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The Jurisprudence of the 1992 Rio Declaration on Environment and Development: A Law, Science, and Policy Explication of Certain Aspects of the United Nations Conference on Environment and Development

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INTRODUCTION

In this article, the authors employ elements of the law, science, and policy paradigm of the New Haven School[1] to explicate the Rio Declaration on Environment and Development.[2] This instrument of international jurisprudence articulates policies and prescriptions directed at the achievement of worldwide sustainable development. The Declaration is a truly consequential work product created by the Preparatory Committee (PrepCom) charged with "paving the way to Rio." This instrument was finalized in March 1992 and affirmed in Rio in June 1992.[3] The above "Rio" reference is to the United Nations Conference on Environment and Development (UNCED), held at Rio de Janeiro, Brazil, during June 1992.[4] The Rio Conference was a landmark world community event evincing a paradigmatic shift within the field of international law.[5] This shift has resulted

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[1] The New Haven School was founded by Myres McDougal and Harold D. Lasswell of Yale Law School. For a very useful depiction of the law, science, and policy paradigm, we recommend LUNG-CHU CHEN, AN INTRODUCTION TO CONTEMPORARY INTERNATIONAL LAW: A POLICY-ORIENTED PERSPECTUS (1989); HAROLD D. LASSWELL & MYRES S. MCDOUGAL, JURISPRUDENCE FOR A FREE SOCIETY, STUDIES IN LAW, SCIENCE AND POLICY (1992); Eisuke Suzuki, *The New Haven School of International Law: An Invitation to a Policy-Oriented Jurisprudence*, 1 YALE STUD. IN WORLD PUB. ORDER 1 (1974). *See* John Batt, *The Child's Right to a Best Interests Psychological Development Under the Declaration of the Rights of the Child: Policy Science Reflections on International Law, Psychological Well-Being and World Peace*, 2 HUM. RTS. ANN. 19 (1984) (illustrating an application of the model). *See also* Richard Falk, *A New Paradigm for International Legal Studies: Prospects and Proposals*, 84 YALE L.J. 969 (1974-75) (illustrating the importance of the law, science, and policy paradigm in the evolution of international law). *See generally* MYRES S. MCDOUGAL ET AL., HUMAN RIGHTS AND WORLD PUBLIC ORDER (1980). There is no question that the law, science, and policy paradigm significantly influences international law scholarship on a worldwide scale. It is in fact the only truly comprehensive scholarly model in the international law jurisprudential realm. All is mutable, but the replacement for the McDougal-Lasswell model is yet to give us even a preview.

[2] United Nations Conference on Environment and Development: Rio Declaration on Environment and Development, U.N. GAOR, 47th Sess., Agenda Item 9, at 1, UNCED Doc. A/CONF.151/5/Rev. 1 (1992), *reprinted in* 31 I.L.M. 876 (1992) [hereinafter Rio Declaration].

[3] *Id.*

[4] Edith Brown Weiss, *United Nations Conference on Environment and Development: Introductory Note*, 31 I.L.M. 814 (1992).

[5] *See generally* THOMAS S. KUHN, THE STRUCTURE OF SCIENTIFIC REVOLUTIONS (1970)(discussing the role of paradigms in intellectual progress).

in the world community's acceptance of the position that Homo sapien-driven projects of economic development are to be evaluated in relationship to their impact on mankind's natural environmental surroundings. Without doubt, the Rio Conference established new environmental ethics and a set of prescriptions.[6] The agreements reached at Rio,[7] when construed as a juridical "oeuvre" enmeshed in the surrounding specific social process,[8] make it a certainty that the world community has opted to champion the cause of sustainable development in order to promote the best interests of all inhabitants of the planet.[9]

The bulk of our attention in this article will be focused on the Rio Declaration, although we shall briefly consider other aspects of the Rio Project. We accent the Declaration because we view its twenty-seven principles as an assemblage of "Grundnorms" (superior norms).[10] The policy reality is that the Rio Declaration is a repository of quintessential interpretative material. The instrument articulates a set of agreed-upon policy pronouncements which can aid all decision makers who strive to achieve the reality of sustainable development on a worldwide basis. All international agreements and actions aimed at sustainable development ought[11] to be evaluated from the perspective of the Rio Declaration. In a very real sense, the Rio Declaration is a carefully expressed statement of jurisprudential intention. Put in a nutshell: it is a register of world community legislative intent. It is, in truth, a map which can serve us well as we journey through the infinite complexity of the multiplicity of

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[6] A prescription is the product of authoritative decision making (e.g., by a legislative or other deliberative body) which relates to expectations in regard to practices and activities. In international law, it is a statement of policy agreed upon by the parties to the decision process. Batt, *supra* note 1, at 263-66.

[7] *See* discussion *infra* part II.

[8] This enmeshment, of course, is a matter of "pari materia." Laws directed at a particular subject matter must be construed in relationship and with reference to each other. This principle is a truism of statutory construction.

[9] The Rio legislative package champions sustainable development. Furthermore, it is clear that achieving sustainable development could do much to promote human well-being, thereby resulting in an increase in the number of those who seek peace rather than war.

[10] The term "Grundnorm" is drawn from the work of German jurisprudence scholar, Hans Kelsen. Kelsen spoke of only one "grand norm"; however, in tailoring the term to fit our needs, we use the term in its plural sense. *See* SURYA PRAKASH SINHA, JURISPRUDENCE (1993).

[11] Law, science, and policy accept the validity of the quest for the ethical "ought." It strives to go far beyond the workmanlike "is" of legal realism.

decisions to come. In print, the declaration can fit on one page of the *New York Times*, but the wisdom contained is enormous.

As indicated above, we shall draw upon the jurisprudential system created by Myres McDougal and Harold Lasswell to produce a detailed interpretation of the Rio Declaration. The law, science, and policy position is that law is inextricably bound to social behavior directed at acquisitions or deprivations of values.[12] Put directly, this policy science jurisprudence views law as basic in the task of determining who gets (or does not get) what, from whom, how, and under what prevailing social conditions.[13] Put more technically, law-focused behaviors take place in social arenas where participants strive to enrich their value positions (or reduce those of others) by using assets[14] to shape the outcome of decisions.[15] Furthermore, law, science, and policy scholars, practitioners and judges apprehend that law is a process of decision in which a multiplicity of the above professional social types play a creative role in what is a policy accentuating process. This New Haven School's jurisprudence is grounded in Western humanist tradition,[16] legal realism and the theories and findings of the contemporary sciences.[17] It is truly an interdisciplinary jurisprudence. No relevant knowledge is excluded from consideration in the endeavor to promote the making of in-

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[12] It is the authors' opinion that a humanistic concern for the value positions (e.g., well-being) of others binds one to the human community. Humanistic concern enables one to move beyond narcissism and delusions of one's significance and to achieve the mature potential of the self. One who seeks to maximize only his or her value position cannot be a real party to the social contract. Perhaps the current incidence of psychological disorders reflects the failure of a democratic philosophy of value distribution. Narcissism-based acquisitiveness and emphasis on the grandeur of the self will eventually produce personal disintegration. *See generally* MORRIS N. EAGLE, RECENT DEVELOPMENTS IN PSYCHOANALYSIS: A CRITICAL EVALUATION (1984); HEINZ KOHUT, THE RESTORATION OF SELF (1977).

[13] We draw on the title of HAROLD D. LASSWELL, POLITICS: WHO GETS WHAT, WHEN, HOW (1958).

[14] "Assets" of all kinds can be used in this project and include information, currency, influence, force, etc.

[15] HAROLD D. LASSWELL, A PREVIEW OF POLICY SCIENCE 18 (1971).

[16] The American figure best representing this tradition is Thomas Jefferson. *See* DUMAS MALONE, JEFFERSON AND THE ORDEAL OF LIBERTY (1962).

[17] Traditionally law, science, and policy have drawn primarily on the human sciences, such as political science, psychology, and anthropology. In this paper we have opted to define the term "science" to include ecology, environmental engineering, agricultural science and certain other scientific endeavors. We make use of enlightenment from these scientific domains in developing our thoughts on the jurisprudence of the Rio Declaration. Our approach is entirely consistent with the free-inquiry philosophy of Professors McDougal and Lasswell. *See supra* note 1.

formed policy and the production of legal outcomes that promote democratic values.[18] Of particular import are the value references of law, science, and policy. At the very core of the law, science, and policy philosophy is the idea that a truly unequal distribution of values (e.g., wealth, respect, etc.) is a threat to human dignity, the Western democratic tradition, and community tranquility.[19] Law, science, and policy at its humanistic spiritual center is a jurisprudence of values. Decisions, institutions, participants, strategies, communications, etc. are all important elements of the corpus of the analytical paradigm, but values are at the heart of the scheme. In this article we shall make extensive use of the "values constituent" of the paradigm in our effort to "retrieve" the jurisprudential meaning of the Rio Declaration.[20]

In the lexicon of law, science, and policy, we define values as preferences or resources to be utilized in converting preferences into value outcomes. Thus, the case is that values may be treated either as ends or as means used to acquire other values. Normally, values conceived as ends are labeled "scope" values,[21] and values conceived as means are designated as "base" values.[22] In this article, as we explore the Rio Declaration from the values perspective, we will not distinguish between values as ends as opposed to means—that would involve a needless pattern of repetition which would interfere with the propagation of its meaning. The particular context will make it clear to the reader how the value category is being employed.

For jurisprudential analytical purposes, law, science, and policy posits eight value categories.[23] It must be kept in mind that these value categories describe numerous particular preferences and a multitude of possible decision outcomes. For example, the wealth value category may be employed to describe many resource conditions and outcomes. Listed below are the eight value categories and a brief explanation of each:

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[18] In the Information Age, where the possession of knowledge is a pre-condition to any serious endeavor, those who promote or seek to promote democratic values must possess encyclopedic knowledge of theory and data.

[19] Batt, *supra* note 1, at 19.

[20] The classical work on the meaning of "retrieval" in law, science, and policy is MYRES S. MCDOUGAL ET AL., THE INTERPRETATION OF AGREEMENTS AND WORLD PUBLIC ORDER: PRINCIPLES OF CONTENT AND PROCEDURE (1967).

[21] Suzuki, *supra* note 1, at 26.

[22] CHEN, *supra* note 1, at 16.

[23] Suzuki, *supra* note 1, at 22-23.

1. Affection—relates to the maintenance of positive affective states in regard to persons, communities, species, etc.;

2. Well-Being—stresses the physical and psychological states productive of system homeostasis;

3. Wealth—refers to community-valued resources, e.g., precious metals, currency, productive capital plant, etc.;

4. Enlightenment—concerns information, theory, and other forms of intellectual content;

5. Respect—the recognition of others and sensitivity toward their claims to human dignity;

6. Skill—capacity and proficiency in vocational and avocational operations;

7. Power—the capacity to produce decision outcomes; and

8. Rectitude—the formulation and carrying out of ethical and moral standards.

We at this point reiterate that the eight value categories will be used to explicate the Rio Declaration. Keep in mind that as we perform this intellectual task, the eight value categories will be elaborated in noteworthy detail. A desired side effect of our research will be that law, science, and policy scholars and others will receive insights into the application of the eight value categories. In addition, we shall be using a narrative jurisprudence format as an intellectual supplement in order to produce a more "stimulating" experience for the reader.[24] We believe that narrative-driven vignettes comprised of exposition, development, and resolution will serve as intellectual anchoring mechanisms promoting the reader's acquisition of enlightenment.

Prior to embarking on the project of the clarification of world community environmental/developmental policy through our method, we shall briefly treat certain matters relating to: (1) party participation, (2) social process interaction,[25] and (3) conference outcomes. These law, science, and policy elements will be used to provide a "working context" which will allow the

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[24] *See* John Batt, *Law, Science and Narrative: Reflection on Brain Science, Electronic Media, Story and Law Learning*, 40 J. LEGAL EDUC. 19 (1990).

[25] Legal rules, jurisprudential theories, and authoritative acts, such as decisions in specific cases and legislative enactments, do not occur in a vacuum. Matters of law and policy are always embedded in a social context. It is in this social context where much of the decision outcome determining activity occurs. See, for example, the social arena of lobbyists and interest groups which provides a "background" for the legislative activities of the U.S. Congress.

reader to more fully understand our explication of the Rio Declaration's twenty-seven principles.

I. PARTICIPANTS, SOCIAL PROCESS, AND PRESCRIPTIVE OUTCOMES

A. Participants and Social Process

"Participant(s)"[26] is a term-of-art derivative of law, science, and policy jurisprudence. The term refers to those persons who individually or collectively interact in a particular social process.[27] Through their interactions, the participants seek to optimize specific values and produce certain preferred outcomes.[28] Law, science, and policy jurisprudence sees these human actors (participants) as acting to maximize their gains and minimize their losses. Put in Freudian terms, the preference is for self-defined "pleasure" over self-designated "pain." In our narrative examination of specific environmental and development cases, we shall stress values as opposed to emphasizing the role of participants. We have taken this approach because we feel that it allows us to make a unique contribution to the jurisprudence of the New Haven School. We are cognizant of the fact that participants are critical in the decision-making process.[29] We shall discourse on participants to a limited extent by making reference to those actors who were involved in the Earth Summit process.

Participants representing nation-states, international governmental organizations, nongovernmental organizations and indigenous peoples of the world all interacted in the social process that culminated in the propagation of the Rio Declaration.[30] The

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[26] Law, science, and policy divides participants into two basic groups. Participants are either governmental or private. Nation States, the U.N. Security Council, the U.N. General Assembly, the Organization of American States, and the Economic and Social Council of the United Nations are governmental participants. Examples of private participants are such organizations as Third World First, the International Committee of the Red Cross, the Women's League for Peace and Freedom, the Lawyer's Committee for Human Rights, and Amnesty International. All of the preceding organizations play an active role in international matters. Participants, of course, as earlier indicated in this paper, strive to optimize their value position.

[27] *See* Batt, *supra* note 1, at 56.

[28] *Id.*

[29] *See id.* at 56-61.

[30] Marguerite Holloway, *Still Negotiating: United Nations Conference on Environment and Development*, 266 SCI. AM. 17 (1992).

interaction of these participants through UNCED institutions is a classic instance of a social process involving participants promoting treasured values. The participants in the UNCED process were operating in the world community context. They used a multiplicity of diplomatic and communications strategies in order to shape the value content of the Rio Declaration. This section of the article seeks to briefly identify for the reader the participants involved in the UNCED social process. At this point, we put forth a small quantum of history focusing on specific political actors and their value positions. We wish to stress that participants and value preferences are the yin and yang of all political and decision-making endeavors. "Who wants what" is always the truly fundamental question for the law, science, and policy investigation. Our discussion of participants and participation begins with a chronicle.

Javier Perez de Cuellar, then the U.N. Secretary General, designated Canadian Maurice Strong to direct the preparatory work which would precede the Rio Conference.[31] Mr. Strong worked diligently at the Stockholm Conference of 1972—the first truly international environmental conference.[32] Under Maurice Strong, as UNCED Secretary General, two years of negotiations and drafting were conducted precedent to the 1992 meeting in Brazil.[33] Mr. Strong is a wealthy industrialist with broad life experience. At the age of fourteen he left his home and went to live with the Eskimos.[34] This experience set down a predicate for his becoming educated in the importance of the environment and its relationship to economic development.[35] Secretary Strong was undoubtedly a perfect choice to direct the march toward Rio. Working both sides of the equator with great skill, Strong sought to instruct, inform and promote: in the developed nations, he emphasized the rationality of shifting resources from national defense to projects which would promote sustainable development. In the developing nations, he worked to convince leaders that development without environmental protection would be,

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[31] Paul Lewis, *Rio Planner: A Magnate Who Mediates*, N.Y. TIMES, June 4, 1992, at A10.

