

5-1-2001

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LeGene Quesenberry

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LeGene Quesenberry, *Ecotourism: A Hyperbolic Sustainable Development Technique*, 9 Penn St. Envtl. L. Rev. 473 (2001).

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Ecotourism: A Hyperbolic Sustainable Development Technique

LeGene Quesenberry*

I. Introduction

Sustainable development has become an important international policy consideration in determining methods of economic growth. The philosophy of sustainable development has taken tangible form in international policy documents. The weakness of the Rio Declaration sparked critical debate regarding sustainability and led to nature-based definitions of sustainability. Prior to this debate sustainable development simply meant sustainable growth. This article advocates the use of nature-based definitions of sustainable development as an alternative to continued exploitation and explores the potential of conservation as part of the Gross Domestic Product calculations. Ecotourism promises to be a successful sustainable development technique, but only if appropriate policy and regulatory incentives are effectively in place.

Part II provides the conceptual definitions of sustainable development. This section discusses international policy regarding sustainable development derived from the Rio Declaration and its policy failures. Nature-based definitions of sustainability are provided as an alternative to economic growth. Ecotourism is suggested as a mechanism for achieving economic development using nature-based definitions of sustainability.

Part III illustrates economic practices that are destructive to the environment and the deleterious effects of world trade on natural resources and local communities. It suggests that costs and

* Associate Professor of Finance, Clarion University of Pennsylvania. The author wishes to thank Dr. James E. Holloway of East Carolina University for his contributions and suggestions and Mr. Terry Duespohl of Clarion University of Pennsylvania for his comments.

benefits of conservation should be incorporated into a nation's Gross Domestic Product calculations.

Part IV describes the financial and political contributions of ecotourism and the social costs which can accompany it. This section concludes with a recognition that local community involvement/ownership is an important component of successful ecotourism. Part V discusses the social, environmental and policy concerns regarding ecotourism. It points out the risks of unsustainable ecotourism and calls for the evaluation of the net present value of resources in their natural state. It also describes the impact of ecotourism, the economy of the local community, and the problem of revenue loss by the host nation.

Part VI raises regulatory and legal issues related to ecotourism and prescribes the programs and incentives that should be utilized to encourage sustainable ecotourism.

II. Conceptual Definitions of Sustainable Development

Sustainable development is development that meets the needs of the present generation without compromising the needs of future generations.¹ If development suggests a progressive supersedure of a society and its economy, physical sustainability can only be achieved by imposing accountability on sources of development for environmental and socioeconomic consequences they create. Success depends on matching resource consumption, technological innovation, government regulation, investment strategies and cultural changes with the requirements of healthy ecological systems.

A. *International Policy Regarding Sustainable Development*

In the 1990s concerns about depleting resources, population growth, and global pollution commanded the intervention of international governments and policymakers. The largest diplomatic gathering in history occurred at Rio De Janeiro in June 1992.² This conference, the United Nations Conference on Environment and Development (UNCED),³ was the progenitor of a number of significant documents in international environmental

1. World Commission on Environment and Development "Our Common Future" p. 43-54, 1987. Also known as the Brundtland Commission Report.

2. UNCED was preceded, in 1972, by the United Nations Conference on the Human Environment in Stockholm.

3. UNCED, popularly known as Earth Summit, was held in Rio de Janeiro, Brazil from June 3-14, 1992.

law and policy. Of major import are the Rio Declaration on Environment and Development (the Rio Declaration)⁴ and Agenda 21,⁵ an action plan making recommendations to governments.

The principles articulated in the Rio declaration represent major policy statements critical to successful sustainable development. The Rio Declaration places human beings “at the center of concerns for sustainable development”⁶ but tempers that centrality by calling for “a healthy and productive life in harmony with nature.”⁷ However, that entitlement is narrowed by the requirement that the environmental needs of the future must be equitably preserved.⁸

To achieve sustainable development, the Rio Declaration mandates: “environmental protection shall constitute an integral part of the developmental process and cannot be considered in isolation from it.”⁹

The Rio Declaration recognizes the imperative of alleviating desperate consumption: “All states and all people shall cooperate in the essential task of eradicating poverty as an indispensable requirement for sustainable development”¹⁰ and requires that “the special situation and needs of developing countries and those most environmentally vulnerable, shall be given special priority.”¹¹

The Rio Declaration also applies to trade practices: “To achieve sustainable development and a higher quality of life for all people, States should reduce and eliminate unsustainable patterns of production.”¹²

Principle 11 recognizes the need to progress beyond platitudes by calling for environmental legislation (although less developed countries are held to lower standards).¹³ Principle 16 internalizes environmental costs by taking the approach that the polluter should pay.¹⁴

4. The Rio Declaration on Environment and Development of the United Nations Conference on Environment and Development, June 14, 1992, U.N.C.E.D. Doc. A/Conf. 151/5 Rev. 1, *reprinted in* 31 I.L.M. 874 (1992). [hereinafter The Rio Declaration].

5. U.N. Doc. A/Conf. 151/4 (1992) [hereinafter Agenda 21].

6. Rio Declaration *supra* note 4, Principle 1.

7. *Id.*

8. *Id.* Principle 3.

9. *Id.* Principle 4.

10. Rio Declaration *supra* note 4, Principle 5.

11. *Id.* Principle 6.

12. *Id.* Principle 8.

13. *Id.* Principle 11.

14. *Id.* Principle 16. But note, this principle also states “that the polluter should bear the cost of pollution . . . without distorting international trade and

Participation by women¹⁵ and indigenous people¹⁶ is vital for the success of sustainable development and the Rio Declaration requires their inclusion.

B. Policy Failures and Recognitions of the Rio Declaration

The Rio Declaration encourages the adoption of sustainable development policies, but does not provide legal or political definitions or a methodology for implementation. The problems of evaluating current economic interests in relation to those of the future remains unresolved.¹⁷ Comparing the value of a healthy ecosystem against individual self-interest and short-term economic gain presents an even greater difficulty. The historical tension between environmental protection and economic development persists even in the Rio Declaration.

Despite its weaknesses, the Rio Declaration fomented critical debate regarding sustainability and marked a transition from a dominion and disposal resource ethic—exploiting natural resources through industrialized economic growth—to one which recognizes the finitude of resources and the need to define growth in terms of quality. In reaction to Earth Summit, the European Union (E.U.) subscribed to the concept of sustainability. Its action plan entitled *Towards Sustainability*¹⁸ calls for a transformation of growth patterns. It also links sustainability to several factors: First, socioeconomic development requires a healthy natural environment; second, the consumption of finite resources must be optimized by reuse and waste minimization; and, third, consumer behavior must be modified on the individual level so as not to borrow resources from another people or generation.¹⁹ The E.U. recognizes that “by aiming at reduction and elimination of pollution

investment.” *Id.*

15. Rio Declaration *supra* note 4, Principle 20.

16. *Id.* Principle 22.

17. See generally Kenneth Rosenbaum, *The Challenge of Achieving Sustainable Development Through Law*, 27 ELR 10455, 10457 (Sept. 1997) (stating that “our legal system depends on advocates and there are no natural advocates for the future.”). Compounding this problem is the doctrine of standing which requires that the plaintiff’s “injury in fact” must not be ‘hypothetical’ or ‘conjectural’. *Id.* citing *Lujan v Defenders of Wildlife*, 119 L. Ed. 2d 351, 354, 22 ELR 20913, 20915 (1992) (citations omitted).

18. Commission of the European Communities. *Towards Sustainability: A European Community Programme of Policy and Action in Relation to the Environment and Sustainable Development*. Luxembourg: Office for Official Publications of the European Communities (1993).

19. *Id.* at 55.

and at prevention, recycling and reuse of waste rather than just abatement or clean-up and by creating a broader mix of instruments, including market incentives, thereby avoiding constraints on the technologies used to achieve higher standards, environment policy can stimulate investment, innovation, and competitiveness rather than stifle them.”²⁰ The E.U. action plan established a policy debate on the Rio Declaration suggesting that sustainability is not simply economic growth.

C. Nature-Based Definitions of Sustainability

From a ecologist’s perspective it is the natural resource base that requires sustaining. William E. Rees opined that the term “sustainable development” does not belong in the discussion of future ecological stability because it has been usurped by the political mainstream. In his view, it no longer challenges conventional economic thought, but rather palliates exploitive economic growth: “It’s meaning drifts [away] . . . from the ideal of ensuring a sustainable environment towards the seductive temptation of ensuring sustainable material growth.”²¹

Indeed, conservation biologists caution that the term sustainable development has become “hopelessly tainted.”²² Instead, Callicott and Mumford propose the concept of ecological sustainability. It is distinguished from both sustained yield and sustainable development. They support the concept of wilderness preservation where large biodiversity reserves in which human exploitation (habitation or economic development) is prohibited. As a conservation paradigm, ecological sustainability would be the aggregation of “culturally selected human economic activities and ecosystem health” in those areas which are already humanly inhabited and exploited.²³ From this perspective, ecological sustainability is fused to ecosystem health.

It has been noted that *au courant* environmental writing refers to sustainable development as *ecodevelopment* and defines it as “a process that allows for economic progress within the natural capacities of ecosystems. That process rejects unconditional growth

20. *Id.* at 64.

21. William E. Rees, *The Ecology of Sustainable Development*, 20 THE ECOLOGIST 18, 18 (1990).

22. J. Baird Callicott & Karen Mumford, *Ecological Sustainability as a Conservation Concept*, 11 CONSERVATION BIOLOGY 32, 32 (Feb. 1997).

23. *Id.* at 33.

as a basis for social and economic progress and replaces it with qualitative advancement in natural resources utilization.”²⁴

Regardless of the discipline or of the terminology chosen, sustainability in practice must embody market incentives, legislation, law enforcement, planning, education, and individual consumer behavior which can then stimulate investment, innovation, conservation, abatement technology, competition and perhaps most importantly non-use.

