer 1998) emphasizes that one of the basic differences between traditional hunters and urban conservationists is that the latter fear, not love, nature. As he points out, "good nature management" depends upon "the recognition of the interdependent wholeness of humanity", which, in turn, is based upon a respect for life that must be taken to preserve lives.

The problem then is not if Indigenous and traditional peoples are or are not "natural conservationists", but rather who and how are we (non-Indians) to judge? Different worldviews make such judgments tenuous at best. And, besides, whose scientific measuring stick is to be used to make the judgments? There are, for example, no universal, nor even standardized, indicators of sustainability, nor universal agreement on how to define, measure, or monitor biodiversity. And, what are the criteria for environmental health? And healthy environments for whom? Never mind the moral question of: who are we to judge, who provoked the biodiversity crisis in the first place?

Two major points remove us from this relativism and judgmentalism, placing scientists, conservationists and indigenous/traditional peoples alike onto the hard facts of observation and experience. One is the unequivocal influence of indigenous and local communities in the formation and maintenance of modern ecosystems. The other are the formidable number of cases studies showing how traditional ecological knowledge and practices serve to effectively manage and conserve mountain, forest, agricultural, dry land, highland, aquatic and other ecosystems (See Posey & Dutfield, 1997; Prain, Fujisaka and Warren, forthcoming; Warren, Slikkerveer and Brokensha 1995).

## RECOGNIZING INDIGENOUS AND LOCAL COMMUNITIES

Western science may have invented the words "nature", "biodiversity", and "sustainability", but it certainly did not initiate the concepts. Indigenous, traditional and local communities have sustainably utilized and conserved a vast diversity of plants, animals, and ecosystems since the dawn of Homo sapiens. Furthermore, human beings have molded environments through their conscious and unconscious activities for millennia to the extent that it is often impossible to separate nature from culture.

Some recently 'discovered' cultural landscapes include those of Aboriginal peoples, who 100,000 years before the term 'sustainable development' was coined, were trading seeds, dividing tubers, and propagating domesticated and non-domesticated plant species. Sacred sites act as conservation areas for vital water sources and individual species by restricting access and behavior. Traditional technologies, including fire use, were part of extremely sophisticated systems that shaped and maintained the balance of vegetation and wildlife. Decline of fire management and loss of sacred sites when Aboriginal people were centralized into settlements, led to rapid decline of mammals throughout the arid regions (Sultan, Craig and Ross 1997).

Another example of 'cultural landscapes' is the 'forest islands' (apete) of the Kayapó Indians of Brazil (Posey 1985; 1990; 1997). Kayapó practices of planting and transplanting within and between many ecological zones indicate the degree to which indigenous presence has modified Amazonia. Extensive plantations of fruit and nut trees, as well as 'forest islands' (apete) created in savanna, force scientists to re-evaluate what have often hastily and erroneously been considered 'natural' Amazonian landscapes. The Kayapó techniques of constructing apete in savanna show the degree to which this Amazon group can create and manipulate micro-environments within and between ecozones to actually increase biological diversity. Such ecological engineering requires a detailed knowledge of soil fertility, micro-climatic properties and plant varietal qualities, as well as interrelationships between components of a human-modified ecological community. Successful apete are dependent not just on knowledge of the immediate properties, but also of long-term successional relationships that change as the forest islands mature and grow. Since many plants are specifically grown to attract useful animals, the complexity of the management problem greatly increases: apete are managed both as agroforestry units and game reserves. Kayapó knowledge of apete formation and succession offers invaluable insights into processes of forestation in savanna and reforestation in denuded areas.

The Kagore Shona people of Zimbabwe have sacred sites, burial grounds, and other sites of special historical significance deeply embedded in the landscape (Matowanyika 1997). Outsiders often cannot recognise them during land use planning exercises. In societies with no written language or edifices[,] hills, mountains and valleys become the libraries and cathedrals that reflect cultural achievement. Chapter 13 on forest management provides additional evidence that presumed "wild" forests are actually managed landscapes. Forests are more often peoples' back yards, not "the wildernesses" assumed by outsiders.

A failure to recognize anthropogenic (human-modified) landscapes has blinded outsiders to the management practices of Indigenous Peoples and local communities (Deneven, 1992; Gomez-Pompa and Kaus 1992). Many

so-called 'pristine' landscapes are in fact cultural landscapes, either created by humans or modified by human activity (such as natural forest management, cultivation, and the use of fire).

This is more than semantics. "Wild" and "wilderness" imply that these landscapes and resources are the result of "nature" and, as such, have no owners—they are the "common heritage of all humankind." This has come to mean that local communities have no tenurial or ownership rights, and, thus, their lands, territories, and resources are "free" to others just for the taking. This is why Indigenous Peoples have come to oppose the use of "wilderness" and "wild" to refer to the regions in which they now or once lived.

This is poignantly expressed in an Aboriginal Resolution from the 1995 Ecopolitics IX Conference, Darwin, Australia: (Northern Land Council 1996):

The term 'wilderness' as it is popularly used, and related concepts as 'wild resources', 'wild foods', etc., [are unacceptable]. These terms have connotations of terra nullius [empty or unowned land and resources] and, as such, all concerned people and organisations should look for alternative terminology which does not exclude Indigenous history and meaning. (Northern Land Council 1996)

Cultural landscapes and their links to conservation of biological diversity are now recognized under the 1972 UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage ('The World Heritage Convention'). A new category of World Heritage Site, the 'Cultural Landscape', recognizes 'the complex interrelationships between man and nature in the construction, formation and evolution of landscapes' (UNESCO/WHC/2/Revised/1995). The first cultural landscape World Heritage Site was Tongariro National Park, a sacred region for the Maori people of New Zealand (Rössler 1993) that was included in the World Heritage List because of its importance in Maori beliefs. Hay-Edie (1998) reports that UNESCO is also now developing new projects to help local communities conserve and protect sacred places.

The Convention on Biological Diversity (CBD) is one of the major international forces in recognizing the role of indigenous and local communities in in situ conservation. The Preamble recognizes the:

Close and traditional dependence of many indigenous and local communities embodying traditional lifestyles on biological resources, and the desirability of sharing equitably benefits arising from the use of traditional knowledge, innovations and practices relevant to the conservation of biological diversity and the sustainable use of its components.

Article 8(j) of the Convention on Biological Diversity (CBD) spells out specific obligations of Signatories to:

Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote the wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices

The CBD also enshrines the importance of customary practice in biodiversity conservation and calls for protection of and equitable benefit-sharing from the use and application of "traditional technologies" (Articles 10.c and 18.4). Glowka and Burhenne-Guilmin (1994) warn that 'traditional' can imply restriction of the CBD only to those embodying traditional lifestyles, keeping in mind that the concept can easily be misinterpreted to mean "frozen in time". But Pereira and Gupta (1993) claim 'it is the traditional methods of research and application, not just particular pieces of knowledge that persist in a 'tradition of invention and innovation'. Technological changes do not simply lead to modernization and loss of traditional practice, but rather provide additional inputs into vibrant, adaptive and adapting, holistic systems of management and conservation.

'Traditional knowledge, innovations and practices' are often referred to by scientists as Traditional Ecological Knowledge (TEK). TEK is far more than a simple compilation of facts (Gadgil et al, 1993; Johnson, 1992). It is the basis for local-level decision-making in areas of contemporary life, including natural resource management, nutrition, food preparation, health, education, and community and social organisation (Warren

et al 1995). TEK is holistic, inherently dynamic, constantly evolving through experimentation and innovation, fresh insight, and external stimuli (Suzuki and Knudson 1992).