[32] Eric Reguly, *Maurice Strong Acts for Earth, Inc.: The Man with Survival Plan for the World*, FIN. POST, May 11, 1992, at S24.

[33] *Id.*

[34] *Id.*

[35] *Id.*

over the long run, economic and social suicide.[36] Strong argued that without environmental protection and conservation of critical resources, sustainable development could not be achieved. On both sides of the equator, his basic message was that we will produce a worldwide systemic breakdown if we destroy the world environment.[37] Strong was supported in his project by thousands of governmental and nongovernmental actors—including his wife Hanne, who organized a spiritual and archetypal movement which stressed the essential nature of the great chain of existence that joins all men to each other and to all species and the surrounding systems of the planet.[38]

By May 1992, a worldwide vision had been structured. However, a major world arena participant did not appear to be committed to the cause—the United States.[39] Of course, 1992 was a presidential election year in the United States, and President Bush, his circle of advisors and his powerful supporters were moving the other way.[40] The *New York Times* put it this way: "The 'Environment President' now seems mainly interested in becoming the 'Re-elected President.' Twice in one week, on the issues of air pollution and forests, the Bush Administration has handed down rulings that sacrifice long-term environmental concerns to short-term commercial and political interests."[41]

The *Times* referred first to a decision by then Vice President Dan Quayle and the Council on Competitiveness.[42] This decision de facto would do away with the public participation provisions of the Clean Air Act.[43] Corporations and other business entities would be allowed to increase emissions without the public being given an opportunity to express its opinion.[44] The Clean Air Act called for public participation.[45] The administration justified its decision by its usual reference to the principles of competitiveness and efficiency.[46]

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[36] *Id.*

[37] *Id.*

[38] *Id.*

[39] *Mr. Bush's Political Environment*, N.Y. TIMES, May 19, 1992, at A14.

[40] *Id.*

[41] *Id.*

[42] Keith Schneider, *Bush to Relax 1990 Rule on Air Pollution Notices*, N.Y. TIMES, May 18, 1992, at A12.

[43] *Id.*

[44] *Id.*

[45] 42 U.S.C. §§ 7401-7642 (West. Supp. 1993).

[46] *See* Schneider, *supra* note 42, at A9.

In a second decision referred to in the *Times* article, a cabinet level group under the leadership of the Secretary of Interior trampled on the Endangered Species Act and in the process overruled the head of the Environmental Protection Agency (EPA) William Reilly.[47] The Secretary's group concluded that despite Mr. Reilly's opinion, seventeen hundred acres of federal public land in the Northwest could be logged—even though the northern spotted owl would be threatened with extinction. The Secretary announced a special plan to save the owls, but EPA biologists indicated the plan could not succeed.[48] The owls, of course, are in the main, a symbol of sustainable development.

U.S. conduct in the international arena supported the conclusion of the environmentally concerned that the administration was not persuaded by the advocacy of Maurice Strong anymore than it was by that of the sustainable development proponents at home.[49] In Nairobi, Kenya, in mid-May 1992, preparatory negotiations for the Rio Conference were about to end.[50] The strands were being bound together. Not all representatives were in agreement on all matters, but relative harmony was the dominant condition—with one exception. U.S. representatives were not singing from the same libretto as the vast majority of the other participants.[51] Assistant Secretary of State, E. Curtis Bohlen, was suggesting that the draft treaty language was not satisfactory to the Bush Administration.[52] A memorandum from then Vice President Dan Quayle, which was made available to delegates at Nairobi, described the draft of the Rio Declaration as "extensively flawed."[53] The biodiversity provisions seemed to particularly disturb the Administration.[54] The Administration's view was that these provisions would hamper U.S. biotechnology transnationals in their efforts at producing products and profits.[55] U.S. delegates indicated that the idea of protecting ecological surrounds and biological and botanical species was not dear

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[47] *See Mr. Bush's Political Environment*, *supra* note 39, at A14.

[48] *Id.*

[49] *Id.*

[50] Jane Perlez, *Environmentalists Accuse U.S. of Trying to Weaken Global Treaty*, N.Y. TIMES, May 19, 1992, at B7.

[51] *Id.*

[52] *Id.*

[53] *Id.*

[54] *Id.*

[55] *Id.*

to the heart of a political administration sensitive to the interests of biotech-enterprises.[56]

The predominant participants in the UNCED process were the nation-states. The Rio actors were human beings officially empowered to act to further the official positions of these nation-states. These participants can be divided into two groups. The two groups are the developed nations who are usually styled as the Group of Seven (G-7) and the developing nation-states who are known as the Group of Seventy-Seven (G-77).[57] The reader should note, however, that the total number of developing states represented in the UNCED process numbered far more than seventy-seven. In reality, the total number of nation-state participants was 178.[58]

"Secondary" participants in the UNCED social process included international governmental organizations (IGOs). The primary IGO involved in the process was the United Nations, which was represented by UNCED Secretary General, Maurice Strong, and the U.N. associates. The United Nations was an "authoritative participant" which played the key role in organizing, planning, consensus building and staging the PrepComs and the Rio Conference.

Nongovernmental organizations (NGOs) were also critical participants in the UNCED social process. Their activities were both direct and indirect. Direct participation was through over one thousand NGOs, accredited by the UNCED Secretariat.[59] These entities directed their efforts at preparing reports, submitting them to nation-state delegates, and lobbying nation-state delegates. Although they were not authoritative participants in the closed sessions, they certainly exerted political force. There is no question that they did important work with respect to the framing of issues and the structuring of the official debate.

Indirect participation by NGOs took another form.[60] Tens of thousands of individuals representing NGOs from all over

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[56] *Id.*

[57] *See* Michael T. Kaufman, *44 Nations Meet Today in India on Economic Plans*, N.Y. TIMES, Feb. 22, 1982, at A9. The G-77 is a coalition of poor, developing and oil-producing countries that actually has 122 members.

[58] William K. Stevens, *The Earth Summit; Lessons of Rio: A New Prominence and an Effective Blandness*, N.Y. TIMES, June 14, 1992, at I10.

[59] Steve Fainaru, *Forum Tries Another Tack at the Issues*, BOSTON GLOBE, June 4, 1992, at 8.

[60] *NGO Meeting Identifies United States as "Problem" for Upcoming Rio Summit*, 15 Int'l Envtl. Rep. (BNA) No. 1, at 19 (Jan. 15, 1992).

the world played a role in the processes leading up to Rio.[61] Moreover, over thirty thousand NGO representatives descended upon Rio when the UNCED convened in June 1992.[62] They were there to participate in what was denominated as the Global Forum. This forum was a parallel summit that occurred simultaneously with the UNCED.[63] It represented the largest global union of environmentally-conscious people that has ever occurred.[64] Noteworthy attendees were the representatives of indigenous peoples from around the globe.[65] The Global Forum was structured to focus the world's attention on the need for economic development linked to environmental protection.[66] The Global Forum support of Agenda 21[67] demonstrated an awareness of the reality of the need to establish the connection between sustainable development and environmental protection.

In the interest of publication economy, we bring to a close our discussion of the Rio process. It is stressed that there was truly meaningful participation by G-77 representatives. This occurred through their chairing of PrepCom working groups and UNCED committees. Galvanized by Southern participants such as Tommy Koh, Singapore's ambassador, both the Northern and Southern nation-state representatives were forced to utilize a formal process of dispute resolution that worked in favor of consensus.[68] Various forces of resistance arose but were effectively dealt with through the decision-making processes officially instituted.[69]

B. Prescriptive Outcomes

Agenda 21 is UNCED's mega-plan for sustainable development.[70] It is a political blueprint for achieving such development.

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[61] Anne McIlroy, *Shadow Summit; Activists' Agenda Goes Far Beyond Goals of Official Earth Summit*, OTTAWA CITIZEN, June 3, 1992, at A1, *available in* LEXIS, Nexis Library, OMNI File.

[62] *Id.*

[63] *Id.*

[64] *Id.*

[65] *Conference Organiser* [sic] *Stresses Rich Countries' Responsibility to Poor Countries*, (Educativa television broadcast, June 5, 1992), *available in* LEXIS, Nexis Library, BBCSWB File.

[66] Peter Eisner, *Seeking Common Ground: Rio Summit Closes with Pacts, Pledges*, NEWSDAY, June 15, 1992, at 6.

[67] *See infra* text accompanying notes 70-71.

[68] Frank McDonald, *Maneuvering Dismays Environmentalists; Some of Thorniest Problems May be Left Open for Government Leaders to Resolve*, IRISH TIMES, June 10, 1992, at 10, *available in* LEXIS, Nexis Library, OMNI File.

[69] *Id.*

[70] Weiss, *supra* note 4, at 814-15.

The agenda specifies in substantial detail the relevant goals related to economic development and environmental protection.[71] Stated as pithily as possible, the fundamental goals are the following: (1) Promotion of relative economic equality by acting collectively and individually (at the nation-state level) to reduce and eradicate global poverty.[72] In regard to this task, the North has an especial responsibility. (2) Protection of cardinal world resources (global and regional) including water resources (oceans, seas, marine life forms, etc.), atmosphere, land masses, etc.[73] (3) The upgrading of the quality of life through such actions as providing an appropriate water supply for all populations, effectively managing waste materials, and reversing the curve of urban area pollution.[74] (4) The control of hazardous materials such as nuclear waste and chemicals.[75] (5) The development of policies and programs directed at efficient resource utilization.[76] Resources as contemplated here would include energy-producing materials, forests, land resources (as for agricultural), fragile ecological systems, biodiversity life forms, etc.[77]

At this point we turn to matters operational and institutional. In addition to the establishment of fundamental goals and policies, Agenda 21 dealt with, perhaps, the most important institutional product—the establishment of the Commission for Sustainable Development.[78] This Commission exists to facilitate carrying out the collective intent manifested by the fabricators of Agenda 21.[79] The Commission is modeled on the U.N. Commission on Human Rights.[80] Like the Commission on Human Rights, the Commission for Sustainable Development does not have the power to impose traditional sanctions.[81] It exists to

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[71] *Id.*

[72] *Id.* at 815.

[73] *Id.*

[74] *Id.*

[75] *Id.*

[76] *Id.*

[77] *Id.*

[78] *Id.*

[79] *Id.* at 814.

[80] The U.N. Economic and Social Council set out the terms of reference for the Commission of Human Rights. The Council provided that the work of the Commission shall be directed towards submitting proposals, recommendations and reports to the Council regarding "international human rights instruments, the protection of minorities and the prevention of discrimination, and related human rights matters." THOMAS BEURGENTHAL, INTERNATIONAL HUMAN RIGHTS IN A NUTSHELL, §§ 2-17, at 62-63 (1988).

[81] Paul Lewis, *U.N. Following Up Accords From Rio*, N.Y. TIMES, Dec. 1, 1992, at A16.

monitor nation-state compliance with Agenda 21, the Convention on Climate Change,[82] and the Convention on Biological Diversity.[83] In addition, it will operate to identify gaps in Agenda 21 coverage. This intergovernmental commission is empowered to receive complaints from nongovernmental organizations as well as from nation-states.[84] The fifty-three commission members are to be elected by the U.N. Economic and Social Council.[85] The Commission will use its prestige and the threat of exposure to motivate nation-states to comply with the policies and programs developed at Rio.[86]

In addition to the above, Agenda 21 dealt with program financing, formal decision making and numerous other important matters.[87] However, as our purpose is simply to provide the reader with a brief overview, we will forego further development of the substance of these provisions.

In the following paragraphs we shall describe briefly—for the purpose of providing further intellectual context—a number of other agreed upon outcomes. We limn first the U.N. Framework Convention on Climate Change.[88] This convention stresses the significance of the concern for the ever-increasing atmospheric concentration of gases which collectively have come to be known as greenhouse gases.[89] These gases are those which produce the well-chronicled greenhouse effect.[90] This effect is viewed as a global hazard as it produces temperature increases in the atmosphere and at the earth's surface.[91] Such temperature increases are believed to have negative effects on ecosystems and consequent adverse impact on the human quality of life.[92] Parties

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[82] United Nations Conference on Environment and Development: Framework Convention on Climate Change, May 9, 1992, 31 I.L.M. 849 [hereinafter Convention on Climate Change].

[83] United Nations Conference on Environment and Development: Convention on Biological Diversity, June 5, 1992, 31 I.L.M. 818 [hereinafter Convention on Biological Diversity]; *see also* Weiss, *supra* note 4, at 816-17.

[84] *U.N. Panel to Review Environmental Vows*, CHI. TRIB., Dec. 1, 1992, at 7.

[85] *Environment: 53 Elected to Commission on Sustainable Development*, Inter Press Serv., Feb. 16, 1993, *available in* LEXIS, Nexis Library, INPRES file.

[86] *Representatives from 53 Nations Meet to Organize Sustainable Development Unit*, Int'l Envtl. Daily (BNA) Mar. 2, 1993, *available in* LEXIS, Nexis Library, BNAENV file.

[87] Weiss, *supra* note 4, at 815.

[88] Convention on Climate Change, *supra* note 82, at 849.

[89] *Id.*

[90] *Id.* at 851.

[91] *Id.*

[92] *Id.*

to the Convention agreed to act to reduce and prevent, in so far as is realistic, the emission of these gases.[93] In addition, parties are to collect relevant data and make such data available to the conference of parties created by the Convention.[94] In order to achieve the emission control goal, nation-states are to cooperate to develop the scientific capacity to effectively control these emissions.[95] Under the Convention, provision is made for the financing of international collaborative efforts.[96] Furthermore, disputes in regard to Convention matters are to be settled via measures such as negotiation, conciliation, and arbitration.[97]

Another truly important result of the Rio process is the Convention on Biological Diversity.[98] Under this Convention, the contracting parties recognize that the preservation of biological diversity is important to the protection of the biosphere.[99] The Convention affirms that the nation-states are primarily responsible for the preservation of biological diversity existing within this jurisdictional domain.[100] However, additional obligations in regard to the task are imposed upon signatories. For example, the parties agree to use source management techniques and, when appropriate, establish protected areas.[101] In addition, all parties are to facilitate the transfer of relevant technology.[102] Contracting parties agree to provide those developing countries which provide genetic materials for research with an opportunity to benefit from biotechnologic activities.[103] Developed countries, under the Convention's provisions relating to financial activities, agree to aid developing countries in achieving convention objectives by providing financial support.[104] This Convention is a true environmental policy landmark.

A third important UNCED document is the Statement of Principles for a Global Consensus of the Management, Conser-

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[93] *Id.* at 854.
[94] *Id.* at 855.
[95] *Id.*
[96] *Id.* at 864-65.
[97] *Id.* at 867.
[98] Convention on Biological Diversity, *supra* note 83, at 818.
[99] *Id.* at 822-23.
[100] *Id.* at 824.
[101] *Id.* at 825.
[102] *Id.* at 829.
[103] *Id.* at 828.
[104] *Id.* at 830-31.

vation, and Sustainable Development of All Types of Forests.[105] The statement is evidence of a global consensus on the above referenced matters.[106] The document expressly recognizes the fundamental function of forests in sustaining planetary life.[107] It is specifically stated in the document that the greening of the planet is a priority project.[108] Forests are to be dealt with in a manner which is productive of renewable bio-energy sources, but which takes into account those factors critical in promoting the project of sustainable development.[109] National policy and legislation are to be crafted with the preceding in mind.[110] The forestry agreement makes reference to many economic matters.[111] A reading of all provisions oriented to economic activities makes it clear that the consensus position is one favoring open markets and free trade.

