INTERNATIONAL EFFORTS TOWARDS PRESERVING BIOLOGICAL DIVERSITY

By Bonnie M. Follett, May 1993

Published 2007, *available at:* http://www.follett.bizland.com/environment/about-us.html

I. INTRODUCTION

> "Life on earth is in eternal transformation, in constant and rhythmic change between creation and destruction, birth and death. " Marija Gimbutas, *Language of the Goddess,* at 316 (Harper & Row, 1989).

The archeological research conducted by Marija Gimbutas into the symbols used by paleolithic European peoples reveals a widespread belief in a Goddess who was "a symbol of the unity of all life in nature." *Id.* at 321. The Goddess was highly revered and had a dual persona: at one moment a life-giver and at another moment a death-wielder. But even when acting in her death aspect, her purpose was a promotion of regeneration and a continuity of the life-cycle. The current concerns with the value of biological diversity, also known as "biodiversity," could be thought of as a successor concept to the Goddess culture. There is a renewed interest in what the Goddess *a.k.a.* Mother Nature knew about the intricacies of the natural world that we must now learn, so that we can address the problems that encroaching human cultures have created.

Biodiversity means an abundance of life, an abundance of species living together successfully in interdependent ecosystems that appropriately support those species represented. The new words were coined only when we began losing, at alarming rates, the abundance of life that our planet once sustained. While the common person might think of the loss of biodiversity in terms of placement of threatened animals on the national Endangered Species List, it is much more than that, and is the reflection of a host of environmental problems.

Ultimately when we talk of loss of biodiversity, we might as well also talk about loss of ourselves, loss of a particular species we are quite intimately familiar with, homo sapiens. For instance, a study by Niels E. Skakkebaek of the University Department of Growth and Reproduction in Copenhagen may be a harbinger of the difficulties awaiting humans in the not-so-distant future. The study showed that sperm counts in men worldwide have dropped by 50

percent in the years since 1940, presumably due to pollutants in the environment.[1] Therefore the subject of biological diversity has implications that go far beyond flora and fauna. It is affected by social and anthropological issues, and by practically every other environmental problem in the news today. Increased pollution and climate change merely speeds our loss of biodiversity.

In this paper I will discuss some of the historical and scientific bases for our present environmental dilemma, factors which contribute to species loss and recent international actions taken to address the issue of preserving our planet's biological diversity.

II. HISTORICAL BACKGROUND

Many of the most ecologically successful cultures of this world were either decimated or severely marginalized by Western practices that included discovering, conquering, colonizing, exploiting and dominating. This colonialism has not been kind to indigenous populations, such as our own Native American tribes. In Central and South America , a mestizo culture began to form. This mixed breed of European and native peoples lay between the foreign aristocracy and the indigenous tribes, who often became worker/slaves. The mestizo sought to do the bidding of the aristocracy while making sure it maintained status well above the other native peoples. The psychology of the conqueror and the conquered came into play (analogous to the dependency between the criminal abuser and the abused victim).

The mestizo sought to advance by attaining the status of the conqueror. And the conqueror contented itself with ideas that the conquered actually benefited by their domination because they received Christian religion, civilization," and more recently medical and agricultural benefits. Eventually the varied concept of civilization was seen and heard only through the limited voice and experience of the dominator. And still the First World presides over and often dictates to others, whose values, traditions, knowledge and indigenous cultures had long been considered inferior and therefore in need of paternalistic control and guidance.

Ecologically sound practices of indigenous peoples were ignored in the rush of discovery of diverse new resources. First World scientists with free access assumed a basic right to snatch up these wild genetic materials, considered to be part of the "common heritage of mankind."[2]

---

[1] Study Finds Sperm Counts Decreasing Worldwide, Down to Earth, (India) 10/31/92.

[2] *See* the International Undertaking on Plant Genetic Resources, FAO Conference, Rome, November 2-23, 1983 and the Agreed Interpretation, FAO Conference, Rome, Nov. 11-29, 1989.

After these resources were tinkered with, altered and patented, the patented results were sold back to source countries at a profit to the First World. But the Third World eventually became restless and dissatisfied with this arrangement. After many years of domination their own cultural values had become lost or subsumed into that of the dominator. And the Third World yearned for an equal footing. This seemed attainable only by emulating the First World practices of exploitation of resources which had led to the stronghold over the Third World in the first place.

Meanwhile populations continue to expand at increasing rates, demanding more and more of environments that long ago seemed boundless, back when the human population was kept in check by loss to diseases and natural selection. Portions of the environment that were once strong and stable are systematically becoming destabilized by the efforts of countries to become "developed" rather than merely "developing."

Suddenly the trickle of data on vanishing species turned into a stream and then a strong coursing river. The developed countries with strong communication systems disseminate this data. They are worried by the Third World's slaughter of their own natural resources. And the First World views their own web of national environmental legislation as a shining beacon, an objective manifestation of their own environmental benevolence. At any rate, a puzzling and potentially disastrous problem is recognized and people begin to address what should be done about the global effects of efforts to develop.

The above assessment may be an oversimplification of the track record leading up to the present status of the social and environmental scheme. But I propose that great bitterness still resides in the hearts of Third World peoples who lack the material advantages the First World gained through exploitation and domination. We have arrived at an environmental and economic impasse: one faction is unwilling to be labeled the responsible party and the other faction demands some leveling of the economic playing field before they will agree to act responsibly on an environmental level.