Ecotourism may then be one mechanism which achieves the economic objectives of sustainable development while satisfying the concerns of conservationists. Although a universal and precise definition of ecotourism is more elusive than a Jabiru Stork, the essence of the concept is that income benefits derived from tourism meet basic human needs, particularly in developing nations, while protecting the natural resource used for tourism.

III. Economic Practices and Conditions and Practices Destructive to the Environment

A. *Illustrations of Destructive Practices*

Supporters of ecotourism propose it as an alternative to agricultural intensification or industrialization.²⁵ There are several examples of unsustainable economic practices that destroy natural resources and ecosystems. Fueled by an exploding population, more than eighty percent of Latin America's tropical forests have been destroyed by logging, slash-and-burn agriculture, and rapid development.²⁶ The destruction has accelerated the decline in populations of many species. Jaguars have been hunted and displaced to protect livestock and encroaching people.²⁷ Tapirs, a stout pig-like ungulate related to the Rhinoceros, is hunted partially because it is thought to kill cattle and to cast evil spells on people.²⁸

One of the richest biological communities in East Africa is located in the Usambara Mountains of Tanzania.²⁹ Its forests have

24. Jerzy Mikosz, *Water Management Reform in Poland: A Step Toward Ecodevelopment*, 5 J. ENV'T. & DEV. 233, 236 (June 1996).

25. Ruth Norris et. al., *Community-Based Ecotourism in the Maya Forest: Problems and Potentials in TIMBER, TOURISTS, & TEMPLES* 327, 330 (Richard B. Primack, et. al. eds., 1998).

26. STACY RITZ, *THE NEW KEY TO BELIZE* 9 (1994).

27. *Id.* at 14. The author also relates the beginning of a Mayan folktale, "God decided to make man because the Jaguar already existed." *See id.*

28. *Id.* at 15.

29. EDWARD O. WILSON, *THE DIVERSITY OF LIFE* 260 (1992).

been halved due to logging and agriculture.³⁰ Destruction of this environment pushes thousands of species toward extinction.³¹

One-fourth of the plant species in the United States is located in the area stretching from Oregon to Baja California.³² Urban and agricultural development is diminishing and destroying that habitat.³³

Madagascar, an island unparalleled in its biodiversity: 30 primates; 10,000 plant species; endemic reptiles and amphibians, has lost two-thirds of its forests, mostly since 1950, to slash-and-burn agriculture.³⁴

The forests of New Caledonia harbor 1575 species of plants but have been reduced to nine percent of the island because of logging, mining, and intentional brushburning.³⁵ The tropical ecosystems located in the Dead Sea Depression near Israel and Jordan (*ghors*) protect ancient African flora and fauna.³⁶ They are imperiled not only by overgrazing, mining, and commercial development,³⁷ but by their use as a minefield³⁸ due to the continuing conflict in that region.

30. *Id.*

31. *Id.*

32. *Id.* at 261.

33. *Id.*

34. See WILSON *supra* note 29 at 267.

35. *Id.* at 269.

36. *Id.* at 260.

37. *Id.*

38. *Id.* A general principle of the World Charter for Nature dictates that "states shall be secured against degradation caused by warfare and other hostile activities." World Charter for Nature, U.N. GAOR 37th Sess., Agenda Item 21 at 7, U.N. Doc. A/Res/37/7, reprinted in, 22 I.L.M. 455 (1983). Despite the nonbinding status of particular declarations, there is evidence that the right to a habitable environment and state responsibility have become fixed principles within customary international law. See e.g., Lynn Berat, *Defending the Right to a Healthy Environment: Toward a Crime of Geocide in International Law*, 11 B.U. INT'L L.J. 327, 338-40 (discussing the right to a healthy environment as deserving the status of *jus cogens*); Mark Caggiano, *The Legitimacy of Environmental Destruction in Modern Warfare: Customary Substance over Conventional Form*, 20 B.C. ENVTL. AFF. L. Rev. 479, 550-03 (noting the world community's recognition of state responsibility to protect the environment from the effects of war); Anthony Leibler, *Deliberate Wartime Environmental Damage: New Challenges for International Law*, 23 CAL. W. INT'L L.J. 67, 70 (asserting that state responsibility for environmental damage has become a customary norm in international law). For a discussion of the use of the environment as a target in times of armed conflict, see Florencio J. Yuzon, *Deliberate Environmental Modification Through the Use of Chemical and Biological Weapons: "Greening" The International Laws of Armed Conflict to Establish and Environmentally Protective Regime*, 11 AM. U.J. INT'L L. & POL'Y 793 (1996).

Finally, in China, rubber planting and slash-and-burn farming account for the loss of nearly half of China's largest tropical forests.³⁹ The Golden Monkey, an inhabitant of these forests, suffered a population decline and now numbers about two hundred.⁴⁰

Pricing policies in developed nations have devastating ecological effects. To illustrate, in response to high prices for beef in the United States, herdsmen in Costa Rica developed pastureland until only seventeen percent of the original forest was left.⁴¹ It became the world's leading beef exporter to the United States.⁴² As the beef market declined, Costa Rica was left with bare landscape,⁴³ soil erosion, and a loss of biological diversity.⁴⁴ The leading cause of rainforest destruction in Central America is cattle production⁴⁵ where since 1960, more than twenty-five percent of all Central American forests have been razed and destroyed to produce beef.⁴⁶ Instead of relieving poverty as is often claimed, exploitation of the rainforests has had the effect of redistributing wealth upward.⁴⁷

B. The Effects of World Trade on Natural Resources and Local Communities

As these examples demonstrate, population pressures and the current conduct of world trade results in environmental

39. Seth Dunn, *Taking a Green Leap Forward*, THE AMICUS JOURNAL 12, 12 (Winter 1997).

40. *Id.*

41. WILSON, *supra* note 29, at 326.

42. *Id.*

43. Rain forest soil is extremely ill-suited for agriculture, because the nutrient load is not in the soil, but rather in the thick layer of fallen and decaying vegetation. Thomas A. Carr et al, *Rain Forest Entrepreneurs: Cashing in on Conservation*, Environment, Sept. 1993, at 13 (citing E. Linden, *Playing with Fire*, Time, Sept. 18, 1989, at 78). Once an area of rain forest is cleared and pasture is planted for cattle, the tropical soil no longer receives the large amounts of decaying organic matter that are necessary for healthy and productive soil. See generally Rattan Lal, *Managing the Soils of sub-Saharan Africa; Innovations for Crop Production in Tropical Soils*, Science, May 29, 1987, at 1069.

44. WILSON, *supra* note 29, at 327.

45. Alan B. Durning & Holly B. Brough, *Taking Stock: Animal Farming And The Environment* 25-27 (Worldwatch Paper No. 103, 1991).

46. Catherine Caulfield, *A Reporter at Large: The Rainforests*, THE NEW YORKER, Jan 14, 1985, at 79; Durning, *supra* note 45, Part 5, at 3 (stating that almost half of Central American forests have been cleared since 1960, primarily to create pasture for cattle).

47. Caulfield at 50. The permanent, wide-reaching benefits of the intact forest—wildlife habitat, water catchment, soil maintenance, food and medicinal resources, and building materials are eliminated for short-term profits accruing to a small group of investors and consumers. *Id.*

degradation and increasing the concentration of wealth.⁴⁸ However, some of the \$3.5 trillion annually involved in world trade could be redirected to induce natural resource protection.⁴⁹ Although the 1991 GATT⁵⁰ panel decision regarding the tuna-dolphin dispute suggested that import measures must regulate an item based on its traits as a product and not because of harvesting or collecting techniques, GATT contains provisions excepting certain products from its non-discrimination requirements.⁵¹ Article XX(b) and (g) except items when “necessary to protect human, animal, or plant life, or health” or when “relating to the conservation of exhaustible natural resources” respectively.⁵² Sadly, to date there seems to be a resistance to these particular provisions by the current GATT panel. However, a subsequent agreement suggests that this narrow interpretation of GATT is inappropriate.

The 1994 Agreement on Technical Barriers to Trade (TBT Agreement) favorably addresses environmental protection and regulations focused on process and production methods.⁵³ Hence, a country could prohibit the importation of products derived in environmentally malignant ways.⁵⁴ Sustainable development demands an interpretation of these two agreements that allows nations to choose to import only those products that are environmentally benign.⁵⁵

To quell global destruction of natural environments, trade must be conducted in ways that account for how a product was derived (how its extraction or production affected the natural environment), its transportation, marketing,⁵⁶ packaging, consump-

48. The cattle industry has been called the most significant factor in pauperizing rural populations. See JEREMY RIFKIN, *BEYOND BEEF* 192-93 (1992).

49. Stewart Hudson, *Trade, Environment, and the Pursuit of Sustainable Development*, in *The Greening of World Trade* 32, 33 (Government Institutes, 1994).

50. The General Agreement on Tariffs and Trade.

51. Rex J. Zedalis, *The Environment and Technical Barriers to Trade Agreement: Did the Reformulated Gasoline Panel Miss a Golden Opportunity?* XLIV NETH. INT'L LAW REVIEW 186, 186-187 (1997).

52. *Id.* at 187 n.8.

53. *Id.* at 187.

54. *Id.* at 188.

55. The international community has agreed to restrict the transboundary movement of hazardous waste. See *Basel Convention and the Control of Transboundary Movement of Hazardous Waste and Their Disposal*, 28 I.L.M. 657 (1989) (entered into force May 5, 1992) and the trade in endangered species. See *Trade in Endangered Species and Wild Fauna and Flora* 993 U.N.T.S. 243, 27 U.S.T. 1087, T.I.A.S. no 8249, 12 I.L.M. 1085 (1973) (entered into force July 1, 1975).