It is a juridical certainty that Agenda 21, the Convention on Climate Change, the Convention on Biological Diversity, and the Statement of Forestry Principles are conspicuous evidence demonstrating a world community commitment to the planetary project of economic development within the arena of a protected planetary environment. But now, having oriented the reader to the Rio complex of participants, social process, and relevant prescriptive outcomes (international instruments), we turn to the Rio Declaration itself.

II. THE RIO DECLARATION ON ENVIRONMENT AND DEVELOPMENT: 27 PRINCIPLES

The authors view the Rio Declaration as the normative jurisprudential instrument of the Rio Movement. Its twenty-seven principles contain the ideological blueprint—the grand design—the to-be-strived-for-reality-rooted "utopia." The instrument is the manifestation of a jurisprudential consensus. The drafters,

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[105] U.N. Conference on Environment and Development, Non-Legally Binding Authoritative Statement of Principles for a Global Consensus on the Management, Conservation and Sustainable Development of All Types of Forests, U.N. GAOR, 47th Sess., Agenda Item 9, at 1, UNCED Doc. A/CONF.151/6/Rev.1 (1992), *reprinted in* 31 I.L.M. 882 [hereinafter Statement of Forestry Principles].

[106] *Id.*

[107] *Id.* at 2.

[108] *Id.* at 5.

[109] *Id.* at 4.

[110] *Id.*

[111] *Id.* at 1-8.

in the preamble to the Declaration, have posited as a goal the establishment of a new global partnership through the creation of new programs of global environmental cooperation.[112] The preamble seeks to motivate states, key sectors of society, and persons to recognize the integral and interdependent nature of all parts of the planetary system.[113] The Declaration itself consists of twenty-seven principles which constitute the commitment of the world's nations to specific norms not universally agreed upon prior to this time.[114] At this point, we outline these principles in order to provide relevant contextual material.

Principle 1 proclaims the human entitlement to a "healthy and productive life in harmony with nature" through sustainable development.[115]

Principle 2 declares the sovereign right of states to utilize their resources in accordance with their national policies relating to environmental integrity and economic development.[116] In addition, this principle calls for preventing environmental damage to other states or special zones (e.g. areas of the common heritage).[117] This responsibility relates to domestic acts that have effects across international boundaries.[118]

Principle 3 insists that current and prospective generations' developmental and environmental needs must be met when nations act to fulfill the right to develop.[119]

Principle 4 requires sustainable development and environmental protection to be considered together and not isolated from each other.[120]

Principle 5 mandates the cooperation of states and people to eliminate poverty.[121] The elimination of poverty is linked to the program for sustainable development.[122]

Principle 6 dictates that the least developed countries and those most environmentally vulnerable shall be given "special

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[112] Rio Declaration, *supra* note 2, at 2.
[113] *Id.*
[114] *Id.*
[115] *Id.*
[116] *Id.*
[117] *Id.*
[118] *Id.*
[119] *Id.*
[120] *Id.*
[121] *Id.*
[122] *Id.*

priority" as to their special needs and situations.[123] It also provides that the needs and interests of all countries should be dealt with through appropriate concerted international environmental and developmental action.[124]

Principle 7 recognizes the special responsibilities of states based on their particular contributions to global environmental degradation.[125] In addition, this principle requires cooperation between states to conserve, protect, and restore the earth's ecosystem.[126] At the same time, it acknowledges the special responsibility of developed states with respect to the pursuit of planet-wide sustainable development.[127]

Principle 8 expresses the view that production and consumption patterns should be phased out by nation-states when they are not sustainable.[128] Moreover, appropriate demographic policies should be promoted by states in order to maximize life quality for the whole of humanity.[129]

Principle 9 directs states to cooperate so as to increase each state's ability to carry out its plan for sustainable development.[130] Cooperation is to occur with respect to the sharing of knowledge and technology.[131]

Principle 10 gives individuals the right at the nation-state level to have access to environmental information.[132] Acquisition of such information allows people to intelligently take part in decision making.[133] This principle requires states to provide "judicial and administrative" procedures which must include opportunities for rectification and relief.[134]

Principle 11 requires states to prescribe adequate environmental legislation.[135] This legislation should take into account the reality of the environmental and developmental contexts.[136]

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[123] *Id.* at 3.
[124] *Id.*
[125] *Id.*
[126] *Id.*
[127] *Id.*
[128] *Id.*
[129] *Id.*
[130] *Id.*
[131] *Id.*
[132] *Id.*
[133] *Id.*
[134] *Id.* at 4.
[135] *Id.*
[136] *Id.*

It is acknowledged that the standards utilized by one country may be unsuitable for application in other nation-state contexts.[137]

Principle 12 specifically addresses the international economy.[138] States are expected to promote an open system global economy.[139] Such an economy is viewed as critical in promoting global economic growth and sustainable development.[140] Trade policies in support of environmental purposes may not be discriminatory or restrictive in regard to international trade.[141] This principle demonstrates a preference for consensus decision making on transnational environmental matters that impact upon economic operations and conditions.[142]

Principle 13 declares that states shall develop national liability and compensation laws directed at rectifying wrongs attributable to polluters.[143] In addition, states are directed to cooperate to develop the international law of compensation necessary to deal with situations producing deleterious transboundary effects.[144]

Principle 14 directs states to cooperate in preventing the relocating or transferring of materials or endeavors to other states when such materials or endeavors are harmful to human health or cause severe environmental degradation.[145]

Principle 15 recognizes the difficulty and near impossibility of complete "scientific certainty" in evaluating environmental dangers.[146] It requires a "precautionary approach" to protect the environment.[147] The standard of proof is one based on the high value placed on environmental protection.[148]

Principle 16 recommends that nations should internalize environmental costs while taking into account these views: the polluter should pay, the public interest must be championed,

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[137] *Id.*
[138] *Id.*
[139] *Id.*
[140] *Id.*
[141] *Id.*
[142] *Id.*
[143] *Id.*
[144] *Id.*
[145] *Id.*
[146] *Id.*
[147] *Id.*
[148] *Id.*

and international trade and investment must not be distorted.[149]

Principle 17 requires nations to adopt a process for assessing the environmental impacts of proposed undertakings that have a high probability of producing a significant detrimental environmental impact.[150]

Principle 18 requires states to give immediate notification to other states of all "natural disasters or other emergencies" that are expected to produce harmful consequences for the other state's environment.[151] This principle also directs the international community to help the states which have suffered the disaster or are in jeopardy.[152]

Principle 19 requires states to provide prior notification, with pertinent information about actions that may have significant detrimental transboundary environmental consequences.[153]

Principle 20 states that the full participation of women is vital and essential in achieving sustainable development.[154]

Principle 21 recommends mobilizing the world youth's "creativity, ideals and courage" to form a world association to accomplish sustainable development and an enhanced future for everyone.[155]

Principle 22 recognizes the importance of the effective participation of indigenous peoples in accomplishing sustainable development.[156]

Principle 23 states that the natural resources and the environments of oppressed, dominated, or occupied people must receive protection.[157]

Principle 24 imposes the requirement upon states that they respect international environmental law and cooperate to further its development.[158] States are also reminded that warfare and sustainable development are incompatible.[159]

Principle 25 recognizes the interdependence and indivisibility of peace, development, and environmental protection.[160]

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[149] *Id.* at 5.
[150] *Id.*
[151] *Id.*
[152] *Id.*
[153] *Id.*
[154] *Id.*
[155] *Id.*
[156] *Id.* at 6.
[157] *Id.*
[158] *Id.*
[159] *Id.*
[160] *Id.*

Principle 26 requires the peaceful resolution of disputes in regard to environmental situations.[161] This principle also requires compliance with the U.N. Charter provisions dealing with conflict resolution.[162]

Principle 27 requires good-faith cooperation between nations and people so as to fulfill the principles of the Rio Declaration.[163] It further charges them to work together in advancing and developing international law relating to sustainable development.[164]

III. EXPLICATION OF THE RIO DECLARATION OF PRINCIPLES THROUGH THE UTILIZATION OF THE LAW, SCIENCE, AND POLICY VALUE CONSTITUENTS

A. Affection

Scholarship centered on environmental norm creation and decision making almost never focuses attention on the importance of "affection" (a constituent law, science, and policy value) and its role in policy creation, legislative production of norms, and the juridical disposition of matters in dispute. In general, affection as a value is seen as primarily applicable to the family law decision-making process and its related social context.[165] We, however, suggest that the positive affect of affection is a vital force having relevance to international law matters. Our position in this article is that affection is critical to the generation of a global partnership having as its purpose the protection of the planetary environment and the promotion of rational economic development to meet the needs of all peoples. It is our view that it is the emotion of affection, rooted in the limbic levels of the central nervous system and programmed by familial and social contexts, which serves to accelerate movement in the direction of binding participants together to promote the cause of planetwide sustainable development.[166] The preced-

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[161] *Id.*

[162] *Id.*

[163] *Id.*

[164] *Id.*

[165] John Batt, *Child Custody Disputes and Beyond the Best Interests Paradigm: A Contemporary Assessment of the Goldstein/Freud/Solnit Position and the Group's* Painter v. Bannister *Jurisprudence*, 16 NOVA L. REV. 621 (1992).

[166] Batt, *supra* note 24, at 19.

ing position will be explicated very shortly in this section of this article. However, at this moment we wish to make brief reference to Principle 1 of the Declaration, for it is indisputably focused on affection.

Principle 1 of the Declaration declares that "[h]uman beings are at the centre of concerns for sustainable development."[167] These chosen words clearly demonstrate that the drafters' position is anthropocentric—man and his associated cultural endeavors are at the vital center of the sustainable development project. Moreover, as the Declaration derives from the preparatory activities of the United Nations working groups,[168] there is no question that the surrounding socioeconomic context is meant to be international. The perspective is assuredly not parochial. Egotism (the great historical/political narcissistic fallacy) and its extension into the primitive obsessive tie with only the spatially local are rejected by the makers of the Declaration. The "syndrome of parochialism"[169] is seen for what is—a barrier to the development of cooperative solutions to problems of worldwide significance. Principle 1 declares that human beings are entitled to their health and to economic well-being. Such a viewpoint is surely related to a psychic value position. The drafters of the Declaration display authentic sentiment for and loyalty to mankind. Affection is projected beyond the local arena and on to human participants in the process of planetary life. Affection of this kind is requisite to the creation of a decision-making system which produces a fair distribution of opportunities and resources. Claims of a humanistic-international-law variety cannot come into existence unless policy makers (lawyers, diplomats, etc.) have developed a pattern of identification which is, at the core, rooted in the affection for Homo sapiens and the humanist cause and condition. The fabricators of the twenty-seven principles display such an affect-fixed pattern of identification. They know that collective action depends upon concern for all!

Principle 3 of the Declaration focuses on generativity[170]—a special variety of affection. Under the standard set by this prin-

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[167] Rio Declaration, *supra* note 2, at 1.

[168] *The Earth Summit: An Opportunity We Cannot Afford to Miss*, 29 U.N. CHRON., No. 2, June 1992, at 42.

[169] Harold D. Lasswell, *Introduction* to MYERS S. MCDOUGAL & FLORENCE FELICIANO, LAW AND MINIMUM WORLD PUBLIC ORDER at xxix (1961).

[170] ERIC H. ERIKSON, IDENTITY AND THE LIFE CYCLE 103 (1980).

ciple, economic development is to occur under a specific requirement. It is obligatory that economic development not be conducted so as to penalize future generations. The pace of development and its regulation must be such that the economic and environmental rights of future generations must not be violated. Present generations are to bind themselves to future generations through the link of generativity. Vice President Al Gore has made a very interesting related comment on generativity in his recently published book on environmental issues:

> As the case with gender, stage of life has a profound effect on the way an individual relates to the world. Adolescents, for example, have a sense of immortality that dulls their perception of some physical dangers. During middle age, on the other hand, emotionally mature adults experience a desire to spend more time and effort on what Erikson has called generativity: the work of bringing forth and nurturing possibilities for the future. The metaphor is irresistible: a civilization that has, like an adolescent, acquired new powers but not the maturity to use them wisely also runs the risk of an unrealistic sense of immortality and a dulled perception of serious danger. Likewise, our hope as a civilization may well lie in our potential for adjusting to a healthy sense of ourselves as a global civilization, one with a mature sense of responsibility for creating a new and generative relationship between ourselves and the earth.[171]

Principle 3 of the Declaration is a less literary, but analogous expression of the point that Vice President Gore makes. Mature human beings show future concern in regard to environment and those generations who are chronologically behind them. Vice President Gore specifically mentions the environment, but it is clear that he recognized that positive affect in regard to the environment stems in great measure from mature affection directed at upcoming members of the human communal continuum.

In addition, Vice President Gore's comment is most interesting in that it anticipates the nexus between Principles 3 and 7 of the Rio Declaration. Principle 7 directs the nation-states to act as a united entity "to conserve, protect and restore the health

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[171] ALBERT GORE, EARTH IN THE BALANCE: ECOLOGY AND THE HUMAN SPIRIT 213 (1992).

and integrity of the Earth's ecosystem."[172] The word "ecosystem" is a term derived from the discipline of ecology.[173] Environmental law from our law, science, and policy perspective is the juridical offspring of ecology. Ecology at its heart (in its radical essence) is a systems field of study. Nature is viewed as consisting of interlocking systems of living and non-living elements. Ecosystems are fields of forces and objects involving webs of relationships. An ecosystem is an arena in which life is maintained. Ecosystems are critical to human beings, other animal species, and botanicals. The surround is the context vital to our existence. We must learn to love it. For it is the sustaining womb which is essential to our preservation.

If we are to respect the interests of all people and achieve our goals of appropriate development and environmental integrity, the affection value must be served. We must champion affection over antipathy. Throughout this article we describe anti-environmental acts and policies which are indicative of the antipathetic position. Many industrial, agricultural and so-called "developmental" endeavors are dramatic evidentiary items which reveal the true hostile, aversive, and psychic positions of the actors. Of course, there are those who are simply ill-informed but basically innocent. But that is not the case with all too many who wreak havoc on the environment and impose injury upon human beings who are within the zone of catastrophe. Their acts are projections of their fundamental antipathy toward humans and the environment.

B. Well-Being

Well-being is one of the primary values stressed by the human dignity jurisprudence of the New Haven School.[174] It is our view that a careful reading of the Rio Declaration of Principles reveals a global concern for the maximization and broad-based distribution of human well-being. Well-being is given clear-cut priority status by the Declaration. Under the Rio scheme, human health (well-being) is to be vigorously protected from

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[172] Rio Declaration, *supra* note 2, at 2.

[173] "Ecosystem" is defined as "an ecological community together with its physical environment, considered as a unit." THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE 413 (New College ed., 1978).

[174] MCDOUGAL et al., *supra* note 1, at 85.

harms produced by environmental degradation.[175] It is made clear that economic development is not to be predicated upon the predatory acquisitive demands of economic and political elites, but is to occur in a context which protects and promotes the best interests of human beings.[176] It is unqualifiedly true that the jurisprudential intent of the Rio Declaration is to establish an anthropocentric juridical bias.