Another area where TEK is well understood and exploited is that of agriculture. Many ancient indigenous agricultural and sustainability systems survived until the colonial period. These systems are complex, based on sophisticated ecological knowledge and understanding, highly efficient and productive, and inherently sustainable. Classic examples are the raised bed systems used for millennia by traditional farmers of tropical America, Asia, and Africa. Known variously in Meso-America as chinampas, waru waru, and tablones, these were extremely effective for irrigation, drainage, soil fertility maintenance, frost control, and plant disease management. At Lake Texcoco the pre-conquest Aztecs had 10,000 hectares of land under chinampas feeding a population of 100,000 people (Willett 1993). There is evidence that farming in India has continued on the same land for more than two thousand years without a drop in yields, and remained remarkably free of pests. The Indian peasant grew as many as forty-one different crops annually in certain localities, and possessed the ability to vary seeds according to the needs of the soil and the season (Willett 1993).

It becomes obvious that local dependence on traditional varieties of crop plants, non-domesticated resources, and gathered foods serves to stimulate biodiversity conservation, not destroy or homogenize it as most agro-industrial systems do (Thrupp 1997). Indeed "modern" agriculture has become one of the major threats to indigenous and local communities, as well as biodiversity, healthy ecosystems and even food security (Mann & Lawrence 1998).

Another important area in which local knowledge plays a major role is in traditional medicines and health systems (Akerle et al. 1991; Bodeker 1998). Alternative medical systems are dependent upon and closely tied to healthy environments and biodiversity conservation. It is important to remember that the distinctions between medicine, food, and health are western distinctions. For many indigenous and traditional peoples, foods are medicines and vice versa; in fact, the western division of the two makes little sense to many traditional peoples (Hugh-Jones 1998). And, above all, healthy ecosystems are critical to healthy societies and individuals, because humanity and nature are one, not in opposition to each other.

## EQUITY AND RIGHTS

Recognition by the CBD of the contributions of indigenous and traditional peoples to maintaining biological diversity may be a major political advance. But there are major dangers. Once TEK or genetic materials leave the societies in which they are embedded, there is little national protection and virtually no international laws to protect community "knowledge, innovations, and practices". Many countries do not even recognize the basic right of indigenous peoples to exist let alone grant them self-determination, land ownership, or control over their traditional resources (Gray, 1998).

"Farmers' Rights", developed by the Food and Agricultural Organization (FAO) over the last two decades, is one of the few international attempts to recognize the contributions of traditional and indigenous peoples--in this case to global food security. But its legal basis is weak and even meager guarantees are resisted by some powerful countries. The global fund established to insure forms of compensation for local farmers remains inoperative. FAO is undertaking a revision of its International Undertaking on Plant Genetic Resources (IUPGR) with the view of strengthening or expanding Farmers' Rights, but the political road to such improvements is rocky and uncertain (GRAIN 1995; Posey 1996; Plenderleith 1998).

The International Labour Organisation (ILO) Convention 169 is the only legally-binding international instrument specifically intended to protect indigenous and tribal peoples. ILO 169 supports community ownership and local control of lands and resources. It does not, however, cover the numerous traditional and peasant groups that are also critical in conservation of the diversity of agricultural, medicinal, and non-domesticated resources. To date the Convention has only 10 national signatories and provides little more than a base line for debates on indigenous rights (Barsh 1990).

The same bleak news comes from an analysis of Intellectual Property Rights (IPRs) laws. IPRs were established to protect individual inventions and inventors, not the collective, ancient folklore and TEK of indigenous and local communities. Even if IPRs were secured for communities, differential access to patents, copyright, know-

how, and trade secret laws and lawyers would generally price them out of any effective registry, monitoring or litigation using such instruments (Posey and Dutfield, 1996). Box 1 summarizes how IPRs are considered inadequate and inappropriate for protecting the collective resources of indigenous and traditional peoples.

#### BOX 1: INADEQUACIES OF INTELLECTUAL PROPERTY RIGHTS

Intellectual Property Rights are inadequate and inappropriate for protection of traditional ecological knowledge and community resources because they:

- recognize individual, not collective rights;
- require a specific act of "invention";
- simplify ownership regimes;
- stimulate commercialization;
- recognize only market values;
- are subject to economic powers and manipulation;
- are difficult to monitor and enforce;
- are expensive, complicated, time-consuming.

The World Trade Organisation's General Agreement on Tariff and Trade (WTO/GATT) contains no explicit reference to the knowledge and genetic resources of traditional peoples, although it does provide for States to develop sui generis (specially generated) systems for plant protection (Trade Related Aspects of Intellectual Property Rights (TRIPs) Article 27.c) (Dutfield 1997). Considerable intellectual energy is now being poured by governments, non-government and peoples' organizations into defining what new, alternative models of protection would include (SEE Leskien & Flitner, 1997). There is skepticism, however, that this sui generis option will be adequate to provide any significant alternatives to existing IPRs (Montecinos 1996).

One glimmer of hope comes from the CBD's decision to implement an "intersessional process" to evaluate the inadequacies of IPRs and develop guidelines and principles for governments seeking advice on access and transfer legislation to protect traditional communities (UNEP 1997).

This provides exciting opportunities for many countries and peoples to engage in an historic debate. Up to now, United Nations agencies have been reluctant to discuss "integrated systems of rights" that link environment, trade, and human rights. However, agreements between the CBD, FAO and WTO now guarantee broad consultations on sui generis systems and community intellectual property rights (CIPRs) between the World Intellectual Property Organisation (WIPO), United Nations Education and Scientific Organisation (UNESCO), United Nations Environment Programme (UNEP), United Nations Development Programme (UNDP), United Nations Commission on Trade and Development (UNCTAD), International Labour Organisation (ILO), the Geneva Human Rights Centre, and others. It will take the creative and imaginative input of all these groups and many more to solve the complicated challenge of devising new systems of national and international laws that support and enhance cultural and biological diversity.

Many of the principles of sui generis systems of rights have already been established in international Conventions like the CBD and ILO 169, as well as major human rights agreements such as the International Covenant on Civil and Political Rights (ICCPR), the International Covenant on Economic, Social and Cultural Rights (ICESCR), and, of course, the Universal Declaration of Human Rights (UDHR) (Greaves 1994; van der Vlist 1994, Posey & Dutfield 1996; Posey 1996).

For indigenous peoples, the Draft Declaration of Rights of Indigenous Peoples (DDRIP) is the most important statement of basic requirements for adequate rights and protection. DDRIP took nearly two decades to develop by hundreds of indigenous representatives to the UN Working Group on Indigenous Populations of the Geneva Human Rights Centre. It is broad-ranging, thorough, and reflects one of the most transparent and democratic processes yet to be seen in the United Nations. The process itself and many of the principles established will undoubtedly serve as models for traditional societies and local communities seeking greater recognition of rights. [Box 2 provides some of the principles affirmed by the DDRIP. The complete text is provided in Appendix 1].