56. Approximately \$450 billion advertising dollars are spent annually on the

tion, and disposal. Trade policies must recognize environmental protection as a legitimate objective and discourage unsustainable processes by making it a cost of doing business or banning them altogether.⁵⁷

Not only should importing countries consider environmental harms caused by acquiring the product,⁵⁸ but the exporting country must recognize the long term costs of its loss of natural resources. Reconnecting the cost and benefits of conservation will require most countries to adjust their methods of calculating their Gross Domestic Product (GDP).⁵⁹ To illustrate, in Indonesia's successful bid to become the world's largest exporter of plywood, heavy equipment displaced manual labor.⁶⁰ In the effort to promote domestic sawmills, generate jobs, and capture more of the value of selling processed tropical wood, the country imposed a ban on the exportation of raw timber.⁶¹ However, most mills were situated in developed areas where costs were low (the coastal cities), not in the local forest communities.⁶² In fact, because the logging boom did not contribute to economic growth in the forest communities, these communities have the highest poverty rates.⁶³

This exportation of benefit away from the natural resource causes a phenomenon whereby the impacted area does not value conservation of the forests because the economic benefit does not inure to them. The importing community does not value conservation of the forests because it does not suffer the costs of logging like soil erosion, water pollution, loss of wildlife and even

maximization of global consumerism. David W. Orr, *Earth in Mind* (1994) at 76.

57. For a discussion of trade measures to regulate certain cross-border exchanges see Steve Charnovitz, *Trade Measures and the Design of International Regimes*, 5 J. ENV'T & DEV. 168, 169 (June 1996). This article also discusses non-environmental economic harm engendered by world trade: "[I]mports can displace internal production, leading to unemployment and loss of profits [F]urther, excessive importing can lead to currency depreciation and excessive exporting can lead to currency appreciation . . ." *Id.*

58. Domestic demand for a product can cause over production, extraction, or harvesting in the exporting country. For example, the demand created by hat manufacturers in the early 20th century caused the decline (and extinction) of many bird species. See J. Kastner, *Long Before Furs, It Was Feathers That Stirred Reformist Ire*, SMITHSONIAN 25(4), 96 (1994).

59. See e.g. Dana Clark & David Downes, *What Price Biodiversity? Economic Incentives and Biodiversity Conservation in the United States*, 11 J. ENV'T. L. & LITIG. 9, 14 (1996).

60. Dwight Y. King, *The Political Economy of Forest Sector Reform in Indonesia*, 5 J. ENV'T. & DEV. 216, 223 (June 1996).

61. *Id.* at 223.

62. *Id.*

63. *Id.*

increased wind speed. If Indonesia's process standards were defined as unsustainable and subject to trade restrictions, then forestry reform would occur. Unsustainable and environmentally destructive activities would be replaced by economic development which benefits from the existence of natural areas. Ecotourism is considered one of the methods of developing an economy in an ecologically sound way.⁶⁴ Once tourism begins to generate revenue for an area, local communities recognize the importance of protecting the natural resources.⁶⁵

IV. Economic Contributions of Ecotourism

Ecotourism, then, could be used as part of an economic strategy to create revenue in place of deforestation. Its ability to generate substantial revenue can stimulate natural resource protection. The 800,000 visitors to Costa Rica provided the tourism industry with \$700 million in earnings displacing bananas as the top money-maker.⁶⁶ Because of the popularity and charisma of African megafauna,⁶⁷ non-resident tourists in Kenya pay entrance fees of \$20.00 to \$27.00 for daily access to the national parks of Aberdares, Tsavo (East and West) and Nairobi.⁶⁸ Entrance fee revenue, combined with hunting revenue, is often the primary source of funding for wildlife and natural area management budgets in Africa. Fifty percent of Kenya's total foreign exchange comes from viewing wildlife or from safaris.⁶⁹ Given estimates of approximately one million annual visitors,⁷⁰ nearly \$20 million in revenue is generated by Kenya's wildlife resource.⁷¹

64. In comparing the benefits of ecotourism on a purely economic level, the net value per hectare of agricultural land is \$0.80, while the value of wildlife viewing is \$40.00 per hectare. Katy Koontz, *Green Getaways*, THE ATLANTA J. & CONST., Dec. 4, 1994, K1.

65. *Id.*

66. Larry Rohter, *People Pollute a Jungle Paradise*, THE ST. PETERSBURG TIMES (Florida), Jan. 26, 1997 at E1.

67. A study of Kenya's Amboseli National Park placed the value of each lion at \$27,000 and each elephant herd at \$610,000 each year in tourism revenue. Koontz, *supra* note 64.

68. RICHARD TRILLO, KENYA, THE ROUGH GUIDE 61 (1996).

69. Peter Dieke, *Policies for Tourism Development in Kenya*, 18 ANNALS OF TOURISM RESEARCH 269, 275 (1991).

70. There were 907,000 visitors to Kenya's parks in 1996. See Market Access at <<http://www.kenyatourism.org/market>> (last visited May 16, 2001). Tourism has grown in its contribution to gross domestic product, rising from 2% in 1960 to 6% in 1996. See The Economy at <<http://www.kenyatourism.org/economy.htm>> (last visited May 16, 2001).

71. Dieke, *supra* note 69 at 274.

A. *Financial and Political Contributions of Ecotourism*

One reason conservation organizations support ecotourism is the belief that such tourism contributes financially⁷² and politically to the existence and management of natural areas.⁷³ This contribution may be direct, as when fees are designated for that natural area's budget,⁷⁴ or indirect through a larger allocation of government funds in recognition of the contribution made by fees funneling to the government treasury. In turn, this latter circumstance may lead to political support that may then generate more financial support. However, in current practice, relatively little of tourism expenditure is collected by impacted natural areas.⁷⁵ Often revenues trickle up to the central government treasury with no direct return to the area that generated it.⁷⁶ Further, tourism can be a financial burden on these areas thereby reducing money available for activities not associated with foreign tourism.⁷⁷ In Latin America, entrance fees charged by parks tend to be low or non-existent.⁷⁸ Usually citizens are permitted entry at reduced rates and free of charge on Sundays.⁷⁹ Funds collected are not maintained locally or designated for site use.⁸⁰

Although \$27 million of 1988 tourist expenditures in Nepal derived from natural areas and costs of managing those areas were only \$5 million, the fees collected by and for the affected areas

72. Estimates of the global economic impact of ecotourism have ranged from \$50 billion to \$150 billion each year. Fern L. Filion et al., *The Economics of Global Ecotourism*, PROTECTED AREA ECONOMICS & POLICY 235, 237 (Mohan Munasinghe & Jeffery McNeely eds., 1994).

73. Kreg Lindberg & Jeremy Enriquez, *An Analysis of Ecotourism's Economic Contribution to Conservation and Development in Belize*, Vol. 2: A Comprehensive Report, (1994) at 46.

74. Many legally designated areas in the Caribbean operate with little actual protection due to a lack of funding. The Dutch government required tourism fees to cover operating costs as a condition of government donations at Bonaire Marine Park and Saba Marine Park. Although there was opposition from the industry at first, these fees have been critical for the existence of the parks. J.A. Dixon et al., *Meeting Ecological and Economic Goals: Marine Parks in the Caribbean*, AMBIO, vol. 22, no. 2-3, 117.

75. Lindberg, *supra* note 73 at 11.

76. *Id.*

77. *Id.*

78. *Id.* Pursuant to a mutual agreement with the government of Belize, the Belize Audubon Society manages seven protected areas for the government and the people of Belize, but it does not receive financial support from the government and has not, yet, received permission to charge entrance fees to the parks. *Id.* at 4.

79. *Id.* at 5 (table 2.1).

80. *Id.* at 11.

amounted to a mere \$1 million.⁸¹ Even these fees do not benefit the Department of National Parks and Wildlife Conservation, but rather are sent to the Ministry of Finance.⁸² The government and its citizens, therefore, may be more inclined to view parks as debt producers.⁸³ To capture some of the economic value generated by natural areas, governments should charge entry fees commensurate with management costs. Ecuador charges \$40.00 to enter the Galapagos National Park and Rwanda charges \$170.00 to enter the Parc National des Volcans.⁸⁴

Sagarmatha (Mount Everest) National Park has experienced economic growth based on the trekking tourist and mountaineering expeditions. Two-thirds of the local families obtain income as guides, porters and purveyors of food, lodging, equipment and handicrafts.⁸⁵ This reliance on tourism has a tendency to lead to large-scale resort development—a condition which is not only culturally damaging, but is also poor environmental practice. Timbering to meet demands of housing and energy needs occurred so rapidly that expeditions are now required to bring their own kerosene and the collection of firewood has been limited to residents who must obtain a permit.⁸⁶

B. Social Problems Caused by Ecotourism

Litter, pollution, and unsanitary waste disposal is attributed to excessive tourism.⁸⁷ Grazing needs of increasing numbers of pack animals has damaged fragile pastures.⁸⁸ Park officials lack authority over tourists and are not included in tourism planning, nor do they have resources to address the problems.⁸⁹ Again, revenue generated by this park's tourism is not designated for its use.⁹⁰

81. Michael P. Wells, *Neglect of Biological Riches: the Economics of Nature Tourism in Nepal*, 2 *BIOLOGY & CONSERVATION* 445, 445 (1993).

82. *Id.* at 451.

83. Wells, *supra* note 81 at 455. Direct costs of park protection and management are ten fold greater than amounts earned from entry fees. *Id.*

84. *Id.* at 447.

85. *Id.* at 456.

86. *Id.* at 457.