It is reemphasized that in evaluating the Rio Declaration, we assume the role of concerned scholars (not advocates of special interests) working within the democratic jurisprudence authored by McDougal and Lasswell. Our expressed preference is that there be a broad-based sharing of fundamental values. This just distribution of values to as many planetary inhabitants as is possible, we believe, is essential if world system order and justice are to prevail. Peace is impossible without a reasonably just distribution of income, resources, social benefits, human dignity, and Jeffersonian life, liberty and human happiness.

We are, of course, aware that there is no utopia. But, it is clear to us that a widespread distribution of fundamental values is our only defense against a *Blade Runner* dystopia[177] and a planetary nightmare. We believe that the Rio Declaration is a document expressing intentions parallel to those of law, science, and policy jurisprudence.

Principles 1, 3, 5, 6, 7, 8, 10, 13, 14, 15, 17, 18, 19, 23, 24, 25, and 26 all stress the well-being value.[178] It is obvious from the length of the list that the Rio Declaration truly emphasizes the significance of this value. Well-being from the law, science, and policy perspective relates to human safety, health, and life comfort.[179] It is a life-sustaining value. Psychologically-normal human beings aspire to this value and seek to optimize their well-being.

The principles stressing well-being articulate expectations in regard to signatory behavior. They require signatories to provide peoples with a real opportunity to live physically and psychologically-healthy lives. As above indicated, we have identified a large number of principles which focus on well-being. As we

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[175] Rio Declaration, *supra* note 2, at 1.

[176] *Id.*

[177] BLADE RUNNER (Warner Brothers 1982).

[178] *Rio Declaration*, *supra* note 2, at 1-5.

[179] Batt, *supra* note 1, at 85.

have many other law, science, and policy matters to deal with, we will not discuss each of the well-being oriented principles. Instead we shall be selective and consider only a limited number of them. We proceed in this manner so that we are able to develop specific vignettes which give the reader human connection to the well-being value. We opt for depth as opposed to breadth. We begin with Principles 1 and 14 of the Rio Declaration.

Principle 1 proclaims that the well-being entitlement belongs to men, women and children. All are entitled to a "healthy and productive life in harmony with nature" under Principle 1.[180] Principle 14 expresses a preference for well-being by barring the transfer from one nation-state to another of materials dangerous to human health.[181] We now explicate a contemporary situation which illustrates how the right to well-being can be violated within an environmental context. We adopt the narrative form in order to graphically illustrate that which concerns us. The first narrative discusses the impact of chemical pollution on mothers and their children. It clearly deals with subject matter connected to the normative content of Principles 1 and 14.

Approximately eighteen hundred *maquilidora* factories operate on the Mexican side of the United States-Mexico border.[182] These *maquilidoras* manufacture a variety of products for export to the United States and other countries.[183] The Republic of Mexico has granted all *maquilidora* owners special tax concessions status and other economic incentives, such as watered-down occupational health and safety requirements.[184] Moreover, Mexican environmental control practices are nothing short of

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[180] "Principle 1. Human beings are at the centre of concerns for sustainable development. They are entitled to a healthy and productive life in harmony with nature." Rio Declaration, *supra* note 2, at 1.

[181] "Principle 14. States should effectively cooperate to discourage or prevent the relocation and transfer to other States of any activities and substances that cause severe environmental degradation or are found to be harmful to human health." *Id.* at 3.

[182] U.S. ENVTL. PROTECTION AGENCY, INTEGRATED ENVIRONMENTAL PLAN FOR THE MEXICAN-U.S. BORDER AREA (First Stage, 1992-1994), at B10-11 tbl. B-5 (1991).

[183] *See* Nora Lockwood, *Deadly Fallout at the Border: Birth Defects, Illness Plague Towns Near Mexican Plants*, PROVIDENCE J. BULL., Sept. 28, 1992, at A1, *available in* LEXIS, Nexis Library, OMNI file.

[184] Jeff Silverstein, *Industrial Inferno May Hold Key to Birth Defects: A Surge in the Numbers of Brain-Damaged Babies Has Led a Texas Border Town to Question the Boom Across the Rio Grande*, THE INDEPENDENT, Mar. 7, 1992, at 10, *available in* LEXIS, Nexis Library, OMNI File.

pitiable.[185] Historically, the vast majority of the *maquilidoras* have not been inspected regularly by Mexican environmental officials.[186] This has been the case despite the existence of Mexican laws and administrative regulations empowering regulators.[187] One must keep in mind that print is not necessarily equatable with administrative practice.

In early 1991, Carmen Rocco, M.D., Director of the Brownsville, Texas, Department of Health, began to investigate the high incidence of anencephalic (congenital absence of a part or all of the brain) babies born in the Brownsville, Texas area.[188] While inquiring in regard to this situation, she became convinced that a causal connection existed between the environmental pollution coming from the unregulated *maquilidora* operations in nearby Mexico and the condition of the anencephalic babies born in the Brownsville area.[189] The chemicals xylene and toluene were identified as the agents responsible for the damage to the babies.[190] These chemicals are highly toxic to the developing central nervous system of the human fetus.[191] They initiate their damage by contaminating the water the mothers drink and the air which they breath.[192] Drinking and breathing introduce these mutagenic agents into the maternal surround containing the fetus.[193] Dr. Rocco communicated her findings to the government of the State of Texas, the Mexican government and the United States government.[194] Neither the Texas, Mexican, nor the United States government gave significant attention to her findings.[195]

The xylene and toluene dispersal continued. As of November 1992, the anencephalic babies continued to be born in the

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[185] Lockwood, *supra* note 183.

[186] *Id.*

[187] *Id.*

[188] Telephone Interview with Carmen Rocco, M.D., Director, Dep't of Health, Brownsville, Texas (Mar. 13, 1992) [hereinafter Interview with Dr. Rocco].

[189] *Id.*

[190] *Id.*

[191] *Id.*

[192] *Id.*

[193] Eduardo Montes, *Hunt Goes on for Cause of Brain Defects in Babies Born on Border; Anencephaly: Theories Include Chemicals Emitted by Factories, Solvents in Gulf of Mexico, or Fathers Exposed to Chemicals at Work*, L.A. TIMES, July 26, 1992, at A1.

[194] Interview with Dr. Rocco, *supra* note 188.

[195] *Id.*

Brownsville area.[196] Unfortunately, the Mexican government does not have good epidemiological data on the number of anencephalic births.[197] However, reliable information indicates that over one hundred anencephalic babies have been born to date in the Matemoras, Mexico/Brownsville, Texas border area.[198]

Well-being for the babies born in the Brownsville area should mean protection from exposure to these mutagenic chemicals. It should mean protecting the health and safety of the mothers who are the progenitors of the babies. These babies are entitled to the biological predicate for the development of a healthy body and a sound mind. Obviously, the presence of a mutagenic agent in the environment infringes upon their right to a somatic and psychic development at normative levels. Clearly such a situation runs contrary to the policy preference expressed in Principle 1 of the Declaration. Dr. Carmen Rocco continues to work on behalf of the unborn.[199] However, Texas' environmental protection entities, the EPA, and Mexico's SEDUE[200] have not acted to protect the well-being of the mothers and babies.[201] This demonstration of disregard for the well-being of mothers and children is exactly what Principle 1 of the Rio Declaration takes a stand against.

Furthermore, the Brownsville example illumines anti-well-being behaviors condemned by Principle 14. Neither the United States nor Mexico has acted to block the movement across the border of operations using chemicals dangerous to human well-being. Principle 14 of the Rio Declaration specifically condemns the movement of dangerous industrial operations from one nation to another nation.[202]

We move at this point to another illustrative narrative. We examine what environmental specialists call the "Minamata case" in order to deepen our understanding of the relationship between

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[196] Chares Krause, *MacNeil/Lehrer News Hour: Border Business* (PBS television broadcast, Nov. 19, 1992) (interviewing Carmen Rocco, M.D., Director, Dep't of Health, Brownsville, Texas).

[197] Silverstein, *supra*, note 184, at 10.

[198] Interview with Dr. Rocco, *supra* note 188.

[199] Krause, *supra* note 196.

[200] The former Secretariat of Urban Development and Ecology (SEDUE) was Mexico's counterpart to the U. S. EPA. It is now called the Secretariat of Social Development (SEDESOL). *Mexico, No Environmental Tiger*, ENV'T WEEK, No. 35, Vol. 5, Sept. 10, 1992, *available in* LEXIS, Envirn Library, PUBS File.

[201] Lockwood, *supra* note 183.

[202] Rio Declaration, *supra* note 2, at 1.

human well-being and environmental insults. The Minamata case is viewed from the perspective of the well-being value posited by Principles 1, 10, and 13 of the Rio Declaration of Principles.[203] Principle 1 proclaims in plain language the preference for "healthy and productive life in harmony with nature."[204] Principle 10 declares that the individual is entitled to access to information regarding hazardous activities and materials in their communities, and requires nation-states to provide redress and remedy for injury through adequate access to national administrative and judicial processes.[205] Principle 13 expresses a strong preference for the development of nation-state liability and compensation laws for victims of environmental pollution.[206] Against this juridical background, we examine the facts of the Minamata case.

Minamata is a village located on the Japanese island of Kyushu, approximately 850 miles south of Tokyo.[207] Historically, Minamata has been a fishing village with its local people's livelihoods closely linked to resources of the sea.[208] This dependency on fishing is illustrated by the fact that the fish consumption in Minamata has been as much as four times Japan's national average.[209]

In 1932, Chisso Corporation, an industrial chemical producer, began to dump methyl-mercury into Minamata Bay.[210] Chisso Corporation's records reflect that their dumping continued from 1932 until 1968.[211] In 1968, it became necessary for Chisso to terminate its dumping of the chemical as a result of the outcry from concerned citizens.[212]

In the 1950s, the village residents began to observe unusual signs. They noticed dead fish floating belly-up in Minamata Bay.[213] At this time, the residents made no connection between

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[203] *Id.* at 3.

[204] *Id.* at 1.

[205] *Id.* at 3.

[206] *Id.*

[207] Chieko Kuriki, *Minamata's Heroes; Industry Poisoned Their Lives, but Not Their Spirits*, CHI. TRIB., Aug. 26, 1990, § 6, at 1.

[208] *Id.*

[209] Mutsuo Fukushima, *Minamata Ruling Revives Debate on Moral Issue of Pollution; Chisso Corp.*, Japan Economic Newswire, Mar. 4, 1988, *available in* LEXIS, Nexis Library, JEN File.

[210] Kuriki, *supra* note 207.

[211] *Id.*

[212] Fukushima, *supra* note 209.

[213] Kuriki, *supra* note 207, at 8.

the activities of Chisso Corporation and the dead fish.[214] Moreover, in the 1950's, the residents observed that many of the cats in the fishing village were behaving in a pathological manner.[215] This behavior included foaming of the mouth, biting themselves, running blindly into walls, and throwing themselves into the bay.[216] In addition, a number of adult village residents began to show "mild" signs of poisoning after eating the fish caught in Minamata Bay.[217] Furthermore, a significant number of children living in the vicinity were hospitalized with suddenly-occurring, severe medical symptoms.[218] These symptoms included numbness of limbs, severe speech impediments, blindness, tremors, paralysis and convulsions.[219] Many of these children died.[220] Chisso Corporation records indicated that over thirty-seven tons of methyl mercury were discharged into Minamata Bay prior to the protest of 1968.[221]

In 1959, Dr. Hajime Hosokawa had decided to conduct an interesting experiment.[222] He fed a cat effluent containing methyl-mercury.[223] This effluent came from a Chisso Corporation facility.[224] The cat convulsed, foamed at the mouth, became wild, and ran blindly around his laboratory.[225] It was a medical certainty that the methyl-mercury had dramatically altered the functioning of the cat's neurological system.[226] Dr. Hosokawa, a Chisso employee, immediately notified Chisso Corporation of the results of this experiment.[227] The corporation's response was to shut down Dr. Hosokawa's experiment, and, as corporate logic dictated, they cut off his access to the contaminated efflu-

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[214] *Id.*

[215] *Id.*

[216] Michael Weisskopf, *Japanese Town Still Staggered by Legacy of Ecological Disaster*, WASH. POST, Apr. 18, 1987, at A12.

[217] Kuriki, *supra* note 207, at 8.

[218] *Id.*

[219] *Id.*

[220] *Id.*

[221] *See also* Fukushima, *supra* note 209 (reporting that court documents indicate 600 metric tons of methyl mercury were discharged by Chisso Corporation into Minamata Bay resulting in the deaths of 700 people and the crippling of as many as 9000 others).

[222] *Id.*

[223] *Id.*

[224] *Id.*

[225] *Id.*

[226] *Id.*

[227] *Id.*

ent.[228] Business continued as usual until the public protest of 1968.[229]

Twenty years passed. Finally, in 1988, the Company was indicted, tried for its offenses, and convicted.[230] However, no company executive was ever imprisoned.[231] Fines were imposed, but total monetary damages fell far short of compensating people for the well-being deprivations they suffered.[232]

The preceding narrative outlines factual matters which have logical relationship to Principles 1, 10, and 13 of the Rio Declaration.[233] The residents of Minamata who were injured by the methyl-mercury discharges certainly did not receive protection aimed at enhancing the healthy and productive life mandated by Principle 1 of the 1992 Rio Declaration.[234] Moreover, the Minamata residents were not afforded their right to intelligently participate in national environmental decision making and were not given adequate access to national administrative and judicial relief processes as required by the now applicable Principle 10 of the Rio Declaration.[235] The narrative further demonstrates that the nation-state, Japan, did not provide legal protection to the residents of Minamata from pollution and environmental damage as *now* required by Principle 13 of the Rio Declaration.[236] The above well-being-focused protections were denied Minamata's inhabitants. *The Rio Declaration of Principles articulates a different juridical position.*

We turn now to another exemplary instance. We examine the well-known Bhopal tragedy in order to further develop the relationship between economic activity which affects the environment negatively and, as a result, damages human well-being.

We utilize Principles 1, 10, and 14 of the Declaration to clarify for the reader exactly how the Bhopal tragedy is viewed from the law, science, and policy perspective.[237] Indeed, Bhopal can be considered one of the major historical occurrences that

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[228] *Id.*
[229] *Id.*
[230] *Id.*
[231] *Id.*
[232] *Id.*
[233] Rio Declaration, *supra* note 2, at 1, 3.
[234] *Id.* at 1.
[235] *Id.* at 3.
[236] *Id.*
[237] Rio Declaration, *supra* note 2, at 2-3.

spawned the well-being principles. As indicated above, Principle 1 articulates the individual human entitlement to a healthy productive life in conjunction with nature.[238] Principle 10 requires nation-states to provide individuals appropriate information, participation, and access to administrative and judicial processes in matters relating to hazardous activities and materials.[239] Principle 14, as we stated in the *maquiladora* narrative, requires nation-states to curb the transfer of activities and substances harmful to the environment and human well-being.[240]

Union Carbide (India) was established by Union Carbide, a U.S. corporation, and the Indian government in the mid-1970s.[241] Its Bhopal plant began the manufacture of pesticides based on the use of methyl isocyanate in 1980 and continued to produce methyl isocyanate-based pesticides until December 1984.[242] This chemical is an analog of cyanide.[243] It is well-known that the inhalation of the gas from cyanide and its analog can produce death or severe physical damage to human beings.[244]

During construction of the Bhopal plant, a workers' shanty town grew up around the plant perimeter. On December 3, 1984, a gas cloud of methyl isocyanate leaked from the Union Carbide chemical plant.[245] This gas cloud, containing some forty-five tons of deadly methyl isocyanate, quickly covered the shanty town and spread over a twenty-five square mile area.[246] The gas discharge continued for forty-five minutes.[247] The effects of the gas cloud were devastating. Approximately thirty-five hundred people were killed, nineteen thousand were permanently disabled, and two hundred thousand people suffered some variety of physical injury as a result of contact with the gas.[248]

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[238] *Id.* at 1.