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## BOX 2: SOME PRINCIPAL RIGHTS AFFIRMED BY THE DRAFT DECLARATION ON THE RIGHTS OF INDIGENOUS PEOPLES

- Right to self-determination, representation and full participation.
- Recognition of existing treaty arrangements with indigenous peoples.
- Right to determine own citizenry and obligations of citizenship.
- Right to collective, as well as individual, human rights.
- Right to live in freedom, peace, and security without military intervention or involvement.
- Right to religious freedom and protection of sacred sites and objects, including ecosystems, plants, and animals.
- Right to restitution and redress for cultural, intellectual, religious or spiritual property that is taken or used without authorisation.
- Right to free and informed consent (prior informed consent).
- Right to control access and exert ownership over plants, animals and minerals vital to their cultures.
- Right to own, develop, control and use the lands and territories, including the total environment of the lands, air, waters, coastal seas, sea-ice, flora and fauna and other resources which they have traditionally owned or otherwise occupied or used.
- Right to special measures to control, develop and protect their sciences, technologies and cultural manifestations, including human and other genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, oral traditions, literatures, designs and visual and performing arts.
- Right to just and fair compensation for any such activities that have adverse environmental, economic, social, cultural or spiritual impact.

## THE GLOBAL BALANCE SHEET

Although international efforts to recognize indigenous, traditional and local communities are welcome and positive, they are pitted against enormous economic and market forces that propel globalization of trade. Critiques of globalization are numerous (e.g. Korten 1995), and point to at least two major short-comings: (i) value is imputed to information and resources only when they enter external markets; and (ii) expenditures do not reflect actual environmental and social costs. This means that existing values recognized by local communities are ignored, despite knowledge that local biodiversity provides essential elements for survival (food, shelter, medicine, etc.). It also means that the knowledge and managed resources of indigenous and traditional peoples are ascribed no value and assumed to be free for the taking. This has been called "intellectual terra nullius" after the concept (empty land) that allowed colonial powers to expropriate "discovered" land for their empires. Corporations and states still defend this morally vacuous concept because it facilitates the "biopiracy" of local folk varieties of crops, traditional medicines, and useful species.

Even scientists have been accomplices to such raids by publishing data they know will be catapulted into the public domain and gleaned by "bioprospectors" seeking new products. They have also perpetuated the "intellectual terra nullius" concept by declaring useful local plants as "wild" and entire ecosystems as "wildernesses", often despite knowing that these have been molded, managed, and protected by human populations for millennia. It is also common for scientists to declare areas and resources "wild" through ignorance or negligence--without even basic investigations into archaeological or historical records, or to actual human management practices. The result is to declare the biodiversity of a site as "natural", thereby transferring it to the public domain. Once public, communities are stripped of all rights to their traditional resources.

It is little wonder then, that indigenous groups in the Pacific region have declared a moratorium on all scientific research until protection of traditional knowledge and genetic resources can be guaranteed to local communities by scientists. The "moratorium movement" began with the 1993 Mataatua Declaration (Clause 2.8) Posey & Dutfield 1996, p.205):

A moratorium on any further commercialisation of indigenous medicinal plants and human genetic materials must be declared until indigenous communities have developed appropriate protection mechanisms.

The Mataatua Declaration, in turn, influenced the Final Statement of the 1995 Consultation on Indigenous Peoples' Knowledge and Intellectual Property Rights in Suva, Fiji (PCRC 1995):

Call for a moratorium on bioprospecting in the Pacific and urge indigenous peoples not to co-operate in bioprospecting activities until appropriate protection mechanisms are in place:

- Bioprospecting as a term needs to be clearly defined to exclude indigenous peoples' customary harvesting practices.
- Assert that in situ conservation by indigenous peoples is the best method to conserve and protect biological diversity and indigenous knowledge, and encourage its implementation by indigenous communities and all relevant bodies.
- Encourage indigenous peoples to maintain and expand our knowledge of local biological resources.

To allay these deep concerns, many scientific and professional organizations are developing their own Codes of Conduct and Standards of Practice to guide research, health, educational, and conservation projects with indigenous and local communities (a summary of some of these can be found in Cunningham 1993, Posey 1995 and Posey & Dutfield 1996).

One of the most extensive is that of the International Society for Ethnobiology, that undertook a 10-year consultation with indigenous and traditional peoples as well as its extensive international membership to establish "principles for equitable partnerships". The main objective of the process was to establish terms under which collaboration and joint research between ethnobiologists and communities could proceed based upon trust, transparency, and mutual concerns. A list of these principles can be found in Box 3.

#### BOX 3: PRINCIPLES FOR "EQUITABLE PARTNERSHIPS" ESTABLISHED BY THE INTERNATIONAL SOCIETY FOR ETHNOBIOLOGY

1? Principle of Self-Determination: This principle recognizes that indigenous peoples have a right to self-determination (or local determination for traditional and local communities) and that researchers shall as appropriate acknowledge and respect such rights. Culture and language are intrinsically connected to land and territory, and cultural and linguistic diversity are inextricably linked to biological diversity; therefore, the principle of self-determination includes: (i) The right to control land and territory; (ii) the right to sacred places; (iii) the right (to own / determine the use of / accreditation, protection and compensation for) knowledge; (iv) the right of access to traditional resources; (v) the right to preserve and protect local language, symbols and modes of expression (vi) and the right to self-definition.

2? Principle of Inalienability: This principle recognizes that the inalienable rights of indigenous peoples and local communities in relation to their traditional lands, territories, forests, fisheries and other natural resources. These rights are both individual and collective, with local peoples determining which ownership regimes are appropriate.

3? Principle of Minimum Impact: This principle recognizes the duty of scientists and researchers to ensure that their research and activities have minimum impact on local communities.

4? Principle of Full Disclosure: This principle recognizes that it is important for the indigenous & traditional peoples & local communities to have disclosed to them (in a manner that they can comprehend), the manner in which the research is to be undertaken, how information is to be gathered and the ultimate purpose for which such information is to be used and by whom it is to be used.

5? Principle of Prior Informed Consent & Veto: This principle recognizes that the prior informed consent of all peoples and their communities must be obtained before any research is undertaken. Indigenous peoples, traditional societies and local communities have the right to veto any program, project, or study that affects them.

6? Principle of Confidentiality: This principle recognizes that indigenous peoples, traditional societies, and local communities, at their sole discretion, have the right to exclude from publication and/or to be kept confidential any information concerning their culture, traditions, mythologies or spiritual beliefs and that such confidentiality will be observed by researchers and other potential users. Indigenous and traditional peoples also have the right to privacy and anonymity.

- 7? Principle of Active Participation: This principle recognizes the critical importance of communities to be active participants in all phases of the project from inception to completion.
- 8? Principle of Respect: This principle recognizes the necessity for western researchers to respect the integrity of the culture, traditions and relationship of indigenous and traditional peoples with their natural world and to avoid the application of ethnocentric conceptions and standards.
- 9? Principle of Active Protection: This principle recognizes the importance of researchers taking active measures to protect and enhance the relationship of communities with their environment and thereby promote the maintenance of cultural and biological diversity.
- 10? Principle of Good Faith: This principle recognizes that researchers and others having access to knowledge of indigenous peoples, traditional societies and local communities will at all times conduct themselves with the utmost good faith.
- 11? Principle of Compensation: This principle recognizes that communities should be fairly, appropriately, and adequately remunerated or compensated for access and use of their knowledge and information.
- 12? Principle of Restitution: This principle recognizes that where as a result of research being undertaken, there are adverse consequences and disruptions to local communities, those responsible for all undertaking of research will make appropriate restitution and compensation.
- 13? Principle of Reciprocity: This principle recognizes the inherent value to western science and humankind in general from gaining access to knowledge of indigenous peoples, traditional societies, and local communities and the desirability of reciprocating that contribution.
- 14? Principle of Equitable Sharing: This principle recognizes the right of communities to share in the benefits from products or publications developed from access to and use of their knowledge and the duty of scientists and researchers to equitably share these benefits with indigenous peoples.