87. *Id.*

88. Wells, *supra* note 81 at 457.

89. *Id.* at 452. With the exception of the entry fee for the Annapurna Conservation Area none of the fees assessed on tourists is designated to support the protected area or the local community. *Id.*

90. From 1982-83 to 1990-91, the total budget of the Department of National Parks and Wildlife Conservation increased from NR 35 million to NR 148 million (\$4.6 million), however, eighty percent of these funds were allocated to the Army for law enforcement—an amount in excess of that needed for park protection. *Id.*

Entry fees then should be maintained in an account for that park's budget and any excess should be used to purchase more land or fund other less financially secure natural areas. Additionally, in order to limit environmental damage caused by tourism and to create a greater demand for the tourist product, countries should limit the number of tourists, require a minimum expenditure, and sell entry to parks at a premium.⁹¹

Prior to opening an area to tourism waste disposal should be addressed. An area like Sagarmatha could impose a sizable monetary deposit on expeditions based on an inventory of supplies refundable upon evidence that expended materials had been packed out. Sustainable ecotourism also requires the inclusion of local residents and officials in its development and rewards.

Experience has shown that when natural areas are established on the basis of aesthetic quality, species protection and diversity without regard for traditional human usage stand little chance of success. For example, under Colonial conservationism, wildlife in Africa became property of the state.⁹² In 1966, when the Rhodesian government designated the Gonarezhou National Park to protect elephants, the indigenous Shangaans were removed from their land.⁹³ In 1980, when Zimbabwe gained its independence, the Shangaans were again denied their claim to this land.⁹⁴ The tribe began an elephant poaching campaign designed to obstruct the park's protective purpose.⁹⁵

C. *Local Ownership as a Component of Successful Ecotourism*

Public attention reinforced mediation efforts between the Shangaans and the government which led to a partnership granting ownership and management rights of wildlife to the tribe.⁹⁶ That wildlife is marketed internationally to attract tourists and tourism revenue to the area. Visitors who come to Mahenye pay sizable trophy fees to hunt elephants.⁹⁷ Money and meat derived from

91. In Bhutan, visitor numbers are strictly controlled with each visitor required to spend \$200.00 daily thereby capturing a much greater share of economic value from each tourist while limiting the environmental and cultural impacts of tourism. *Id.*

92. Marisa Milanese, *Africa's Ghost in the Machine. Clive Stockil's Campfire Project Generates Tourism, Jobs—and Controversy*, CONDE NAST TRAVELER, Jun. 1997 at 24.

93. *Id.*

94. *Id.*

95. *Id.*

96. *Id.*

97. Milanese, *supra* note 92, at 25. The Zimbabwean Government charges

safaris is shared by the tribe.⁹⁸ Tourist and trophy revenue has been used to build roads, a clinic, a mill and a school.⁹⁹ Moreover, the Shangaans, in cooperation with the Zimbabwe Sun Hoteliers, built Mahenye Safari Lodge from which they derive ten percent of the profits.¹⁰⁰ The threat of poaching still exists, but perhaps by vesting the community with an economic interest in preventing such activity it will become more difficult for widespread poaching to occur. In an area where agriculture should not be encouraged, this local management of natural resources may be the only prudent way for people and the wildlife to survive.

Another interesting example of local ownership of tourism involves the nearly extinct Kalahari Bushmen of South Africa. Approximately 40 Bushmen are prospering from the establishment of Kagga Kamma Game Reserve.¹⁰¹ After the introduction of wildlife in 1990, the tribe, then numbering 27, was invited to live in the park.¹⁰² An agreement permits the tribe to hunt and gather beyond the constraints of law and policy applied to non-Bushmen.¹⁰³ Although criticized as a "human zoo,"¹⁰⁴ it may be difficult for the tribe to exist in competition with agriculture and encroachment occurring outside the park. The tribal community contains traditional thatched huts, a central dining hall, and a restaurant.¹⁰⁵ Tourists pay \$105 per night¹⁰⁶ to attend a lecture and to observe Bushman culture.¹⁰⁷ The tribe receives a percentage of the revenues, and that revenue has been used to build a school and a craft shop.¹⁰⁸ Bushmen can generate money through staging traditional hunts, selling authentic crafts, and lecturing (story-telling) about Bushman customs and practices; as a result, an

hunters \$15,000 for each elephant killed as a trophy. Eddie Koch, *Visit Africa and See Pink Elephants: In Zimbabwe, a New Eco-Safari Prefers Paintballs to Bullets*, CONDE NAST TRAVELER, Apr. 1997 at 48.

98. Milanese, *supra* note 92, at 24.

99. *Id.*

100. *Id.* at 28.

101. The South African Tourist Board, *Kagga Kamma Private Game Reserve, Place of the Bushman* at 4 (Pieter De Waal ed. 1994).

102. *Id.*

103. *Id.*

104. *Id.*

105. Graham Boynton, *The Lost Tribe of the Kalahari*, CONDE NAST TRAVELER, May 1997 at 228, 288. This poignant article questions whether ecotourism will enable the Bushmen to persist.

106. *Id.* at 293.

107. *Id.* at 285. The fees for various activities were: N\$50 (U.S.\$11) to accompany a Bushman on a hunt, N\$200 (\$44) to accompany women on a gathering, and N\$25 (\$5.50) per person to join a traditional dance. *Id.*

108. *Id.* at 288.

incentive exists for younger generations to retain their cultural identity.¹⁰⁹ Successful ecotourism must incorporate residents living near the natural resource.

V. Social, Environmental, and Policy Concerns Regarding Ecotourism

Although the contribution of tourism to social and economic development has been recognized, its risks have been given less attention. The World Travel and Tourism Council predicts that 5.4 million new jobs will be created worldwide over the next decade.¹¹⁰ The tourism industry, at its current rate of growth will double by the year 2005.¹¹¹ UNEP's¹¹² Blue Plan on the Mediterranean predicts that solid wastes and waste water generated by tourism will double by the turn of the century and the land used for tourism lodging will also double.¹¹³ This unappealing aspect of tourism has even found its way into modern literature. In describing Cote d'Azur, Peter Mayle decries the effects of all too successful tourism: "It used to be beautiful . . . but . . . it seemed like a madhouse, disfigured by overbuilding, overcrowding, and overselling: villa developments, *steack pommes frites*, inflatable rubber boats, genuine Provencal souvenirs made from olive wood, pizzas, water-skiing lessons, nightclubs, go-cart tracks—the posters were everywhere, offering everything."¹¹⁴

A. Risks of Unsustainable Ecotourism

When a proposal to develop a 500 acre resort complete with the requisite Nicklaus golf course, 800 luxury homes, and a \$30 million computer center imposed upon Tepoztlan, Mexico, the result proved lethal.¹¹⁵ Grupo KS, the Mexican development company, contended that its resort would create 9000 construction jobs and 3000 service jobs.¹¹⁶ The community responded that its open air markets had already cultivated tourism, and their wages were higher than the national average.¹¹⁷ They also recognized the

109. *Id.* at 285-86.

110. Alan Daniels, *Industry to Continue to Grow, Council Says*, THE VANCOUVER SUN, Jan. 13, 2001 at C1.

111. Norris *supra* note 25, at 330.

112. United Nations Environment Programme.

113. Commission of the European Communities, *supra* note 18, at 42.

114. PETER MAYLE, *A YEAR IN PROVENCE* 117 (1991).

115. Kira L. Gould, *Whose Water?* METROPOLIS, 29, 29 (Sept. 1996).

116. *Id.* at 33.

117. *Id.*

ecological harm caused by a golf course which maintains itself through the ardent use of pesticide and the consumption of 525,000 gallons of scarce water per day.¹¹⁸ A grassroots campaign against the resort forced the mayor to resign and, in a police attack on a village celebration, a member of that effort, Marcos Olmedo Gutierrez, was murdered.¹¹⁹ Several months of political activism had reduced tourism to twenty-five percent of its normal rate.¹²⁰ Many townspeople were left unemployed.¹²¹

The adverse effects of tourism are not limited to newly developing areas. The Red Sea has long been a prime destination for scuba divers and snorkelers mainly for its rich and unusual coral reefs. Diving at an Sharm El Sheikh had been limited by lack of access and accommodation until 1988 when an international hotel was built.¹²² An industry employing thousands of people flourished with over sixty dive boats operating daily.¹²³ Most dive centers allow three to four dives per person per day depending on depth and time.¹²⁴

The area south of Sharm has been designated Ras Muhammed National Park. Tourist authorities zealously predict that in twenty years 850,000 divers per year may visit Sharm El Sheikh resulting in 8.5 million dives.¹²⁵ Even the study's most conservative estimates predict 350,000 dives annually in addition to snorkeling and shore dives from residents.¹²⁶ There is considerable, credible evidence that diving and snorkeling cause reef damage primarily from standing, touching, equipment strikes, anchor drops, and finning.¹²⁷ In order to ameliorate the damage, officials have regulated mooring by requiring boats to moor at permanent buoys, limited the number of people inside park areas, and charged a fee to entering boats.¹²⁸ The fee is set at forty dollars with one dollar for park tax.¹²⁹ Caribbean tourism based on diving accounted for one-half the gross national product (GNP) in 1990, approximately U.S. \$4.5 billion.¹³⁰

118. *Id.*

119. *Id.*

120. Gould, *supra* note 115, at 33.

121. *Id.*

122. Michael Prior et al., *The Impact of Activity Tourism: A Case Study of Diving in Egypt*, 48 INT'L J. OF ENVL. STUDIES, no. 3/4, 201, 202 (1995).

123. *Id.* at 202.

124. *Id.*

125. *Id.*

126. *Id.*

127. Prior, *supra* note 122, at 205 (see figure 1: Frequency of Damage Events).

128. *Id.* at 207.