III. CURRENT STATUS OF BIODIVERSITY ON EARTH

Today we continue to tinker with our environment and contemplate the task of cataloging all forms of life currently extant in the various ecosystems on planet Earth. This undoubtedly is a necessary step to preservation. I cannot help but be reminded that "Mother Nature does it better." Often when we try to help Mother Nature, we only serve to slow her down. Part of the reason for

this cataloging is due to our astounding lack of understanding as to what we are dealing with. We currently do not know how many species inhabit the earth, much less the intricacies of how species interact. Estimates of the number of species range all the way from three million to 30 million.[3] Studying the nature, number and distribution of species is an essential part of conserving the remaining biodiversity on this planet.

Stewardship of our resources is felt to be a moral duty by many, but it depends on knowing what we are dealing with. We have no central planetary archives for whatever species knowledge we have accumulated to date, and we can only guess at the total number of species by using imprecise methods of extrapolation. Taxonomy becomes particularly troublesome when you attempt to figure microorganisms into the equation of species diversity. For instance only one percent to ten percent of the world's bacteria are believed to have been identified, and nothing is known of their extinction rates. The prevailing view is that there must certainly have been many extinctions caused by the activities of man.[4] For the past 250 years there has been systematic research in taxonomy, the field involved in classifying organisms in distinct categories, yet the job is far from done; it would be more appropriate to say that it has only begun. The luxury of taking more time on this task before other actions are taken is no longer a situation where time is on our side.

Habitats and species are being destroyed at alarming rates. Modern loss rates are pegged at approximately 150 species lost per day.[5] Parallels can be drawn between our present situation and the last great species extinctions, including the extinction of dinosaurs, which took place 65 million years ago. Scientists caution that a mass extinction, including extinction of homo sapiens, is likely to occur in the next one or two centuries if current destruction rates continue.

Of the variety of environmental problems facing us today, loss of species is particularly ominous, for it is a direct indicator of degradation in our ecosystems. Loss of biodiversity is directly related to many of our present concerns, such as deforestation, burgeoning populations, desertification, pollution of water and air. Such loss threatens our ability to achieve sustainable

---

[3] May, R. How Many Species Inhabit the Earth?, Scientific American, p.42, Oct. 1992. *See* also Gadagka, Raghavendra, World's Biodiversity Needs To Be Preserved, Down to Earth, (India) p. 43-44, 10/31/92.
[4] Miller, S., Save a Bug for Biotechnology, New Scientist, 8/1/92.
[5] Wi1son, E.O., The Current State of Biodiversity, Biodiversity, p.13 (1988) as quoted by Dobson, Tracy, Loss of Biodiversity: An International Policy Perspective, 17 North Carolina J. Int'l L. & Corn. Reg, 277, 279 (Spring 1992)

development. Harvard University biologist E.O. Wilson estimates that as to tropical forests alone, the current rate of loss indicates that 25% of the world's species will be lost in the next 50 years.[6]

In North American rivers, streams and their fauna, there are approximately 700 known species of fishes. Of these, 103 species and subspecies are endangered, 114 threatened and 147 deserving of concern. This seems to indicate that roughly one out of three North American fishes are facing habitat problems.[7] Although the status of biodiversity in running waters has not received the same type of focus as has loss of tropical rain forests, a 1985 study of two midwestern rivers where historical data existed revealed declining populations or local extinctions of 45-70 percent of the fish fauna.[8]

Concerns about threatened species usually focuses on impressive species that capture the popular imagination and create an impetus to act. Such a focus does not result in a comprehensive scheme taking into account the total ecosystem of the endangered animal or bird. And basic to functioning ecosystems is a healthy thriving biomass that includes insects and microorganisms, as well as the larger animals which capture our focus. For example, in the U.S. alone, small organisms like anthropods and microbes make up 95% of the 500,000 known species.[9]9 Loss of these basic organisms generally occurs prior to the loss of larger species. To focus on the current layout of our planet and the utilization of its landmasses, about 50% is agricultural, 20% commercial forests, 25% occupied by cities, towns and human settlements, Only five percent of our terrestrial area is unmanaged and uninhabited or "wildlands." Most species live in human-managed ecosystems.[10] This would indicate that a prime focus on protecting national parks that cover only 3.2% of the world land area is bound to be an insufficient focus for addressing all biodiversity issues. Equally important will be how we manage our agricultural land, our commercial forests and our cities, not merely our protected areas.

The world's population is now 5.4 billion, 2.9 billion more than just 40 years ago. There are few new gains expected in agriculture's Green Revolution and population is growing faster

---

[6] Hileman, Bette, Earth Summit Concludes with Agenda for Action but Little Funding, Chem. & Eng. News, 7/6/92.
[7] Allan, J. David and Flecker, Alexander S., Biodiversity in Running Waters, BioScience, vol. 43 No. 1, p. 32, 35, Jan. 1993.
[8] Id.
[9] Pimentel, David,et al, Conserving Biological Diversity in Agricultural/Forestry Systems, BioScience, Vol. 42 No. 5, May 1992.
[10] Id.

than food production in 70% of developing nations.[11] The population is expected to increase by a third or more in the next 20 years. Currently 1.1 billion people are chronically hungry, 90 million more than in 1970. The Third World has 77% of the world's population, but only uses 12% of the natural resources and 18% of the energy. The First World is responsible for the vast bulk of consumption.[12] Our survival will depend on controlling our population and consumption as well as improved stewardship of our environmental resources.