Similar principles have been elaborated by environmental philosophers, ethicists, and eco-theologians (Golliher, 1998). Unfortunately much of their efforts have been couched in such rarefied discourses that they have had little impact on the practice of science or on public policy.

There are some important exceptions to this, notably "deep ecology" (Naess 1985, 1989; Devall 1988, Fox 1990, Sessions 1995), which has inspired a militant "Earth First" movement aimed at extinguishing the anthropocentric view that humans have the right to do as they wish to other life forms. For deep ecologists, "the hubris in asking people 'to take responsibility' for the environment is replaced by an invitation to realize the depth of existing ecological relationships" (Golliher, *ibid*). Ingold (1988) has long argued for a discourse that avoids anthropocentrism and ethnocentrism, in favor of an "ontological equality". To a large extent, this requires shifting priorities from instrumental values (how is biodiversity useful to humans) to intrinsic values (all life is valuable whether it is of use to humans)•not an easy task in a world dominated by economics and global trade.

"Ecofeminism" has also been instrumental in pointing out how unequal gender and power relations have operated to separate "nature" from "spirit", thereby catalyzing disrespect for biodiversity and destruction of ecosystems (Ruether 1992, 1998; Adams 1993; Mies and Shiva 1993; Plaskow and Chirst 1989; Primavesi 1991). This emphasis on "spirit" provides a much-needed bridge between cultures, since "cosmovisions" are the organizing spiritual and conceptual models used by indigenous and traditional peoples' to integrate their society with the world. These cosmovisions are based on the "sacred balance" of cosmic forces that unite human beings (males and females equally) with all life (again, equally shared).

Many people in industrialized countries are trying to re-integrate the concept of "sacred balance" into a practical "ethic" of land, biodiversity, and environment. This movement takes its inspiration from Aldo Leopold's (1949) ideas of "land ethic" and "environmental citizenship". Callicott (1998) argues for the need of a global ethic formulated around respect for the diversity of cultures and ecosystems. It may be that the "need" is not just the artifact of human psychology and moral reflection, but rather spiritually and psychologically grounded. Roszak (1992) believes that the environmental crisis is rooted in the extreme "disturbance" of the web of life that is a part of human consciousness.

Indeed, a basic precept of ecology itself is that disturbance of one element of an environmental systems affects all other elements, as well as the whole (Capra, 1998). It may be conjecture as to how Homo sapiens is psychologically affected by the overall loss of biological and cultural diversity, but certainly indigenous,

traditional and local communities are aware of the negative local affects•and they express their profound concerns in cultural and spiritual terms precisely because they recognize the deep rootedness of the disturbance.

The worrisome lesson from all of this is that the global environmental crisis cannot be solved by technological tampering ("quick fixes") or superficial political measures. The Native American leader Black Elk puts it:

It is the story of all life that is holy and is good to tell, and of us two-leggeds sharing in it with the four-leggeds and the wings of the air and all green things; for these are children of one mother and their father is one spirit. (Neihardt, 1959; Suzuki 1998).

For industrialized society to reverse the devastating cycles it has imposed on the Planet, it will have to invent an "ecology" powerful enough to offset deforestation, soil erosion, species extinction, and pollution ; and, "sustainable practices" that can harmonize with growth of trade and increased consumption.; and, of course, a "global environmental ethic" that is not subverted by economically powerful institutions. That may be an impossible task--but there are some viable paths.

One of the best is to relearn the ecological knowledge and sustainable principles that our society has lost.. This can come through listening to the peoples of the Planet who still know when birds nest, fish migrate, ants swarm, tadpoles develop legs, soils erode, and rare plants seed•and whose cosmovisions manifest the ecologies and ethics of sustainability. As the Bepkororoti Paiakan, a Kayapo Chief (Brazil), puts it: We are trying to save the knowledge that the forests and this Planet are alive --to give it back to you who have lost the understanding.

But listening is not enough: we must uphold their basic rights to land, territory, knowledge, and traditional resources. And we must discover how the balance sheet of economic and utilitarian policies can be countered by the "sacred balance" expressed by indigenous and traditional peoples.

## Appendix 1: UN Draft Declaration on the Rights of Indigenous Peoples

(as agreed upon by members of the Working Group on Indigenous Populations at its 11th session, 1993)

Affirming that indigenous peoples are equal in dignity and rights to all other peoples, while recognizing the right of all peoples to be different, to consider themselves different, and to be respected as such,

Affirming also that all peoples contribute to the diversity and richness of civilizations and cultures, which constitute the common heritage of humankind,

Affirming further that all doctrines, policies and practices based on or advocating superiority of peoples or individuals on the basis of national origin, racial, religious, ethnic or cultural differences are racist, scientifically false, legally invalid, morally condemnable and socially unjust,

Reaffirming also that indigenous peoples, in the exercise of their rights, should be free from discrimination of any kind,

Concerned that indigenous peoples have been deprived of their human rights and fundamental freedoms, resulting, inter alia, in their colonization and dispossession of their lands, territories and resources, thus preventing them from exercising, in particular, their right to development in accordance with their own needs and interests,

Recognizing the urgent need to respect and promote the inherent rights and characteristics of indigenous peoples, especially their rights to their lands, territories and resources, which derive from their political, economic and social structures, and from their cultures, spiritual traditions, histories and philosophies,

Welcoming the fact that indigenous peoples are organizing themselves for political, economic, social and cultural enhancement and in order to bring an end to all forms of discrimination and oppression wherever they occur,

Convinced that control by indigenous peoples over developments affecting them and their lands, territories and resources will enable them to maintain and strengthen their institutions, cultures and traditions, and to promote their development in accordance with their institutions, cultures and traditions, and to promote their development in accordance with their aspirations and needs,

Recognizing also that respect for indigenous knowledge, cultures and traditional practices contributes to sustainable and equitable development and proper management of the environment,

Emphasizing the need for demilitarization of the lands and territories of indigenous peoples, which will contribute to peace, economic and social progress and development, understanding and friendly relations among the nations and peoples of the world,

Recognizing in particular the right of indigenous families and communities to retain shared responsibility for the upbringing, training, education and well-being of their children,

Recognizing also that indigenous peoples have the right freely to determine their relationships with States in a spirit of coexistence, mutual benefit and full respect,

Considering that treaties, agreements and other arrangements between States and indigenous peoples are properly matters of international concern and responsibility,

Acknowledging that the Charter of the United Nations, the International Covenant on Economic, Social and Cultural Rights and the International Covenant on Civil and Political Rights affirm the fundamental importance of the right of self-determination of all peoples, by virtue of which they freely determine their political status and freely pursue their economic, social and cultural development,

Bearing in mind that nothing in this Declaration may be used to deny any peoples their right of self-determination,

Encouraging States to comply with and effectively implement all international instruments, in particular those related to human rights, as they apply to indigenous peoples, in consultation and cooperation with the peoples concerned

Emphasizing that the United Nations has an important and continuing role to play in promoting and protecting the rights of indigenous peoples,

Believing that this Declaration is a further important step forward for the recognition, promotion and protection of the rights and freedoms of indigenous peoples and in the development of relevant activities of the United Nations system in this field,

Solemnly proclaims the following United Nations Declaration on the Rights of Indigenous Peoples:

Articles

Part I

1. Indigenous peoples have the right to the full and effective enjoyment of all human rights and fundamental freedoms recognized in the Charter of the United Nations, the Universal Declaration of Human Rights and international human rights law.
2. Indigenous individuals and peoples are free and equal to other individuals and peoples in dignity and rights, and have the right to be free from any kind of adverse discrimination, in particular that based on their indigenous origin or identity.
3. Indigenous peoples have the right of self-determination. By virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development.
4. Indigenous peoples have the right to maintain and strengthen their distinct political, economic, social and cultural characteristics, as well as their legal systems, while retaining their rights to participate fully, if they so choose, in the political, economic, social and cultural life of the State.
5. Every indigenous individual has the right to a nationality.