129. *Id.*

130. The World Resources Institute et al., *WORLD RESOURCES A GUIDE TO THE*

As a result, restrictions on commercial dive operations may be met with great resistance. However, dive sites that have become over-dived are no longer marketable to serious sports enthusiasts and the remaining dive operators are forced into price competition. Commercial self-interest alone has not sufficed in these areas to forge a responsible stewardship out of exploitation.¹³¹

B. Evaluating the Costs of Environmental Damage

Because coral reefs also provide habitat for harvestable fish (an estimated one-quarter of harvested fish in developing nations come from reefs) and protection from erosion and storms, it is estimated that over a twenty-five year period the costs of destroying one kilometer of reef range from \$137,000 to \$1.2 million.¹³² Education regarding external costs from destruction of natural resources cultivates support for protection and is integral to any successful ecotourism plan. The nascent science of ecological economics favors evaluating resources relative to the services such systems provide. For example, New York City invested \$1.5 billion in land purchases around reservoirs and the watershed of upstate New York in order to maintain the natural purification system rather than expend an estimated \$6 to \$8 billion in new treatment plant construction.¹³³ The major threats to water quality were agricultural by-products: pesticides, chemical fertilizers and manure.¹³⁴ New York City's purchase of 120,000 acres of land, its improvement of sewage treatment plants located in the watershed, and its imposition of alternative agricultural methods to prevent runoff into streams¹³⁵ protects New York City's consumption of 1.4 billion gallons per day from the expense of filtration.¹³⁶

By calculating the net present value (NPV) of one hectare of standing timber in a primary forest at \$2500-3000 and comparing that to its NPV of \$120 as agricultural use, the cost of deforestation in Indonesia (excluding logging damage and degradation) may be

GLOBAL ENVIRONMENT 194 (1998-99).

131. See Jonathan L. Hafetz, *Fostering Protection of the Marine Environment and Economic Development: Article 121(3) of the Third Law of the Sea Convention*, 15 AM. U. INT'L REV. 583, 612 (2000). Comparing the destruction of the world's marine environment to Hardin's Tragedy of the Commons and advocating privatization of small portions of the oceans to be held in public trust by single states.

132. The World Resources Institute, *supra* note 130, at 195.

133. *Id.* at 193.

134. David Brown, *The Price of Water*, METROPOLIS, Sept. 1996 at 19.

135. *Id.* at 24.

136. *Id.* at 19.

as high as \$1 billion per year.¹³⁷ The loss of government revenue caused by illegal logging is estimated between \$3.5 billion and \$4.6 billion annually.¹³⁸

Wetlands of northern Nigeria have been damaged by drought and dams.¹³⁹ The benefits of diverting water for agriculture upstream amounts to \$29 per hectare.¹⁴⁰ But the flood plain provides \$167 in benefits to local people via farming, fishing, grazing livestock, and gathering fuelwood.¹⁴¹ So even without measuring the value of wildlife habitat, the value retained by maintaining the area in its current condition is much greater than the value obtained by redirecting water for other uses and projects.¹⁴² These ecological valuations lend weight to the arguments favoring protection and sustainable use of natural ecosystems. By adding the revenue potential of tourism to the undeveloped site, local politicians and community leaders may be more effective in responding to demands for short-term profit.¹⁴³

C. Revenue Loss by the Host Country

Another economic factor which must be considered in the promotion of ecotourism addresses the amount of revenue lost by the host country. A consistent finding of economic impact studies, particularly in developing countries where one presumes most of the pristine natural environment exists, is the high level of "leakage." Much of the initial tourist expenditure leaves the host country, and particularly the destination site itself, to pay for imported goods and services used to satisfy foreign expectations. Two-thirds of ecotourist expenditures in Nepal is thought to leak away from the domestic economy.¹⁴⁴ Wearing and Parsonson estimate a loss of twenty-nine percent of business receipts and fifty percent of wage earning receipts in their survey of rainforest tourism in Australia.¹⁴⁵

137. King, *supra* note 60, at 217 n.3.

138. *Id.* at 218.

139. The World Resources Institute, *supra* note 130 at 193.

140. *Id.*

141. *Id.*

142. *Id.*

143. Nefer Munoz, *Environment-Costa Rica: Tourism Turns into Green Gold*, BUS. & INDUSTRY May 26, 2000 quoting William Rodriguez the President of the Chamber of Commerce for Sarapiquí De Heredia, Costa Rica: "We know nature is our livelihood, and that is why our mentality now is to take care of it. This is how businesses in the region see things today." *Id.*

144. Wells, *supra* note 81, at 449.

145. Stephen Wearing & Rob Parsonson, *Rainforest Tourism Case Study*,

The concept of leakage can be easily demonstrated by examining a typical tourist exchange. The local impact of tourism occurs in three categories: direct,¹⁴⁶ indirect,¹⁴⁷ and induced.¹⁴⁸ Direct impacts are those arising from the initial tourism spending, such as money spent at a hotel. The hotel buys goods and services from other local businesses generating indirect impacts. In addition, the hotel employees spend part of their wages to buy local goods and services generating induced impact. If, however, the hotel purchases goods and services from outside the region, or employees spend their wages outside the region, then a significant portion of the money provides no indirect or induced impact to the region—it leaks away.¹⁴⁹

By identifying leakages, one can identify what goods are needed but are not locally produced, then compare the benefits of local production to its costs. Thus, policymakers would be able to set priorities for developing local production of goods for use by tourism or other industries. Great care must govern such an undertaking to insure that local production does not create larger negative environmental damage than importation.

Ecotourism organizations should sponsor markets for locally produced natural products, artwork,¹⁵⁰ literature, and food.¹⁵¹ Tourists should be encouraged to choose products that are

TOURISM MGMT. 236, 241 (Sept. 1991).

146. For a discussion of the use of an input-output model to determine the economic effect of a business on a local economy, see Richard Gazel, *Gambling, Socioeconomic Impacts and Public Policy: The Economic Impact of Casino Gambling at State and Local Levels*, 556 THE ANNALS OF THE AM. ACAD. OF POL. & SOC. SCI. 66 at 70-72.

147. “[L]ocal businesses pay wages and salaries to their own employees and buy intermediate goods and services from other businesses.” *Id.* at 70. This expenditure is known as the multiplier or indirect impact. *Id.*

148. Lindberg, *supra* note 73, at 47.

149. Money generated from a business that is either not spent at all or is spent on items purchased outside the local economy is described as being lost or leaking away from the local economy. *Id.*

150. The national parks created in Nunavut are expected to create tourist trade which will benefit the local Inuit printmakers, carvers, and weavers. Louise Kinross, *Canada: New National Parks Will Draw More Tourists to High Arctic*, Reuter Textline Fin. Post, Nov 17, 1992 available in LEXIS, News Library, Canada File.

151. The increasing consumer demand for ecologically sound products should enhance a market savvy business to profit from this approach. See generally Ted J. Rakstis, *Business Rethinks, Refines, Recycles, and Recoups*, KIWANIS MAGAZINE, Aug. 1993 at 40-43; see also, Cheryl Powell, *The Green Movement Sows Demand for Ecofurniture*, WALL STREET JOURNAL, Sep. 1994 pp. B1, B8.

environmentally friendly not those which are simply convenient or profitable.¹⁵² Less tourist revenue will leak away from the region.

Tax incentives could be allocated to the ecotourist businesses which use a threshold percentage of locally produced goods.

VI. Regulatory and Legal Issues Which Affect the Success of Ecotourism

Regulatory programs and incentives are necessary to implement ecotourism as a successful sustainable development technique. These programs include (1) the establishment of national parks, wilderness areas, and extractive reserves¹⁵³ and ecological zoning; (2) "debt-for-nature" swaps which forgive or refinance some a nation's foreign debt in return for the debtor nation's protection of environmentally sensitive areas;¹⁵⁴ and, (3) the creation of a legal infrastructure to support enforcement of environmental protection. The incentives include (1) subsidization of communities near natural areas which forego development or industrialization;¹⁵⁵ (2) tax and market incentives to tourist ventures which operate in a sustainable manner; (3) tax of unsustainable or environmentally damaging ecotourist operations; (4) agricultural reform; (5) development of synergistic businesses in the natural area; (6) public environmental education; (7) population control. A few of these programs and incentives require elaboration.

A. Policy and Regulatory Programs Affecting Ecotourism

1. *Parks, Extractive Reserves, Ecological Zoning*—The establishment of a national parks system provides for the protection of important natural and cultural features. It also permits the

152. "Ecotourism has proved not to be a fleeting trend of bored yuppies but a popular new type of travel for those who want to learn about and protect the world instead of merely using its resources without giving a thought to the future." Koontz, *supra* note 64 at K1.

153. Wilson, *supra* note 29 at 324.

154. See Marc Dourojeanni, *Creating an International Environment that Supports Natural Biodiversity Conservation* in GLOBAL DIVERSITY STRATEGY 74-75 (World Resources Institute et al. eds., 1992). Other sorts of payment schemes can also be used for environmental protection. For example, the United States agreed to make advance monetary payments to Canada and Japan to be reimbursed in sealskins (that is, live seals left in the wild). The import ban on skins taken from the ocean was meant to secure compliance with the international agreement. The purpose of the ban on skins derived from land was to assist parties in enforcing their domestic laws. These payments were in response to a market demand for seal skin. See Charnovitz, *supra* note 36, at 177.