IV. FACTORS CONTRIBUTING TO THE LOSS OF BIODIVERSITY

Factors contributing to species extinction were described by Associate Professor Tracy Dobson of Michigan State University, in a recent law review article, as being primarily human-driven and centered on habitat destruction.[13] Specific factors Professor Dobson discussed include:

(1) Increased development leading to environmental degradation and loss of forests or habitats. For Example: Mono-cropping agricultural methods require clear-cutting of forests, draining of wetlands and irrigation of arid lands. This leads to soil erosion and siltation of streams, rivers and lakes. Mono-cropping also eliminates natural predators of insects harmful to crops, and devastating pest attacks will eventually result, This will need to be fought with agricultural chemicals, which then contribute to loss of other valuable microorganisms, as well as polluting groundwater.[14]

(2) Byproducts of industrialization and economic development pollute. This creates health hazards for humans and other living things. Water quality problems have been experienced in developing countries due to toxic dumping or inadequate sewage systems. Also, a too-rapid industrialization can create dramatic accidents like Chernobyl. Unanticipated effects may result from large development projects such as giant dams ("pharonic works") and water diversions. These often result in habitat loss and/or degradation through disruption of the natural running water flow and disruption of regular flooding patterns on the floodplains of rivers and streams. Yet such flooding serves a dual purpose of enriching the land and alternately enriching the water, and thus facilitating biological diversity[15] Without it, both the lands and our streams become impoverished.

---

[11] Hileman, Bette, Earth Summit Concludes, supra, n. 6, p.9.
[12] Id.
[13] Dobson, Tracy, Loss of Biodiversity: An International Policy Perspective, 17 North Carolina J. Int'l Law & Corn. Reg 277, 287-299 (Spring 1992).
[14] Pimentel, David, et al, Conserving Biological Diversity in Agricultural/ Forestry Systems, supra, n. 9.
[15] Allan, J. David and Flecker, Alexander S., Biodiversity Conservation in Running Waters, supra, n. 7.

(3) Capitalist economies focus on short term benefits, which encourages environmental damage. For Example: disposable products are priced without taking into account the cost of disposal, thus creating a false sense of cost to consumers. At the UNCED Conference in Rio, the Business Council for Sustainable Development proposed a plan where pricing would reflect environmental costs of production, use, recycling and after-use disposal.[16] Also, our concept of gross national product (GNP) is flawed. Current calculations of GNP do not factor into the depreciation analysis the continuing losses, use and degradation of our natural resources as they are used. This creates a false perception of our economic well-being as reflected by the GNP. This perception recognizes short term gains while failing to take into account the consequences we will pay for our current oversight - that natural resources are an important factor basic to a sustainable GNP.[17]

(4) Global climate change. Both human-caused and naturally-caused climate change can and will exacerbate present problems. A situation where ecosystems change more rapidly than is natural will result in many species failing to adapt to these changes.[18]

(5) Growth of Multi-National Corporations. Given free rein by lack of regulation, such corporations can avoid their own national regulations for protection of environment. They are then able to lower costs by failing to account for effects of their pollution, which further impedes developing third world countries and creates obstacles to environmental protection.[19]

(6) The "Right to Develop." This recently recognized right[20] and the funding by the World Bank of development projects in the Third World has frequently had disastrous consequences, when effects on the environment were not taken into account during decision-making for new projects. The right to develop remains a source of tremendous tension between First World and Third World, because we must now be concerned with environmental effects.

(7) Population Growth and Poverty. The problems of population and poverty are closely related and most notably affects Third World countries. Increased population increases burdens on the Earth's "carrying capacity" and humans compete with other living things for resources. Biodiversity suffers. And people suffer with illiteracy and ill-health. Third World parents may produce more children knowing that many of their children will likely die before maturity.

---

[16] Business Group Develops Radical Plan to Change the Way Corporations Operate, Chem & Eng News, p. 12—13, 7/6/92.

[17] Gore, Albert, Earth in the Balance, Plume Edition, 1993, p. l82—l86.

[18] See also results of research in the area of climate change caused by natural disasters such as eruption of volcanoes, and the disastrous historical results on human populations. Gore, Earth in the Balance, supra, n. 17, p. 57-80.

[19] Hackman, Sandra, After Rio: Our Forests, Ourselves, Technology Review, Vol. 95, p. 39-40, Oct. 1992.

[20] G.A. Res. 41/128, Declaration on the Right to Develop, U.N0 GOAR, 41st Sess., Annex, Supp No. 53, at 186—87, U.N. Doc. A/4l/53 (1986).

Population is a point closely tied with women's rights and concerns, as well as religious and cultural factors. For instance, producing children is one of society's limited outlets for female creativity. While women have a scarcity of other opportunities, they can always take pride in their children and procreative abilities, Children are also a source of male pride, as can be seen through traditional views of "the more children, the better," as well as the common preference for male heirs. Changes in male perceptions of women on an international scale are needed. Women must be given options to contribute to society in ways other than continued child-bearing.

(8) Problems related to "The Tragedy of the Commons." There is a lack of incentives to use common resources wisely or preserve resources under circumstances of non-governance. For Example, adjoining countries may dump their pollution and waste into a common body of water, such as the Mediterranean Sea, creating pollution problems neither country is willing to take responsibility for on their own.

(9) Viewpoints and Expressions of Western Science. Knowledge is not widely shared when use of esoteric scientific language, including references to probabilities rather than certainties, results in ambiguities in the minds of public and policy-makers. Lack of a clear vision tends to put the issues discussed on a lower priority. Also the media, in an effort to remain "neutral" on an issue, may give equal weight to diverging viewpoints even though an overwhelming percentage of the scientific community recognizes a certain problem exists.[21]2' Western science has also traditionally been dominated by white males, capitalism and patriarchy, and expressions of science may reflect an economically self-interested perspective that tends to shut out other valid perspectives. The public also shares a common belief in the inherent truth of science. This leads to a passive acceptance of beliefs expressed by scientists, and also leads to a distrust of knowledge disseminated in an "unscientific" manner, despite its possible relevancy and validity.