Part II

6. Indigenous peoples have the collective right to live in freedom, peace and security as distinct peoples and to full guarantees against genocide or any other act of violence, including the removal of indigenous children from their families and communities under any pretext.  
In addition, they have the individual rights to life, physical and mental integrity, liberty and security of person.
7. Indigenous peoples have the collective and individual right not to be subjected to ethnocide and cultural genocide, including prevention of and redress for:
  - (a) Any action which has the aim or effect of depriving them of their integrity as distinct peoples, or of their cultural values or ethnic identities;
  - (b) Any action which has the aim or effect of dispossessing them of their lands, territories or resources;
  - (c) Any form of population transfer which has the aim or effect of violating or undermining any of their rights;
  - (d) Any form of assimilation or integration by other cultures or ways of life imposed on them by legislative, administrative or other measures;
  - (e) Any form of propaganda directed against them.

8. Indigenous peoples have the collective and individual right to maintain and develop their distinctive identities and characteristics, including the right to identify themselves as indigenous and to be recognized as such.

9. Indigenous peoples and individuals have the right to belong to an indigenous community or nation, in accordance with the traditions and customs of the community or nation concerned. No disadvantage of any kind may arise from the exercise of such a right.

10. Indigenous peoples shall not be forcibly removed from their lands or territories. No relocation shall take place without the free and informed consent of the indigenous peoples concerned and after agreement on just and fair compensation and, where possible, with the option of return.

11. Indigenous peoples have the right to special protection and security in periods of armed conflict. States shall observe international standards, in particular the Fourth Geneva Convention of 1949, for the protection of civilian populations in circumstances of emergency and armed conflict, and shall not:

(a) Recruit indigenous individuals against their will into the armed forces and, in particular, for use against other indigenous peoples;

(b) Recruit indigenous children into the armed forces under any circumstances;

(c) Force indigenous individuals to abandon their lands, territories or means of subsistence, or relocate them in special centres for military purposes;

(d) Force indigenous individuals to work for military purposes under any discriminatory purposes.

### PART III

12. Indigenous peoples have the right to practice and revitalize their cultural traditions and customs. This includes the right to maintain, protect and develop the past, present and future manifestations of their cultures, such as archaeological and historical sites, artifacts, designs, ceremonies, technologies and visual and performing arts and literature, as well as the right to the restitution of cultural, intellectual, religious and spiritual property taken without their free and informed consent or in violation of their laws, traditions and customs.

13. Indigenous peoples have the right to manifest, practice, develop and teach their spiritual and religious traditions, customs and ceremonies; the right to maintain, protect, and have access in privacy to their religious and cultural sites; the right to the use and control of ceremonial objects; and the right to the repatriation of human remains.

States shall take effective measures, in conjunction with the indigenous peoples concerned, to ensure that indigenous sacred places, including burial sites, be preserved, respected and protected.

14. Indigenous peoples have the right to revitalize, use, develop and transmit to future generation their histories, languages, oral traditions, philosophies, writing systems and literatures, and to designate and retain their own names for communities, places and persons.

States shall take effective measures, whenever any right of indigenous peoples may be threatened, to ensure this right is protected and also to ensure that they can understand and be understood in political, legal and administrative proceedings, where necessary through the provision of interpretation or by any other appropriate means.

### PART IV

15. Indigenous children have the right to all levels and forms of education of the State. All indigenous peoples also have this right and the right to establish and control their educational systems and institutions providing education in their own languages, in a manner appropriate to their cultural methods of teaching and learning. Indigenous children living outside their communities have the right to be provided access to education in their own culture and language.

States shall take effective measures to provide appropriate resources for these purposes.

16. Indigenous peoples have the right to have the dignity and diversity of their cultures, traditions, histories and aspirations appropriately reflected in all forms of education and public information.

States shall take effective measure, in consultation with the indigenous peoples concerned, to eliminate prejudice and discrimination and to promote tolerance, understanding and good relations among indigenous peoples and all segments of society.

17. Indigenous peoples have the right to establish their own media in their own languages. They also have the right to equal access to all forms of non-indigenous media.

States shall take effective measures to ensure that State-owned media duly reflect indigenous cultural diversity.

18. Indigenous peoples have the right to enjoy fully all rights established under international labour law and national labour legislation.

Indigenous peoples have the right not to be subjected to any discriminatory conditions of labour, employment or salary.

## PART V

19. Indigenous peoples have the right to participate fully, if they so choose, at all levels of decision-making in matters which may affect their rights, lives and destinies through representatives chosen by themselves in accordance with their own procedures, as well as to maintain and develop their own indigenous decision-making institutions.

20. Indigenous peoples have the right to participate fully, if they so choose, through procedures determined by them, in devising legislative or administrative measures that may affect them.

States shall obtain the free and informed consent of the peoples concerned before adopting and implementing such measures.

21. Indigenous peoples have the right to maintain and develop their political, economic and social systems, to be secure in the enjoyment of their own means of subsistence and development, and to engage freely in all their traditional and other economic activities. Indigenous peoples who have been deprived of their means of subsistence and development are entitled to just and fair compensation.

22. Indigenous peoples have the right to special measures for the immediate, effective and continuing improvement of their economic and social conditions, including in the areas of employment, vocational training and retraining, housing, sanitation, health and social security.

Particular attention shall be paid to the rights and special needs of indigenous elders, women, youth, children and disabled persons.

23. Indigenous peoples have the right to determine and develop priorities and strategies for exercising their right to development. In particular, indigenous peoples have the right to determine and develop all health, housing and other economic and social programmes affecting them and, as far as possible, to administer such programmes through their own institutions.

24. Indigenous peoples have the right to their traditional medicines and health practices, including the right to the protection of vital medicinal plants, animals and minerals.

They also have the right to access, without any discrimination, to all medical institutions, health services and medical care.

## PART VI

25. Indigenous peoples have the right to maintain and strengthen their distinctive spiritual and material relationships with the lands, territories, waters and coastal seas and other resources which they have traditionally owned or otherwise occupied or used, and to uphold their responsibilities to future generations in this regard.

26. Indigenous peoples have the right to own, develop, control and use the lands and territories, including the total environment of the lands, air, waters, coastal seas, sea-ice, flora and fauna and other resources which they have traditionally owned or otherwise occupied or used. This includes the right to the full recognition of their laws, traditions and customs, land-tenure systems and institutions for the development and management of

resources, and the right to effective measures by States to prevent any interference with, alienation of or encroachment upon these rights.