[239] *Id.* at 3.

[240] *Id.* at 3.

[241] Stuart Diamond, *Disaster in India Sharpens Debate on Doing Business in Third World*, N.Y. TIMES, Dec. 16, 1984, § 1, at 1.

[242] John Elliott, *Union Carbide Plant That Will Never Reopen*, FIN. TIMES, Dec. 7, 1984, at 116.

[243] Steven R. Weisman, *Doctors in India Disagree on Drug*, N.Y. TIMES, Apr. 10, 1985, at A3.

[244] Paul Berq, *Army-Sponsored Research Yields New Cyanide Antidote*, WASH. POST, May 1, 1985, at 5.

[245] Diamond, *supra* note 241.

[246] K. K. Sharma, *Carbide Accused of Criminal Failure Over Gas Deaths*, FIN. TIMES, Feb. 20, 1985, at I3 (Overseas News).

[247] *Id.*

[248] Bill Dietrich, *Our Troubled Earth--India*, SEATTLE TIMES, Nov. 13, 1990, at F14.

As soon as the gas cloud cleared, investigations were launched by the Indian government and Union Carbide to determine what had occurred.[249] The investigations revealed the following: improper pipe connections, inadequate safety equipment, inadequate safety plans for plant workers, no safety plans for the nearby residents, no evacuation plans for nearby residents, and no alarm system to warn nearby residents.[250] Plants of this type are not built in or near residential areas in developed countries (the North). The catastrophic human consequences of this event are with us to this moment. The above narrative graphically illustrates just how important are the well-being protections contained in the Rio Declaration.

If Bhopal were an event of 1993, it would be clear that the people's entitlement to a healthy and productive life under Principle 1 would have been infringed.[251] In addition, the facts of the Bhopal case demonstrate that the people's right to access to relevant environmental information under Principle 10 would have been violated. Finally, the narrative presents a case in which nation-states failed to act together to prevent the transfer of a dangerous endeavor from one nation-state to another as required by Principle 14.[252] Well-being was not promoted at Bhopal. It is our duty to see that the world community promotes it in the future.

C. *Wealth*

"Wealth" as a technical term is defined in reference to that category most appropriately labelled "resources." "Resources," as we use the term, includes physical resources, raw materials, human resources and money, etc. In other words, wealth is comprehensively defined. The authors take the position that "wealth" from the law, science, and policy perspective includes not only the traditional economic items, but also encompasses what we designate as "planetary capital." "Planetary capital" includes rain forests, clean rivers, bioactive oceans such as the Antarctic Ocean with its krill-based food chain, bioactive soil, and the seeds and plants that grow in the rain forests and possess

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[249] John Elliott and Terry Dodsworth, *Union Carbide Warned Indian Unit Over Safety Risks*, FIN. TIMES, Dec. 11, 1984, at §I1.

[250] Sharma, *supra* note 246.

[251] Rio Declaration, *supra* note 2, at 1.

[252] *Id.* at 3.

important pharmacological properties. In addition, we also view such various non-human life forms such as insects and worms (which are responsible for maintenance of environments which produce resources connected with markers of wealth as traditionally defined) as examples of planetary capital. Moreover, it is the authors' position that there are mammals, such as dolphins and whales, which are true forms of planetary capital. Our belief is that in the future they will aid us in making scientific advances related to medicine, brain science, etc. Work with these beings will result in the production of wealth for those persons, research entities, corporations, and nation-states that pursue appropriate projects.

Furthermore, the authors contend that the wealth value is related specifically to patterns of resource acquisition, distribution, production, and consumption. These processes are inextricably bound to the concept of the wealth value. It is clearly the case that billions of human beings strive with vigor to maximize their wealth value position. We shall demonstrate, through the narratives set forth in this section, the global implications that the Rio Declaration of Principles has in reference to the wealth value. This value must be examined with environmental quality, human well-being, and sustainable development in mind. The lust for wealth cannot be preferred over all other values.

Principles 2, 3, 5, 6, 8, 12, and 22 of the Rio Declaration of Principles deal with the wealth value.[253] At this juncture, we shall consider wealth matters which we perceive as most useful in illustrating the law, science, and policy approach to this particular value. Our goal is to provide relevant illustrations and commentary so that the wealth value aspects of the Rio Declaration are illuminated. Owing to space constraints, we are able to deal with only three wealth-value-oriented principles. We begin our discussion by focusing on Principle 2 of the Declaration.

Principle 2 of the Rio Declaration states that in accord with norms of international law, every nation has the right to exploit its own resources.[254] Who in fact engages in the exploitation of resources will depend upon the form of established government. Exploitation in nation-states that, in the main, accept a capitalist ideology, will be conducted by individuals, joint ventures, partnerships, and private corporations (domestic and foreign) in

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[253] Rio Declaration, *supra* note 2, at 1-5.

[254] *Id.* at 1.

most cases. In nation-states that operate on a mixed capitalist/socialist predicate, exploitation will often be conducted by employees operating on behalf of the nation-state in joint venture with a private economic entity. In nation-states where private enterprise is limited to small-scale trade (e.g., buyer-seller) operations, exploitation operations of real scale will be carried out more often than not by entities created by the central authority.

Principle 2 makes it clear that the acquisition of resources is far from being an absolute right.[255] Generally, the expected limits on the acquisitions of wealth are the developmental and environmental policies of the nation-state. However, the plain meaning of Principle 2 is an articulated international policy preference which jurisprudentially limits the right to resource exploitation. This Principle 2 position is that the state has the responsibility to control wealth acquisition operations within its boundaries so that damage is not inflicted upon other states or other areas outside of the boundaries of the state where the wealth acquisition activity occurs.[256] In order to make our point graphically, we consider a case narrative.

Scholars of international law are familiar with that landmark classic, the *Trail Smelter Case*.[257] The *Trail Smelter Case* involved a dispute between Canada and the United States. Consolidated Mining and Smelting Company of Canada, Ltd. operated a smelter in Trail, British Columbia, beginning in 1906 and continuing until 1941. In 1925 and 1927, Consolidated added two 409-foot stacks to its smelter and substantially increased its zinc and lead ore smelting. This stepped-up production greatly increased sulphur dioxide emissions. Thousands of tons of emissions spewed from the two stacks of the Canadian plant. These emissions travelled into the state of Washington in the United States, causing air and water pollution. As a consequence, the environment and human beings were put in jeopardy. A decision by the International Arbitral Tribunal held the government of Canada responsible under international law for the acts of Consolidated Mining and Smelting Company of Canada, Ltd.[258] The

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[255] *Id.*

[256] *Id.*

[257] Trail Smelter (United States v. Canada), 3 R.I.A.A. 1905, 1907 (1949) (Arbitral Tribunal, 1941), *reprinted in* MYERS S. McDOUGAL & W. Michael Reisman, INTERNATIONAL LAW IN CONTEMPORARY PERSPECTIVE: THE PUBLIC ORDER OF THE WORLD COMMUNITY (1981).

[258] *Id.*

decision has become the leading case on state liability for acts that cause damage across transnational boundaries. Pithily put, the subscribed-to view was that a country is responsible for allowing domestic entities to pollute the environment of another nation-state.[259] Principle 2 of the Declaration is clearly consistent with this decision, which sought to place rational, environmentally-sensitive limits on the wealth acquisition process.[260] The view is that wealth acquisition is not an endeavor that has *the* preferred position.

Principle 5 of the Rio Declaration, like Principle 2, sees the wealth issue as being of world community interest.[261] This principle stresses the eradication of poverty through activities which increase the availability of wealth to general populations, not simply to elites. Rising levels of productivity, increased standards of living, and optimal sharing of interests in wealth are viewed as essential to the task of eliminating poverty. The position taken by the drafters of the Rio Declaration is that the eradication of poverty is requisite to sustainable development. Eradication of poverty and a more democratic distribution of wealth must occur if global environmental well-being is to be achieved.

Principle 5 clearly demonstrates a preference for the freedom of all people to participate in the wealth acquisition process.[262] The Declaration's drafters see it as the duty of all nation-states to cooperate in creating those economic conditions which protect people from deprivations and promote a more equitable sharing of income, property, and social benefits. The global social process context identified by the drafters of the Rio Declaration makes it clear that developed and developing nations must create joint policies, strategies, and programs to achieve the goals of Principle 5.

At this juncture we set forth some relevant contextual material which hopefully will provide the reader with signposts of reference. Our focus is on the culture of poverty under contemporary global conditions. The realities are grim. One billion people are trapped in absolute poverty.[263] In truth, absolute poverty is the real socioeconomic condition of the South. Ab-

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[259] *Id.*

[260] Rio Declaration, *supra* note 2, at 1.

[261] *Id.* at 2.

[262] *Id.*

[263] GAIA, AN ATLAS OF PLANET MANAGEMENT 220 (Dr. Norman Myers, ed., 1984).

solute poverty has been defined as a "condition of life so characterized by malnutrition, illiteracy, disease, high infant mortality and low life expectancy as to be beneath any reasonable definition of human decency."[264] This brand of poverty can be measured by examining specific factors useful in measuring levels of deprivation. The most important factors are income, food, fuel, literacy, housing, employment, health care, population density, and environmental quality.[265] Our research indicates that the developing countries are faced with extraordinary levels of deprivation in each of these areas. Lack of access to food is a very real measurement of poverty. While total world food production has not diminished, access to it by the people of the developing countries has been greatly reduced. It is estimated that 450 million people suffer from starvation or malnourishment.[266] The number will surely increase unless prevailing conditions are altered. Health care is also an index of poverty and deprivation. Minimal health care is unavailable to over 800 million people.[267] In some countries, doctor-patient ratios are as low as one doctor for each 17,500 people.[268] Mental and physical disabilities afflict over 400 million people in the world.[269]

Income is a critical measure of poverty. Most people of developing nations have an income level of less than one hundred dollars per year.[270] At this income level, people can barely survive. This must be contrasted with income levels of the developed nations, where incomes average, at the very least, forty times greater then those in the developing countries.[271] Adult literacy rates are another measure of poverty. The rate of illiteracy in the developing countries is extremely high. An estimated 850 million adults are illiterate, the majority of whom are women.[272]

Other indices demonstrate the tenuous position of the developing nations. The people of these nations lack access to lines of credit. The majority of individuals and nation-states in the developing world currently have no significant access to credit.

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[264] *Id.* at 220 (quoting Robert McNamara).
[265] *Id.*
[266] *Id.* at 221.
[267] *Id.*
[268] *Id.* at 220.
[269] *Id.* at 221.
[270] *Id.* at 220.
[271] *Id.* at 218.
[272] *Id.* at 220.

Lacking credit, as well as income, these deprived third world citizens and nation-states face bleak prospects. Moreover, inadequate housing, lack of access to potable water, inadequate transportation systems, and exploding populations combine to make their existence a living hell on earth. Life expectancies are over thirty years less than those in the developed nations, and child mortality rates in some developing countries are up to twenty times higher than those in Western Europe.[273]

Furthermore, the disparity between the developed countries and the underdeveloped or developing countries has been exacerbated by several important world events. The 1973-74 oil shock raised energy prices dramatically. The price of a barrel of oil increased nearly 500%.[274] The result was that oil producing exporting nations[275] made enormous profits that were deposited in banks of the developed nations.[276] These sums were available to the bankers for lending purposes. The banks encouraged the developing countries to borrow at levels which were beyond their ability to repay. U.S. banks were particularly energetic in the quest for developing country business.[277] When a recession struck the U.S. in 1982-83, U.S. interest rates rose from 10% to 20%. The major world banks quickly followed suit and raised their interest rates. The impact on the developing nations was that the debt increased substantially because interest rates were variable.[278] In order to deal with the world economic situation, institutions controlled by the industrialized developed nations acted to protect their financial interests. For example, the International Monetary Fund (IMF) required that stringent economic measures be instituted in the developing countries so as to reduce government spending for public projects and services (e.g., education and social security expenditures).[279] The imposition of such serving conditions by the developed nations did irreparable harm to the people of the developing countries.

In truth, the poor were being sacrificed to promote the interests of the banks of the developed nations. One must keep

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[273] *Id.* at 220-21.

[274] HELEN CALDICOTT, M.D., IF YOU LOVE THIS PLANET: A PLAN TO HEAL THE EARTH 129 (1992).

[275] Most of these countries belong to the Organization of Petroleum Exporting Countries (OPEC).

[276] Caldicott, M.D., *supra* note 274, at 130.

[277] *Id.*

[278] *Id.*

[279] *Id.* at 131.

in mind that the developed nations dominate IMF and the World Bank.[280] Political leaders of developing nations were encouraged, and at times intimidated, into taking economic and political actions that had long term consequences and ignored the best interests of their nations and their citizens.[281] As a result, social safety nets were destroyed and an enormous number of people fell into the poverty abyss.[282] Forced to emphasize exports and curtail imports, the developing nations expanded production without adequate consideration of the environmental and social impacts. The environmental result was massive global destruction of the rain forests, as well as pollution of the waters and the air of developing countries.

It is clear that the makers of the Rio Declaration had learned that environmental protection, sustainable development, and the eradication of poverty had to be linked together. They knew that the achievements of environmental protection and sustainable development were impossible unless the nation-states of the developed nations played a vigorous role in eliminating poverty in the developing nations. We introduce at this point the relevant factual background which will aid us in discussing the developed nations' failure to promote economic development in the developing nations.

We first examine the wealth value as reflected in the historical financial relationship between the wealthiest nations and those extremely underdeveloped nations. As the United States has been the richest nation of the developed nations since World War II, we now consider certain U.S. actions that have significantly affected the world wealth balance.

In 1986 the United States spent a total of $15.9 billion on foreign aid.[283] The following year, expenditures amounted to $13 billion.[284] This $13 billion represented 0.19% of the U.S. gross national product (GNP) for 1987.[285] Norway, the top percentage donor, gave 1.1% of its GNP, and the Netherlands, the second highest donor, gave 0.98% of its GNP.[286] The $13 billion U.S. foreign aid figure was comprised of $4.8 billion for military

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[280] *Id.*
[281] *Id.* at 132-35.
[282] *Id.*
[283] *Id.* at 128.
[284] *Id.* at 127.
[285] *Id.* at 128.
[286] *Id.*

equipment, $1.5 billion for food, $3.2 billion for economic security, and $2.5 billion for development assistance.[287] In 1986, expenditures of discretionary U.S. income were allocated as follows: $10.3 billion for movies and theaters, $34.2 billion for tobacco, $59 billion for alcohol.[288] Contrast these expenditures with the amounts spent on foreign aid.