V. INTERNATIONAL AGREEMENTS AFFECTING BIODIVERSITY

A. The Stockholm Convention

The United Nations Conference on the Human Environment ("Stockholm Convention") in 1972 was the first meeting where both developed and developing countries discussed issues relating to the status of the international environment. The Convention expounded on the primacy

[21] Gore, A., Earth in the Balance, supra, n. 17, p.38 & 40.

and importance of Man: "Man is both creature and moulder of his environment..."[22]

The Stockholm Convention concentrated on the rights of man to enjoy "dignity and well-being" and a "quality of life" which had been created by the European powers, and to mould the environment to those ends. But there was also growing recognition that these very goals would necessarily he subject to taking more serious responsibility for Man's effect on his environment. Waste products and destruction of environment went hand in hand with this "dignity" and "quality of life." The Convention also recognized that peoples of underdeveloped countries had these same rights and should not be impeded in their development. Principle 9[23] saw solutions to the problems of development through further development and use of technology transfer rather than cessation or limitation of development.

The Stockholm Convention seems to have been a first assessment between the conquerors and the conquered as to what road to take now that "Man" had indelibly begun a moulding of his environment, social ideals and quality of life along a certain path. The meeting in Stockholm had positive results for the Third World, in that Principles 1 and l5 articulated goals and policies against the perpetuation of colonization, racial domination, discrimination and oppression by developed countries over developing countries. Now the benefits of development must accrue to all.

1. *Siq Utero Tuo* expressed as Principle 21

Stockholm's Principle 21 balanced the sovereign right of a state to exploit its own resources according to its own environmental policies against the responsibility to "ensure activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond limits of national jurisdiction." These two principles were juxtaposed so as to limit the right to development by a sense of responsibility to other states. But the true extent of environmental damage may not have been realized at the time of the Stockholm Convention, and with the extent of global environmental degradation today, imposing liability for global effects may be extremely difficult.

---

[22] Declaration of the United Nations Conference on the Human Environment, Preamble, proclamation 1 (Stockholm 1972)

[23] Principle 9. Environmental deficiencies generated by the conditions of under-development and natural disasters pose grave problems and can best be remedied by accelerated development through the transfer of substantial quantities of financial and technological assistance as a supplement to the domestic effort of the developing countries and such timely assistance as may be required.

Yet Principle 21 of the Stockholm Convention has been reincorporated into more recent international environmental instruments,[24] which may indicate it is becoming a norm of international law, despite difficulty of enforcement. For example, countries that destroy their rainforests in the interest of clearing farmland are also destroying in the process very valuable ecosystems and biodiversity of value to all on the planet. Climate and rainfall patterns everywhere have been affected by these actions. Yet states have a sovereign right to develop their resources. Imposing liability for damage to the global environment on a handful of poverty-stricken developing countries would seem impractical and pointless.

Principle 21 derives from a recognized principle of international law, "*Sic utero tuo ut alienuin non laedas.*" A State should not use its property in a way that harms others. This concept was also discussed in the Trail Smelter arbitration of 1941.[25] The Court reasoned that if a case of pollution is of serious consequence and if injury can be established by clear and convincing evidence, then the offending state is responsible for damage caused. But this was a case of factual simplicity compared to the magnitude of problems today. Its holding is impractical in the modern sense where reparations may be in square conflict with the right of a state to develop. Instead there is a growing international consensus that solutions must be found that do justice and provide equity to both developed and developing nations.

B. Patchwork Agreements Affecting Biodiversity.

Aside from Stockholm, there has been a patchwork of international agreements affecting the status of biodiversity. The first Whaling Convention was signed in 1935. Among the 170 multilateral and bilateral environmental agreements[26] since then is the Washington Convention on International Trade in Endangered Species of Wild Fauna and Flora ("CITES") effective in 1975, Although CITES addressed previously ignored endangered species, its protections of flora and fauna are not triggered until a species has become endangered, and is therefore at the point of extinction already. It also focuses mainly on trade issues, not conservation. By the time a species is listed for CITES purposes, its habitat will already be severely degraded and total biological diversity of that ecosystem already threatened. Therefore CITES was not a comprehensive approach to addressing problems of loss of species.

---

[24] Principle 21 has been expressed verbatim as Principle 2 of the Rio Declarations and Article 3 of the Convention on Biological Diversity, and has been included in other agreements.
[25] Trai1 Smelter Case (U.S. v. Canada), 3 U.N. Rep. Int. Arb. Awards 1911 (1941).
[26] International Agreements to Protect the Environment, U.S.I.T.C. 2351, Jan. 1991.

In 1980 a World Conservation Strategy was prepared jointly by the International Union for the Conservation of Nature and Natural Resources ("IUCN")[27] with the United Nations Environment Programme ('UNEP")[28] and the World Wildlife Fund. This led to the World Charter For Nature of 1981, which proclaimed "principles of conservation by which all human conduct affecting nature is to be guided and judged." The Charter contained strong normative language in its guiding principles, and seemed to address not only states but also NGOs and corporations in its broad preamble.[29]2" While the Charter had no binding enforceable impact, it certainly influenced many ideas expressed in more recent undertakings such as the Rio Convention on Biological Diversity and the Rio Declarations.