27. Indigenous peoples have the right to the restitution of the lands, territories and resources which they have traditionally owned or otherwise occupied or used; and which have been confiscated, occupied, used or damaged without their free and informed consent. Where this is not possible, they have the right to just and fair compensation. Unless otherwise freely agreed upon by the peoples concerned, compensation shall take the form of lands, territories and resources equal in quality, size and legal status.

28. Indigenous peoples have the right to the conservation, restoration and protection of the total environment and the productive capacity of their lands, territories and resources, as well as to assistance for this purpose from States and through international cooperation. Military activities shall not take place in the lands and territories of indigenous peoples, unless otherwise freely agreed upon by the peoples concerned.

States shall take effective measures to ensure that no storage of hazardous materials shall take place in the lands and territories of indigenous peoples.

States shall also take effective measures to ensure, as needed, that programmes for monitoring, maintaining and restoring the health of indigenous peoples, as developed and implemented by the peoples affected by such materials, are duly implemented.

29. Indigenous peoples are entitled to the recognition of the full ownership, control and protection of their cultural and intellectual property.

They have the right to special measures to control, develop and protect their sciences, technologies and cultural manifestations, including human and other genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, oral traditions, literatures, designs and visual and performing arts.

30. Indigenous peoples have the right to determine and develop priorities and strategies for the development or use of their lands, territories and other resources, including the right to require that States obtain their free and informed consent prior to the approval of any project affecting their lands, territories and other resources, particularly in connection with the development, utilization or exploitation of mineral, water or other resources. Pursuant to agreement with the indigenous peoples concerned, just and fair compensation shall be provided for any such activities and measures taken to mitigate adverse environmental, economic, social, cultural or spiritual impact.

## PART VII

31. Indigenous peoples, as a specific form of exercising their right to self-determination, have the right to autonomy or self-government in matters relating to their internal and local affairs, including culture, religion, education, information, media, health, housing, employment, social welfare, economic activities, land and resources management, environment and entry by non-members, as well as ways and means for financing these autonomous functions.

32. Indigenous peoples have the collective right to determine their own citizenship in accordance with their customs and traditions. Indigenous citizenship does not impair the right of indigenous individuals to obtain citizenship of the States in which they live.

Indigenous peoples have the right to determine the structures and to select the membership of their institutions in accordance with their own procedures.

33. Indigenous peoples have the right to promote, develop and maintain their institutional structures and their distinctive juridical customs, traditions, procedures and practices, in accordance with internationally recognized human rights standards.

34. Indigenous peoples have the collective right to determine the responsibilities of individuals to their communities.

35. Indigenous peoples, in particular those divided by international borders, have the right to maintain and develop contacts, relations and cooperation, including activities for spiritual, cultural, political, economic and social purposes, with other peoples across borders.

States shall take effective measures to ensure the exercise and implementation of this right.

36. Indigenous peoples have the right to the recognition, observance and enforcement of treaties, agreements and other constructive arrangements concluded with States or their successors, according to their original spirit and intent, and to have States honour and respect such treaties, agreements and other constructive arrangements. Conflicts and disputes which cannot otherwise be settled should be submitted to competent international bodies agreed to by all parties concerned.

#### PART VIII

37. States shall take effective and appropriate measures, in consultation with the indigenous peoples concerned, to give full effect to the provisions of this Declaration. The rights recognized herein shall be adopted and included in national legislation in such a manner that indigenous peoples can avail themselves of such rights in practice.

38. Indigenous peoples have the right to have access to adequate financial and technical assistance, from States and through international cooperation, to pursue freely their political, economic, social, cultural and spiritual development and for the enjoyment of the rights and freedoms recognized in this Declaration.

39. Indigenous peoples have the right to have access to and prompt decision through mutually acceptable and fair procedures for the resolution of conflicts and disputes with States, as well as to effective remedies for all infringements of their individual and collective rights. Such a decision shall take into consideration the customs, traditions, rules and legal systems of the indigenous peoples concerned.

40. The organs and specialized agencies of the United Nations system and other intergovernmental organizations shall contribute to the full realization of the provisions of this Declaration through the mobilization, inter alia, of financial cooperation and technical assistance. Ways and means of ensuring participation of indigenous peoples on issues affecting them shall be established.

41. The United Nations shall take the necessary steps to ensure the implementation of this Declaration including the creation of a body at the highest level with special competence in this field and with the direct participation of indigenous peoples. All United Nations bodies shall promote respect for and full application of the provisions of this Declaration.

#### PART IX

42. The rights recognized herein constitute the minimum standards for the survival, dignity and well-being of the indigenous peoples of the world.

43. All the rights and freedoms recognized herein are equally guaranteed to male and female indigenous individuals.

44. Nothing in this Declaration may be construed as diminishing or extinguishing existing or future rights indigenous peoples may have or acquire.

45. Nothing in this Declaration may be interpreted as implying for any State, group or person any right to engage in any activity or to perform any act contrary to the Charter of the United Nations.

## References

- Akerele, O, Heywood, V, and Synge, H, (eds), 1991. Conservation of Medicinal Plants. Cambridge University Press, Cambridge,.
- Adams, C. (ed.) 1993. Ecofeminism and the Sacred. Continuum, New York.
- Alcorn, J. B. 1994. Noble savage or noble state? Northern myths and southern realities in biodiversity conservation. *Etnoecologica* 2: 7-19.
- Barsh, R.L. 1990. An Advocate's Guide to the Convention on Indigenous and Tribal Peoples, *Oklahoma City University Law Review*, 15:209-253.
- Bierhorst, J. 1994. *The Way of the Earth: Native America and the Environment*. William Morrow & Co., New York.
- Bodeker, G. 1998. 'Valuing Biodiversity for Human Health and Well Being: Traditional Health Systems'. In Posey, D. (ed) *Cultural and Spiritual Values of Biodiversity*.
- Bodley, J. 1976. *Anthropology and Contemporary Human Problems*. Benjamin Cummings Publishing, Menlo Park.
- Callicott, J.B. 1989. In *Defense of the Land Ethic: Essays in Environmental Philosophy*. State University of New York Press, Albany.
- Capra, F. 1998. 'Reconnecting with the Web of Life: Deep Ecology, Ethics, and Ecological Literacy'. In Posey, D.A. (ed). *Cultural and Spiritual Values of Biodiversity*.
- CBD Secretariat, 1994, *Convention on Biological Diversity, Secretariat of the Convention on Biological Diversity*, Montreal.
- CBD Secretariat 1996. *The Impact of Intellectual Property Rights Systems on the Conservation and Sustainable Use of Biological Diversity and on the Equitable Sharing of Benefits from its use*, UNEP/CBD/COP/3/22.
- Clad, J. 1984. Conservation and indigenous peoples: a study of convergent interests. *Cultural Survival Quarterly* 8: 68-73.
- Clarkson, L., Morrissette, V. and Regallet, G. 1992. *Our Responsibility to the Seventh Generation: Indigenous Peoples and Sustainable Development*. International Institute for Sustainable Development, Winnipeg.
- Cunningham, A.B. 1993. 'Ethics, Ethnobiological Research, and Biodiversity'. WWF/UNESCO/Kew People and Plants Initiative, WWF International, Gland, Switzerland.
- Denevan, W.M., 1992, The pristine myth: the landscape of the Americas in 1492. *Annals of the Association of American Geographers* 82(3): 369-385.
- Devall, B. 1988. *Simple in Means, Rich in Ends: Practicing deep ecology*. Gibbs Smith, Salt Lake City.
- Diamond, I. 1994, *Fertile Ground: Women, earth, and the limits of control*. Beacon Press, Boston.
- Diamond, J. 1997. *Guns, Germs and Steel: A Short History of everybody for the Last 13,000 Years*. Jonathan Cape, London.
- Durning, A.T. 1992 *Guardians of the Land: Indigenous Peoples and the Health of the Earth*. Worldwatch Paper 112. Worldwatch, Washington DC.