A fundamental economic reality is that much U.S. aid subsidizes American corporations. For example, more than 90% of U.S. foreign aid awarded under the Johnson Administration benefitted U.S. corporations.[289] These corporations sold goods and services to aid recipients. These goods and services were purchased with "aid dollars." U.S. citizens pay, and the corporate sector profits. The preceding discussion, truncated by necessity, clearly demonstrates that the U.S. has done little to restructure the wealth value position of the developing countries. The United States is used symbolically in this discussion. The reality is that the industrialized world has done virtually nothing to break the poverty cycle which plagues the developing nations. The policy pronouncement of Principle 5 must be taken seriously if the goals of environmental protection and sustainable development are to become world system realities.

At this point, it is important to consider a certain number of economic facts in order to more fully understand the deep structure of the developing world's contemporary dilemma. It is necessary that we examine more closely certain global institutions and their behaviors that directly relate to the global poverty and inequities found in the developing countries. This discussion relates to Principle 12 of the Rio Declaration.[290]

The fabricators of the Declaration emphasize clearly in Principle 12 that the policy preference is for an "open international economic system." Nation-states are expected to interact on a cooperative basis to develop and maintain such a system. However, it is emphasized that this open economic system is expected to produce economic growth and sustainable development in all nation-states. Furthermore, Principle 12 expressly declares that this system is to be one which ensures the conservation, restoration, and protection of the earth's environment.[291] The "wealth

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[287] *Id.* at 127.
[288] *Id.* at 128.
[289] *Id.* at 127.
[290] Rio Declaration, *supra* note 2, at 3.
[291] *Id.*

process" is seen as inextricably bound to the maintenance of a healthy global environment. It is anticipated that there will be worldwide flows of trade, investment, finance, credit, and competition. The system is to be an open one. The goal is the wealth of all nations, not monopoly profits for the few. This open system is an idea fundamental to the true faith of Adam Smith. Moreover, it is consistent with the McDougal and Lasswell position favoring the wide distribution of opportunity in regard to participation in wealth transactions.[292]

To illustrate the above, we provide a very brief example. Energy multinationals roam the world in quest of the control of oil wealth. From the north slope of Alaska to the chilled waters south of the Falklands, from the jungle interior of Ecuador to the South China Sea, from Santa Barbara, California to the Arabian Peninsula—anywhere this resource can be found, they appear. Everywhere they go, these wealth "acquisitors" pollute streams, rivers, tidewaters, and soils with brine discharges and runaway oil.[293] There is no substantial evidence that these multinationals have had true concern for the environmental zones in which they have operated. Moreover, sustainable development has not been on their agenda. Principle 12 clearly proscribes such practices.[294] Single-minded focus on resource acquisition does nothing to support an open and viable world community economic system operating so as to promote sustainable development. Under Principle 12, nation-states are expected to act to prevent such activity.[295] In ending this segment, we stress that the Rio Declaration articulates the position that those who engage in wealth acquisition must take into account the world community's demand for sustainable development.

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[292] The world *wealth* process manifests a similarly high degree of interdependence. No contemporary state can achieve sustain a desired level of economic activity as a self-sufficient unit: it needs and seeks resources, skill, labor, goods, and markets beyond its borders . . . . The economic cycle is global in its impact: depression or protracted recession in any significant area of the world makes it correspondingly difficult in all other areas to maintain high levels in the production and sharing of goods and, hence, in the conditions under which liberty and human personality can flourish.

MCDOUGAL et al., *supra* note 1, at 49-50 (emphasis in original, citations omitted).

[293] CALDICOTT, *supra* note 274, at 78-84.

[294] Rio Declaration, *supra* note 2, at 3.

[295] *Id.*

D. Enlightenment

The drafters of the Rio Declaration hold the widespread sharing of enlightenment as requisite to successful implementation of the environmental, economic, and human objectives articulated in the Declaration. For purposes of this discussion, we define enlightenment as that value which stresses informational, conceptual, analytical, critical, and creative endeavors and processes. We hasten to add that this definition is somewhat different from that which is preferred by certain law, science, and policy scholars.[296] However, we feel that our definition has the advantage of being comprehensive and is in the spirit of law, science, and policy jurisprudence. We turn now to the enlightenment value's enshrinement in the Rio Declaration.

Several specific principles of the Rio Declaration stress the enlightenment value—for example, Principles 9 and 10.[297] Principle 9 instructs nation-states in regard to the exchange of knowledge essential to the vital project of producing sustainable development on a planetary scale.[298] The first position advanced is that nation-states will exchange technological and scientific knowledge relevant to the task of moving toward sustainable development.[299] An intensive textual analysis of the totality of the Declaration principle and our awareness of the comprehensive social context surrounding the negotiations make it markedly clear to us that the flow of relevant knowledge and technology is to move not only between and among the industrialized nations, but also between these nations and the developing countries. Although the terms "diffusion and transfer of technologies" are not spelled out by the principles, it is clear that the expectation is that the exchanges shall occur. In order to produce the necessary semantic link between the enlightenment value and environmental and resource actuality, we offer an illustration of consequence.

Over the last two decades, Amazonia has experienced an historically noteworthy gold rush. In fact, it has been one without historical parallel. Hundreds of thousands of miners have

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[296] HAROLD D. LASSWELL & ABRAHAM KAPLAN, POWER AND SOCIETY: A FRAMEWORK FOR POLITICAL INQUIRY (1950).

[297] Rio Declaration, *supra* note 2, at 2-3. Principle 19 of the Rio Declaration also deals with enlightenment, but space limitations do not allow us to explain, *id.* at 4.

[298] *Id.* at 2.

[299] *Id.* at 4.

invaded the Amazon region, and the extraction rate of gold may average as much as a hundred tons per annum.[300] The resource reality is that very significant gold deposits exist in the river arenas of the Amazon. The mining itself is done by individuals or small groups of miners known as *garimpeiros* (diggers of the backland). With their chain saws they cut great swaths through the forests, and with their dredging equipment they rip up river banks and river bottoms. The great bulk of these placer miners use an extremely environmentally destructive method of mining. Furthermore, it is a wasteful approach resulting in the loss of approximately 25% of the gold deposits.[301] The method employed centers around the use of the primitive sluice box. However, this method is supplemented by the use of mercury. The mercury is combined with the pay dirt which has gone through the washing process. The gold in the pay dirt clings to the mercury, separating the gold from the pay dirt. A blow torch is then used to burn away the mercury. The remaining unadulterated gold is gathered and stored for transport. The mercury, unfortunately, evaporates into the atmosphere where it combines with water particles and eventually falls into the rivers and streams of Amazonia. Mercury, as noted earlier in this paper in regard to the Minamata situation, is an enormously toxic substance. Mercury poisoning produces a wide array of clinical symptoms in human beings: birth defects, brain damage, kidney disorders, memory impairment, bipolar (manic depressive) disorder, loss of contact with reality, and malaria-like symptoms.[302] Mercury "contaminates" not only human beings, but also other biological species. In addition, it is absorbed into the environmental surround, poisoning botanical elements and water systems. In humans and other biological species, mercury invades the organism through contact with the skin, absorption by inhalation, or absorption within the alimentary canal after ingestion of mercury contaminated food and after eating contaminated dishes from plates or contaminated utensils. A 1988 study of the Kayapó Indians who live at some distance from all gold mining operations in the Amazon indicates that they have very high

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[300] *Gold: South America's Sleeping Giant*, MINING J., Sept. 11, 1992, at 188.

[301] JUAN DE ONIS, THE GREEN CATHEDRAL: SUSTAINABLE DEVELOPMENT IN AMAZONIA 153 (1992).

[302] SUSANNA HECHT & ALEXANDER COCKBURN, THE FATE OF THE FOREST 162 (1990).

mercury levels in their blood.[303] An enormous number of the gold miners who work with the mercury are heavily contaminated. Exact figures are not available, but it is reasonable to assume that over 500,000 indigenous persons and gold miners are victims of mercury poisoning.[304]

The evidence indicates that the mercury derived from the mining operations is widely dispersed throughout the Amazon and has entered the food chain. Fish taken from two Amazonian rivers, the Tapajós and the Madiera, have been analyzed. Measured mercury levels are as much as ten times the amounts deemed safe in fish for human consumption.[305] The situation in Amazonia is more than an analog of the Minamata disorder.[306] The better comparison is the Bhopal tragedy.[307] What we anticipate is a first-order human and environmental catastrophe. The horror is that scientific enlightenment and resulting technology exist to dramatically reduce the release of mercury into the environment of Amazonia. Moreover, the use of simple chemical processes could recover the 25% of the gold lost in mining carried out by the *garimpeiros*.[308] This recapture "profit" would easily cover the cost of using environment-protecting methods and technologies to inhibit the spread of the mercury.[309] Over several decades, scientists and technical personnel associated with the commercial mercury producing industry have acquired chemical, geological, and engineering technology which makes it possible to capture mercury vapor and, as a consequence, reduce the amount of mercury released into the atmosphere. Condensers can be used to capture the mercury vapor. Retorts have been developed which are quite effective when used according to the procedures worked out in laboratories and in the field over many years. These retorts are set up in banks linking them to a number of condensers. The retorts are charged, raked and discharged. This total operating cycle, when well-managed, does much to

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[303] *Id.* at 161 n.26. "The Kayapó children have a mean blood level of 4.74 parts per million and *garimpieros* working in the Cumaru mine upstream have levels of 4.97 ppm. The acceptable upper limit is usually taken as two parts per million. . . ." *Id.*

[304] *Id.* at 162.

[305] DE ONIS, *supra* note 301.

[306] *See supra* text accompanying notes 203-32.

[307] *See supra* text accompanying notes 237-52.

[308] DE ONIS, *supra* note 301.

[309] *Id.*

reduce atmospheric pollution.[310] The above outlined approach contains more than 95% of the mercury.[311] Other useful technologies are available: sulfuric acid based methods, solid absorbent processes (e.g., iodine impregnated charcoal), and refrigeration units used in conjunction with filtration.[312] It is critical that the industrial nations of the United States and Europe, where the above knowledge base and relevant technology exist, act to fulfill the directive of Principle 9.[313] The mercury pollution problem attendant upon the primitive mining methods of the *garimpeiros* can be brought under control by the dissemination of the relevant enlightenment. The knowledge and the technology is available. The costs of putting "what is known" into operation can be easily met by recapturing the gold lost through inefficient mining methods. The reality is that the transfer of easily-mastered knowledge can avert an environmental and human catastrophe.

Of course, education matters must be taken into account—the backland miners must be recruited to the solution. They must learn that they are victims of their own work, and they must come to expand their pattern of identifications to the whole of Amazonia and its populations. The diffusion of knowledge is not a simple task, but Principle 9 should be implemented.

The framers of the Rio Declaration have clearly demonstrated that they hold technical knowledge to be significant in meeting the policy goals posited in the Declaration. However, it is clear from a reading of Principle 10 that the framers do not believe that technical knowledge alone will produce sustainable development, better living conditions worldwide, well-being, and human dignity.[314] The language of Principle 10 reveals that the framers hold the view that positive policy results depend upon making enlightenment in regard to environmental matters available to the citizens of the nation-state.[315] The framers clearly believe that environmental issues can be properly dealt with only if an informed citizenry exists. Principle 10 demonstrates a pref-

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[310] 4 Kenneth W. Nelson et al., *Nonferrous Metallurgical Operations, in* AIR POLLUTION 845, 876 (Arthur C. Stern ed., 1977).

[311] *Id.*

[312] *Id.*

[313] Rio Declaration, *supra* note 2, at 2.

[314] *Id.* at 3.

[315] *Id.*

erence for the widespread sharing of environmental knowledge.[316] This principle establishes an informational right: the people have a "right to know." On environmental matters of consequence, every person is entitled to "appropriate access" to information. This right by law is to be enforceable against public bodies that possess apposite information. Principle 10 imposes on states an affirmative duty to provide information, generate public awareness, and create open forums for debate and discussion.[317]

The people have a right to participate, and it is recognized that the right to enlightenment is the cornerstone upon which the people's participation in the decision-making process is predicated. Information in the hands of non-special interest participants is essential if human safety and environmental protection are to be insured. It is the dissemination of knowledge (i.e., enlightenment) that special interests fear more than anything. William Greider in his landmark work, *Who Will Tell the People*,[318] puts the matter this way when discussing EPA dissemination of information to the public in regard to toxic chemical pollution:

> What discomfited the chemical companies was not the prospect of stern federal law enforcement—they had been quite effective at neutralizing that—but the unwieldy threat of aroused public opinion. The regulatory law had proved impotent but another law enacted by some states and by Congress in 1986 had stimulated widespread public alarm by establishing the people's "right to know" about what poisons were being dumped on them. As the plant-by-plant reports on toxic pollution were collected and made public by the EPA, community after community became angered by the frightening data.[319]

People became enlightened in regard to what the chemical companies were doing to the health and lives of themselves and their children. Resulting public pressure compelled many companies to make at least minimal efforts at controlling the flow of toxic substances into the environment. It is underscored that private businesses which keep the facts from the public are not the only threats to the environment and the people's safety.

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[316] *Id.*

[317] *Id.*

[318] WILLIAM GREIDER, WHO WILL TELL THE PEOPLE: THE BETRAYAL OF AMERICAN DEMOCRACY (1992).

[319] *Id.*

Government agencies in the past have all too often withheld information about their toxic practices.[320] In the United States, the Department of Energy (DOE) has a history of secret nuclear energy contract projects which have produced environmental horrors. The DOE contracted the work out to General Electric, Westinghouse, Rockwell International and others.[321] A number of nuclear facilities were built all over the United States: Savannah River, South Carolina; Oak Ridge, Tennessee; Los Alamos, New Mexico, and others.[322] The DOE "supervised" construction and operation of the facilities. Everything was done under the bedsheet of national security. As a consequence, neither the DOE contractors nor the agency have been held responsible for meltdowns, releases, spills, and leaks.[323] At least hundreds of thousands of U.S. citizens have been contaminated by radioactive materials.[324] We have had our own Chernobyl at the Hanford nuclear facility in the state of Washington. Radiation in excess of that released at Chernobyl was passed into the atmosphere and nearby streets and rivers by the operators at Hanford.[325] The Columbia River has become a radiation cesspool. Remember, Hanford is only one of many radiation disseminating sites. There are many others—recall Three Mile Island. An interesting example of a federal agency-sponsored assault on the people and the environment involves a uranium milling plant near Cincinnati, Ohio.[326] Since the early 1950s, the plant has placed approximately 170,000 pounds of powdered uranium in the Great Miami River. Over 290,000 pounds of the material were allowed to enter the atmosphere and over 12,000,000 pounds were buried in the ground.[327] Because uranium is extremely carcinogenic, numerous residents living around this plant at Fernald, Ohio have become cancer victims.[328] The causality is beyond dispute. Furthermore, the people who lived in the area were told the plant was a pet food manufacturing facility.[329] Our reading of

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[320] CALDICOTT, *supra* note 274, at 87-94.

[321] *Id.* at 87.

[322] *Id.*

[323] *Id.* at 88.

[324] *Id.*

[325] *Id.*

[326] *Id.* at 90.

[327] *Id. See also* Kenneth B. Noble, *U.S. Stood by as Radioactive Waste Leaked*, N.Y. TIMES, Oct. 15, 1988, at A1.

[328] CALDICOTT, *supra* note 274, at 90.

[329] *Id.*

Principle 10 of the Rio Declaration leads us to assert that the public has a right to know all information relevant to its fate. Public officials must release information about government operations, as well as crimes and torts committed against the people by business entities. People should not to be sacrificed under specious claims of "national security." Citizens groups and health and media professionals must be ever-vigilant in regard to the activities of business and government entities.