As for addressing biodiversity as a subject in itself, in February 1988 the IUCN prepared Draft Articles for Inclusion in a Proposed Convention on the Conservation of Biological Diversity by means of the Preservation In Situ of Wild Genetic Resources. In 1989 an IUCN proposal addressed the issues of conservation in relation to access to resources, and suggested that loss of free access might encourage developed countries to accept obligations to pay for conservation of genetic resources in developing countries.[30]

C. Preparation for a Conference On Biodiversity

Between November 1988 and May 1992, the Governing Council of UNEP sponsored three meetings of technical experts and seven negotiating sessions to address the issue of biodiversity. The final conference was held May 11-22, 1992 in Nairobi, Kenya, the seat of UNEP. Attended by both developed and developing countries, the Conference prepared Draft Articles to be presented at the Convention on Biological Diversity at UNCED in Rio the following month. Ninety-seven countries participated in the final round of negotiations and 79 signed the Final Act around midnight of May 22, 1992.

The final draft was achieved only after difficult negotiations. Environmental groups were disappointed that conservation measures were couched in narrow national terms with the use of soft language. They claimed the treaty did not create obligations necessary to save ecosystems.

---

[27] Now called the World Conservation Union, the IUCN is an institution consisting of governments, departments of governments and NGOs.

[28] UNEP was formed after the Stockholm Convention as the institutional structure to give global guidance for international actions protecting the environment.

[29] Weiss, Edith Brown, International Environmental Law: Basic Instruments & References, 1992, p. 184.

[30] Barton, John H., Biodiversity at Rio, BioScience, Nov. 92.

Eleanor Savage of the U S delegation called the convention "flawed" because it failed to provide adequate intellectual property protections and claimed it would hamper free trade in genetically-engineered organisms.[31] There were also concerns by many who objected to deleting 'global lists' of species and areas of biological importance. Such a list could have served as a yardstick by which to measure future progress. Mostafa Tolba, executive director of UNEP,[32] recognized that the Convention only created the bare minimums of what was needed, but disagreed that it would be an ineffective piece of environmental law, noting that the 1985 treaty giving rise to the Montreal Protocols of 1987 and London Amendments of 1990 was initially weak as well, and that we must learn to "walk before we run."[33] The Agreed Text was published in the Nairobi Final Act of May 22, 1992.

Within a week, on May 29, 1992, the United States Department of State had issued a statement announcing that the U.S. would not sign the Convention as it failed to address U.S. interests relating to intellectual property ("I.P.") rights, funding and biotechnology. This caused a perception worldwide that the United States had isolated itself by taking such a position.[34] The action of the United States seemed to focus attention away from biodiversity itself and onto I.P. rights and fears of compulsory licensing which were created by vague language used in the Agreed Text.

VI. THE CONVENTION ON BIOLOGICAL DIVERSITY

A. Political Climate

Despite the concerns of the US, and its unwillingness to take a much-needed leading role at the Rio Earth Summit, the Agreed Text prepared in Nairobi on May 22, 1992 was adopted and 153 countries signed the Convention on Biological Diversity of June 5, 1992. The United States' lone refusal to sign created a media circus that in effect took the focus off of biodiversity and

---

[31] Nations Forge Biodiversity Convention that is 'flawed,' Rio support 'doubtful', Bureau of Nat'l Affairs, Intern'l Environment Daily ("BNA IED") 5/28/92.

[32] Mr. Tolba has served since 1976 and retired at the end of 1992. The new director is Elizabeth Dowdeswell, the second Canadian to hold the post. Maurice Strong served from 1972 - l975BNA lED, Dowdeswell Arrives at UNEP Headquarters to Take up New Post as Executive Director, 1/21/93. She has announced her working motto: "I want to cause constructive damage to the status quo." Ember, Lois, Canadian Woman Heads U.N. Environmental Agency, Chem & Eng. News, 1/18/93

[33] Id. (BNA IED, 1/21/93, n. 3e **-?-**)

[34] Hileman, Bette, Earth Summit Concludes, supra, n. 6. Also Barton, John H., Biodiversity at Rio, supra, n. 30.

placed it squarely on the commercial interests of the biotechnology industry's concerns with I.P. rights and technology transfer.

The field of Biotechnology would be most affected by any restrictions on the free flow of information and materials that the Convention might impose. It is a field at this point highly dominated by the U.S. and other First World countries. The provisions in the Convention which the U.S. and biotechnology interests objected to remain of vital importance to Third World countries, which cannot afford to both develop and preserve biological diversity without cooperation from the First World. The problem is how to achieve balance when it is the developed countries that have set the example for the actions the developing countries now engage in to aid their development.

B. Analysis of the Principal Provisions of the Convention on Biologica1 Diversity

The Convention on Biological Diversity speaks of biodiversity in terms of the components of biodiversity and the benefits of biodiversity, rather than in terms of functioning ecosystems and habitats. The Convention's language only rarely speaks of a normative mandate ("shall"), and most major provisions are couched in soft terms, leaving a lot of wiggle room for member States ("shall, as far as possible or appropriate.....").

The broad objectives of the Convention include:

> the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights.." (Article 1)

Principle 21 of the Stockholm Convention was restated as Article 3, tempering the sovereign right of states to exploit their own resources by the responsibility to other states not to cause damage outside the limits of their own national jurisdiction. Yet while this language might impose liability in simple, identifiable trans-boundary pollution cases, there seems to be no consensus on what this language means in practical terms on a global scale.