Dutfield, G., 1997

Flannery, T.F. 1996. *The Future Eaters: An Ecological History of the Australasian Lands and People*. Secker and Warburg, London.

Fox, W. 1990. *Toward a Transpersonal Ecology: Developing new foundations for environmentalism*. Shambala, Boston.

Ellen, R. 1986. What Black Elk left unsaid: on the illusory images of green primitivism. *Anthropology Today* 2: 8-12.

Four Directions Council 1996. *Forests, Indigenous Peoples and Biodiversity: Contribution of the Four Directions Council to the Secretariat of the Convention On Biological Diversity*, FDC, Lethbridge.

Gadgil, M. & Berkes, F. 1991. Traditional Resource Management Systems. *Resource Management and Optimization*, 8(3-4), 127-141.

Gadgil, M., Berkes, F. and Folke, C. 1993. Indigenous knowledge for biodiversity conservation. *Ambio* 22: 151-156.

Glowka, L and Burhenne-Guilmin, F., in collaboration with Synge, H., McNeely, J.A. and Gundling, L. 1994. *A Guide to the Convention on Biological Diversity*. IUCN Environmental Policy and Law Paper No. 30. IUCN, Gland.

Golliher, J. 1998. Ethical, Moral, And Religious Concerns: Introduction. In Posey, D.A. (ed). *Cultural and Spiritual Values of Biodiversity*.

Gomez-Pompa, A. and Kaus, A. 1992. Taming the wilderness myth. *BioScience*, 42(4): 271-279.

Genetic Resources Action International, 1995, *Framework for a full articulation of farmers' rights*, Discussion paper, GRAIN, Barcelona.

Gray, A. 1994. Territorial defense as the basis for indigenous self-development'. *Indigenous Affairs*, 4: 2-3

Gray, A. 1998. *Voices of the Earth: Introduction*. In Posey, D.A. (ed). *Cultural and Spiritual Values of Biodiversity*.

Greaves, T. (ed) 1994, *Intellectual Property Rights for Indigenous Peoples: A Sourcebook*. Oklahoma City, SfAA.

Hames, R. 1991 Wildlife conservation in tribal societies. In: Oldfield, M.L. and Alcorn, J.B. (eds.) *Biodiversity: Culture, Conservation, and Ecodevelopment*. Westview Press, Boulder, San Francisco and Oxford, pp.172-199.

Hay-Edie, T. 1998. Landscape Perception and Sensory Emplacement. In Posey, D.A. (ed). *Cultural and Spiritual Values of Biodiversity*.

Hladik, C.M., A. Hladik, O.F. Linares, H. Pagezy, A. Semple & M. Hadley, 1993, *Tropical Forests, People & Food: Biocultural Interactions and Applications to Development*. Man and the Biosphere Series, Vol. 13. UNESCO and Parthenon Press, Paris.

Hugh-Jones, S. 1993. "Food" And "Drugs" In Northwest Amazonia. In Hladik, C.M., A. Hladik, O.F. Linares, H. Pagezy, A. Semple & M. Hadley, 1993, *Tropical Forests, People & Food: Biocultural Interactions and Applications to Development*. Man and the Biosphere Series, Vol. 13. UNESCO and Parthenon Press, Paris.

International Union for Conservation of Nature and Natural Resources, United Nations Environment Programme and World Wide Fund for Nature 1991. *Caring for the Earth: A Strategy for Sustainable Living*. IUCN, UNEP and WWF, Gland.

Johannes, R.E. and Ruddle, K. 1993. Human interactions in tropical coastal and marine areas: lessons from traditional resource use'. In: Price, A. and Humphreys, S. (eds) *Applications of the Biosphere Reserve Concept to Coastal Marine Areas*. 19-25. IUCN, Gland.

Johnson, M.. 1992. *Lore: Capturing Traditional Environmental Knowledge*. Dene Cultural Institute/IDRC, Hay River.

Kalland, A. 1994a. Indigenous - local knowledge: prospects and limitations. In: Hansen, B. V. (ed.) *Arctic Environment: Report on the Seminar on Integration of Indigenous peoples Knowledge*, Reykjavik, September 20-23, 1994. 150-167. Ministry for the Environment (Iceland), Ministry of the Environment (Denmark) and The Home Rule of Greenland (Denmark Office), Reykjavik and Copenhagen.

Kalland, A. 1994b. Aboriginal subsistence whaling: a concept in the service of imperialism. In: *High North Alliance 11 Essays on Whales and Man (2nd Edition)*. High North Alliance, Reine Lofoten.

Kemf, E. (ed) 1993. *The Law of the Mother: Protecting Indigenous Peoples in Protected Areas*. The Sierra Club, San Francisco.

Korten, D.C. 1995. *When Corporations Rule the World*. Earthscan, London.

Leopold, A. 1949. *A Sand County Almanac and Sketches Here and There*. Oxford University Press, New York.

Leskien, Dan & Michael Flitner. 1997. Intellectual Property Rights and Plant Genetic Resources: Options for a Sui Generis System. *Issues in Genetic Resources No. 6*. International Plant Genetic Resources Institute (IPGRI), Rome.

Lyons, O. 1998. Biodiversity: Perspectives from Indigenous Peoples. In Posey, D.A. (ed). *Cultural and Spiritual Values of Biodiversity*.

Maffi, L. 1998. Language Diversity: Language and the Environment. In Posey, D.A. (ed). *Cultural and Spiritual Values of Biodiversity*.

Mann, P. & K. Lawrence, 1998. Rebuilding our Food System: the Ethical and Spiritual Challenge. In Posey, D.A. (ed). *Cultural and Spiritual Values of Biodiversity*.

Martin, C. 1978. *Keepers of the Game*. University of California Press, Berkeley.

Martin, P.S. 1984. Prehistoric overkill: the global model. In: Martin, P.S. and Klein, R.G. (eds.) *Quaternary Extinctions: A Prehistoric Revolution*. 354-403. University of Arizona Press, Tucson.

Martin, P.S. and Klein, R.G. (eds.), 1984. *Quaternary Extinctions: A Prehistoric Revolution*. University of Arizona Press, Tucson.

Matowanyika, J.Z.Z. 1997. Resource management and the Shona people in rural Zimbabwe. In: Posey, D.A. and Dutfield, G. *Indigenous Peoples and Sustainability: Cases and Actions*. 257-266. IUCN and International Books, Utrecht.

Neihardt, J.G. 1959, *Black Elk Speaks*. Washington Square Press.

Northern Land Council, 1996. *Ecopolitics IX: Perspectives on Indigenous Peoples' Management of Environmental Resources*. NLC, Casuarina.

Mies, M. and Shiva, V. 1993. *Ecofeminism*. Zed Books. London.