155. Roger W. Findley, *Legal and Economic Incentives for the Sustainable Use of Rainforests*, 32 TEX. INT'L L. J. 17, 22 (Winter 1997).

regulation or prohibition of agricultural, scientific, recreational, or educational uses. Regulations promulgated by the Belizean government regarding activity in its National Parks System Act prohibit, via fine/imprisonment, road or trail construction, clearing land for cultivation, and building structures in addition to the usual prohibitions of hunting, gathering, or defacing natural or culture features.¹⁵⁶ But there is a need to move beyond the creation of small areas of protection which fragment habitat. William Newmark compared national parks in the United States to island biogeography and discovered that the smaller and more isolated a park was from other wild areas the more species it had lost.¹⁵⁷ The first species to disappear were the large wide-ranging mammals.¹⁵⁸ Small and isolated populations are subject to genetic inbreeding and stochastic events making them more vulnerable to extinction.¹⁵⁹ Dave Wilcove, staff ecologist for the Environmental Defense Fund, linked the decline of songbirds to the extermination of predators in the eastern United States.¹⁶⁰

This situation of descending megapredators and ascending mid-range predators was dubbed *mesopredator release* by Michael Soule.¹⁶¹ The importance of regulating prey species extends to fauna because too many herbivores are very destructive to plant life. One method of achieving strong preservation systems is to employ the strategy of ecological zoning.¹⁶²

Zoning of a nation's ecosystems allows economic assessment of natural resources.¹⁶³ Any development should involve preservation

156. Jose Valdez, *Striking a Balance Between People & Environment*, BELIZE TODAY, Feb. 1993, at 21, 22.

157. Dave Foreman, *Wilderness: From Scenery to Nature* 5 No.4 WILD EARTH 8, 12 (Winter 1995/1996).

158. *Id.* Newmark predicts that all national parks will continue to lose species. *Id.* In addition to regulating prey animals, large carnivores serve as umbrella species: If enough habitat is protected to maintain viable populations of top predators, then most other species will be protected. *Id.* at 13.

159. *Id.*

160. *Id.* at 12.

161. *Id.*

162. The Convention Concerning the Protection of the World Cultural and Natural Heritage, Nov. 16, 1972, 11 I.L.M. 1358, art. IV., creates the affirmative obligation for member states to protect world heritage sites within its jurisdiction [referred to hereafter as the World Heritage Convention].

163. World Heritage sites and biosphere reserves are honorary designations for lands that meet certain criteria. See Zarrin Caldwell, *Does the United Nations Control U.S. Public Lands?* at <<http://www.unausa.org/publications/lands.htm>>. The function of the designation is to allow international recognition of sites of natural and cultural significance. *Id.* Most world heritage sites and biosphere reserves involve a national park. Over sixty-eight percent of the land in U.S. national parks, preserves, and monuments is also part of a world heritage site,

of the biosphere reserve,¹⁶⁴ protection of its ecological value, and maximization of its sustainable use. These zones¹⁶⁵ would optimally include interconnecting wildlife preserves, an extraction area, a polyculture farming area, an agriculture area, and buffer areas in which communities could develop and where tourist facilities would exist.¹⁶⁶ Extraction is the harvesting of renewable products from a natural environment in a way which provides alternative income to logging or monoculture farming.¹⁶⁷ For example, rubber tappers in Brazil derive their principal income from rubber and other wild forest products like nuts and palm hearts.¹⁶⁸ They live within the forest and hunt, fish, and operate small-scale farms depending on the stable and diverse ecosystem of which they are a part.¹⁶⁹ In 1985, rubber tappers in the Brazilian Amazon formed the National Council of Rubber Tappers (CNS) and proposed an alternative to the large scale farming: reserves would be created on federally owned property, but controlled locally.¹⁷⁰ These zones would receive legal recognition and the local association would be able to

biosphere reserve, or both. See HOUSE COMM. ON RESOURCES, 105TH CONG. 1ST SESS., INTERNATIONAL LAND DESIGNATIONS INFORMATION SHEET H.R. 901, "*The American Land Sovereignty Protection Act*" (Comm. Print 1997).

164. Biosphere reserves are areas of terrestrial and coastal ecosystems promoting solutions to reconcile the conservation of biodiversity with its sustainable use. See *The MAB Programme, World Network of Biosphere Reserves*, UNITED NATIONS EDUCATION, SCIENTIFIC & CULTURAL ORGANIZATIONS, at <<http://www.unesco.org/mab/wnbr.htm>> (visited Mar. 3, 2001). Each biosphere reserve is intended to advance three functions: a conservation function; a development function which is socio-culturally and ecologically sustainable; and, a logistic function to foster research, education, and monitoring related to conservation and development. See *The MAB Programme, Biosphere Reserves in a Nutshell*, UNITED NATIONS EDUCATION, SCIENTIFIC & CULTURAL ORGANIZATIONS, at <<http://www.unesco.org/mab/bfaq.htm>> (visited Mar. 3, 2001).

165. The Seville Strategy and Statutory Framework for Biosphere Reserves includes requirements that the reserve contain three zones of varying environmental protection: core areas, buffer zones, and transitions or cooperation zones. Core areas are legally protected from human activities exception for non-destructive research. See *The MAB Programme, The Statutory Framework of the World Network of Biosphere Reserves*, Art. 4 <<http://www.unesco.org/mab/home/framework.htm>> (visited Mar. 3, 2001).

166. The World Heritage Convention, *supra* note 71, advocates the establishment of buffer zones where land is managed for the benefit of the world heritage site. See U. N. EDUC., SCI. and CULTURAL ORG., Operational Guidelines for the Implementation of the World Heritage Convention, art. III, para. 76 (last modified Feb. 16, 1997) <<http://www.unesco.org/whc/opgutoc.htm>>.

167. Wilson, *supra* note 29, at 303.

168. *Id.* at 323.

169. *Id.*

170. Findley, *supra* note 155, at 25.

harvest natural products at a sustainable rate.¹⁷¹ The proposal was accepted by Brazil's President Sarney in 1990.¹⁷²

Extraction can also apply to logging. Strip logging—not to be confused with clear cutting—imitates the natural felling of trees creating linear gaps. The strip is used as a road to remove the logs. The area is then left alone until saplings begin to grow then another strip is cut above the old one so nutrients from the fresh cut flow into the older regenerating strip.¹⁷³ The Mundo Maya project is an effort by Mexico, Belize, Guatemala, Honduras, and El Salvador to create an international tourism zone featuring natural and cultural attractions.¹⁷⁴ Tourism development in and around these zones must occur without compromising the integrity of the ecosystem.

2. *Debt-For-Nature Swaps and Compensatory Payments*—Debt-for-Nature Swaps generally occur when nongovernmental organizations or other interested groups purchase debt from a developing nation on the secondary market at a discount.¹⁷⁵ The buyer then exchanges its right for repayment for an agreement for the developing nation to enact legislation protecting the environment, or transfers the debt to a conservation organization in the debtor nation in exchange for currency or bonds to finance a conservation program directed by that local group.¹⁷⁶ Any nation that incurs debt may be able to trade that debt for environmental protection. For example, a United States non-governmental organization purchased \$650,000 of Bolivian debt for \$100,000 on the condition that the government protect 3.7 million acres of rainforest.¹⁷⁷ There was some difficulty due to Bolivia's failure to enact the promised legislation.¹⁷⁸

Successful exchanges require contract language which conditions the payment on the protection. Progress payments may be effective in assuring compliance. A contract provision allowing for a bonus to be paid upon compliance may also prove useful. Another creative financial incentive used domestically requires

171. *Id.*

172. *Id.*

173. Wilson, *supra* note 29, at 324-325.

174. Norris, *supra* note 25, at 331.

175. David A. Ring, *Sustainability Dynamics: Land-Based Marine Pollution and Development Priorities in the Island States of the Commonwealth Caribbean*, 22 COLUM. J. ENVTL. L. 65, 130 (1997).

176. *Id.*

177. A. Dan Tarlock, *Exclusive Sovereignty Versus Sustainable Development of a Shared Resource: The Dilemma of Latin American Rainforest Management*, 32 TEX. INT'L L. J. 37, 64 (Winter 1997).

178. *Id.* at 64.

compensatory payments to local governments which refrain from or are prohibited from development.¹⁷⁹ Other governments which do not sponsor conservation areas pay those that do. Dr. Findley provided the example of Guaraquecaba, Brazil which is limited from development because most of it is protected coastal rainforest and wetlands: its share of tax has increased five hundred percent due to contributions from municipalities which benefit from Guaraquecaba's restraint.¹⁸⁰

The argument of ecotourism's revenue potential would augment these exchanges. A nation rich in natural resources may generate substantial wealth by avoiding activities that alter that environment.

3. *A Legal Infrastructure to Support Enforcement of Environmental Protection*—Prevention of environmental degradation related to tourism requires a legal infrastructure prepared to levy fines and impose jail sentences on individuals.¹⁸¹ But, it must also be equipped to revoke permits, suspend or terminate operations, require remediation, and deny financial benefits such as tax incentives.¹⁸² This labor intensive infrastructure requires human resources to inspect sites, operate customs, monitor remediation, and process violators. It should be viewed as an employment opportunity.

B. *Policy and Regulatory Incentives*

1. *Agricultural Reform*—Leaching pesticide residues make agriculture the number-one polluting industry in the United

179. Findley, *supra* note 155, at 30.

180. *Id.*

181. For a discussion regarding the efficacy of law as a means to promote sustainable development see Kenneth L. Rosenbaum, *supra* note 17 at 10455. The article discusses five obstacles to achieving sustainable development through law: Division of authority over resources, lack of understanding the environment, lack of advocates for "future generations," changing uses of resources, that many social mechanisms are required to mediate use of resources. *Id.* at 10455.

182. Resource protection is complicated by the fact that many different authorities may have jurisdiction over a resource. For an analysis of the division of control of the Columbia River and an argument for reform of splintered authority, see Angus Duncan, *Proposal for a Columbia Basin Watershed Planning Council*, 10 ILLAHEE 287 (1994). One study identified 17 different international, federal, state, and tribal management jurisdictions that a hypothetical salmon may pass through in its life. Charles F. Wilkinson, *Crossing the Next Meridan*, 209 *citing* Charles F. Wilkinson & Daniel Keith Conner, *Law of the Pacific Salmon Fishery: Conservation and Allocation of Transboundary Common Property Resource*, 32 KAN. L. REV. 17 (1983).

States.¹⁸³ Considering that we export banned pesticides as well as those we use to the rest of the world, the situation in those importing countries cannot be much better.