The Convention mandates that each contracting party is to develop national strategies for conservation and sustainable use of biological diversity and to integrate these into plans, programmes and policies. (Article 6) There should also be identification and monitoring of components of biological diversity and identification of processes with adverse impacts on

conservation and sustainable use. (Article 7) The Convention provides for *In-Situ* Conservation by way of protected areas and reserves (Article 8), and *Ex-Situ* Conservation, such as gene banks, to be used as a complement to in-situ measures and also for the purpose of preserving and rehabilitating components of biological diversity, with an expressed preference for doing so within the country of origin where possible. (Article 9) The concept of sustainable use is to be integrated into national decision-making and local customs to help facilitate remedial actions in degraded areas. (Article 10)

Parties are encouraged to create incentives for conservation and sustainable use of the components of biodiversity. (Article 11) Emphasis is also placed on scientific and technical education and training programmes as well as promotion of research. (Article 12) The Convention expresses a duty to educate the public and promote public awareness. (Article 13) The Convention supports environmental impact assessments to minimize adverse impacts of proposed projects and to allow for public participation, as well as notification, exchange of information and consultation requirements when activities threaten or affect biodiversity in other states. (Article 14) Issues of liability and redress for damages to other states will be examined at the Conference to be held after the treaty enters into force. This will no doubt be a thorny issue to resolve, since such responsibility impacts on the right to develop.

Despite the above undertakings, the media focus has been on Articles 15 through 21. These are the articles which created the controversy over biotechnology, I.P, rights, patents, and financing mechanisms, the sources of U.S. objections.

The Convention grants participating States sovereign rights over their natural resources and the local government has authority to grant access, which is subject to national legislation. Access is to be granted on “mutually agreed terms” and subject to “prior informed consent” of the source country. (Article 15) This provision basically means that the days of free access to other countries’ resources are now over, in favor of sovereign control.

Contracting parties also undertake to provide access and/or transfer of technologies relevant to conservation and sustainable use. Transfer of technology (by the developed countries) is to be provided on “fair and most favourable terms, including on concessional and preferential terms where mutually agreed,” (Article 16) This vague language gave the U.S. and biotechnology industry pause, yet transfer is still subject to mutual agreement. And Article 16 also mentions patent and I.P. rights will be given adequate and effective protection. The

following Articles 17, 18 and 19 emphasize a spirit of cooperation in the exchange of information, technical and scientific endeavors and biotechnology, with a clear picture emerging that developing countries want to be included wherever possible in these areas.

C. Financing Mechanism

Article 20 addresses the issue of financial resources to implement the Convention. It focuses on developed countries providing resources to assist developing countries to meet the costs of implementing the Convention. The emphasis is on burden- sharing. There is a special notice that to the extent developed countries fail to meet their financial obligations, the developing countries may fail to implement their obligations under the Convention. Thus, First World financial commitment is crucial to the Convention's success.

The Global Environment Facility ("GEF")[35] which is part of the World Bank, will serve as the interim financing mechanism for the Convention on Biological Diversity, pursuant to Article 21, until the Conference of the parties is held after ratification.. The U.S. complained that current wording of the provision gives control to developing nations.[36] This position implies a fear that the voting procedure would be by majority vote rather than by consensus, but majority voting is not mentioned in the treaty. In fact, Article 23.3 refers to consenus agreement. The U.S. fear may be unfounded.

D. The NGOs Global Forum

Non-Governmental Organizations ("NGOs") excluded from UNCED's formal talks held their own alternative "Global Forum" in Rio with over 7,000 groups represented and 250,000 persons participating in meetings, performances and exhibitions.[37] The Global Forum proved to be a valuable opportunity for NGOs to create a global network.[38] On June 9 NGOs, critical of the U.S., met informally with several delegates from the Convention at the Global Forum to address their concerns on biodiversity.[39]

---

[35] For background information on GEF see: BNA IED, First Round of Projects to be Funded Under Green Fund Announced by World Bank 5/20/91.

[36] BNA IED, U.S.. Still Objects to Biodiversity Pact, Says Senior State Dept. Official, 12/7/92.

[37] Worgman, Nira Broner, Local Groups Think Globally, Technology Review, Oct. 1992.

[38] Id., n. 36; and NGO's Sign 32 Alternative treaties in Hopes of Spurring Governments' Policies, BNA IED, 6/16/92.

[39] BNA IED, U.S. Called 'Villian;' Accused of Lack of Leadership at Rio Conference, 6/5/92 and Delegates Debate Biodiversity Treaty With NGO's Seeking Aid for Native Peoples, 6/10/92.

One of the issues addressed by NGOs was the problems inherent in loss of biodiversity for indigenous cultures, which the official convention seemed to largely ignore. Although Northern focus was on the loss of Brazil's forests, locals were aware that deforestation must cease not only because of global warming but because forest peoples depend on forests.[40]39 The loss of rainforest and its biodiversity is also a loss for indigenous tribes and their cultures. Human Beings whom the Rio Declarations (in Principle 1) sought to protect are being destroyed concurrently with actions taken pursuant to the right to develop. While concern for loss of species ought to include everything from bacteria to humans, the media focus of the Convention was on biotechnology and I.P. rights.