- Montecinos, C. 1996, 'Sui Generis - a Dead End Alley', *Seedling*, 13:4:19-28. GRAIN.
- Opoku, K.A. 1978. *West African Traditional Religion*. FEP International Pvt., Lagos.
- Pacific Concerns Resource Centre, 1995. *Proceedings of the Indigenous Peoples' Knowledge and Intellectual Property Rights Consultation*, 24-27 April, Suva, Fiji. PCRC, Suva.
- Pereira, W. and A.K. Gupta, A.K. 1993. A dialogue on indigenous knowledge. *Honey Bee* 4: 6-10.
- Pierotti, R. & D.R. Wildcat, 1998. Traditional Knowledge, Culturally-based Worldviews and Western Science. In: Posey, D.A. (ed). *Cultural and Spiritual Values of Biodiversity*.
- Plaskow, J., and Chirst, C. (eds.) 1989. *Weaving the Visions: New patterns in feminist spirituality*. Harper and Row, San Francisco.
- Plenderleith, K. 1998. The Role of Traditional Farmers in Creating and Conserving Agrobiodiversity. In: Posey, D.A. (ed). *Cultural and Spiritual Values of Biodiversity*.
- Posey, D.A. 1985. Indigenous management of tropical forest ecosystems: the case of the Kayapó Indians of the Brazilian Amazon. *Agroforestry Systems* 3: 139-158.
- Posey, D.A. 1990. Cultivating the forests of the Amazon: Science of the Mebengokre. *Orion Nature Quarterly* 9: 16-23.
- Posey, D.A. 1995. *Indigenous Peoples and Traditional Resource Rights: a Basis for Equitable Relationships?* Green College Centre for Environmental Policy and Understanding, Oxford.
- Posey, D.A. 1997. The Kayapó: the role of intellectual property in resource management in the Brazilian Amazon. In: Posey, D.A. and Dutfield, G. *Indigenous Peoples and Sustainability: Cases and Actions*. 240-254. IUCN and International Books, Utrecht.
- Posey, D.A. 1998, *Traditional Ecological Knowledge and the "Web of Life": Rediscovering the Cultural and Spiritual Values of Biodiversity*. UNESCO
- Posey, D.A. (ed) (1998). *Cultural and Spiritual Values of Biodiversity*. Leiden University Press/ Intermediate Technology Publications/ United Nations Environment Programme.
- Posey, D.A., with contributions by G. Dutfield, K. Plenderleith, E. da Costa e Silva, and A. Argumedo. 1996. *Traditional Resource Rights: International Instruments for Protection and Compensation for Indigenous Peoples and Local Communities*. IUCN, Gland.
- Posey, D.A. and Dutfield, G. 1996. *Beyond Intellectual Property: Toward Traditional Resource Rights for Indigenous Peoples and Local Communities*. Ottawa, International Development Research Centre.
- Posey, D.A. and Dutfield, G. 1997. *Indigenous Peoples and Sustainability: Cases and Actions*. IUCN and International Books, Utrecht
- Posey, D.A. and Dutfield, G. (in press) *Plants, Patents and Traditional Knowledge: Ethical Concerns of Indigenous and Traditional Peoples*.
- Posey, D.A. and Overal, W. (eds) 1990. *Ethnobiology: Implications and Applications: Proceedings of the First International Congress of Ethnobiology*. Volume 1 (Theory and Practice; Ethnozoology). MPEG/CNPq/MCT, Bel,m.
- Prain, Gordon, Sam Fujisaka and D. Michael Warren (eds.) (forthcoming). *Biological and Cultural Diversity: The Role of Indigenous Agricultural Experimentation in Development*. London, Intermediate Technology Publications.

- Primavesi, A. 1991. *From Apocalypse to Genesis: Ecology, feminism, and christianity*. Fortress Press, Minneapolis.
- Redford, K. H. 1991. The ecologically noble savage. *Cultural Survival Quarterly* 15: 46-48.
- Redford, K. H. and Stearman, A. M. 1993. Forest-dwelling native Amazonians and the conservation of biodiversity: interests in common or in collision? *Conservation Biology* 7: 248-255.
- Reichel-Dolmatoff, G. 1976. Cosmology as ecological analysis: a view from the rainforest. *Man* 11: 307-318.
- Reichel-Dolmatoff, G. 1996. *The Forest Within: The World View of the Tukano Amazonian Indians*. Council Oak Books, Tulsa, OK.
- Roszak, T. 1992. *The Voice of the Earth*. Simon and Schuster, New York.
- Rössler, M. 1993. Tongariro: first cultural landscape on the World Heritage List. *World Heritage Newsletter* 4: 15.
- Ruddle, K. and Johannes, R.E. (eds.) 1985. *The Traditional Knowledge and Management of Coastal Systems in Asia and the Pacific*. UNESCO, Jakarta.
- Ruether, R. 1992. *Gaia and God: An ecofeminist theology of earth healing*. Harper, San Francisco.
- Ruether, R.R. 1998. Ecofeminism: Domination, Healing, and World Views. In: Posey, D.A. (ed). *Cultural and Spiritual Values of Biodiversity*.
- Sessions, G. (ed.). 1995, *Deep Ecology for the 21st Century*. Shambhala, Boston.
- Stearman, A. M. 1992. Neotropical hunters and their neighbors: effects of non-indigenous settlement patterns on three native Bolivian societies. In: Redford, K. H. and Padoch, C. (eds.) *Conservation of Neotropical Forests: Building on Traditional Resource Use*. 108-128. Columbia University Press, New York.
- Strathern, Marilyn 1996. Potential property. *Intellectual rights and property in persons*. *Social Anthropology* 4(1): 17-32.
- Sultan, R., Craig, D. and Ross, H. 1997. Aboriginal joint management of Australian national parks: Uluru-kata Tjuta. In: Posey, D.A. and Dutfield, G. *Indigenous Peoples and Sustainability: Cases and Actions*. 326-338. IUCN and International Books, Utrecht.
- Suzuki, D. and Knudson, P. 1992. *Wisdom of the Elders: Honouring Sacred Visions of Nature*. Bantam Press, London.
- Suzuki, D. 1998. Finding a New Story. In: Posey, D.A. (ed). *Cultural and Spiritual Values of Biodiversity*.
- Taylor, P. 1992. *Respect for Nature*. Princeton University Press, New Jersey.
- Thrupp, L. 1997. *Linking Biodiversity and Agriculture: Challenges and opportunities for sustainable food security*. The World Resources Institute.
- UNEP, 1997. *The Biodiversity Agenda: Decisions from the 3rd Meeting of the Conference of the Parties to the Convention on Biological Diversity*. Buenos Aires, Argentina, November 1996. UNEP/CBD/97/1.
- UN ECOSOC, 1986. *Study of the Problem of Discrimination Against Indigenous Populations*. United Nations Economic & Social Council, E/CN.4/Sub.2/1986/7 and Add. 1-4.
- UNESCO 1993. Amendment to the Draft Programme and Budget for 1994-1995 (27 C/5), Item 5 of the Provisional Agenda (27 C/DR.321). UNESCO, Paris.

van der Vlist, L. (ed.). 1994, *Voices of the Earth: Indigenous Peoples, New Partners and the Right to Self-determination in Practice*. Netherlands Centre for Indigenous Peoples, Amsterdam, Netherlands.

Warren, D.M., Slikkerveer, L.J. and D. Brokensha, D. (eds) 1995. *The Cultural Dimension of Development: Indigenous Knowledge Systems*. Intermediate Technology Publications, London.

Willett, A.B.J. 1993. *Indigenous Knowledge and its Implications for Agricultural Development and Agricultural Extension: A Case Study of the Vedic Tradition in Nepal*. PhD dissertation, Iowa State University.

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