Thirty-five years of environmental history make it clear that the real guardians of the environment and human well-being on the planet are those who are operating outside of the influence of special interests. The law, science, and policy position and the stand of the Rio Declaration are in congruence: in order to maximize the people's position democratically, the enlightenment value must be stressed. Knowledge and information must flow through open channels across international and internal domestic "boundaries." "Knowing" is power, and the people's position can be maximized only if they have awareness. Without awareness, participation and change cannot occur. It is clear that in the realm of environmental situations, there must be continuing change so that the goal of sustainable development and the value maximization of man/biosphere unit can be achieved.

E. Respect

The push toward the democratization of the world system has moved the respect value to the law, science, and policy center stage. The respect value, as broadly defined, refers to the granting or withholding of recognition. The basic question becomes: Is one in or out? As law, science, and policy jurisprudence is a decision-making jurisprudence, the truly important matter is whether or not "one" (individual, group or nation-state) is recognized as a self-directed participant in the pertinent decision-making process.

A number of Rio Declaration principles demonstrate a preference for participation, derived from a strong affinity for the respect value. Among them, Principle 10 stresses the informed participation of citizens in governmental decision making and requires that nation-states promote informed citizen participation by recognizing the right to the possession of information necessary for informed decision-making participation.[330]

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[330] Rio Declaration, *supra* note 2, at 3.

The following environment-focused vignette illustrates the significance of the respect value in the context of environmental protection. The vignette involves a Swiss partnership's plan to "relocate" hazardous waste to Somalia.[331] In December 1991, Somalian Health Minister Nir Elmy Osman signed a contract with Acher Partners to construct and operate an incinerator for the purpose of burning one-half million tons of toxic waste per year.[332] Terms of the contract revealed that a toxic waste landfill was to be sited in Somalia. This information became public when the former political leader of Somalia, Mohamed Siad Barre, blew the whistle and sent copies of the contract to Somalis living in Kenya. The contract's authenticity was confirmed by several reliable sources.[333] Investigations by the Swiss press revealed that Acher Partners was a false business name.[334] Additional investigations demonstrated that the real partners in the dumping venture were powerful Swiss and Italian waste companies.[335]

Mohamed Siad Barre's announcement resulted in strong criticism being directed at the partnership by the international press. Considerable public awareness was generated in Somalia and Europe.[336] The public outcry resulted in the cancellation of the contract and ended the plan to dispose of the hazardous waste in Somalia.[337] This example of international toxic waste brokers attempting to profit through secret dealing illustrates the importance of the respect value that Principle 10 seeks to foster. In Principle 10, the Rio signatories committed themselves to respect the right of citizens to access information relating to critical environmental matters. Public authorities must make the information available to all parties of interest. Moreover, all states are required to implement judicial and administrative processes

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[331] *See Contract Shows Plan to Dump Solid Waste in Somalia*, Reuter Libr. Rep., Sept. 7, 1992, *available in* LEXIS, Nexis Library, OMNI File.

[332] *Id. See also Contract to Dump Toxic Waste in Somalia Linked to Firm in Small Village Outside Geneva*, Int'l Envtl. Daily (BNA), Oct. 2, 1992, *available in* LEXIS, Nexis Library, BNAIED File.

[333] *Id.*

[334] *Id.*

[335] *Toxic Waste Shipment to Somalia Believed Aborted: UNEP*, AGENCE FRANCE PRESSE, Oct. 6, 1992, *available in* LEXIS, Nexis Library, OMNI File [hereinafter *Toxic Waste*].

[336] *Somalia Waste Dumping Probe*, FIN. TIMES, Sept. 10, 1992, at 6.

[337] *Toxic Waste*, *supra* note 335.

which will ensure a right to participate.[338] It is clear that those in power in Somalia had no intention of apprising the public of the impending environmental depredation. If such a secret project were undertaken today, Somali authorities would be violating the standards established in Principle 10.

Principle 20 of the Rio Declaration, like Principle 10, supports the preference for the respect value.[339] It recognizes the necessity of women participating in the projects of environmental protection and sustainable development.[340] Women, under this principle, are entitled to information and access to the decision process. However, the de facto as well as the de jure participation of women depends upon a project of rectification. We make our point by discussing the issue of literacy, because literacy is critical to the fulfillment of the participatory rights set forth in Principle 20.

The realities are as follows. Two out of every three women in the developing countries are illiterate.[341] Male/female literacy ratios range from Latin America's 76%/70% to Asia's 56%/34% to Africa's 35%/15%.[342] The worst women's literacy situation in the world is found in Saudi Arabia where female literacy barely exceeds 0%.[343] Many nations have failed to afford women any opportunity to become literate, severely undercutting their ability to participate meaningfully in those actions directed at the achievement of sustainable development. It is clear that in those nations where women have been deprived of the path to literacy, patriarchal authority has acted to place women at a decision-making disadvantage.

Today, full participation by women is a goal to be achieved. Full participation, as we use it and as Principle 20 of the Rio Declaration of Principles uses it, means gender-neutral participation. Women are to participate as equals in achieving sustainable development and environmental protection.

We turn now to our third respect-focused principle. Principle 22 of the Declaration emphasizes the respect value by seeking

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[338] Rio Declaration, *supra* note 2, at 3.

[339] "Principle 20. Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development." Rio Declaration, *supra* note 2, at 4.

[340] *See id.*

[341] GAIA, *supra* note 263, at 192.

[342] *Id.* at 187.

[343] *Id.*

the participation of indigenous people in the project of sustainable development.[344] Principle 22 holds their participation to be indispensable and recognizes the relevance of the knowledge and practices of indigenous people to sustainable development. We shall establish a nexus between the respect value and Principle 22 by an appropriate verbal portrait.

In the year 1500, there were approximately six million Indian people in what is now Brazil.[345] By 1900, the European settlers and their helpers had reduced Brazil's Indian population to approximately one million people.[346] In 1910, the Indian Protection Agency (SPI) was established to protect Brazil's Indian tribes.[347] SPI, in fact, became a participant in a prolonged program of environmental persecution and decimation.[348] A twenty-one volume report published in 1967 by Brazil's Attorney General documented the incredible horror of anti-Indian activities carried out by ranchers, entrepreneurs, miners, government agents, and others.[349]

In 1969, Brazil's Interior Minister Luma abolished the SPI and established the Fundaçâo Nacional do Indio (FUNAI) as the successor agency designated to protect Brazil's Indians.[350] However, Indian expectations of having their claims supported were not to be fulfilled. Although FUNAI was charged with protecting Indian rights, it quickly became controlled by the captains of economic "development" and, in the end, simply stepped aside and allowed the persecution to continue.[351] By 1987, the profit-driven program of genocide was nearly completed and Brazil's Indian population had been reduced to an estimated 220,000.[352]

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[344] Principle 22. Indigenous people and their communities, and other local communities, have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development. Rio Declaration, *supra* note 2, at 5.

[345] *See Indians and Gold-Diggers Clash in Brazil, At Least Four Die*, Reuter Libr. Rep., Aug. 18, 1987, *available in* LEXIS, Nexis Library, REUTER File.

[346] *See* SUSAN HECHT & ALEXANDER COCKBURN, THE FATE OF THE FOREST 153 (1990).

[347] *See id.* at 154 n.15.

[348] *Id.* at 153-54.

[349] *Id.* at 154.

[350] *See id.*

[351] *Id.*

[352] *Brazilian Indian Rights Campaigners Claim Major Victory*, Reuters N. Eur. Serv., Jan. 21, 1987, *available in* LEXIS, Nexis Library, REUTER File.

In 1988, Brazil elected its first non-military government in twenty years. The new National Charter established Indian rights within a constitutional context. Approved in September 1988, the new constitution included provisions providing for the protection of Indian territories and Indian rights.[353] Moreover, the charter guarantees Indian organizations the right to protect Indian legal interests through litigation.[354] It has become clear that the pro-Indian provisions were nothing but patina. The destruction of Brazil's Indian tribes and Indian lands continues as tens of thousands of gold miners are still permitted to take over Indian lands and destroy the ecosystem in which the Indians traditionally have made their existence.[355] As of 1993, it is clear that failure to fully take into account the respect value as it relates to the interests of many indigenous groups results in a deviation from the norm established by Principle 22. The Rio Declaration makes it clear that respect is a fundamental value.

F. Skill

We now consider the skill value[356] as manifested in the Rio Declaration of Principles. "Skill value" relates primarily to vocational methodology and technique. Skill, in the main, refers to applied operations as opposed to theoretical, analytical and tradition-labeled creative endeavors.

Principles 5, 8, 11, 20, and 22 of the Rio Declaration of Principles stress the skill value.[357] It is apparent from an examination of these principles that the framers of the Rio Declaration recognized and emphasized the significance of the skill value and the relationship between this value and environmental protection and sustainable development. We will not discuss all five of these skill value principles, but will instead make our point by discussing material related to Principle 8, which deals with the critical matter of sustainable development. This Principle indicates a policy preference for the reduction and elimination

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[353] Brazil's 1988 constitution guarantees the Indians permanent possession of their traditional tribal lands by mandating a system of land reservations. *See, e.g.*, William R. Long, *Brazil's Indians Win Tribal Land Rights*, L.A. TIMES, June 17, 1988, §1, at 11; *Ideas & Trends: Conflicting Pressures Shape the Future of Brazil Indians*, N.Y. TIMES, Feb. 25, 1990, §4, at 5.

[354] *See* Long, *supra* note 353.

[355] *See Ideas & Trends*, *supra* note 353.

[356] *See* MCDOUGAL et al., *supra* note 1, at 85.

[357] *See* Rio Declaration, *supra* note 2, at 2-3.

of "unsustainable patterns of production and consumption" because both are inconsistent with the overarching policy objective of sustainable development.[358]

We begin with a well-documented catastrophe. Our specific illustrative example relates to the techniques of beef production for international markets. In 1966 Brazil's development-focused military government instituted Operation Amazonia.[359] The program's goal was the utilization of the Amazon Rain Forest in the quest for economic development. To achieve its purpose, the Brazilian military government induced multinational corporations to invest in the Amazon region by providing special tax incentives.[360] Many American and European multinationals were attracted by these inducements and invested heavily in the region. A number of these corporations went on to clear the rain forest primarily for the purpose of raising beef cattle.[361] According to Brazilian estimates, the commercial cattle ranching operations destroyed nearly 15,200 square miles of the rain forest between 1966 and 1983.[362] Although Brazil has eliminated the tax incentives, these commercial operations continue today.[363]

The preceding narrative indicates the overall economic approach and its importance. However, we wish to attend especially to matters related to the skills used to further the mass production of beef for sale and distribution in international commerce. Attention to actual production operations reveals a very particular relationship between the application of the skills selected for the productive process and the impact on the environment.

The skills used to serve large-scale industrial food production of this kind are reminiscent of those military skills used to conduct scorched earth operations during wartime. They are incredibly destructive of the bio/botanical/hydro/atmospheric environment. Consider for example, the skills, perhaps most

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[358] *See id.* at 2.

[359] JEREMY RIFKIN, BEYOND BEEF: THE RISE AND FALL OF THE CATTLE CULTURE 194 (1992).

[360] *See id.*

[361] *See id.* at 195.

[362] *See id.* at 195.

[363] Les Whittington, *Brazil Finally Springs into Action to Curb Destruction in Amazon Rain Forest; New Indian Affairs Official Posseulo Begins Full-Scale Effort to Drive Wildcat Minors from Yanomami Lands*, THE GAZETTE (Montreal), July 9, 1991, at E8, *available in* LEXIS, Nexis Library, MONGAZ File.

critical, in these Amazonian operations related to the maintenance and use of massive thirty-five-ton D9 bulldozers with angle plows. The machines make one think of combat tanks used to clear a path for infantry. They tear up or level down every environmental element in their way, covering, by one estimate, twenty-seven hundred yards of forest per hour.[364] On any one clearing project, as many as one hundred of these machines might be put into service. The technical skills related to the maintenance and operation of these behemoths differ radically from the skills related to the making, maintenance, and utilization of machetes normally employed by indigenous people for cutting the forest.

Today millions of cattle are grazing on the Amazon's cleared areas despite the fact that its soil is ill-suited for grazing cattle and will be depleted within three to five years, thus rendering it completely unsuitable for ranching or any other commercial use. This situation has provided the incentive to "slash, burn, graze and move on," thereby initiating a cycle that further accelerates the destruction of the Amazon Rain Forest.[365] Ninety percent of the new cattle ranches operate less than eight years before they deplete the soil and leave abandoned scrub land.[366]

Although the Brazilian government has eliminated its tax subsidies for cattle ranch development, it has not eliminated cattle ranching and has not stopped the assault on the Amazon Rain Forest.[367] The cost to Brazil, its people, and the peoples of the world is immeasurable.

This is exactly the type of situation the framers of the Rio Declaration had in mind when Principle 8 was drafted.[368] Principle 8's directive to nation-states is to reduce and eliminate unsustainable patterns of production and consumption to achieve sustainable development and a high quality of life for all people. The recognition of the correlation between sustainable development and a high quality of life was a direct response to the actions illustrated in our preceding narrative.

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[364] *See* RIFKIN, *supra* note 359, at 198.

[365] *See id.* at 199.

[366] *See id.*

[367] *See* Whittington, *supra* note 363.

[368] "Principle 8. To achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production and consumption and promote appropriate demographic policies." Rio Declaration, *supra* note 2, at 2.

Skills and technologies applied to productive operations are determined by the economic model which dominates the decision making of multinational food conglomerates. In order to fully comprehend why skills (and technologies) that are so damaging to the environment are used, we must understand more about the beef production and its impact. The skills and technology used in beef production do not help to achieve sustainable development. Moreover, they do not help to produce a higher quality of life for all people.[369]

Recall that Principle 8 instructs all nation-states to work toward the elimination of unsustainable production and consumption.[370] This "instruction" must be seen in relationship to certain global realities. Today, one billion people face starvation.[371] Over fifteen million children die each every year from malnourishment.[372] Meanwhile, the average U.S. resident eats sixty-five pounds of beef per year.[373] Seventy percent of the grain grown in the United States is fed to cattle.[374] These cattle are notoriously inefficient in the utilization of the grain input; a one-pound gain in the weight of a steer comes at a cost of nine-pounds input of grain.[375] The reality is that the production process is grossly inefficient. Less than 15% of the feed actually yields beef for human consumption.[376] The rest is used in the energy process or for body elements (i.e., bones, etc.) that are not eaten.[377] The bottom line is that cattle have an efficiency ratio of about 6%.[378] Put more graphically, in order to produce an animal that weighs about one thousand pounds, over twenty-seven hundred pounds of grain input is necessary.[379] Much of the grain fed to cattle is suitable for human consumption.