The plague of monoculture in the rainforests does not bear repeating. What is necessary is a change. The current state of agriculture policy must shift from an agricultural protectionist paradigm to one of sustainable agriculture.¹⁸⁴ Sustainable agricultural processes are those which do not undermine the capacity for successful crop production in the future.¹⁸⁵ One such method is permaculture. Permaculture revitalizes local farming without the perils of expensive and destructive use of fertilizer, irrigation, and pesticide. There are many successful prototypes of permaculture: Masanobu Fukuoka's rice farm in Japan, Bill Mollison's Australian farms, John and Nancy Todd's New Alchemy Institute on Cape Cod,¹⁸⁶ and Mark Cohen's Belize Agroforestry Research Center (BARC). Using indigenous plants that work together—providing shelter, fixing nutrients, holding water—and combining ecosystems that benefit each other—gardens, woodlands, fish ponds—one can eliminate artificial support of food and protect the genetic reserve of plants.¹⁸⁷ At BARC one may walk beneath a canopy of hardwood, fruit, and medicinal trees (mahogany, cedar, sapodilla, avocado, plum, pau d'arco).¹⁸⁸ The understory consists of cacao coffee, bamboo, bananas, oranges, vanilla, ginger, and apples.¹⁸⁹

In 1995, members of the Tropical Conservation Foundation, an umbrella organization to BARC, helped cocoa growers form a chocolate-producing cooperative in Costa Rica which then produced 104,000 pounds of organic chocolate.¹⁹⁰ This business enables people indigenous to the forest to be compensated fairly

183. JANINE M BENYUS, *BIOMIMICRY*, 19 (1997).

184. "Equating agricultural protectionism and environmental protection is probably the gravest shortcoming in contemporary agricultural policy." Jim Chen, *Globalization and its Losers*, 9 MINN. J. GLOBAL TRADE 157 at 198 (Winter 2000).

185. Hugh Lehman et al., *Clarifying the Definition of Sustainable Agriculture*, 6 J. AGRIC. ENVTL. ETHICS 127, 139 (1993).

186. Benyus, *supra* note 182, at 36-40.

187. Interview with Mark Cohen, Director of the Belize Agroforestry Research Center, in the TOLEDO DISTRICT, Belize (Dec. 28, 1997).

188. *Id.*

189. *Songs From a (Vanishing) Belizean Forest*, TROPICAL CONSERVATION FOUNDATION NEWSLETTER, Vol. 8, No. 1 (Tropical Conservation Foundation, Athens, Ohio), Dec. 1997, at 1.

190. *Organic Chocolate Producers Cooperative Farms*, TROPICAL CONSERVATION FOUNDATION NEWSLETTER, Vol. 6, No. 1 (Tropical Conservation Foundation Athens, Ohio), Nov. 1995, at 1.

while protecting the natural resource from which they derive their livelihood and without resorting to destructing practices.

Permaculture farms and cooperative types of farms could become part of the ecotourism industry. Visitors could pay an entrance fee, provide donations, or purchase local foods or crafts. Alternatively, farms located adjacent to natural reserves can house paying researchers who may then study flora and fauna extensively. Ecotourism supplements the income of those who would be otherwise engaged in monoculture agrotechnology and product exportation.

2. *Synergistic Businesses in Natural Areas*—Environmentally sensitive economic activities can thrive in natural areas without jeopardizing conservation objectives. Extractive reserves, permaculture (polyculture) farming, research facilities, and ecotourism can support the local economy.

Bioprospecting is another profitable endeavor which demands protection of the natural resource where it occurs. A bioprospector may be an individual or a team of scientists searching for curatives in “natural resources such as plants, fungi, insects, microbes, and marine organisms.”¹⁹¹ Financial rewards from sales of plant-based drugs in the U.S. were estimated at \$15.5 billion for 1990.¹⁹² The Convention on Biological Diversity, the first international instrument recognizing the intrinsic value of biodiversity, reaffirms national sovereignty over resources.¹⁹³ The Convention requires access to and transfer of technology to developing nations to facilitate conservation and sustainable use of biological diversity.¹⁹⁴ In 1991, Costa Rica and Merck, Sharp and Dohme, Inc. (Merck) entered into contracts whereby Costa Rica supplies raw resources in the form of extracts to Merck who then researches them for medicinal value.¹⁹⁵ Merck provided \$1 million, and supplied equipment and personnel for an extraction facility.¹⁹⁶ Most

191. Christopher J. Hunter, *Comment: Sustainable Bioprospecting: Using Private Contracts and International Legal Principles and Policies to Conserve Raw Medicinal Materials*, 25 B.C. ENVTL. AFF. L. REV. 129, 136 (1997).

192. *Id.* To recognize the exponential growth in this field, compare, Norman Myers, *The Primary Source* 7-8, 206 (1984) (stating that each year, over the counter drug sales of these medicines amounted to \$20 billion worldwide).

193. Convention on Biological Diversity, U.N. Conference on Environment and Development, June 5, 1992, *reprinted in* 31 I.L.M. 818, 822 (1992). The initial document setting forth principles of sovereign ownership of natural resources was the Resolution on Permanent Sovereignty over Natural Resources. U.N. GAOR, 17th Sess., Supp. No.17 at 15, U.N. Doc A/5217 (1963).

194. Convention on Biological Diversity, *supra* note 193, Art. 16 at 830.

195. Hunter, *supra* note 191, at 159.

196. *Id.*

importantly a royalty was provided for any commercially marketable drug later produced.¹⁹⁷

Bioprospecting is as susceptible to abuse as any other endeavor. The species *maytenus buchananni* in Kenya was eradicated by a prospecting team sponsored by the U.S. National Cancer Institute.¹⁹⁸ The challenge of sustainable bioprospecting is to protect biodiversity while permitting its medicinal availability. Tourism, if it is to contribute to sustainable development, must be subject to similar constraints. One study of the Cooloola National Forest in Australia estimated that it required \$37,000 tourist dollars to support one job.¹⁹⁹ That translated to one job for every 1600 visitor days.²⁰⁰ The evidence demonstrates that once an area becomes excessively visited, the site experiences severe and large-scale environmental degradation.²⁰¹

Further, a survey conducted of Cooloola's businesses found that three quarters of them employed fewer than five permanent full-time staff.²⁰² Seasonal fluctuations of occupancy and employment pose another challenge. In order for ecotourism to replace more destructive economic practices, employment in that industry must be continuous, full-time and gainful. Before one joins the exuberance regarding ecotourism, these issues must be addressed.

3. *Taxation and Market Incentives Regulating Ecotourism*— Incentive legislation for the tourism industry has included income tax exemptions, accelerated depreciation allowances, duty-free imports, and full repatriation of capital and remittance of profits.²⁰³

The national impact of ecotourism is based on payment of taxes, licenses, import duties, occupancy taxes, and related revenues.²⁰⁴ All industries generate government revenue through payment of license fees and business taxes. Less obvious is tourism's contribution to government revenue through industry's purchase of inputs. Part of each tourist dollar generates sales of

197. *Id.* at 160.

198. *Id.* at 138.

199. Wearing & Parsonson, *supra* note 145, at 237.

200. *Id.*

201. *Id.*

202. *Id.* at 239.

203. Winston Griffith, *Tourism in the Commonwealth Caribbean: A Case Study of Barbados in THE TROUBLED AND TROUBLING CARIBBEAN* 201, 204 (Roy A. Glasgow & Winston Langley eds., 1980). For example, Barbados' Hotel Aids Act of 1967 guaranteed to all investors full repatriation of capital and profits. *Id.* Jamaican hotels with an excess of 350 rooms were granted a 15-year income tax exemption. Tom Barry et al., *The Other Side of Paradise*, *FOREIGN CONTROL IN THE CARIBBEAN* 113 (1984) at 82.

204. Lindberg, *supra* note 73, at 55.

utilities and fuel. A government's partial ownership of the utilities and its tax on fuel inures to its benefit. Tourism generates additional revenue through payment of occupancy and departure taxes. Because the tax structure already exists it would be relatively simple to assess a tax or provide a deduction for certain tourist activities.

A consumption tax could be assessed to those operators who imported or used environmentally disadvantageous materials. A hotel built with lumber from a tropical forest or which used tropical woods in furniture would be taxed on that use. Similarly, hotels which used recycled products such as carpeting made from plastic bottles or which employed solar energy would receive energy credits which could be used to offset income or sold to hotels which were not employing such techniques. This latter market incentive forces tourism operators who are practicing poor environmental policies to boost the income of a competitor.

Tradable permits have been utilized in Sao Paulo, Brazil to encourage preservation of historic buildings and have been proposed for water and fish resources as well as investments in ecotourism.²⁰⁵

An opportunity also exists for non-governmental organizations to provide subsidies to promote preservation.²⁰⁶

4. *Education*—Another argument appealing to conservation organizations is that tourism educates the public regarding environmental issues.²⁰⁷ Positive experiences of tourists can be used to market conservation. Governments where pristine natural areas are located may be exposed to significant international pressure to protect those areas from degradation caused by monoculture agrotechnology and product exportation. Indeed, encroachment is more likely to occur in other areas due to a lack of tourist-related public awareness.

Any desire to protect parks, and to conserve natural resources generally, must be derived from complex and interdependent factors. In many cases, attitudes will depend on relative costs and benefits provided by the park. Costs occur in two ways: 1) as

205. Antonio Herman Benjamin & Charles Weiss Jr., *Economic and Market Incentives as Instruments of Environmental Policy in Brazil and the United States*, 32 TEX. INT'L L. J. 17, 85-86 (Winter 1997).

206. *Id.* at 85. For example, a group could pay people engaged in turtle harvesting not to kill turtles. An additional payment could be made based on a bounty: for each turtle saved from another hunter that bounty-hunter would be compensated.