The problems of Brazil are common to many Third World countries striving to develop. With the cutting of the forests, there is a migration of forest dwellers to the cities which do not have the infrastructure to cope with the burgeoning populations. There are crucial needs for increased public services, such as health care and education, but the most striking public health threat almost everywhere in the Third World is how to obtain safe drinking water. Incidence of birth defects have risen when immigrants must rely on waters polluted by illegal dumping and raw sewage.[41]

E. Ratification

The Convention is subject to ratification pursuant to Article 34. Although the signature by 153 countries is significant because it may create an obligation not to defeat the object of the treaty,[42] only ratification by a country will reflect its full consent to be bound. According to Article 36, ratification by 30 countries is required before the Convention on Biological Diversity will enter into force. Canada, in December 1992, was the first industrialized country to ratify both the convention on climate change and the biodiversity convention.[43] As of February 1993, six countries had ratified the Convention.[44]

F. Institutional Follow-up

---

[40] Hackman, Sandra, After Rio: Our Forests, Ourselves, supra, n. 19, p. 32-40.

[41] Id., at p. 38-39.

[42] l984 Vienna Convention on the Law of Treaties, Article 11 and Article 18.

[43] BNA IED, U.N. Conventions on Climate Change, Biodiversity Ratified by Government, 12/30/92.

[44] BNA IED, Intern'l Environmental Issues Expected To Spill Increasingly Into Trade, Foreign Aid Arenas, 2/22/93.

Pursuant to Article 24 of the treaty, UNEP announced that the interim secretariat for the U.N. Framework Convention on Biodiversity will be located in Geneva. Pursuant to Article 23, a conference of the parties to the accord will take place within one year after the treaty enters into force.[45]

Nationally, the U.S. will establish a Center on Biodiversity within the Smithsonian Institution.[46] Funding for the first year would only be $1 million and channeled through the Environmental Protection Agency.

VII. THE UNITED STATES POSITION ON THE CONVENTION FOR BIOLOGICAL DIVERSITY

The United States' position that it would not sign the Convention on Biological Diversity was highly criticized.[47]

The United States is preeminent in the field of biotechnology. It has strong laws in the areas of I.P, rights and patent protection and a financial interest in promoting I.P. rights worldwide through negotiations on the General Agreement on Tariffs and Trade (GATT") and on the agreement on Trade Related Intellectual Property Rights ("TRIPS")[48] The U.S.'s primary objections to the Convention on Biological Diversity were objections to the language that implied source countries could pass laws restricting other countries' IP. rights (Article 16), and fears that compulsory licensing agreements would result in favor of source countries.[49]

To date, the United States has had free access to genetic materials located in other countries of the world and has enjoyed an atmosphere of free trade. It has pioneered tremendous efforts in the areas of biogenetics and agriculture, and many of these U.S. firms have spent years on research and development and expect to reap the financial rewards of their work.[50] It is apparent to everyone concerned with protecting biodiversity that biotechnology and I.P. protections are going to constitute a major component of the struggle to preserve biological diversity. This is true in part because it is an area of major concern to First World powers who

---

[45] BNA IED, Biodiversity Convention to be Based in Geneva, 1/5/93.
[46] BNA IED, U.S. Will Create Biodiversity Center Within Year, Smithsonian Official Says, 11/9/92.
[47] Hileman, B., Earth Summit Concludes, supra, n. 6, p. 15.

[48] Porter, Gareth, The United States and the Biodiversity Convention: The Case For Participation, Environmental and Energy Study Institute, Nov. 1992, p. 6-7.
[49] BNA IED, Treaty Interferes With Principles of Patent Protection, 6/11/92.
[50] BNA IED, Treaty Wording Too Vague. Poses Risk to Biotech Firms, Industry Official Says, 12/15/92.

most often still call the shots, and also because the agreements that the current Convention might require may become an administrative and bureaucratic nightmare, creating costs that must be passed on to consumers.[51] Genetic materials are often put on ice for years and years before being used in a manner that would require sharing of profits with a source country. Yet in rea1ity increased administration may not be an insurmountable barrier.

Obviously I.P. rights is not a subject likely to be dropped before the U.S. finally sees its way clear to sign the Convention and pave the way for ratification. The U.S. signature may depend on further clarification of these issues, and compromises, agreed interpretations or protocols are likely.

However, Gareth Porter of the Environmental & Energy Study Institute claims that the U.S. already did gain major concessions in Nairobi. He stresses that adequate protection is already provided by language in the Convention stating that the treaty provides for "adequate and effective protection of intellectual property rights." Such language is well-recognized in international law as being protective of patent rights.[52] According to Mostafa Tolba, the treaty will not be reopened for negotiation, but there may be strengthening of I.P. rights in protocols to the convention. However, the U.S.'s best course of action to allay present antagonism would be to sign the convention as it is and then play an active part in clarifying these issues.[53]

VIII. WILL THE CLINTON/GORE ADMINISTRATION MAKE A DIFFERENCE?

The poor showing of the United States at the Earth Summit may have been in large part due to attitudes prevalent in the Bush/Quayle administration. Quayle's pet project, the Council on Competitiveness, a pro-economic growth organization, is rumored to have been responsible for the leak of a compromise worked out through the efforts of E.P.A. administrator William

[51] Lecture by Prof. John H. Barton of Stanford University, 7/30/92 in San Francisco.
[52] Porter, G., The United States and the Biodiversity Convention: The Case For Participation, supra, n. 47, p.13-14. See also: BNA IED, Administration Objections to Treaty Based on Misreading of Text, Study Says, 11/13/92 and Treaty Wording Too Vague. Poses Risk to Biotech Firms, Industry Official Says, 12/15/92.
[53] Id., at p. 26-27.