Worldwide demand for beef has created a gigantic demand for feed grains. This has resulted in land use being diverted from the production of human food crops to feed grains. Beef production has risen largely because of the increased demand for

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[369] *See* RIFKIN, *supra* note 359, at 163-64.
[370] Rio Declaration, *supra* note 2, at 2.
[371] RIFKIN, *supra* note 359, at 176.
[372] *Id.* at 177.
[373] *Id.* at 154.
[374] *See id.* at 160.
[375] *See id.*
[376] *See id.*
[377] *See id.*
[378] *See id.*
[379] *See id.*

beef in the developed countries (the McDonald's phenomenon). This demand for beef has grown as developing nations have striven to increase their consumption of beef in emulation of the developed nations.[380] Encouraged by multinational corporations, the U.S. government, the United Nations Food and Agricultural Organization, and the Green Revolution of the 1970's, many nations switched their production emphasis from food production to feed grains.[381] Millions of acres in these countries were converted to grow livestock feed despite the fact that there were enormous numbers of people suffering from extreme nutritional deprivation and hunger.[382]

Today, many nations that have climbed the "protein ladder" to prestige by producing grain-fed beef work hard to keep their position on the ladder, in spite of the rampant hunger it creates.[383] This means that they emphasize the use of skills and technology which are not directed to the reality of the food position of their whole populations. They are caught on the treadmill of nonsustainable production and the consumption preferences of the elite and upper-middle class. The privileged members of our population continue to eat beef while the poor suffer extreme nutritional deprivation. Great quantities of the grain product are exported to the developed world where the population is already well-fed.[384]

The irrational profit-centered activities of ruling elites, multinationals, and corrupt politicians of the developing countries have resulted in malnutrition and starvation for millions of people. The ruling elites, multinationals, and certain friendly politicians in the developed nations have sought to maximize their positions without regard to the catastrophic consequences for the people and ecology of the developing nations. Clearly the beef cycle is not sustainable. The framers of the Rio Declaration recognized that sustainable development and a higher quality of life could not be achieved without eliminating such unsustainable patterns of production.

We now outline what could be done to move beyond present-day unsustainable activity. We believe that with sustainable op-

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[380] *See id.* at 162-64.
[381] *See id.* at 162-63.
[382] *See id.* at 163.
[383] *See id.* at 162-64.
[384] *See id.* at 148-49.

erations based on appropriate skills and technology we can meet Principle 8's objectives.

From a law, science, and policy perspective, it is obvious that governmental and corporate decision making with respect to food production has been based upon capital-intensive and technology-centered approaches which have failed to produce sustainable development or maximize the nutritional position of the great bulk of the world's population. We believe that there is a paradigm of much greater utility. Organic farmers and gardeners, operating within a tradition of connection to "Mother Earth," have adopted approaches that can achieve the goal of sustainable development and adequate diet for all people.[385] Technology is a reality that can do much to promote vital environmental and human interests; however, technology on a mass scale which reduces farming to but another industrial process is seldom in the best interests of the people or the environment. The skills which in the end will prove most important are those with an eye toward sustainable production and equitable consumption. As we are at this point in the article focusing on skill, we shall attempt to see relevant production from the skill perspective. We reiterate that skill often relates to the utilization of mechanical devices (technology).

Under Principle 8 of the Rio Declaration, education in appropriate skills is viewed as an essential value. People who perform agricultural tasks are not expected to be agricultural engineers but should be trained in the most up-to-date skills relevant to growing vegetables, grains, and fruits on small farm plots. They must be educated in the use of "natural" methods of farming as opposed to the skills appropriate for agribusiness endeavors. In order to add meaning to the above general statement, we provide the reader with a limited number of brief comments which are directed at skill specifics. We begin with a discussion of soil preparation.

Farmers and gardeners need to learn tillage skills which assist in the destruction of weeds, provide for the control of agricul-

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[385] *See generally* MASANOBU FUKUOKA, THE NATURAL WAY OF FARMING: THE THEORY AND PRACTICE OF GREEN PHILOSOPHY (1985). "It takes 200 square yards of land to support one human being living on grains, 600 square yards to support someone living on potatoes, 1,500 square yards for someone living on milk, 4,000 square yards for someone living on pork, and 10,000 square yards for someone subsisting entirely on beef." *Id.* at 46.

tural residues, and do not harm the soil.[386] Moreover, there must be an acquisition of those skills related to the management of water resources so as to properly promote crop growth, a function of the interaction of water and soil nutrients. Farmers and gardeners must learn those skills that allow them to control non-crop botanical growth so as to maximize crop interaction with light and water, as well as sustain optimal levels of soil elements. Appropriate techniques of seed bed preparation must be learned. We emphasize not the skills relevant to mega-mechanical farming, but rather those related to the use of tilling equipment that will not damage the environment. Recall that the goal of Principle 8 is a sustainable environment and the meeting of human nutritional needs.

Small plot workers must improve their knowledge and understanding of fertilizing and soil-conditioning techniques so as to sustain production over time without exhausting soil nutrients. It is important to note that the large-scale utilization of chemical fertilizers and soil-conditioning machinery associated with multinational agribusiness is not compatible with sustainable organic agricultural operations. Sustainable tillage in the developing countries requires what has been called "biological technology" as contrasted to the "mechanical technology" of Western agribusiness. This "biological technology" is illustrated by the use of "mini-machines" designed for small area cultivation as opposed to the monster machines used by agribusiness.[387] Sustainability requires the application of appropriate technology and relevant science so as to support small-scale cultivators working plots which provide food sources for local consumption. The skills utilized in operating these mini-machines differ significantly from those utilized in operating thirty-five-ton bulldozers.[388]

Crop protection is also a fundamental skill. Agricultural workers must receive training in skills that promote the control and elimination of weeds, insects, and nematodes. The skills required for insect control relate to chemical and non-chemical methods.[389] These workers should be schooled in those skills related to safe and effective chemical use.

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[386] *See* 1 ENCYCLOPEDIA BRITANNICA 348 (15th ed. 1978).

[387] *See* Richard Critchfield, *Science and the Villager: The Last Sleeper Wakes*, 61 FOREIGN AFF. 14, 15-16 (1982).

[388] *See id.*

[389] *See* ENCYCLOPEDIA BRITANNICA, *supra* note 386, at 353-54.

Water-management skills are vital in dry-land farming. "Dry-land farming" refers to production of crops without irrigation in regions where annual precipitation is less than twenty inches.[390] These water-management skills include irrigation ditch construction, irrigation system operation, drainage ditch construction, and drainage ditch operation.

Furthermore, dry-land farming requires a knowledge of the historical agricultural experience of the area and the skills related to the "fallow" system of farming. Fallow "refers to land that is plowed and tilled, but left unseeded during a growing season."[391] Knowledge and skill are required to utilize and till the soil while at the same time leaving intact the surface straw or residue to preserve soil moisture levels.

In addition, timing skills are required in dry-land farming. These timing skills must be employed in order to optimize the benefit of temperature and moisture conditions. Dry-land farming also requires the skilled application of fertilizers, as well as consideration of local climates, rainfall levels, and soil nutrient levels. Crop rotation and planting skills are also required. Special techniques are necessary to prevent wind and water erosion of existing soils. Alternating crops (crop rotation) is necessary to sustain soil nutrient and moisture levels, as well as maximize sustainable production.[392]

Much more could be said about the need to stress the skill value in relationship to sustainable development. Skills related to the application of genetic knowledge, applied entomology, and agricultural radiology might be considered within the conceptual context of sustainable development. However, reality constraints require that we move on to the discussion of other law, science, and policy value matters. In closing this section, we stress that the skills related to applied agricultural science are basic to the achievement of the sustainable-development goal.

G. Power

Power is the "condition precedent" for participation in the processes related to influencing and making decisions. All those who seek to shape political outcomes must be concerned with

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[390] *Id.* at 354.
[391] *Id.* at 355.
[392] *See id.*

the acquisition and application of power. Power is vital in producing effects. Without power one cannot distribute particular values along the continuum of one's preference line.

For example, an administration which seeks to reform the American health care system must possess power in a quantum sufficient to negate the forces of monopoly and acquisitiveness. Its goal of equitably distributing well-being for the people will never be achieved unless it possesses power in an amount sufficient for the task. It is clear from an examination of the social process surrounding the creation of the Rio Declaration that this jurisprudential product resulted from the utilization of participant power.[393] Moreover, the Declaration specifies that the implementation of the document's general intent is to be primarily a matter for nation-states (power participants).[394] They are to exercise appropriate power in order to achieve agreed upon policy objectives. Nation-states are unquestionably certified power holders. Principles 2, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 17, 18, 19, 22, 24, 26, and 27 reflect this value reality.[395] However, it must be stressed that the principles also impose "demands" upon the nation-states. For example, Principle 2 provides that the nation-states retain the right to exploit their own resources, but there is a critical qualification: exploitation must be carried on within the limits of the U.N. Charter and applicable norms of international law.[396] Thus, national power is not unfettered.

Each signatory has agreed to accept international law as a qualifier in regard to the power value. Under Principle 2, it is clear that nation-states may not exploit resources in a manner which would damage the environments of other nation-states.[397] States have opted for a recognition of interdependence. Furthermore, the above specifically enumerated principles are examples of the preference for inclusivity over exclusivity in decision making.[398] "Exclusive decision making" considers the individual nation-state's interests as the basis for nation-state decision making, whereas "inclusive decision making" considers outside interests in the making of decisions. We suggest that nation-state decision-

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[393] *See* Principle 27, Rio Declaration, *supra* note 2, at 5.

[394] See Rio Declaration, *supra* note 2, at 1.

[395] *See id.* at 1-5.

[396] *See id.* at 1.

[397] *See id.*

[398] *See generally* MCDOUGAL et al., *supra* note 1, at 400-15.

making process has taken a historical step forward by nation-state acceptance of a world community jurisprudence reflecting global interdependence.[399]

We view this development as another example of the trend toward a world community jurisprudence which has a higher standing than the individual juridical system of any one nation-state or limited collection of states. The reader will note that we have focused much less attention on the power value than we have on the other seven critical law, science, and policy values. "Power" has been much discussed by international law scholars. The law, science, and policy view has been explicated at length by Professors Lasswell and Kaplan in their brilliant work, *Power and Society*.[400] We believe that we can add nothing to that discussion of the power value, especially in light of Professor McDougal's landmark contributions to the jurisprudential issue of power and its manifestations. We have chosen in this article to focus on the other seven values because a discussion stressing these values produces greater insight into the value jurisprudence of a very particular construct of juridical intent, to wit, the Rio Declaration on Environment and Development. However, we add just a few more words relevant to the power value.

The Rio Conference also considered the need for authoritative international institutional mechanisms to address sustainable development and environmental protection. This reality culminated in the decision to establish a U.N. Commission on Sustainable Development (CSD).[401] After much debate between representatives of developing and developed nation-states, U.N. Assembly delegates finally reached an agreement on November 25, 1992 in the form of a draft resolution as to the power and composition of the CSD.[402] The CSD's size was set at fifty-three nation-state members of the U.N. to be elected for three-year terms, with rotating membership representing states on a geographically equitable basis.[403] CDS's charge is to provide guidance to all nation-states and international institutions in the implementation of Agenda 21 and the other Earth Summit agree-

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[399] *See* Preamble, Rio Declaration, *supra* note 2, at 1.

[400] LASSWELL & KAPLAN, *supra* note 296.

[401] *See* Weiss, *supra* note 4, at 814, 815.

[402] *See United Nations: Selection of New UNEP Chief, Director of Sustainable Development Body Linked*, Int'l Envtl. Daily (BNA), Dec. 1, 1992, *available in* LEXIS, Nexis Library, BNAIED File.

[403] *See id.*

ments and to investigate and compile information on the environmental records of member states.[404] The resolution was formally adopted on December 22, 1992.[405] It recognizes that formal power is to be in the nation-states membership. Although, it does not provide for participation by the nongovernmental organizations (NGOs), it requests that U.N. Secretary-General Boutrous Boutrous-Ghali develop guidelines for NGO participation, and also provides for a high-level advisory board to be established to provide technical expertise to the CSD.[406] The distribution of power as outlined above is certainly one which comports with current world community political realities.

H. Rectitude

We now examine the rectitude value as found in the Rio Declaration. "Rectitude" refers to ethical and moral positions. We see the Rio Declaration as a comprehensive code devoted to the promotion of rectitude. Virtually every provision in the Declaration deals with matters related to the rectitude value. The vast majority of the principles articulate jurisprudential "oughts" of ethical and moral substance. The authors of the Declaration have produced a document which places substantial emphasis on the rectitude value. We will discuss only a few of the principles from the rectitude perspective. With the rectitude value in mind, the concerned scholar can test each of the twenty-seven principles to determine the ethical/moral content specifically enshrined in each of them.

Principle 10 articulates the view that all citizens have the right to actively participate in decision making related to environmental matters.[407] The drafters have made a very specific ethical choice to come down squarely on the side of informed public participation in the decision process. Elites are not to be possessed of a monopoly in regard to decisions which impact the people of that state. Principle 10 emphasizes a due process norm directed at access to administrative and judicial arenas so that real remedies for the aggrieved will exist.[408] Enshrinement

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[404] *See id.*

[405] *Report of the United Nations Conference on Environment and Development*, G.A. Res. 47/191, U.N. GAOR 2d Comm., 47th Sess., Agenda Item 79, at 17, U.N. Doc. A/47/719 (1992).

[406] *Id.* at 17-25.

[407] *See* Rio Declaration, *supra* note 2, at 3.

[408] *See id.*

of this norm is clearly demonstrative of an ethical preference for one of the fundamental features of democratic jurisprudence.

Principle 20 guarantees that women will play a "vital role" in the project of sustainable development.[409] Gender equality is guaranteed. Women are not to be treated as passive spectators at the pageant of sustainable development. This principle is in keeping with the modern democratic recognition of women's abilities and capacities. The ethical choice made manifest is against the inequities fostered by a system built upon faulty patriarchal principles.

Finally for purposes of illustration, we refer the reader to Principle 24.[410] States are to have respect for international law and eschew acts of war. The ethical position is that acts of war are in themselves against humanity's interest because they destroy the environmental surround and the goal of sustainable development. From the perspective of sustainable development, acts of war are truly horrific.

There is no doubt in the authors' minds that the Rio Declaration is one of the great rectitude-centered human manifestos of the modern era.[411] Its makers are to be commended as ethicists of the first rank.

CONCLUSION

In the preceding pages we have attempted to apply creatively the policy science jurisprudence developed through the efforts of Professors McDougal and Lasswell and their associates. Our employment of narrative to augment the utilization of the eight value categories we believe suggests to the reader a serviceable technical addition to the law, science, and policy approach. Our position is that narrative instances act to anchor the value constituents to existential scenes in which participants interact to effect their value positions. As a consequence, the goal of semantic specificity is served. But more importantly, an under-

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[409] "Principle 20. Women have a vital role in environmental management and development. Their full participation is therefore essential to achieve sustainable development." *Id.* at 5.

[410] "Principle 24. Warfare is inherently destructive of sustainable development. States shall therefore respect international law providing protection for the environment in times of armed conflict and cooperate in its further development, as necessary." *Id.* at 5.

[411] *See, e.g.*, U.S. CONST.; *Universal Declaration of Human Rights*, G.A. Res. 217A(III), U.N. GAOR, 3rd Sess., Pt. 1, U.N. Doc. A/810 (1948).

standing of the significance of the value constituents is augmented because narrative enhances the central nervous system's response to theoretical material.

Our primary subject matter focus has been on the Rio Declaration on Environment and Development. The explication of this world community charter for sustainable development through the use of the method described above provides legal scholars, jurists, government officials, business people, politicians and ordinary citizens with a "cryptographic" jurisprudential compendium. By reference to this compendium, one can gain substantial insight into world community "legislative intent" in regard to development within a context of environmental concern. We believe the Rio Declaration demonstrates a clear-cut preference in favor of human dignity, ecological maintenance, and an equitable worldwide distribution of the eight values identified by those working within the law, science, and policy tradition.