207. Norris, *supra* note 25, at 333.

expenditure on capital investment and operating costs and 2) as opportunity costs.²⁰⁸

Some of the opportunity costs may be those incurred by government or private industry of substantial short-term revenue sources derived from converting the natural resource through mining, agriculture, and hydroelectric power industries.²⁰⁹ Reduced access to resources located within the park including the “loss” of free grazing opportunities, hunting and gathering.²¹⁰

Perceived damage by predator animals to livestock products or other tourist attractions.²¹¹ Other costs may be economic or social, such as inflation and crowding related to tourism.

Conversely, there are direct and indirect benefits of ecotourism. Direct benefits in the form of employment opportunity that provides dignity for the employee such as park staff; and other economic benefit related to tourism development rather than non-sustainable activity which morphs the ecosystem.

Indirect benefits accrue to a local community through external funding. For example, a contract involving bioprospecting may require a collecting institution to provide regional non-governmental agencies with legal resources or provide primary health care and educational resources to the local community.²¹²

Protected areas also generate productive, aesthetic, educational and cultural benefits. Productive benefits such as protection of water supplies through filtration and erosion prevention²¹³ have an enormous monetary value as seen in the prior discussion on evaluating the costs of environmental damage. Aesthetic and educational benefits generated by conserving flora and fauna are made tangible in a culture’s art, poetry, literature and music. Another benefit is the preservation of cultural traits and national identities associated with the natural environment.²¹⁴

208. Wells, *supra* note 81, at 453.

209. *Id.*

210. *Id.*

211. John L. Eliot, *Cormorant Slaughter in Lake Ontario Provokes Outrage—and a Reward*, 195 No.2 NAT’L GEOGRAPHIC 139, 139 (Feb. 1999). (reporting that 1000 Coromants, protected by New York State, were killed by shotgun blasts on an island perhaps because sportfishers had complained that the birds were eating too many small-mouthed bass.

212. Sarah A. Laird, *Contracts for Bioprospecting in BIODIVERSITY PROSPECTING* 99 at 122.

213. *See* discussion *supra* Part V.B.

214. Although beyond the scope of this article, for a discussion of the intersection of aboriginal and non-aboriginal rights in the context of the Nunavut Land Claims Agreement which created the first territory in a modern nation to be governed by an aboriginal people see Charles J. Marecic, *Nunavut Territory:*

VII. Policy Recommendations and Concerns Supporting Ecotourism

1. *Integrate tourism and other forms of community development into a sustainable development plan.* Successful management of fragile or scarce resources in inhabited areas depends upon delivering an acceptable standard of living to those people adjacent to or near the resource.²¹⁵ Because agriculture is a major threat to these areas, tourism may divert potential farmers into tourism employment. However, much depends on keeping the population at a level where the natural environment can cope.²¹⁶ Family planning education and its accouterments are essential.

2. *Alleviate poverty by improving the status of women.*²¹⁷ Providing women with opportunity can reduce their dependence on fertility as a social and economic necessity.

3. *Discourage excessive and non-regenerating consumption.* This may require tax on activities or products defined as environmentally unfriendly. Prohibit the use of private rental cars in ecotourism sites. Alternatively, tax such use and earmark that money for conservation.

4. *Encourage change in consumer behavior by "redirecting customer needs and wants toward "ecologically beneficial products*

Aboriginal Governing in the Canadian Regime of Governance, 24 AM. INDIAN L. REV. 275 (2000). Also, the Inuit land claim deal created three new national parks in Nunavut that many believe will help establish ecotourism as a viable economic base. *Id.* at 278. See also, Kinross, *supra* note 148 claiming that tourists will be able to observe traditional hunting of marine animals and caribou by the Inuit and may have the opportunity to hunt polar bear, muskox, and caribou outside the park. The estimated cost a tourist would pay for such an experience is \$1500.00/day. See *id.*

215. *Id.*

216. Fifty-five percent of Venezuela's nearly 100 parks, monuments, refuges, and reserves are illegally occupied and seventy-five percent are illegally hunted. Sean T. Mcallister, *Community-Based Conservation: Restructuring Institutions to Involve Local Communities in a Meaningful Way*, 10 COLO. J. INT'L ENVTL. L. & POL'Y 195, 198 (Winter, 1999) citing Aldemaro Romero Diaz, *Economic Contributions of Venezuelan Protected Areas: The Tragedy of the Commons and Perspectives*, in PROTECTED AREA ECON. & POL'Y: LINKING CONSERVATION & SUSTAINABLE DEV. 121 (Mohan Munasinge & Jeffery McNeely eds., 1994).

217. See Jens Dalh, *Gender Parity in Nunavut?*, at <http://articcircle.uconn.edu/ArticCircle/SEEJ/Nunavut/gender.html> (visited May 12, 2000) stating that in Inuit culture, "the man is the traditional hunter who comes home with the catch; he is the provider. After hunting, he comes home not only with food but with experiences, information and new knowledge about other people and about nature. It is the man who passes on his knowledge—the woman listens. In many ways the last decades have witnessed a break in this monopoly. Women have become wage earners; many have a good education; and it is now often men who are unemployed and must stay at home." *Id.* at 1.

and services, and providing the socio-ecological products to consumers.²¹⁸

5. *Identify negative externalities associated with natural resources degradation.*

6. *Develop carrying capacity guidelines for fragile, pristine resources and restrict access accordingly.* Charge high “rents” or user fees for access to areas. However, it is reasonable in developing nations to charge foreign tourists a higher rate than nationals. Belize provides for free admittance to its national parks on Sundays for its citizens. Kenya’s residents pay a much reduced rate to access their parks.²¹⁹ Such policies may indoctrinate environmental awareness. It may also stem resentment harbored by people who live near or “own” a resource but could not otherwise afford the enjoyment of it.

7. *Broaden the skill base of those employed in ecotourism operations so that in the “off-season” those employees can still support themselves and/or their families.* One suggestion is to rotate personnel through various functions such as maintenance, groundskeeping, housekeeping, hospitality, construction, food service and the like. An additional benefit of creating a diverse workforce is that it may increase worker satisfaction.

8. *Reduce leakage of ecotourism revenue by requiring or promoting the use of indigenous products.*

9. *Expand traditional environmental education.* Tourism can generate substantial support for conservation both within the toured country and by the tourist. But, given that the popularity of destinations change and the drive to make money in the present is very powerful, conservation cannot depend on tourism alone. Additionally, economic incentives of tourism should not be the sole purpose for resource conservation and protection. Utilitarian, spiritual, and most importantly, the ecological values of natural areas must be part of the development scheme. The contemporary preservationist approach recognizes that the health of ecosystems is proportional to our quality of life and that biotic communities have intrinsic value towards which we have an ethical obligation.

10. *Identify and mitigate tourism’s negative environmental impacts.* Tourism has caused construction in fragile ecological areas,²²⁰ habitat destruction,²²¹ conversion of wetlands and man-

218. Jagdish N. Sheth & Atul Parvatiyar, *Ecological Imperatives and the Role of Marketing*, in ENVIRONMENTAL MARKETING STRATEGIES, PRACTICE, THEORY, AND RESEARCH 3, at 8 (Michael J. Polonsky & Alma T Mintu-Wimsatt eds., 1995).

219. Dieke, *supra* note 69, at 61.

220. See Ring *supra* note 174, at 78.

groves into landfills,²²² and pollution.²²³ For example, outside of Costa Rica's Manuel Antonio National Park over one hundred hotels serve 200,000 people annually.²²⁴ The hotels spawned nightclubs and restaurants, all of which along with the hotels, produce and receive large amounts of waste.²²⁵ But, because there is no sewer system in the area, untreated sewage is discharged directly into the ocean.²²⁶

11. *Prevent the major cause of species extinction and genetic depletion—habitat loss—by maintaining and expanding reservoirs of biodiversity and ecological integrity exclusive of human habitation and economic exploitation.* In some of these areas visitation access should be greatly restricted or unavailable.

12. *Cultivate international support of non-governmental organizations which are motivated and successful in protecting natural resources.*

13. *Develop an international code of ethics regarding ecotourism which clearly establishes responsibilities for the tourist and the indigenous population as well as the proprietors involved in ecotourist transactions.*²²⁷

VIII. Conclusion

Ecotourism continues to be an important element of sustainable development. It should serve the purpose of protecting natural resources from exploitation. There must be international policy changes which encourage cooperation and enforcement of environmental standards in order to accomplish that purpose.

221. *Id.*

222. *Id.*

223. Rohter, *supra* note 66, at 5E.

224. *Id.*

225. *Id.*

226. *Id.*

227. For a discussion on the development of a code of ethics for the tourism industry see Franklin B. Krohn & Zafar U. Ahmed, *The Need for Developing an Ethical Code for the Marketing of International Tourism Services*, Vol. 8(1) J. OF PROF. SERVICES MARKETING, 189 (1991). The authors describe five axioms to be followed in developing an international code of ethical behavior:

1. The code to be developed should be short and simple.
2. All participants in the international tourism industry should be involved.
3. Effective communication and feedback can be accomplished with an 800-number and wide-spread dissemination of the results of the calls.
4. A "Good Housekeeping Seal of Approval" for the industry should be established along with individual certification of the practitioners.
5. Self-policing of advertising and promotion must be accomplished by those within the industry. *Id.* at 197. The development of an ethical code for the ecotourism industry could be modeled on these axioms.

Promoting ecotourism serves a variety of altruistic ends: it provides revenues to developing nations, protects the environment, educates residents and tourists, and assists indigenous peoples in maintaining their cultural identities. However, the fervor of ecotourism as it is currently practiced threatens to destroy through excessive use, poor planning, and non-sustainable activities, the very site valued for its unique, unspoiled qualities. Left ungoverned, ecotourism becomes a paradox.