Reilly that might have paved the way for U.S. signature. [54]

Experts seem to agree that despite the absence of U.S. membership in the Convention, the U.S. will nevertheless find itself subject to its dictates. Otherwise it will lose valuable scientific contracts with countries who are signatories, as it already has with Venezuela.[55]

The new administration's view is that protecting biodiversity and I.P. rights are consistent goals. Biotechnology will benefit in many ways if biodiversity is preserved, and there is inherent economic importance in biodiversity.[56] Environmental groups believe it is likely that the U.S. will now sign the treaty because the Clinton/Gore administration seems to be committed to environmental concerns. The new administration's perception is that protection of the environment can create jobs rather than the previous administration's view that further protection would impede economic growth.[57] Although nicknamed "Ozone" by the Republican candidates in the 1992 presidential race, Vice-President Gore has an in-depth knowledge of and commitment to environmental issues, and he has outlined a Global Marshall Plan for the future.[58] In it he refers to preservation of our environment as something that must become "our new organizing principle" rather than taking a back seat to free trade and economic considerations.

IX. PROSPECTS FOR FUTURE ACTION

Current efforts addressed by the Convention on Biological Diversity seem well-intentioned and place new emphasis on this environmental issue. Yet this Convention will probably be insufficient to ensure that necessary action is taken promptly enough to save many biosystems from complete degradation and many species from extinction. However, the Earth Summit was a start and did focus new attention on biodiversity issues and served to inspire many individuals, organizations and governments. Although Mostafa Tolba has specified that the treaty

---

[54] White House Snubs U.S. Envoy's Plea To Sign Rio Treaty, N.Y. Times, 6/5/92. See also, Gore, Earth in The Balance, supra, n. 17, foreword, p.xv.

[55] BNA IED, U.N. Biodiversity Treaty Seen Likely to Affect U.S. Biotech Firms, 9/25/92 and U.S. will Create Biodiversity Center Within Year, Smithsonian Official Says, 11/9/92.

[56] Gore, Sen. Albert, Jr., Essentials for Economic Progress: Protect Biodiversity And Intellectual Property Rights, The Journal of NIH Research, Vol. 4, p. 18-19, Oct. 1992.

[57] BNA IED, Environment May Not Top Clinton's List. But Groups See Host of Issues, Problems, 11/6/92.

[58] Gore, A., Earth in The Balance, supra, n. 17, p. 295-360.

will not be reopened for negotiation, he acknowledged that protocols are likely.[59] These can clarify and strengthen areas of concern.

Much will need to be done on a national level in all countries of the world to mobilize an otherwise stagnant situation and provide local solutions and enforcement. But everyone is aware that national action alone will not be enough, especially when poverty-stricken countries need to allocate resources and monies elsewhere.

One solution that has been considered is the debt-for-nature swaps originally proposed under Pres. Bush's Enterprise for the Americas Initiative.[60] Interest payments on restructured debt are set aside to finance conservation and development programs.

Another intriguing approach suggested by economist Roger Sedjo involves assigning a value to each species and component of a country's natural resources.[61] While values will be somewhat arbitrary; a resource with known applications will be assigned a higher value and resources of unknown economic value would receive a lesser or minimum value. The property rights would vest in the sovereign state where the resource resides. This would benefit Third World countries which may have rich natural resources by giving them a value in their resources. Such a value balances and complements the rights a biotech company has in their genetically altered or hybrid species.

Although there is inherent value in any species, assigning arbitrary values based on usefulness to humans may satisfy our need for control through an economic solution. It would give developing countries non-altruistic motives to preserve their resources, and allow for transfers through bilateral agreement. A competitive bidding process could be used if the same resources exist in more than one state. An added bonus to each nation assigning values to their natural resources is that it would help to facilitate integration of natural resources into GNP. It would also facilitate economic "tracking" of degradation in value of natural resources.

One example of a bilateral agreement not inconsistent with the above approaches is the Merck-Costa Rica agreement. INBio, a Costa Rican research organization, exclusively provides specimens and forest conservation to Merck for drug development projects. Merck retains all I.P.

---

[59] BNA IED, Treaty Wording Vague, 12/15/92.
[60] BNA IED, Central American Nations to Propose Debt-For Nature Swaps to U.S., 1/22/91 and BNA IED Briefs: US. Trade Mission Pushes Debt-For-Nature Swaps, 7/16/91.
[61] Sedjo, Roger A, Property Rights For Plants, 97 Resources (Resources for the Future 1989).

rights, and agrees to pay $1 million and royalties to the source country.[62] This deal seems good for both parties and is likely to be emulated by others in future similar deals.

X. CONCLUSIONS

Concerns over preservation of biological diversity are now at an all-time high. Although the Rio Conference on Biological Diversity seemed to open up many areas of controversy, there is now an international consensus that much needs to be done to preserve our world. The Rio Conference will serve as a frame of reference for future actions. And the United States should take a greater role in seeing that appropriate responsive actions are taken.

We have reached a point in our evolution and development where we must make hard choices as to the value and priority we place on biological diversity. To choose not to opt for preservation will leave a severely depleted planet to future generations. We must learn to look to the future and change our tendencies and habits in recognition of a duty to preserve our plant and the biological diversity that is a key to its survival.

We have a duty to preserve the life of all species both for their inherent value and right to live and also for our own present and future benefits. To achieve any measure of success will take enormous educational and retraining efforts; but accomplishing an overhaul on the way we view ourselves in relation to the environment will do wonders for our self-esteem, and maybe even for our pocketbooks. Incentives towards encouraging conservation should be developed on a national and international level.

The Rio Conference was only a beginning and stands as a basis for further international action towards preserving biological diversity.

ꕥ ꕥ ꕥ

[62] BNA IED, Deal Between Drug Firm, Costa Rica Called Example of What Treaty Would Do, 6/17/92.